Current Physiotherapy Practice in Intensive Care Units in Kosovo

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Introduction: Physiotherapy as a part of a multidisciplinary approach within the intensive care units (ICU) in Kosovo is an important intervention that prevents the effects of a prolonged bed rest and mechanical ventilation. They manage respiratory complications, physical deconditioning, neuromuscular and also musculosceletal conditions that are presented.

Objectives: Aim of the study was to describe the importance of physiotherapy in patients with critically ill, and to provide an overview of the practice of physiotherapy (PT) in intensive care units in Kosovo.

Material and methods: The working method is quantitative. The research involved 37 health professionals, physiotherapists who were identified and invited to participate. The resarch was performed in the regional hospital Isa Grezda of Gjakova, Peja hospital, University clinical center of Kosovo and the private medical hospital Royal Medical. The research data were selected with the questionnaire instrument: an observational cross-sectional study in these Kosovo hospitals.

Results: Most of the physiotherapist were under 31-40 years in age, 39% of them were male and 61% were female. Majority of the respondents 72% were part time worker in ICU. 15% of them always performed deep breathing exercises, 14% percussion, 13% positioning and 12% of them performed postural drainage as the most used methods in patients treatment. 47% of physiotherapists never performed inhalation, 29% nebulizer and 12% mechanical ventilation.

Conclusion:Deep breathing exercises, positioning, mobilization and postural drainage techniques are presented amongst the most used methods, and lack of academic training in respiratory care was the main barrier in practice and many of them state that a training in respiratory care is necessary.

Keywords: physiotherapy, ICU, mobilization, postural drainage.
DOI Number: 10.48047/nq.2022.20.19.NQ99105 **NeuroQuantology2021;19(12): 1133-1142**

1. Introduction

Critical care is medical care for patients who have life-threatening illnesses, and it takes place in an intensive care unit. The care for critically ill patients requires a multidisciplinary approach.(Jackson et al., 2021).Most patients are discharged within 1-2 days, commonly after postoperative respiratory and cardiovascular support and monitoring. But some patients may require support for several weeks or

months. Physiotherapists are part of the multidisciplinary team within the intensive care units (ICU) in Kosovo and they play important role in the treatment of patients with critical illness. Physiotherapy improves functional status up to one year after discharge and reduce mortality by 25%.The aim of a physiotherapy approach in these cases is to decrease patient dependency on the ventilator and to improve quality of life.(Clini E et al, 2005). Physiotherapy in the Intensive care unit improves patients' physical wellbeing .(Dionne F et al, 2012). The prolonged bed rest together with the physiological effects of inactivity and immobility, including pressure ulcers and muscle weakness, present the major burden towards which the physiotherapeutic approach is oriented.(Chambers M et al, 2009, Harper CM et al, 1998). Over the bed rest muscle wasting occurs early and with reduction of up to 30 % over the first 10 days.(Parry et al., 2015). This way, early mobilization has its benefits in the improvement of respiratory function and hospital length of stay (Alaparthi et al 2020).

Physiotherapists manage neurological,musculoskeletal and cardiorespiratory complications of patients with critically ill. Within the ICU the physiotherapist will treat the problems that are presented and also is responsible to reduce long-term consequences that may appear from a period of immobility. The effect of immobility it is most common in eldery patient and to patients with chronic diseases like chronic obstoructive pulmonary disease and congestive heart failure.(Yende S et al, 2006). Functional mobility retraining and therapeutic exercises are the most common forms used from PT, the goal of therapeutic exercises are to restore strength and endurance to patient using both actively and passively training for lower and upper extremities, and functional mobility retraining to regain balance, coordination and the ability to walk independently.(Hodgin, K et al 2009) Intensive care patients experience psycologhical symptoms like memory loss and some of them can have symptoms of anxiety,depression and post-traumatic stress.The use of diaries may promote psycological recovery by reducing gaps in memory.(Aitken et al 2013,Costa et al 2019).

Matherial and Methods

The working method is quantitative. The research involved 37 health professionals, physiotherapists who were identified and invited to participate. The research was performed in the regional hospital of Gjakova, Peja hospital, University clinical center of Kosovo and the private medical hospital Royal Medical. The study was conducted in the form of an online questionnaire by using Google Forms : an observational cross-sectional study in these Kosovo hospitals.Physiotherapists working in ICU were requested to fill the questionnaire and the requested responses were received by email. Statistical analysis was done by using SPSS.

The aim of the study was clearly stated when the questionnaire was distributed to them. They were informed that they're identity will not be disclosed and the information would be used only for research purpose. The questionnaire included physiotherapists profile(qualification, work experience, and hours of working,) and physiotherapy techniques in ICU(mobilization,positioning, and postural drainage,breathing exercises, application of nebulizer and oxygen therapy masks etc.

Results

Table 1: Profile of samples

Characteristics of samples	No. of respondents, N and (%)	Male	Female
Age (in years)			
21-30	7 (38.88)	2	5
31-40	7 (38.88)	3	4
41-50	4 (22.22)	2	2
Qualification			
Bachelor	11 (61.11)	6	5
Master of Science	4 (22.22)	1	3
Professional Master	3 (16.66)	0	3
Work experience (in years)			
1-5	5 (27.77)	1	4
6-10	3 (16.66)	2	1
Over 10 years	10 (55.55)	4	6
Full time working in ICU?			
Yes	5 (27.77)	1	4
No	13 (72.22)	6	7
After-hours services at the ICU during the week?			
Yes	8 (44.44)	2	6
No	10 (55.55)	5	5
Intensive Care Unit where you work?			
Neurosurgical ICU	5 (27.77)	1	4
Neurological care ICU	2 (11.11)	0	2
Cardiac Care ICU	2 (11.11)	0	2
Surgery	2 (11.11)	1	1
Central Intensive Care Unit	7 (38.88)	5	2
Average no of patients treated during the day			
1-3	2 (11.11)	0	2
3.1-5	10 (55.55)	3	7
>5.1	6 (33.33)	4	2

Table 2: Techniques of physiotherapy

Sl. No.	Types of Physiotherapy given by physiotherapist	Always	Never	Sometimes	F-ratio
1	Active range of motion exercises	11	1	6	3.245^{ns}
2	Airways suctioning	4	9	5	2.412^{ns}
3	Bronchodilators or other medications	3	4	11	0.035^{ns}
4	Chair exercises	7	1	10	3.245^{ns}

5	Deep breathing exercises	14	0	4	5.524*
6	Doctors referral	12	0	6	4.236*
7	Electrical muscle stimulation	5	0	13	2.125 ns
8	Exudate patients	4	9	5	1.524 ns
9	Get out of bed with and without walking aids	14	0	4	0.524 ns
10	Hyperinflation	6	5	7	1.256 ns
11	Inhalation	6	8	4	6.324**
12	Mechanical ventilation	10	2	6	1.854 ns
13	Mobilizations	9	0	9	5.458*
14	Nebulizer	6	5	7	4.746*
15	Oxygen therapy mask on your patients	5	3	10	2.657 ns
16	Passive cycling	4	5	9	1.756 ns
17	Passive expiration	9	3	6	2.964 ns
18	Passive range of motion in bed	16	0	2	1.265 ns
19	Patient with cough/suffocation	12	2	4	2.547 ns
20	Performing independent mobilization	10	0	8	1.24 ns
21	Positioning	12	0	2	4.214*
22	Postural drainage	11	1	6	5.632*
23	Patients suitability	16	0	2	1.254 ns
24	Percussion or manual vibration	13	1	4	6.412*
25	Respiratory muscle training exercises	12	0	6	1.254 ns
26	Suction bronchial secretions from the mouth or nose	6	5	7	2.618 ns
27	Transfer your patients	9	0	8	0.473 ns

For F-ratio degrees of freedom (n-1) =2, *p<0.05 and **p<0.05

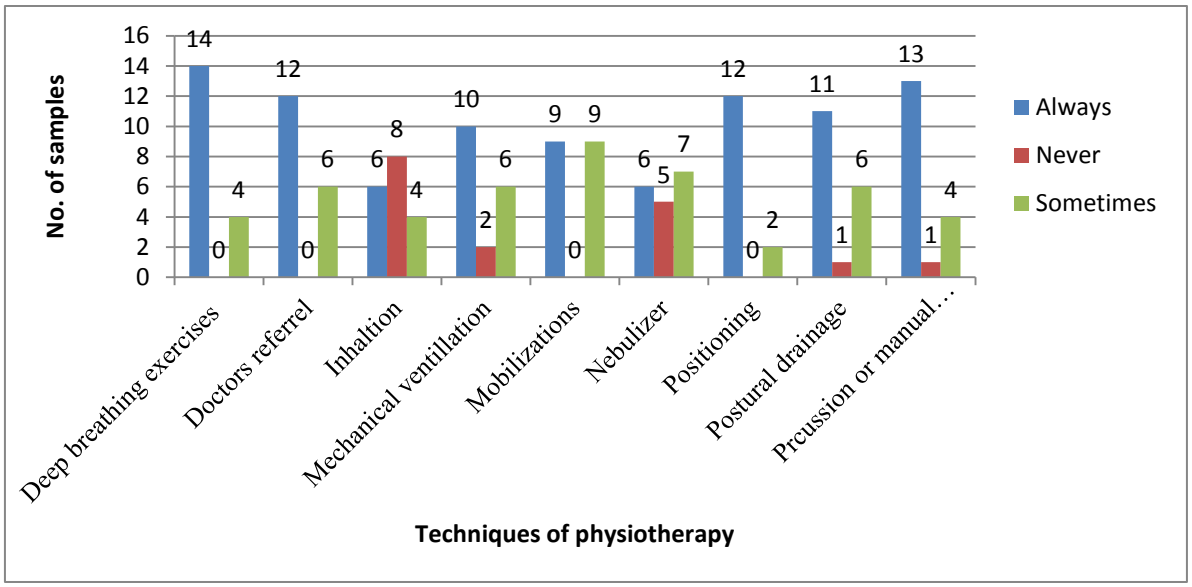

Figure 1: Most significant physiotherapy techniques in Intensive Care Unit (ICU)

eISSN 1303-5150

In our study, we have received 18 replies from physiotherapy out of 37 responses. Among them 7 were male and 11 were female (**Table 1**). Most of the respondents were bachelor degree holder (11), four were Master of Science degree holder and least was professional master degree holder (3). Most of the physiotherapist were under 21-30 and 31-40 years in age. Out of 18, 10 peoples had more than 10 years' experience. Majority of the respondents (13) were part time worker in ICU. Most of the Physiotherapists were working in Central Intensive care unit (7) and Neurosurgical ICU (5) in most of the times. 10 physiotherapist treated averagely 4-5 people and 6 physiotherapists treated more than five daily (**Table 1**).

In this study, by doing ANOVA test, we have found that out of 27 techniques applied by physiotherapist; only few are significantly different from others (**Table 2**). These are deep breathing exercises (5.524*), Doctors referral (4.236*), Inhalations (6.324**), Mobilizations (5.458*), Nebulizers (4.746*), Positioning (4.214*), Postural drainage (5.632*), Percussion or manual vibration (6.412*).

In **Figure 1**, we have shown the details physiotherapy techniques which are significantly different from others. Number of Physiotherapist who always prefer deep breathing exercises (14), doctor's referral (12), Inhalations (6), mobilizations (9), nebulizers (6), positioning (12), postural drainage (11), percussion or manual vibration (13).

Discussion

The purpose of this study was to provide an overview of the practice of physiotherapy (PT) in intensive care units in Kosovo. This study can present the current practice environment in the ICU in Kosovo in terms of the use of PT modalities and treatments for a particular patient, demographic information, educational data, and practice-related hurdles. It was noted that the physiotherapists employed in the intensive care unit (ICU) had a variety of training, experience, clinical knowledge, and skills. In this survey, it was discovered that 70% of the participants had less than five years of ICU experience, and nearly 80% of the respondents were between the ages of 20 and 40. It was discovered that almost 60% of respondents had a bachelor's degree in physiotherapy, and 22% had a master's degree, while evaluating the qualifications of physiotherapists working in ICU. Our investigation also revealed that the majority of physiotherapists lacked professional degrees specifically connected to their field. Because these were the methods of PT that were most frequently used in our study, deep breathing exercises, exercises prescribed by doctors, patient mobilizations, and positioning were the most popular PT methods.

Systematic evaluations (Clini & Ambrosino, 2005; Denehy & Berney, 2006) revealed that positioning, manual hyperinflation, mobilisation, percussions and vibrations, suctioning, exercises, and continuous rotational therapy were the most frequently employed treatment modalities by hospital therapists. The clinical case determined how much of

these therapeutic approaches were used (Stiller, 2013). There is a need for strong evidence of the effectiveness of PT therapies in ICU, according to recent studies, and the available data is only at levels C and D at the moment (Gosselink et al., 2008). Regardless of the clinical circumstances, chest physical therapy was the most popular treatment among PTs in the current study (54%). The combination of postural drainage, manual hyperinflation, percussion, and vibration is known to increase chest physical therapy (PT) effectiveness (Ciesla et al., 1996). The USA (Jolley et al., 2017), Europe (Norrenberg & Vincent, 2000), and Asia all have similar ICU procedures (Baidya et al., 2016). However, a study done in Greece found that different physical therapists' practises for early mobility and respiratory PT varied (Christakou et al., 2019). According to a study conducted in Nepal, physical therapists' scope of practice was limited to chest physiotherapy exclusively (Baidya et al., 2016). In the ICU in KSA, positioning was the second most popular therapy. According to a recent study (Thomas et al., 2006), a large majority of therapists concur that posture helps to avoid bedsores and increase patients' comfort. Positioning is a crucial intervention to lower the risk of bedsores among patients admitted to ICU, according to a cross-sectional survey among nurses and doctors (Hamric & Blackhall, 2007). There is a similar PT practice across European nations, according to a study by Norrenberg and Vincent from 2000. Although strong efficacy of these PT techniques has been reported and is the preferred procedure in the USA (Schweikert et al., 2009) and many European countries, functional activities, which also include bed mobility and gait training, and therapeutic exercises were moderately preferred by 46% and 39% of PTs, respectively (Perme & Chandrasekhar, 2008). Such clinical practise guidelines were the subject of a systematic review that supports early mobilisation in ICU (Lang et al., 2020).

The majority of PTs who were questioned said they had learned ICU PT management from their superiors and peers. According to research done in Jordan, the primary obstacles were a lack of personnel, a lack of funding, a lack of significance being accorded to the issue, and a lack of consultation with the PTs who work in the ICU. Poor staffing and training in the ICU among PTs is a similar situation that has been documented from Sri Lanka (Sigera et al., 2016). Most participants responded indifferently when it came to how other team members evaluated the value of PT sessions in the ICU, the prioritisation of services, and PT consultation. Despite compelling evidence showing physical therapy (PT) sessions in the ICU increase patient satisfaction, shorten hospital stays, and save money. According to a study, offering PT services for 24 hours per day as opposed to 12 hours per day would dramatically lower ICU costs (Rotta et al., 2018). It is advised that the academic programme contain course learning outcomes relevant to knowledge and psychomotor skills involved in the administration of ICU PT in order to overcome the obstacles and enhance the quality of care in this setting. A 132-item consensus framework for a minimal standard of physical therapy practice in intensive care units was created as a result of a study done in Australia and New Zealand (Skinner et al., 2016). In a similar vein, South African, UK, and Japanese PTs have created a list of clinical standards of practise for ICU (Van Aswegan et

al., 2017; Twose et al., 2019 and Takahashi et al., 2020).

Following are some drawbacks of the study:

1) Participants' response rates were low (only 50% responded).
2) The knowledge, conduct, and abilities of the PTs working in the ICU were examined in order to validate them for use in developing the residency and fellowship programmes. Despite the fact that the scope of this study was restricted to a few ICU characteristics, it can still be used to improve the design of bachelor's and master's degree curricula to better meet the needs of the time.
3) The survey's length, the six situations, and the questions that go along with each scenario make it time-consuming and lengthy.
4) The self-reported questionnaire is always susceptible to answer bias and is easily impacted by the participants' environment.

Conclusion

Deep breathing exercises, positioning, mobilization and postural drainage techniques are presented amongst the most used methods by physiotherapists working in ICU. Lack of academic training in respiratory care was the main barrier in practice and many of them state that a training in respiratory care is necessary.Future research must look into the relationship between years of ICU experience and level of care. Studies may also investigate the ICU's compliance with clinical recommendations.

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eISSN 1303-5150