Knowledge of physiotherapists working in adult ICU on contraindications to mobilization

Conhecimento dos fisioterapeutas atuantes em UTI adulto sobre as contraindicações à mobilização

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Abstract

**Introduction:** Mobilization is an effective therapy to combat the deleterious effects of immobility, but not all patients are in a condition to be moved; thus, knowledge about contraindication criteria is fundamental. **Objective:** To evaluate the knowledge of physiotherapists working in adult ICUs on contraindications to the mobilization of critical patients. **Method:** This was a cross-sectional study in which a survey was applied to physiotherapists working in an adult ICU in the city of Recife. **Results:** Out of the 36 criteria presented, only five were considered contraindication criteria. Clinical parameters were those that obtained higher frequency for not being considered criteria for contraindication, nor were there observed differences in the relation between the time of working in the ICU. **Conclusion:** Most physiotherapists did not consider the criteria presented as contraindications to mobilization, so that professional training in mobilization practices and the creation of protocols are necessary.

**Keywords:** Rehabilitation. Intensive Care Unit. Exercise.
Introduction

The immobility observed in most critical patients is responsible for the increase in the length of hospital stay and weaning from mechanical ventilation and for the reduction in functionality and quality of life [1-6]. In addition there is a negative effect on the economy of health systems, through prolonged hospital stay and spending on retirements and pensions [7,8].

As a result of the aforementioned damages, several studies [1,7,9-12] have shown that mobilization is a safe and effective intervention to combat the effects of immobility [13,14], providing benefits such as reducing muscle weakness and improving quality of life [1,15-17].

Despite being a technique with rare adverse events [9,16-21], the mobilization of critically ill patients should be carried out with caution, since the literature points that there are parameters of contraindication of respiratory, cardiovascular, neurological, trauma-orthopedic, hematological and clinical nature [1,3,6,22-26].

However, although these criteria are generally similar, it is possible to observe the existence of some divergences, mainly in relation to the reference values of some parameters, such as hemoglobin level, white blood cells, platelets, respiratory rate (RR), heart rate (HR), oxygen saturation (SpO₂) and mean arterial pressure (MAP) [1,6,7,22-26]. Therefore, decision-making for mobilization in critically ill patients must consider the physiotherapist’s knowledge of these criteria.

Accordingly, the objectives of this study were: 1) to outline the profile of physical therapists working in the adult ICUs in public and private hospitals in the city of Recife in Brazil; 2) to evaluate the knowledge of these professionals about the application of contraindication criteria for patient mobilization in making clinical decisions; and 3) to analyze the influence of the time working in the ICU on acquiring knowledge of these criteria.

Method

We conducted a cross-sectional survey type study, which was approved by the Ethics and Research Committee Involving Human Beings (CEP) of the Center for Health Sciences, Federal University of Pernambuco (UFPE), under CAAE No. 15019113.7.0000.5208, according to Resolution 466/12.

The population consisted of physiotherapists working in an adult ICU of public and private hospitals in the city of Recife. Units listed in the National Register of Health Establishments - CNES were visited through the website (http://cnes2.datasus.gov.br/) in 2016,
where 39 hospitals had been registered, of which three had closed and nine were excluded due to bureaucratic obstacles.

A total of 410 professionals were included in the study according to information collected from the heads of the respective services, where the appropriate number of questionnaires was sent. The collections took place from March 2016 to February 2017.

For inclusion of the professional in the study, a record was registered with the Regional Physiotherapy Council (CREFITO) and an account of working in an adult ICU in public and private hospitals in Recife. The duplications were checked by the board’s registration number.

Data collection occurred with the consent to access the service, where the physical therapists were directly approached. Those who voluntarily agreed to participate signed an informed consent form and then responded without assistance with the questionnaire.

For the elaboration of the survey, a search was performed in the electronic databases PubMed, Lilacs and Scielo using the keywords: early mobilization, rehabilitation, ICU and exercise to list the criteria for contraindication to mobilization. Subsequently, systematic meetings were held with experts in the field for the preparation of the list of criteria, and a pilot study was carried out with 20 physical therapists specialized in working in the ICU for suitability of language and conciseness, to fix inconsistencies, complexities, ambiguities and superfluous questions.

The final questionnaire was self-explanatory and was provided with instructions necessary for its correct completion, without the need for an examiner. It consisted of four parts: 1) academic training and professional data; 2) professional practice; 3) profile of the ICU at which working; and 4) list of criteria for contraindication to mobilization.

The statistical analysis was performed using the software Statistical Package for the Social Sciences (SPSS), Chicago, version 20.0, where the absolute and relative frequencies were calculated for the categorical variables. The number of responses "not a criterion" (considered "error") was analyzed using a t-test for proportions \(H_0: p = 0\), thus observing whether the proportion of the response "not a criterion" was significant in the sample as whole. From this analysis, when \(p < 0.05\) \((\alpha = 0.05)\) was obtained, there was a significant proportion of professionals who did not consider a certain criterion to be a contraindication, when compared to the professionals who did. For this analysis, it was not taken into account whether the contraindication was absolute or relative, nor were the responses "I don't know" analyzed.

The chi-square test was also performed to determine the association between length of experience and the contraindication criteria. For this calculation, the length of service was divided into two groups, up to five years of experience and more than five years, due to the distribution of professionals in these ranges.

**Results**

We obtained a response rate of 39.5%, making it possible to characterize the profile and practice of physiotherapists. The data are presented in Table 1.

| Variable                                | N   | %    |
|-----------------------------------------|-----|------|
| Working in some other area besides adult ICU |     |      |
| Yes                                     | 96  | 59.3 |
| No                                      | 66  | 40.7 |
| Graduation                              | 12  | 7.4  |
| Specialization in ICU                   | 99  | 61.1 |
| Another specialization                   | 47  | 29   |
| Master's                                | 3   | 1.85 |
| Ph.D                                    | 1   | 0.6  |
| General                                 | 95  | 58.4 |
| Neurology                               | 14  | 8.6  |
| Profile of current ICU                  |     |      |
| Cardiology                              | 46  | 28.4 |
| Traumatology                            | 1   | 0.6  |
| Hematology                              | 6   | 3.7  |
| Practice mobilization                    |     |      |
| Yes                                     | 155 | 95.7 |
| No                                      | 7   | 4.3  |
The physiotherapists’ knowledge of contraindication criteria and of parameters most considered as not being an impediment to mobilization, can be seen in numbers and frequencies in Table 2 and Figure 1, respectively.

Figure 1 shows that when separated into groups, the criteria that were reported most often as not being considered a contraindication to mobilization were clinical parameters.

### Table 2 - General characteristics of children and adolescents with cystic fibrosis according to the frequency of physical activity

| Contraindication Criteria | Respiratory | Neurological |
|---------------------------|-------------|--------------|
| FiO2 ≥ 50 - 60% | (15) 9.3% | (15) 9.3% |
| SpO2 ≤ 88 - 90% | (26) 16% | (26) 16% |
| OI ≤ 200- 300 | (15) 9.3% | (15) 9.3% |
| RR ≥ 25 and ≤ 40 breaths/min | (40)24.7% | (40)24.7% |
| PEEP ≥ 10 cmH2O | (26) 16% | (26) 16% |
| Asynchronous ventilation | (51) 31.5% | (51) 31.5% |
| Major criterion (Absolute) n (%) | Not a criterion |
| Minor criterion (Relative) n (%) | |
| Not a criterion n (%) | P |
| FiO2 ≥ 50 - 60% | (15) 9.3% | (70) 43.2% | (76) 46.9% | 0.01 |
| SpO2 ≤ 88 - 90% | (26) 16% | (103) 63.6% | (31) 19.1% | 0.01 |
| OI ≤ 200- 300 | (15) 9.3% | (73) 45.1% | (73) 45.1% | 0.01 |
| RR ≥ 25 and ≤ 40 breaths/min | (40)24.7% | (99) 61.1% | (23) 14.2% | 0.01 |
| PEEP ≥ 10 cmH2O | (26) 16% | (72) 44.4% | (64) 39.5% | 0.01 |
| Asynchronous ventilation | (51) 31.5% | (74) 45.7% | (35) 21.6% | 0.01 |
### Cardiovascular

| Condition                                                                 | Not a Criterion (%) | Other (%) | *p* Value |
|---------------------------------------------------------------------------|---------------------|-----------|-----------|
| Arrhythmias with hemodynamic repercussion                               | (145) 89.5%         | (17) 10.5%| -         |
| **Thromboembolism without heparinization**                               | (151) 93.2%         | (10) 6.2%| -         |
| Signs of hemorrhage                                                      | (144) 88.9%         | (17) 10.5%| (1) 0.6%  | 0.319     |
| HR ≤ 30 and ≥ 120 bpm                                                   | (115) 71%           | (46) 28.4%| -         | -         |
| MAP ≤ 60 - 65 mmHg                                                       | (51) 31.5%          | (88) 54.3%| (22) 13.6%| 0.01      |
| MAP ≥ 90 - 120 mmHg                                                     | (41) 25.3%          | (105) 64.8%| (13) 8%  | 0.01      |

### Neurological

| Condition                                                                 | Not a Criterion (%) | Other (%) | *p* Value |
|---------------------------------------------------------------------------|---------------------|-----------|-----------|
| ICP ≥ 20 mmHg                                                            | (124) 76.5%         | (26) 16%  | (7) 4.3%  | 0.008     |
| Craniectomy                                                              | (27) 1.6%           | (92) 56.8%| (36) 22.2%| 0.01      |
| Unstable spinal fractures                                                | (67) 41.4%          | (78) 48.1%| (15) 9.3% | 0.01      |
| Psychiatric disorders or severe agitation                                 | (115) 71%           | (39) 24.1%| (5) 3.1%  | 0.025     |
| Contraindications to muscle stretching                                   | (68) 42%            | (73) 45%  | (16) 9.9% | 0.01      |

### Trauma -orthopedic

| Condition                                                                 | Not a Criterion (%) | Other (%) | *p* Value |
|---------------------------------------------------------------------------|---------------------|-----------|-----------|
| Trauma or surgery of the leg, hip or lumbar spine                         | (17) 10.5%          | (102) 63% | (40) 24.7%| 0.01      |
| Unconsolidated hip or lower limb fractures                                 | (67) 41.4%          | (78) 48.1%| (15) 9.3% | 0.01      |
| Neurological and/or motor deficits and/or musculoskeletal limitations that make mobilization impossible | (29) 17.9%          | (72) 44.4%| (57) 35.2%| 0.01      |

### Hematological

| Condition                                                                 | Not a Criterion (%) | Other (%) | *p* Value |
|---------------------------------------------------------------------------|---------------------|-----------|-----------|
| Platelets ≤ 20,000 – 50,000 mm³                                           | (76) 46.9%          | (75) 46.3%| (7) 4.3%  | 0.008     |
| White blood cells ≤ 3,000 mm³                                             | (45) 27.8%          | (78) 48.1%| (22) 13.6%| 0.01      |
| Hemoglobin ≤ 8- 9 g/dL                                                     | (38) 23.5%          | (97) 59.6%| (23) 14.2%| 0.01      |

### Clinical

| Condition                                                                 | Not a Criterion (%) | Other (%) | *p* Value |
|---------------------------------------------------------------------------|---------------------|-----------|-----------|
| On day of and 24 h after radiotherapy                                     | (19) 11.7%          | (78) 48.1%| (26) 16%  | 0.01      |
| Advanced cancer with metastases                                          | (23) 14.2%          | (90) 55.6%| (42) 25.9%| 0.01      |
| Immunosuppressive potential                                              | (60) 37%            | (62) 38%  | (8) 4.9%  | 0.004     |
| Open abdominal wounds                                                     | (32) 19.8%          | (97) 59.9%| (30) 18.5%| 0.01      |
| Severe liver disease with thrombocytopenia                               | (105) 64.8%         | (47) 29%  | (8) 4.9%  | 0.004     |
| Severe sores or venous ulcers                                             | (19) 11.7%          | (91) 56.2%| (51) 31.5%| 0.01      |
| Hypothermia ≤ 34°C or fever ≥ 38°C                                        | (104) 64.2%         | (54) 33.3%| (2) 1.2%  | 0.158     |
| General malaise                                                           | (44) 27.2%          | (103) 63.6%| (14) 8.6%| 0.01      |
| Severe cachexia and dehydration                                           | (42) 25.9%          | (81) 50%  | (31) 19.1%| 0.01      |
| Bone, muscle and chest pain                                              | (27) 16.7%          | (108) 66.7%| (85) 15.4%| 0.01      |
| 2h after hemodialysis                                                     | (9) 5.6%            | (44) 27.2%| (106) 65.4%| 0.01      |

### Note:
- *FiO₂* = fraction of inspired oxygen, *OI* = oxygenation index, *MAP* = mean blood pressure, *PEEP* = positive end expiratory pressure, *ICP* = intracranial pressure.
- *t*-test for the proportion of the sample answering “not a criterion”, removing those who answered “I don’t know”. [H₀: 𝑝 = 0].
The association between length of service and the criteria showed a significant result for two of the 36 parameters, namely: craniectomy and intracranial pressure ≥ 20 mmHg. These data can be seen in detail in Table 3.

Table 3 - Association between time working in the ICU and criteria for contraindication to mobilization

| Contraindication criteria | Up to 5 years | More than 5 years | P     |
|---------------------------|---------------|-------------------|-------|
|                           | Correction    | Error             | Correction | Error |       |
| **Respiratory**           |               |                   |       |       |       |
| \( \text{FiO}_2 \geq 50 \text{ - 60\%} \) | 48 (56.5) | 37 (43.5) | 37 (48.7) | 39 (51.3) | 0.325 |
| \( \text{SpO}_2 \leq 88 \text{ - 90\%} \) | 82.2 ± 12.6 | 17 (20.2) | 62 (81.6) | 14 (18.4) | 0.772 |
| \( \text{O}_{2} \leq 200 \text{ - 300} \) | 84.7 ± 19.2 | 38 (45.2) | 42 (54.5) | 35 (45.5) | 0.978 |
| \( \text{RR} \leq 25 \text{ and } \geq 40 \text{ bpm} \) | 75.7 ± 20.6 | 12 (14.1) | 66 (85.7) | 11 (14.3) | 0.976 |
| \( \text{PEEP} \geq 10 \text{ cmH}_{2}\text{O} \) | 73.6 ± 20.1 | 37 (43.5) | 50 (64.9) | 27 (35.1) | 0.273 |
| Asynchronous ventilation  | 83 ± 25.2    | 14 (16.9) | 56 (72.7) | 21 (27.3) | 0.113 |
| **Cardiovascular**        |               |                   |       |       |       |
| Arrhythmias               | 85 (100)      | 0                 | 77 (100) | 0 | -     |
| Thromboembolism without heparinization | 85 (100) | 0 | 76 (98.7) | 1 (1.3) | 0.293 |
| Signs of hemorrhage       | 85 (100)      | 0                 | 76 (98.7) | 1 (1.3) | 0.293 |
| \( \text{HR} \leq 30 \text{ and } \geq 120 \text{ bpm} \) | 84 (100) | 0 | 77 (100) | 0 | -     |
| \( \text{MAP} \leq 60 \text{ - 65 mmHg} \) | 74 (87.1) | 11 (12.9) | 65 (85.5) | 11 (14.5) | 0.778 |
| \( \text{MAP} \geq 90 \text{ - 120 mmHg} \) | 78 (92.9) | 6 (7.1) | 68 (90.7) | 7 (9.3) | 0.616 |
| **Neurological**          |               |                   |       |       |       |
| Intracranial pressure ≥ 20 mmHg | 83 (100) | 0 | 67 (90.5) | 7 (9.5) | 0.004 |
| Craniectomy               | 55 (68.8) | 25 (31.2) | 64 (85.3) | 11 (14.7) | 0.015 |
| Unstable spinal fractures  | 80 (97.6) | 2 (2.4) | 74 (96.1) | 3 (3.9) | 0.600 |
| Psychiatric disorders or severe agitation | 77 (93.9) | 5 (6.1) | 64 (85.3) | 64 (85.3) | 0.077 |
| **Trauma-Orthopedic**     |               |                   |       |       |       |
| Trauma or surgery of leg, hip or lumbar spine | 66 (80.5) | 16 (19.5) | 53 (68.8) | 24 (31.2) | 0.092 |
| Unconsolidated hip or lower limb fractures | 78 (94) | 5 (6) | 67 (87) | 10 (13) | 0.092 |
| Neurological and/or motor deficits and/or musculoskeletal limitations that make mobilization impossible | 50 (61) | 32 (39) | 51 (67.1) | 25 (32.9) | 0.424 |
| Contraindications to muscle stretching | 63 (79.7) | 16 (20.3) | 55 (73.3) | 20 (26.7) | 0.349 |
| **Hematological**         |               |                   |       |       |       |
| Platelets ≤ 20,000 – 50,000 mm\(^3\) | 79 (95.2) | 4 (4.8) | 72 (96) | 3 (4) | 0.803 |
| White bloodcells ≤ 3,000 mm\(^3\) | 66 (86.8) | 10 (13.2) | 57 (82.6) | 12 (17.4) | 0.479 |
| Hemoglobin ≤ 8- 9 g/dL | 73 (86.9) | 11 (13.1) | 62 (83.8) | 12 (16.2) | 0.580 |
| **Clinical**              |               |                   |       |       |       |
Knowledge of physiotherapists working in adult ICU on contraindications to mobilization

| Contraindication                                  | Group 1 | Group 2 | Group 3 | Group 4 | Chi-square |
|---------------------------------------------------|---------|---------|---------|---------|------------|
| On day of and 24 h after radiotherapy             | 52 (80) | 13 (20) | 45 (77.6)| 13 (22.4)| 0.744      |
| Advanced cancer with metastases                   | 59 (72) | 23 (28) | 54 (74) | 19 (26)  | 0.778      |
| Immunosuppressive potential                       | 65 (91.5)| 6 (8.5) | 57 (96.6)| 2 (3.4)  | 0.234      |
| Open abdominal wounds                              | 70 (84.3)| 13 (15.7)| 59 (77.6)| 17 (22.4)| 0.282      |
| Severe liver disease with thrombocytopenia         | 79 (95.2)| 4 (4.8) | 73 (94.8)| 4 (5.2)  | 0.914      |
| Severe sores or venous ulcers                      | 59 (70.2)| 25 (29.8)| 51 (66.2)| 26 (33.8)| 0.587      |
| Hypothermia ≤ 34°C or fever ≥ 38°C                 | 82 (98.8)| 1 (1.2) | 76 (98.7)| 1 (1.3)  | 0.958      |
| General malaise                                    | 78 (92.9)| 6 (7.1) | 69 (89.6)| 8 (10.4) | 0.467      |
| Severe cachexia and dehydration                    | 65 (80.2)| 16 (19.8)| 58 (79.5)| 15 (20.5)| 0.903      |
| Bone, muscle or chest pain                         | 68 (81) | 16 (19) | 67 (88.2)| 9 (11.8) | 0.211      |
| Pain                                               | 68 (81) | 16 (19) | 61 (81.3)| 14 (18.7)| 0.951      |
| 2h after hemodialysis                              | 25 (30.1)| 58 (69.9)| 28 (36.8)| 48 (63.2)| 0.371      |
| Patients with limited prognosis                    | 31 (37.3)| 52 (62.7)| 35 (45.5)| 42 (54.4)| 0.300      |

Note: FiO₂ = fraction of inspired oxygen, OI = oxygenation index, PEEP = positive end expiratory pressure, PAM = mean arterial pressure, ICP = intracranial pressure. Chi-square test between the variables contraindication criteria and time working in the ICU, with the sample being divided into two groups: up to five years of experience and greater than five years.

Discussion

The data obtained in our study show that an important proportion of the sample of physiotherapy professionals working in an adult ICU in the city of Recife did not consider 31 of the 36 criteria considered as a contraindication, the most frequently disregarded criteria were the clinical parameters: two hours after hemodialysis and patients with limited prognosis. Also, the length of experience in the ICU did not significantly influence the majority of the physiotherapists’ responses.

Physiotherapists’ profile

The response rate of 39.5% obtained in this study is similar to that found in the study by Nozawa et al. [27], with a 30% return of the questionnaires sent to all Brazil, a percentage adequate enough to determine the profile of physiotherapists working in the ICU.

According to Table 1, of the 162 physiotherapists, 59.3% worked in another area besides the adult ICU, the experience time observed was between 5 and 10 years, 58.6% worked in a general ICU and 61.1% specialized in intensive care. These findings are in line with those found by Nozawa et al. [27], when they determined this professional profile throughout Brazil. Different profiles were found in the studies by Bhat et al. [28] and Hale et al. [29]. The first conducted in India, showed that more than half of its respondents had just graduated; however, 34% said they had a master’s degree, almost 18 times the number found in our study. In the second study, carried out with Canadian physiotherapists, it was observed that most of the interviewees in their research did not have a high academic degree, but they reported relying on the scientific literature to practice mobilization [29].

Regarding the help of the multidisciplinary team during the mobilization and evaluation of the critical patient, about 60% of the physical therapists who participated in the study stated that they performed the mobilization alone. This fact can be explained by the fulfillment of resolution No. 402 of August 3, 2011, Article
Physiotherapist's knowledge of contraindication criteria in ICU

In Table 3, it can be seen that a substantial proportion of the sample did not consider 31 of the 36 criteria considered, as a contraindication, except for: arrhythmias with hemodynamic repercussions, thromboembolism without heparinization, signs of hemorrhage, HR ≤ 30 and ≥ 120 bpm and hypothermia ≤ 34°C or fever ≥ 38°C. Although no similar study was found in the databases searched, we can raise the hypothesis described below.

The options “criterion of major/absolute contraindication” and “criterion of minor/relative contraindication” were included in this survey, since we considered them as usual terms used in clinical practice for decision-making [23]. Although our study did not differentiate the absolute and relative criteria for statistical analysis, we observed in a descriptive way, the existence of a fine line between the answers “minor/relative contraindication criterion” and “not a contraindication criterion.” Knowing that all the parameters queried are contraindications to mobilization according to the literature, the fact that there was no differentiation between what would be an absolute or relative criterion, along with the non-uniformity of evidence on the parameters for most of these criteria, may explain our findings.

The criteria with the highest frequency of “I don’t know” responses were “immunosuppressive potential” and “on day of and 24 h after radiotherapy”. Patients in this state are generally fragile and debilitated, and depending on the intensity of the exercise, there may be too much increase in metabolic demand, reducing the body’s ability to recover [47, 48]. Included in the class of “clinical” parameters, we can infer that these criteria have a greater subjective characteristic, which can hinder the applicability of these parameters.

The parameters illustrated in Figure 1 present the criteria most often considered as not being contraindicated by physical therapists, not being in accordance with literature findings [23, 36, 49], and they are separated by groups:

- \( \text{FiO}_2 \geq 50-60\% \) and \( \text{OI} \leq 200-300 \): ventilatory demand increases during exercise [44, 49] predisposing to a fall in \( \text{SpO}_2 \), usually resolved by an increase in \( \text{FiO}_2 \). Fractions between 50 and 60% are considered high, representing a relative risk to the patient [23, 25]. The OI translates important aspects of the respiratory reserve, an OI of 200-300 is considered borderline, and depending on the intensity of the exercise, it can lead to a drop in oxygen saturation and dyspnea [50].

- MAP\( \leq 60 - 65 \text{ mmHg} \) and MAP\( \geq 90 - 120 \text{ mmHg} \): the blood pressure of critically ill patients varies rapidly during exercise, but there are no absolute values considered safe, so it is necessary to observe the use of vasoactive drugs and monitor hemodynamic changes [50].

Craniectomy: it is a surgical procedure generally used to prevent damage to nerve tissues [50, 51]. Hodgson et al. [23] considers craniectomy as a relative contraindication when exercises are performed out of bed.

Neurological and/or motor deficits and/or musculoskeletal limitations that make mobilization impossible: they constitute contraindications in...
several studies, since they make it impossible to carry out the mobilization protocols, whether in performing exercises, positioning or using equipment such as a cycle ergometer [10, 36, 41, 49, 50, 52-57].

Hemoglobin ≤ 8-9 g/dL and white blood cells ≤ 3,000 mm³: the function of hemoglobin is to oxygenate the tissues [58], and low concentrations favor symptoms such as muscle fatigue and dyspnea, impairing exercise [50, 58]. White blood cells suggest the presence of infections, which tend to increase oxygen demand, which can make exercise an exhausting and organic overload situation [50].

Two hours after hemodialysis and patients with limited prognosis: exercise is recommended during the first two hours after dialysis, since the appearance of hemodynamic instability is common after dialysis [59-61]. Patients with limited prognosis are defined as patients with no possibility of medical cure, and can be under palliative care, which aims at general well-being, and exercise can be a tool for the relief of pain, stress and depression [62].

Influence of time of working in the ICU to retain knowledge of contraindication criteria

When comparing the time of experience in the ICU and the contraindication criteria, no significant difference was found between those who had worked for five years or less and those who had longer experience. However, Hoyer et al. [63] in interviewing 120 professionals working in the ICU (including nurses, doctors, physiotherapists and occupational therapists) showed that less experienced professionals had more difficulties in carrying out mobilization. Thus, the comparison with our findings was flawed, since each class had its particularities.

Conclusion

A substantial proportion of the physiotherapists interviewed did not consider most literature findings as contraindications, with the parameters most often not considered as contraindications being; FiO₂ ≥ 50 -60%, OI ≤ 200-300; MAP ≤ 60 - 65 mmHg; MAP > 90 - 120 mmHg; craniectomy; neurological and/or motor deficits and/or musculoskeletal limitations that make mobilization impossible; hemoglobin ≤ 8-9 g/dL; white blood cells ≤ 3,000 mm³; two hours after hemodialysis and patients with limited prognosis. In addition, training time did not seem to influence the response pattern of these physiotherapists.

However, this study had some limitations, including: bureaucratic obstacles; absence of data from all hospitals in the region under study; non-differentiation of absolute and relative criteria in statistical analysis and subjectivity of some criteria in the preparation of the questionnaire. Therefore, more nationwide studies are needed to elaborate which contraindication criteria are considered as a consensus among physiotherapists to support the clinical practice of these professionals.

However, despite the limitations found, the results presented are important, as there are no similar studies that show the divergences between the knowledge of physiotherapists and the literature findings on the mobilization of critical patients. Thus, it can be concluded that there is a need to improve the knowledge of physiotherapists about

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