Assess the level of fatigue and its contributing factors among mechanically Ventilated Patients in the Intensive Care Unit

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ABSTRACT
Fatigue is a typical complaint among hospitalized patients and is one of the most predominant and upsetting manifestations announced by critically sick patients in the emergency unit. Attendants are in an ideal situation to distinguish, analyze and assess patients who might be in danger of encountering fatigue and set up mediations as vital. Hence, the present study aimed to assess the level of fatigue and its contributing factors among mechanically ventilated patients in an Intensive care unit. A descriptive correlational design was employed with 60 patients. Demographic variables data were collected by using a structured interview questionnaire followed by assessing the response of the patients using patient response scale after using visual analogue scale-fatigue (VAS-F). Assessed the contributing factors of fatigue such as depression anxiety and stress by using DASS-21, sleeping difficulty by using Insomnia Severity Index, pain by using Visual Analogue Pain Scale, and agitation by using Richmond Agitation and Sedation Scale (RASS), the severity of illness by using the APACHE II scale. The findings of the study revealed that the level of fatigue, the most of the patients 36(60%) had moderate fatigue, 14(23.33%) had severe fatigue and 10(16.67%) had mild fatigue. Contribution factors of fatigue such as the sedation, depression, anxiety, stress, insomnia and severity of illness had shown positive correlation which was found to be statistically significant. The contributing factor pain had shown a positive correlation with fatigue which was found to be statistically significant. The present study findings described that patients in this examination with higher disease seriousness scores at ICU admission and more continuous sedation administration added to higher fatigue evaluations that expand after some time.

INTRODUCTION
Fatigue is an inclination of tiredness. It might be unexpected or continuous in the beginning. It might be a manifestation of an ailment if it is drawn out, severe, progressive, or occurs without provocation. Fatigue can be characterized as an overall in general sentiment of sleepiness as well as diminished energy level, yet not exhausted. The side effect of fatigue and its benefactors are very much recorded in people with the disease, as are interventions to help these patients with the executives of this normal and debilitating (Brunier and Graydon, 1996). Fatigue is a typical complaint among hospitalized...
patients and is one of the most predominant and upsetting manifestations announced by critically sick patients in the emergency unit (Delgado-Guay et al., 2009).

Exhaustion comes in numerous structures, is related to a broad scope of aetiologies, and is irritated and escalated by a huge number of ecological and situational factors present in the concentrated consideration climate (Gift, 1989). While surveying and assessing weakness is the way into the viable administration of this troubling indication, reports have demonstrated that exhaustion evaluation in the emergency unit problematic and patients are frequently left experiencing its untoward results (Henry et al., 2008).

Moreover, the experience of fatigue that starts in the underlying emergency unit regularly endures a very long time to years after being released, and this has been demonstrated to be related to more terrible patient results. Medical caretakers are in an ideal situation to recognize, analyze and assess patients who might be in danger of encountering fatigue and set up interventions as necessary (Knaus et al., 1991).

Fatigue isn’t equivalent to tiredness, yet the craving to rest may go with exhaustion. Detachment is an inclination of aloofness that may go with weariness or exist autonomously. Also, people frequently portray weakness utilizing an assortment of terms including tired, drained, depleted, disquietude, drowsy, absence of energy and feeling run down (Lee et al., 1991).

Fatigue is normal. About 20% of Americans guarantee to have weariness sufficiently exceptional to meddle with carrying on with a typical life. A physical reason has been assessed to be capable 20% to 60% of the time, while enthusiastic or mental causes include the other 40% to 80% of instances of fatigue. Lamentably, weariness can happen in ordinary people that experience extraordinary physical or mental movement (Lush et al., 1988).

Exhaustion happens with specific ailments and disorder; ordinary weakness in sound people is immediately mitigated in a couple of hours to about a day when the physical or mental movement is decreased. Likewise, individuals infrequently experience weakness after eating (here and there named postprandial gloom), which can be a typical reaction to food, particularly after enormous dinners and this may last around 30 minutes to a few hours (Matthews, 2011).

Wearness in malignant growth patients is abstract and multi-dimensional, identified with the sickness itself just as the results from drugs and medicines. What’s more, torment, enthusiastic misery, and sickness add to weariness in malignant growth patients. In patients who are sick, the writing archives that these patients frequently report feeling “tired”. In any case, little is thought about oneself rating of weakness and its possible clinical benefactors, especially in those ICU patients getting mechanical ventilation. Rest aggravations and weariness can be entwined in ICU patients, and weakness can affect a patient’s capacity to partake in one’s consideration (Meek et al., 2000).

Puntillo et al. detailed the indication appraisal is sick patients uncovered that 75% of members revealed being worn out. This engaging examination didn’t expect to decide the wellspring of weariness or any clinical covariates that may be related to this manifestation. Weakness, conceptualized as sluggishness, was the most regularly happening, extraordinary, and distressful manifestation announced by the examination members (Poirier, 2013).

Matthews detailed that the majority of the participants (65%) were not getting mechanical ventilatory help. Screening, assessment, and the executives of weariness are believed to be problematic in the basic consideration setting with little data explicitly in patients accepting the standard steady methodology of mechanical ventilation. A depiction of exhaustion and potential clinical components that add to this ambiguous, yet primary side effect is fundamentally sick patients is required before mediated or therapeutic aid can be planned and tried to deal with this basic indication. Consequently, the accompanying investigation was embraced to start to fill this information hole by portraying weariness evaluations and deciding whether any clinical factors are identified with weakness is fundamentally sick patients accepting mechanical ventilator uphold. Hence, the present study aimed to assess the level of fatigue and it’s contributing factors among mechanically ventilated patients in an Intensive care unit (Wintermann et al., 2018).

**MATERIALS AND METHODS**

The research approach adopted in the study was a quantitative approach by using descriptive correlational design, the study was conducted at Saveetha Medical College and Hospital, Chennai, after obtaining formal permission from the Institutional Review Board and Institutional Ethical Committee of SIMATS. The study was conducted with 60 mechanically ventilated patients. Sample who satisfied the inclusion criteria were selected by conve-
Table 1: Frequency and percentage distribution of the level of fatigue among mechanically ventilated patients in ICU. N = 60

| Fatigue               | No. | %   |
|-----------------------|-----|-----|
| No fatigue (0)        | -   | -   |
| Mild fatigue (1 – 3)  | 10  | 16.67|
| Moderate fatigue (4 – 6) | 36  | 60.0 |
| Severe fatigue (7 – 9) | 14  | 23.33|
| Very severe fatigue (10) | -   | -   |

Table 2: Frequency and percentage distribution of level of pain among mechanically ventilated patients in ICU. N = 60

| Pain                  | No. | %   |
|-----------------------|-----|-----|
| No pain (0)           | -   | -   |
| Mild (1 – 3)          | 12  | 20.0 |
| Moderate / Severe (4 – 6) | 40  | 66.67|
| Very severe (7 – 9)   | 8   | 13.33|
| Worst possible pain (10) | -   | -   |

Table 3: Frequency and percentage distribution of level of depression among mechanically ventilated patients in ICU. N = 60

| Depression             | No. | %   |
|------------------------|-----|-----|
| Normal (0 – 9)         | -   | -   |
| Mild (10 – 13)         | 18  | 30.0 |
| Moderate (14 – 20)     | 22  | 36.67|
| Severe (21 – 27)       | 20  | 33.33|
| Extremely severe (≥28) | -   | -   |

Table 4: Frequency and percentage distribution of the level of anxiety among mechanically ventilated patients in ICU. N = 60

| Anxiety               | No. | %   |
|-----------------------|-----|-----|
| Normal (0 – 7)        | -   | -   |
| Mild (8 – 9)          | 14  | 23.33|
| Moderate (10 – 14)    | 27  | 45.0 |
| Severe (15 – 19)      | 19  | 31.67|
| Extremely severe (≥20)| -   | -   |

Table 5: Frequency and percentage distribution of the level of stress among mechanically ventilated patients in ICU. N = 60

| Stress                | No. | %   |
|-----------------------|-----|-----|
| Normal (0 – 14)       | 1   | 1.67 |
| Mild (15 – 18)        | 15  | 25.0 |
| Moderate (19 – 25)    | 25  | 41.66|
| Severe (26 – 33)      | 19  | 31.67|
| Extremely severe (≥34)| -   | -   |
nience sampling technique.

Samples who were hemodynamically unstable, and patients who were receiving aggressive ventilator support, Alzheimer disease were excluded from the study. The investigator introduced himself, and the data related to demographic variables were collected by using a structured interview questionnaire. The investigator-assessed the fatigue level by using visual analogue scale-fatigue (VAS-F) once a patient in one day among ventilated patients on the third day of the mechanical ventilator support. The investigator-assessed its contributing factors such as depression anxiety and stress by using DASS-21, sleeping difficulty by using Insomnia Severity Index, pain by using Visual Analogue Pain Scale, agitation by using Richmond Agitation and Sedation Scale (RASS), the severity of illness by using the APACHE II scale. The data were tabulated and analyzed by descriptive and inferential statistics.

RESULTS AND DISCUSSION

The present study depicts that most of them 22(36.7%) were in the age group of 35 — 55 years, 43(71.77%) were male, 28(46.6%) were under ventilator support for 18 yours, 29(48.3%) were staying in ICU for two days, and all 60(100%) had stable hemodynamic status.

The present study finding revealed regarding the level of fatigue, the most of the patients 36(60%) had moderate fatigue, 14(23.33%) had severe fatigue and 10(16.67%) had mild fatigue (Table 1).

Present study findings supported by the study conducted by Chlan and Savik (2015) uncovers that depict levels of fatigue and investigate clinical elements that may add to weariness in fundamentally sick patients accepting mechanical ventilation. An example of 80 patients (half female) accepting ventilatory help for a middle 7.9 days (range 1-46) with a mean period of 61.2 years gave everyday weakness appraisals. ICU affirmation APACHE III was 61.5. The pattern means weariness appraisals were 60 with variances after some time demonstrating an overall pattern upward. Blended models investigation involved ailment seriousness = 0.27(0.12) and sedation recurrence = 1.2(52) as huge supporters of fatigue evaluations.

Table 2 depicts that most of the patients, 40(66.67%) had moderate/severe pain, 12(20%) had mild pain, and 8(13.33%) had very severe pain. Table 3 depicts that most of the patients, 22(36.67%) had moderate depression, 20(33.33%) had severe depression, and 18(30%) had mild depression.

Bai et al. (2015) had conducted a study on the impact of depression on fatigue in patients with a mechanical ventilator. This examination established that for emergency unit factors, for example, joblessness, increased age, taking more medications or lower practice frequencies brought about more extreme discouragement, which interpreted of like this to more significant levels of fatigue. Among every one of these components, sorrow had the best effect on the patients’ fatigue levels.

Table 4 depicts that most of the patients 27(45%) had moderate anxiety, 19(31.67%) had severe anxiety, and 14(23.33%) had mild anxiety. Table 5 depicts that most of the patients 25(41.66%) had moderate stress, 19(31.67%) had severe stress, 15(25%) had mild stress, and only one was normal. The study depicts that the demographic variable duration of ventilator support had shown statistically significant association with contributing factors pain among mechanically ventilated patients in ICU at p<0.001 level and the other demographic variables had not shown statistically significant association with pain among mechanically ventilated patients in ICU.

The study depicts that the demographic variable duration of ventilator support had shown statistically significant association with fatigue among mechanically ventilated patients in ICU at p<0.01 level and the other demographic variables had not shown statistically significant association with fatigue among mechanically ventilated patients in ICU. The findings depict that the contributing factors of fatigue sedation, depression, anxiety, stress, insomnia and severity of illness had shown positive correlation which was found to be statistically significant at p<0.05 level. The contributing factor pain had shown a positive correlation with fatigue which was found to be statistically significant at p<0.001 level. This indicates that when the level of contributing factors increases the fatigue level of the mechanically ventilated patients also increases.

CONCLUSION

The present study findings described that patients in this study with higher illness severity scores at ICU admission and more frequent sedation administration contributed to higher fatigue ratings that increase over time. Further study is needed to determine how fatigue ratings may impact clinical outcomes such as successful weaning trials and engagement in progressive mobility programs.

Conflict of Interest

The authors declare that they have no conflicts of
interest for this study.

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