

Original Research Article

Psychological assessment in ICU survivors using DASS-21 scalePriti S. Jaiswal¹, Steffi. P. Mascarenhas², Dnyanesh Pramod Patil³, Unnati Pandit⁴¹Student, D.Y.Patil University, School Of Physiotherapy, Nerul, Navi Mumbai-400706²Assistant Professor, Department Of Cardio-Pulmonary Physiotherapy, School Of Physiotherapy, D.Y.Patil University, Nerul, Navi Mumbai-400706³Assistant Professor, Department Of Sports physiotherapy, D.Y.Patil University, School Of Physiotherapy, Nerul, Navi Mumbai-400706.⁴Professor and Director, D.Y.Patil University, School Of Physiotherapy, Nerul, Navi Mumbai-400706***Corresponding author**

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Abstract: When patients are admitted in ICU, psychological problem such as depression, anxiety, stress, etc. are commonly seen and that affects the outcome of the patient. To assess these symptoms we used the DASS-21 (Depression, Anxiety & Stress Scale-Short version). Psychological problems was commonly seen when patient was admitted in ICU for more than 4 days decreasing their HRQOL (health related quality of life). There was altered sleep pattern & sleep quality in ICU patients which was the reason to have psychological problem. The study was done on 100 patients who had an ICU stay of more than 4 day between 18-60 years. The results showed increased levels of depression and anxiety as compared to stress level. Patients showed moderate depression and extreme severely anxiety who stayed in ICU. Various factors could influence the psychological wellbeing of the patient, including the hospital environment, care givers, presence of family members nearby apart from the seriousness of illness, apprehensions about possibility of death.

Keywords: ICU stay, DASS21, Depression, Anxiety, Stress

INTRODUCTION:

Intensive care unit (ICU) is an area set aside for care of patient who are critically ill or who are in danger so they need continuous care and attention. There is variety of unit according to the degree of dependency of patients such as renal care unit (RCU), coronary care unit (CCU), cardiac surgery unit (CSUs) & intensive therapy unit (ITU) [1]. When the patients are admitted in ICU, psychological problem such as depression, anxiety & stress are commonly seen & that affect the outcome of the patient [2]. The patients who stayed more than 4 days ICU show high levels of post-traumatic stress disorder (PTSD) [3]. Prolonged stayed in ICU may affect the recovery periods of patients because of the affected psychological status of patients [4]. HRQOL (Health Related Quality Of Life) is a relevant outcome measure for patient admitted to the ICU. Long term functional status and social interaction are becoming more important for doctors and nurses [5]. Benzodiazepine administration & fluctuation of sedation of patients in ICU may increase the risk of

depression, anxiety & stress [6]. HRQOL is decreased when the patients have depression, anxiety & stress. In addition, the presence of delirium is also related to negative outcomes for patients in ICU. Such symptoms can be decreased by early mobility, increase day-night exposure & use of music [7, 8]. Several studies shows that there is altered sleep pattern & sleep quality in ICU patients which are the reasons to have psychological problem. There is poor sleep in ICU related to environmental factor such noise, light, loud talking, intravenous lines & catheter [9-11]. The patient rehabilitation protocol is affected because of the imbalance in their psychological status [5]. Due to the ICU stay, their physical recovery is delayed and also suffer adverse psychological and cognitive sequel. In addition, there occur physical problems like weakness, lack of mobility, poor appetite and breathlessness, cognitive issues like loss of memory, attention deficit and dys executive symptoms, psychological problems like anxiety, depression, irritability & panic attacks and lastly post-traumatic stress disorder [12].

DASS (depression, anxiety & stress scale) is one of assessment tool which is made up of subscales of items of similar content to evaluate the extent of these symptoms. It consists of 42 questions- 14 each for the 3 symptoms of depression, anxiety & stress. But the disadvantage of this scale it burdens the patient due to 42 questions. Thus a shortened version DASS-21 proves less problematic as it is shorter thus proving more acceptability by patients with limited concentration and possesses adequate reliability. DASS-21 is validated & variable to assess the depression, anxiety & stress in the patients who have had an ICU stay. Doubling the scores of the short version scale is equivalent to the scores of the full version scale because it covers all the symptoms assessed by the full version scale [12-14]. **Depression:** Depression is a common mental disorder, characterized by sadness, loss of interest or pleasure, feeling of guilt or low self-worth, disturbed sleep or appetite, feeling of tiredness and poor concentration.

Anxiety- anxiety disorder is group of mental disorder characterized by feeling of anxiety & fear. Where anxiety is worried about future event fear is reaction to current event.

Stress: Stress is physical, mental or emotional factor that cause bodily and mental tension [15].

One of the study conducted in ICU & Ward patients using the DASS questionnaire had shown, that there were elevated depression, anxiety and stress levels among the patients and this was significantly higher in ICU patients [16]. Very few studies are found using this DASS-21 in ICU survivors mainly in Indian population. Thus we conducted a study that aimed to assess Psychological issues in only ICU Survivors using the Depression, Anxiety and Stress Scale (DASS)-21. The objective of this study was to assess the level of depression, anxiety & stress levels in post ICU stay patients.

MATERIAL & METHODS:

	DEPRESSION	ANXIETY	STRESS
NORMAL	0-9	0-7	0-14
MILD	10-13	8-9	15-18
MODERATE	14-20	10-14	19-25
SEVERE	21-27	15-19	26-33
EXTREMELY SEVERE	28+	20+	34+

RESULTS & DISCUSSION:

A cross-sectional study was conducted to assess psychological problem in ICU survivors. A validated questionnaire of DASS-21 was distributed amongst the patients. They were explained about the research & consent forms were filled by them before the administration of questionnaire. They were also ensured about the confidentiality of the information provided. This research was approved by the Ethics Committee of D. Y. Patil University, School of Physiotherapy. This study involved 100 patients, above the age of 18 years who required intensive care for more than 3 days. It included patients who were mechanically ventilated during the ICU stay, undergone surgical or non-surgical intervention, who were well oriented to time & place. Patient who either died before or after the ICU discharge, those with neurological deficit & uncooperative patients were excluded.

Tools used:

DASS21 is a 21 item self-report questionnaire design to measure the severity of a range of symptoms common to both depression & anxiety. The scale has scores from 0 (did not apply to me at all) to 3(applied to me very much).The essential function of DASS is to assess the severity of the symptoms of depression, anxiety & stress. Accordingly, the DASS not only allows a way to measure the severity of patients' symptoms, but also patient response to treatment can be measured. The DASS-21 is a set of three self-report scales designed to measure the emotional states of depression, anxiety and stress. Each of the three DASS-21 scales contains 7 items, divided into subscales with similar content. The DASS-21 scale is a dimensional rather than categorical concept of psychological disorder. It therefore has no direct implications for the patients to diagnostic categories postulated in classificatory systems such as the Diagnostic and Statistical Manual of Mental Disorders (DSM) and International Classification of Diseases (ICD). The scores obtained by DASS-21 can be doubled to make it equivalent to the values of the full version [13]. The cut-off scores for conventional severity labels (normal, mild, moderate & severe) are as follows [16]:

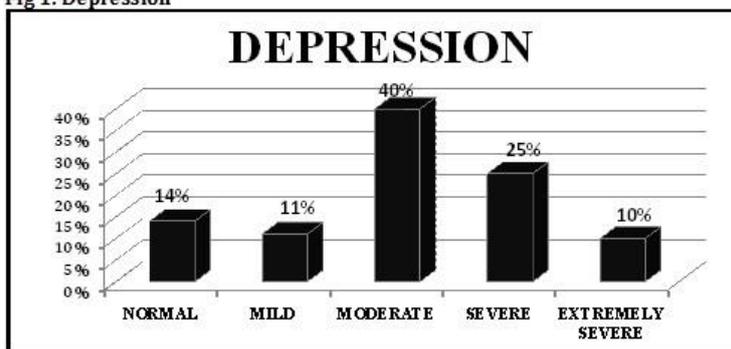
The study was conducted in 100 people on which had more than 3 days ICU stay in hospital. Among them, 68% subjects were male & 32% were female. 41% were between 51-60 years of age, 24% were between 41-50 years, 18% were between 31-40years & 17% were between 18-30years. 59% subjects had ICU stay for 3 days, 26% for 5days, 10% for 6days, 4% for 7days & 1% for 8 days in ICU. 43% subjects were diagnosed with the pulmonary condition, 28% were diagnosed with the cardiac condition, 22% were diagnosed with the systemic condition, 5% were diagnosed with the orthopaedic condition & 2% were diagnosed with the neurological condition.

Table 1 shows the classification of the patients according to the scoring of the 3symptoms assessed by the DASS-21. The level of depression was moderate in 40% of subjects, severe in 25%, absent in 14%, mild in 11% & extreme in 10 %. (Fig 1). The level of anxiety was extremely severe in 43% of subjects, severe in 25%, moderate in 19%, no anxiety in 7% & mild anxiety in 6% (Fig 2). Stress levels was absent in 57% of subjects, moderate in 22%, mild in 14%, severe in 7% & extreme in none. (Fig 3)

Table 1: Classification of subjects as per DASS-21

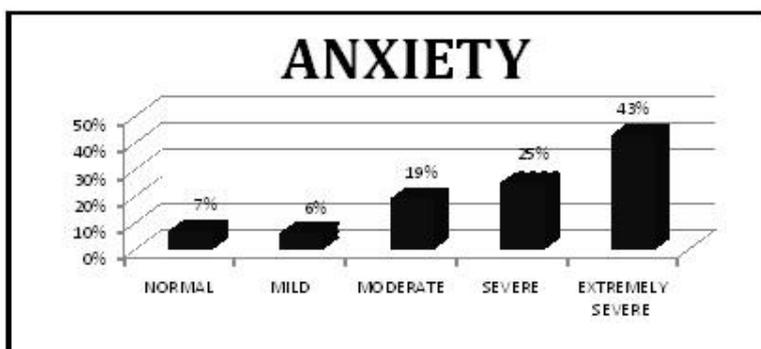
	Normal	Mild	Moderate	Severe	Extremely severe
Depression	14%	11%	40%	25%	10%
Anxiety	7%	6%	19%	25%	43%
Stress	57%	14%	22%	7%	0%

Fig 1: Depression



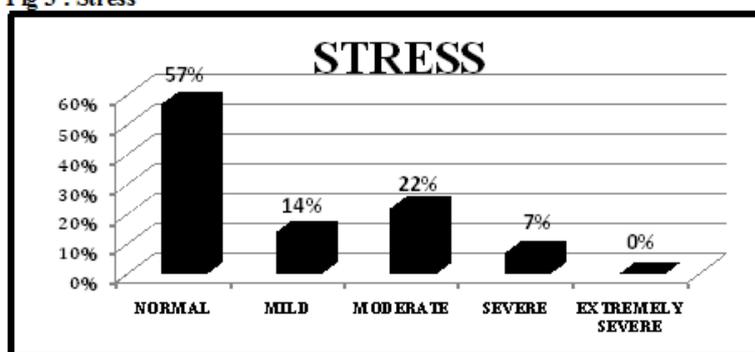
40% of subjects were moderately depressed, 25 %were severely depressed, 14 % were normal, 11% were mildly depressed & 10 % were extremely depressed.

Fig 2: ANXIETY



Anxiety was extremely severe in 43% subjects, severe in 25%, moderate in 19%, 7% were normal & anxiety was mild in 6%.

Fig 3 : Stress



57% subjects were normal, 22% were moderately stressed, 14% were mildly stressed, 7% were severely stressed & 0% were extremely stressed.

DISCUSSION:

The DASS 21 is divided into 3 subscales- Depression, Anxiety, and Stress. Scores for depression, anxiety and stress are calculated by summing the scores for the relevant items. The depression scale assesses dysphoria, hopelessness, devaluation of life, self-deprecation, lack of interest / involvement, anhedonia and inertia.

Three parts of the brain play role in depression-

1. Hippocampus – It regulates hormone cortisol that is released by the body at times of physical & mental stress e.g. depression. Due to stressful event or chemical imbalance in the body, excessive amount of cortisol are sent to the brain. Increases level of cortisol on a long term exposure, can lead to slow production of new neurons that cause it to shrink leading to memory problems.

2. Prefrontal- Release excessive amount of cortisol causes shrinkage of prefrontal cortex, as it is also responsible for regulating emotions, decision making & formation of memories

3. Amygdala- It gets enlarged & hyperactive due to excessive exposure to cortisol. Thus causing disturbances in sleep & activity patterns [15]. Few studies have assessed depression & anxiety as a mortality risk after CABG surgery. The mortality rates due to depression are increased due to use of psychotropic medications. In addition, the depression aspect of DASS-21 measures only depressive mood and not sleep & appetite disturbances due to underlying illness [17]. The results for depression in the current study also shows an increasing rate for signs of depression

The anxiety scale assesses autonomic arousal, skeletal muscle effects, situational anxiety, and subjective experience of anxious affect. The anxiety domain includes physiological & autonomic markers for anxiety strongly associated with bodily pain. Anxiety is independently associated with several physical conditions, poor quality of life, disability, social functioning, decreased work productivity & even mortality causing decrease in quality of life. Anxiety disorders are commonly seen in physician diagnosed physical conditions. The onset of anxiety depends on presence of physical illness, biological mechanisms (alterations in autonomic and hypothalamic and pituitary system), psychological mechanisms (fear of body symptoms), addictions, medications, genetic, personality & environmental factors (low socioeconomic status, childhood adversity [17-19].

Depression symptoms can be correlated to psychological variables like anxiety. Depression & anxiety have been linked with health behaviours like non-adherence to medications & treatment, sedentary lifestyle & smoking. There exists worsening of symptoms with increase in levels of depression. Few studies state that depression & anxiety are undetected and so untreated in primary care. Thus, addition of mental health services in initial stages of treatment would improve the active participation and care for medical problems of patients [17, 18].

The stress scale assesses difficulty relaxing, nervous arousal, and being easily upset/ agitated, irritable / over-reactive and impatient. Stress can be external (from environment, psychological or social situation.) and internal (illness or from medical procedure). Pain, lack of sleep, presence of tubes in

nose or mouth, being restrained by tube, etc was pointed out major stressors in ICU patients [20]. Stress levels are significantly higher in ICU patients as compare to ward patients [16]. The predictors for stress symptoms were demographics (age, gender, low education levels hospital stay experiences, personality traits (pessimism), pain memory. Severity of illness may not affect the stress levels as often the patient is unaware of the life threat during treatment. Few studies have shown that traumatic patients have high risk of developing stress disorders mainly in those with poor social support [21]. In contrast to these studies, subjects in this study were not stressed may be because they were in to inpatient department when the questionnaire was filled. In addition to this predictors for post-traumatic stress syndrome include high educational level, personality trait, family support, factual recall and memory of pain. However as my subjects had passed the ICU stay phase & were in the wards the stress levels were comparatively less.

On the whole, the depressed patients show affective symptoms such as vegetative & somatic complaints. In patients, sleep disturbance, availability of medical insurance is more common with psychological issues. Age and level of education influence the scores of the mood scales [22].

CONCLUSION

The subjects with a history of ICU stay suffer psychological problems along with medical issues. Among these depression, anxiety and stress are the common psychological issues faced by the ICU survivors. Depression and anxiety levels were higher as compared to stress levels. The early these symptoms are detected the earlier it could be treated thus avoiding the interference of psychological issues during rehabilitation

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