

PSYCHOLOGICAL EFFECTS OF SEDATIVE ON CRITICALLY ILL PATIENTS

GUL A¹, GUL R^{*2}, HAROON M³, KHAN J⁴, AJMAL F⁵, KHAN HS⁶, KHAN S⁷

¹Internal Medicine/ Critical Care (FCPS II), Senior Clinical Fellow, Russell's Hall Hospital, Dudley, UK

²Internal Medicine (FCPS II), Junior Clinical Fellow, Heartlands Hospital, Birmingham, UK

³Internal Medicine/ Critical Care (FCPS II), Khyber Teaching Hospital, Peshawar, Pakistan

⁴Pulmonology/ Critical Care (FCPS II), Bahria International Hospital, Rawalpindi, Pakistan

⁵Internal Medicine/ Critical Care (FCPS II), Lady Reading Hospital, Peshawar, Pakistan

⁶MRCP (UK), MRCP (Ireland), Registrar, Aintree Hospital, Liverpool, UK

⁷Dow International Medical College Karachi, Sindh, Pakistan

*Corresponding author email address: 15ridagul@gmail.com

(Received, 28th September 2023, Revised 20th November 2023, Published 27th December 2023)

Abstract: This study aimed to assess the psychological effects experienced by patients admitted to the intensive care unit (ICU). Following ethical approval, the study was conducted as a cross-sectional survey at Bahria International Hospital ICU between January 2022 and December 2022. The inclusion criteria required patients to be over 18 years of age, have stayed in the ICU for at least 24 hours, be aware during the assessment, and provide informed consent for research participation. Patients who failed to complete the assessment or were transferred out of the ICU were excluded from the study. The data was analyzed using a non-probability sampling technique and the SPSS-24 version. A chi-square value of less than 0.5 was considered significant. The data from a total of 161 patients was evaluated. Of these, 72 patients (44%) were diagnosed with depression, while 89 patients (55.2%) had medical cases. Males outnumbered females, with 94 (58%) male patients and 67 (42%) female patients. 26 patients (17%) had a hospital stay of over 2 weeks, compared to 135 (83%) who were discharged within 2 weeks. One hundred fifty-one patients (93%) did not show signs of anxiety, while 10 (6%) tested positive. Nine patients tested positive for amnesia, while 152 did not. One hundred fifty-five patients (96%) reported no hallucinations, while 6 patients (4%) believed they had experienced hallucinations. Seventy-four patients (46%) tested negative for post-traumatic stress disorder (PTSD), while 87 patients (54%) claimed to experience PTSD. Of the ICU admissions, 89 (55%) were due to medical cases, while 27 (16.7%) were surgical. The study highlights the need for implementing a bedside screening instrument and physician approval to improve the identification and early detection of psychological effects in critically ill ICU patients. The first step towards preventing and developing a future ICU free from psychological effects is identifying the incidence and risk factors associated with such impacts. The complex psychosocial impacts experienced by critically ill ICU patients require more attention and research.

Keywords: Critical Care, Intensive Care Unit, Psychological Effect, Anxiety, Depression, Post-Traumatic Stress Disorder

Introduction

The emotional health of the family careers, as well as the psychological and physical health of critically ill patients, are both negatively impacted. The study looked at how family careers handled dealing with delirious patients and discovered that they showed signs of discomfort (Hanifa et al., 2023). There is little evidence that sensory stimulation affects ICU patients' psychological and familial outcomes. Despite a recent systematic analysis finding meager certainty evidence from only two studies, narrative synthesis demonstrated increases in patients' psychological recovery and families' satisfaction with care. Because of this, it is yet too early to tell how a sensory stimulation intervention may affect the psychological, clinical, and family outcomes of critically sick patients (Liang et al., 2023). Pain, agitation, delayed weaning, immobilization, and lack of sleep are frequently associated with psychological effects (Eikermann et al., 2023; Gamwell et al., 2023). Patients who are critically ill may experience chronic psychological, clinical, and cognitive problems as a result of being extensively sedated and immobilized for an extended period. ICU patients want specialized care from the medical staff and quick assistance when they need it. To

prioritize treatments and simultaneously reduce their dread, worry, and panic attacks, patients must also be aware of their medical issues. It's crucial to have a safe setting that develops self-worth, stability, and recovery motivation (Aljameez et al., 2023; Leong et al., 2023) The ability of the families to deal with the ICU admissions of their loved ones would be improved by knowing and making an effort to address the requirements of the families. The needs of family members vary marginally with location. Family members in Hong Kong and Malaysia required reassurance that the patients received quality treatment (Leong et al., 2023; Papautsky and Abdulbaseer, 2024; Zainah et al., 2016). They are affected both physically and psychologically by their time in the ICU. Pain, tiredness, discomfort, idleness or overactivity, noise, thirst, headaches, discomfort brought on by endotracheal tubes, and difficulty swallowing are some prevalent bodily aches and pains. Their disease course, medical care, and perceptions of care regarding the ICU staff's conduct all impact their psychological well-being. Hallucinations, dread, worry, anxiety, depression, loneliness, death thoughts, panic, uneasiness, uncertainty, and despair were all described by patients (Topçu et al., 2017). These aspects

of the patient experience are simple to miss when the managing team's primary concern is treating the patient's severe conditions. When family members find that their loved ones have been admitted to the ICU, they become upset. When family members' needs for knowledge, assurance, assistance, and support are not addressed, they feel emotionally helpless. Lack of control, uncertainty, and loneliness are things they encounter. Every time there is a grave change in their relations, they experience tremendous emotional alterations. When family members' experiences don't match their expectations, which are influenced by their cultural background, they become upset (Hirshberg et al., 2020).

Methodology

Cross-sectional study conducted at the intensive care unit (ICU) of Bahria International Hospital in Rawalpindi between January 2022 and December 2022. The study's purpose was to investigate certain conditions among ICU patients. Here's a breakdown of the critical points in the methodology. The study received approval from an ethical committee, indicating that the research design and procedures adhere to ethical standards. The study was conducted from January 2022 to December 2022 at the ICU of Bahria International Hospital in Rawalpindi.

The study included individuals who met specific criteria: they had to be over 18 years old, have stayed in the ICU for at least 24 hours, be conscious during the assessment, and provide informed consent to participate in the research. Some individuals were excluded from the study, such as those unable to complete the assessment and those transferred out of the ICU.

Descriptive statistics were used to summarize the data. The mean and standard deviation were used for continuously distributed data with a regular distribution. Categorical variables were summarized using frequency and percentage. The dataset had no missing values, and the processing of the data did not alter the original dataset. The study included data from all 166 patients who were enrolled. The sampling method used was non-probability sampling. The data analysis was conducted using SPSS version 24. A chi-square test was used to determine statistical significance, with a threshold value set at 0.5 for the chi-square statistic. This suggests that if the calculated chi-square value was below 0.5, it was considered significant. The study used a well-defined methodology, adhered to ethical guidelines, and employed various statistical data analysis and presentation methods. The findings could provide insights into the prevalence and characteristics of the studied conditions within the specified ICU population.

Results

After getting ethical approval & written informed consent from the patients, the data was analyzed through SPSS 24 versions.

Table 1 Age and complaint duration

	N	MEAN	ST DIV
Age	161	28.6	11.811
Complaint Duration	161	16.83	4.242

Table 2, Age and gender group versus intensive care unit stay

Age And Gender Distribution	Intensive Care Unit Stay			P-VALUE
	YES	NO	TOTAL	
Less Than 50 Years	42 (56%)	33 (44%)	75 (100%)	0.641
Greater Than 50 Years	45 (52.3%)	41 (47.7%)	86 (100%)	
Male	52 (55.3%)	42 (44.7%)	94/161 (58%)	0.669
Female	35 (52.2%)	32 (47.8%)	67/161 (42%)	

Table 3 Different variables studied against intensive care unit stay

NO	Variables Studied	Intensive care unit			P-VALUE	
		YES	NO	TOTAL of 161		
1	Duration Of Complaints	<02 WEEKS	71 (52.6%)	64 (47.4%)	135 (83%)	0.400
		>02 WEEKS	16 (61.5%)	10 (38.5%)	26 (17%)	
2	Depression	YES	54 (75%)	18 (2%)	72 (44%)	0.00
		NO	33 (37.1%)	56 (62.9%)	89 (56%)	
3	Anxiety	Yes	7 (70%)	3 (30%)	10 (6%)	0.287
		NO	80 (53%)	71 (47%)	151 (93%)	
4	Amnesia	YES	6 (66.7%)	3 (33.3%)	9 (100%)	0.428
		NO	81 (53.3%)	71 (46.7%)	152 (100%)	
5	Hallucination	YES	5 (83.3%)	1 (16.7%)	6 (100%)	0.123
		NO	82 (52.9%)	73 (47.1%)	155 (100%)	
6	Post-Traumatic Stress Disease	YES	51 (58.6%)	36 (41.4%)	87 (100%)	0.206
		NO	36 (48.6%)	38 (51.4%)	74 (100%)	
7	Medical Cases	YES	71 (79.8%)	18 (20.2%)	89 (55.2%)	0.00
		NO	16 (32.3%)	56 (77.8%)	72 (44.8%)	
8	Surgical Cases	YES	12 (44.4%)	15 (55.6%)	27 (16.7%)	0.274
		NO	75 (56%)	59 (44%)	134 (83.2%)	

[Citation: Gul, A., Gul, R., Haroon, M., Khan, J., Ajmal, F., Khan, H.S., Khan, S. (2023). Psychological effects of sedative on critically ill patients. *Biol. Clin. Sci. Res. J.*, 2023: 623. doi: <https://doi.org/10.54112/bcsrj.v2023i1.623>]

Discussion

Critically sick patients in the intensive care unit (ICU) may have profound and complex psychological repercussions. The severity of the illness, the ICU setting, the necessary medical interventions, and the patient's particular psychological makeup are a few of the causes of these consequences. The main psychological impacts that critically ill patients may encounter in the intensive care unit are covered in the results. The intensive care unit (ICU) setting might be intimidating and unfamiliar due to the intense lighting, continual machine sounds, and frequent patient care. As a result, there may be increased dread and anxiety, which is frequently made worse by how severe the illness is. Out of 72, 54 (75%) were positive, and 18 (2%) were seen as unfavorable for having depression, while out of 89, 33 (37.1%) were positive, and 56 (62.9%) were seen as unfavorable for not having depressive symptoms. Pain, discomfort, and uncertainty regarding the outcome may make these emotions stronger. A significant level of sedative pattern variation was seen in the study in a real-world ICU clinical setting, despite advice to prefer mild sedation to extreme sedation (Devlin et al., 2018). In contrast, out of 151 people, 80 (53%) were positive, and 7 (47%) were perceived negatively for not having anxiety symptoms. Out of 10, 7 (70%) were positive and 3 (30%) were negative for having anxiety. Due to their illnesses, examinations, and treatment procedures, critically ill patients frequently experience excruciating agony, pain, and anxiety. Early deep sedation could lessen mental and physical suffering (Su et al., 2021), relieve pain and anxiety, increase patient compliance, and shorten procedure times (Choo and Lee, 2020; Hida et al., 2017). In critically sick patients who frequently experience severe sleep fragmentation and disordered sleep architecture, early deep sedation also improves sleep efficiency, which benefits patients' clinical outcomes (Jean et al., 2020). Out of 9, 6 (66.7%) were found to have amnesia, and 3 (33.3%) were found to be negative. In contrast, out of 152, 81 (53.3%) were found to have amnesia symptoms, and 71 (46.7%) were found to be negative. Due to terrible events that occurred while they were patients in the ICU, some survivors have PTSD symptoms. Vivid dreams, delirium, and hallucinations can be upsetting and leave psychological scars that last a lifetime. Feelings of helplessness and sadness may be exacerbated by extended stays in the intensive care unit, separation from family members, and difficulty doing basic self-care tasks. Loss of control over their bodies and decisions relating to their care may also be a problem for patients. Families and ICU staff members both reported having trouble comprehending patients' needs (Martinho and Rodrigues, 2016; Yoo et al., 2020). Out of 6, 5 (83.3%) were found to be positive and 1 (16.7%) to be harmful for having hallucinations, whereas out of 155, 82 (52.9%) were found to be positive and 73 (47.1%) were found to be negative for not having hallucination symptoms. Family members praised the ICU staff as essential individuals for meeting the patients' psychological requirements and offering psychological care to the patients. Out of 87, 51 (58.6%) were found to be positive for having PTSD, while 36 (48%) were found to be negative for not having PTSD symptoms. In contrast, out of 74, 36 (48.6%) were found to be positive for not having PTSD symptoms, while 38 (51.4%) were found to be negative.

Giving patients hope entails urging ICU staff members to communicate information with them judiciously. It has been demonstrated that providing psychological assistance (such as psychotherapy, stress management, and coping mechanisms) while a patient is in the intensive care unit reduces post-traumatic stress disorder and the need for psychiatric medication (Ho et al., 2018). In comparison, out of 72, 16 (32.3%) were found to be medical cases, and 36 (77.48%) were found to be unfavorable for medical cases. Out of 89, 71 (79.8%) were medical cases, and 18 (20.2%) were harmful for non-medical cases. Similarly, out of 27 cases, 12 (44.4%) were surgical cases, 15 (55.6%) were not, and out of 134 cases, 75 (56%) were surgical cases and 59 (44%) were not. Some patients continue to endure psychological side effects like anxiety, despair, and trouble adjusting to their new conditions even after leaving the intensive care unit (ICU). These impacts can call for continuous counseling and psychological care. Patients are not the only ones who are affected psychologically; families and careers can endure trauma, worry, and emotional pain as a result of seeing a loved one's severe sickness. Our study had a few limitations as well. No standardized instrument is available for evaluating the psychological consequences on ICU patients. As a result, psychological results may be measured and reported differently depending on the study. There aren't enough long-term follow-up studies to determine how ICU experiences affect patients' psychological health and quality of life over protracted periods despite the growing recognition of short-term psychological repercussions. Many healthcare facilities are constrained by a lack of resources, which makes it difficult for them to offer complete psychological assistance to ICU patients. Implementing measures that could lessen psychological suffering may be hampered as a result. Understanding and fully resolving these impacts provides substantial constraints and difficulties. Medical experts, researchers, and legislators must work together to create efficient interventions and support systems for ICU patients.

Conclusion

It is widespread in ICUs and has a significant impact on mortality as well as length of stay. Improved identification and early detection will result from a bedside screening tool with physician permission. Identifying incidence and risk factors is the first step in prevention, to create a future ICU free from psychological consequences. ICU patients who are critically ill have a wide range of intricate psychosocial effects. The patient's characteristics, the seriousness of the sickness, and the ICU setting all impact these effects. Identification and treatment of these psychological components are essential if ICU patients and their families are to get comprehensive and all-encompassing care.

Declarations

Data Availability statement

All data generated or analyzed during the study are included in the manuscript.

Ethics approval and consent to participate

Approved by the department Concerned.

Consent for publication

[Citation: Gul, A., Gul, R., Haroon, M., Khan, J., Ajmal, F., Khan, H.S., Khan, S. (2023). Psychological effects of sedative on critically ill patients. *Biol. Clin. Sci. Res. J.*, 2023: 623. doi: <https://doi.org/10.54112/bcsrj.v2023i1.623>]

Approved

Funding

Not applicable

Conflict of interest

The authors declared absence of conflict of interest.

Author Contribution

AISHA GUL

Coordination of collaborative efforts.

RIDA GUL

Conception of Study, Development of Research Methodology Design, Study Design,, Review of manuscript, final approval of manuscript

MOHAMMAD HAROON

Manuscript revisions, critical input.
Coordination of collaborative efforts.

JAWAD KHAN

Data acquisition, analysis.

FAHAD AJMAL

Data entry and Data analysis, drafting article

HAMZA SATTAR KHAN

Data acquisition, analysis.

SUMBUL KHAN

Coordination of collaborative efforts.

References

- Aljarameez, F., Saha, C., Sinan, M., Rajan, L., Ahmed, G. Y., and Mutair, A. A. (2023). Sociodemographic determinants of structural empowerment and organisational commitment among critical care nurses in Saudi Arabia: a comparative cross-sectional study. *British Journal of Healthcare Management* **29**, 1-12.
- Choo, M. S., and Lee, D. S. (2020). Does deep sedation with analgesia have positive effects on anxiety, pain and compliance in patients before and after prostate biopsy? *International Journal of Clinical Practice* **74**, e13517.
- Devlin, J. W., Skrobik, Y., Gélinas, C., Needham, D. M., Slooter, A. J., Pandharipande, P. P., Watson, P. L., Weinhouse, G. L., Nunnally, M. E., and Rochweg, B. (2018). Clinical practice guidelines for the prevention and management of pain, agitation/sedation, delirium, immobility, and sleep disruption in adult patients in the ICU. *Critical care medicine* **46**, e825-e873.
- Eikermann, M., Needham, D. M., and Devlin, J. W. (2023). Multimodal, patient-centred symptom control: a strategy to replace sedation in the ICU. *The Lancet Respiratory Medicine* **11**, 506-509.
- Gamwell, K. L., Roberts, C. M., Kraft, J. D., Edwards, C. S., Baudino, M. N., Grunow, J. E., Jacobs, N. J., Tung, J., Mullins, L. L., and Chaney, J. M. (2023). Factor analysis of the stigma scale-child in pediatric inflammatory bowel disease. *Journal of Psychosomatic Research* **164**, 111095.
- Hanifa, A. L. B., Alrø, A. B., Holm, A., and Dreyer, P. (2023). Nurses' experiences of managing cognitive problems in intensive care unit patients: A qualitative study. *Intensive and Critical Care Nursing* **79**, 103508.
- Hida, S., Takemoto, M., Masumoto, A., Mito, T., Nagaoka, K., Kumeda, H., Kawano, Y., Aoki, R., Kang, H., and Tanaka, A. (2017). Clinical benefits of deep sedation with a supraglottic airway while monitoring the bispectral index during catheter ablation of atrial fibrillation. *Journal of Arrhythmia* **33**, 283-288.
- Hirshberg, E. L., Butler, J., Francis, M., Davis, F. A., Lee, D., Tavake-Pasi, F., Napia, E., Villalta, J., Mukundente, V., and Coulter, H. (2020). Persistence of patient and family experiences of critical illness. *BMJ open* **10**.
- Ho, J. Q., Nguyen, C. D., Lopes, R., Ezeji-Okoye, S. C., and Kuschner, W. G. (2018). Spiritual care in the intensive care unit: a narrative review. *Journal of intensive care medicine* **33**, 279-287.
- Jean, R., Shah, P., Yudelevich, E., Genese, F., Gershner, K., Levendowski, D., Martillo, M., Ventura, I., Basu, A., and Ochieng, P. (2020). Effects of deep sedation on sleep in critically ill medical patients on mechanical ventilation. *Journal of sleep research* **29**, e12894.
- Leong, E.-L., Chew, C.-C., Ang, J.-Y., Lojikip, S.-L., Devesahayam, P.-R., and Foong, K.-W. (2023). The needs and experiences of critically ill patients and family members in intensive care unit of a tertiary hospital in Malaysia: a qualitative study. *BMC Health Services Research* **23**, 1-11.
- Liang, S., Chau, J. P. C., Lo, S. H. S., Choi, K. C., Bai, L., and Cai, W. (2023). The effects of a sensory stimulation intervention on psychosocial and clinical outcomes of critically ill patients and their families: A randomised controlled trial. *Intensive and Critical Care Nursing* **75**, 103369.
- Martinho, C. I. F., and Rodrigues, I. T. R. M. (2016). Communication of mechanically ventilated patients in intensive care units. *Revista Brasileira de terapia intensiva* **28**, 132-140.
- Papautsky, E. L., and Abdulbaseer, U. (2024). Capturing the Work of Patients' Family Members in the Medical Intensive Care Unit Using Naturalistic Observations. *HERD: Health Environments Research & Design Journal* **17**, 84-91.
- Su, L., Liu, C., Chang, F., Tang, B., Han, L., Jiang, H., Zhu, W., Hong, N., Zhou, X., and Long, Y. (2021). Selection strategy for sedation depth in critically ill patients on mechanical ventilation. *BMC Medical Informatics and Decision Making* **21**, 1-12.
- Topçu, S., Ecevit Alpar, Ş., Gülseven, B., and Kebapçı, A. (2017). Patient experiences in intensive care units: a systematic review. *Patient Experience Journal* **4**, 115-127.
- Yoo, H. J., Lim, O. B., and Shim, J. L. (2020). Critical care nurses' communication experiences with patients and families in an intensive care unit: A qualitative study. *Plos one* **15**, e0235694.
- Zainah, M., Sasikala, M., Nurfarieza, M., and Ho, S. (2016). Needs of family members of critically ill patients in a critical care unit at Universiti Kebangsaan Malaysia Medical Centre. *Med & Health* **11**, 11-21.



Open Access This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>. © The Author(s) 2023