

THE EFFECTIVENESS OF AUDIOVISUAL-BASED HEALTH EDUCATION ON ANXIETY LEVELS AMONG FAMILIES OF ICU PATIENTS: AN ANALYSIS USING ROY'S ADAPTATION MODEL

Anis Windari^{1*}, Fery Agusman², Anny Rosiana M³

¹⁻³Department of Master Nursing Study, Universitas Karya Husada Semarang

Email Korespondensi: nswindari2@gmail.com

Disubmit: 12 Januari 2026 Diterima: 08 Agustus 2026 Diterbitkan: 01 September 2026
Doi: <https://doi.org/10.33024/mahesa.v6i9.24478>

ABSTRACT

The Intensive Care Unit (ICU) is a hospital unit equipped with specialized staff and medical equipment to care for patients in critical and life-threatening conditions. This situation often causes family members of ICU patients to experience stress, fear, and anxiety regarding the patient's condition. Anxiety experienced by ICU patients' families can have both physical and psychological impacts. Interventions are needed to help families adapt and manage this anxiety, one of which is audiovisual-based health education. This study to determine the effectiveness of audiovisual-based health education in reducing anxiety among families of ICU patients using Roy's Adaptation Model. This study was quasi-experimental with a two-group pretest-posttest control group approach. The research was conducted from December 2024 to January 2025 at RSUD dr. Loekmono Hadi Kudus. The population consisted of 65 family members of patients admitted to the ICU. Using purposive sampling, 55 respondents were selected, divided into an intervention group (28 respondents) and a control group (27 respondents). The intervention used audiovisual media in the form of a video accessed through smartphones. The instruments included video, smartphone (belonging to the family), and the Hospital Anxiety and Depression Scale (HADS) questionnaire. Data were analyzed using an independent sample t-test. This study has obtained an Ethical Clearance Certificate with number 69/KEPK/RSLH/VIII/2024. The independent sample t-test analysis showed a p-value of 0.017 ($p < 0.05$). Audiovisual-based health education is effective in reducing anxiety among families of ICU patients using Roy's Adaptation Model. It is recommended that hospitals provide audiovisual-based health education as part of a family support program in the ICU.

Keywords: Anxiety, Audiovisual, Family, ICU, Roy's Adaptation Model.

INTRODUCTION

The Intensive Care Unit (ICU) is a hospital service unit supported by professional staff and specialized equipment to treat patients with life-threatening conditions caused by sudden illness, trauma, or complications resulting from organ dysfunction or system failure, which

still have the potential to recover through intensive care and therapy (Herman et al., 2022).

Patients admitted to the ICU are generally in an unstable condition and require intensive therapy, such as in cases of severe respiratory failure, post-cardiac surgery, or

patients requiring close monitoring—both invasive and non-invasive—to prevent more serious complications and to manage acute conditions that demand intensive treatment (Hudak & Gallo, 2021). Such circumstances lead families to face various stressors, including fear of death, uncertainty, financial burdens, emotional changes, critical situations, and decision-making between life and death (Yuliati, 2021).

The World Health Organization (WHO, 2021) reported that at least 50 million individuals undergo ICU treatment annually due to trauma and infections. The number of critically ill patients admitted to ICUs increases by 9.8% to 24.6% each year, with an estimated global mortality rate of 1.1 to 7.4 million deaths from critical illness (WHO, 2021). The Society of Critical Care Medicine (SCCM, 2022) reported that the average mortality rate among adult ICU patients ranges from 10% to 29%, depending on age and disease severity. In the United States alone, approximately 4 million people are admitted to ICUs annually, with around 500,000 deaths recorded each year (Society of Critical Care Medicine (SCCM), 2022).

The Bed Occupancy Rate (BOR) in Indonesia reached 80% in 2020 (Kemenkes RI, 2023). By 2021, there were 81,032 ICU beds available across 2,979 hospitals in Indonesia, with a total of 52,719 critically ill patients treated. This indicates that the average ICU utilization rate in Indonesia was 64.83% in 2021 (Kemenkes RI, 2023). At RSUD dr. Loekmono Hadi Kudus, 393 patients were admitted to the ICU between January and June 2024.

The fast-paced and demanding atmosphere in ICUs often makes communication with families difficult, limiting their access to information about the patient's

condition. Restrictions on visiting hours, communication barriers, and financial constraints often leave ICU families feeling isolated, fearful, and anxious (Mariati, et. al 2022). Psychosocial problems such as anxiety, fear, and stress are reported more frequently in families than in patients themselves. These tense, irrational, and overwhelming experiences form the basis of anxiety (Herman et al., 2022). Studies show > 90% of family members of ICU patients experience anxiety (Simanjuntak et al., 2022).

The proportion of family members experiencing severe psychological distress due to critical illness is expected to rise in line with the growing number of ICU admissions (Pitoy et al. 2023). Insufficient fulfillment of family health needs, particularly regarding information on the patient's illness progression and treatment plans, can further increase anxiety levels among families (Widiastuti et al., 2023).

Roy emphasized that the environment functions as a stimulus (stressor) originating from both internal and external sources (Ratna et al., 2023). Internal stimuli include mental processes within the body such as experiences, emotional capacity, personality, and biological stressors. External stimuli comprise physical, chemical, and psychological factors perceived as threats by individuals (Dharma & Rahayu, 2022). Education for families serves as a form of stimulation, enabling them to adapt to circumstances, make effective decisions, improve patient health outcomes, and reduce family anxiety (Morgado et al., 2024).

Audiovisual education is considered more engaging and effective because it involves two senses—sight and hearing—maximizing the reception of information (Chatterjee et al., 2021). Audiovisual media have advantages

such as fast delivery of messages, easy retention, stimulation of thoughts and opinions, development of imagination, clarification of abstract concepts, and realistic explanations (Setiawan et al., 2024).

This study to determine the effectiveness of audiovisual-based health education in reducing anxiety among ICU patients' families, using Roy's Adaptation Model as a theoretical framework.

LITERATURE REVIEW

Nurses provide care not only for patients but also for their families, helping them adapt to the ICU environment and the patient's condition. An individual's ability to cope and achieve optimal health depends largely on the effectiveness of their adaptive mechanisms (Yeşilyurt, 2023). According to Roy's Adaptation Model, several factors influence adaptation, including human factors (developmental stage, psychological condition), environment (family, home, school support), health-illness (physical condition), and nursing care (Khaerunnisa et al., 2024).

RESEARCH METHODS

The research method used was a quasi-experimental design with a two-group pretest-posttest with control group design. The population consisted of family members of patients treated in the Intensive Care Unit (ICU), totaling 65 respondents. The sampling technique applied was purposive sampling, determined based on specific inclusion criteria. The inclusion criteria in this study were family members of patients admitted to the Intensive Care Unit (ICU) who served as the primary companions or were directly involved in the patient's care and decision-making. Participants were required

to be at least 18 years old, able to read and understand the intervention material delivered through smartphone-based videos, and willing to participate by providing informed consent. Additionally, respondents were expected to provide reliable responses throughout the study. The exclusion criteria were applied to eliminate individuals who might not be able to fully participate due to cognitive, emotional, or situational limitations. The sample size was calculated using the Lameshow formula, resulting in a total of 55 respondents, divided into 28 respondents as intervention group and 27 respondents as control group.

The independent variable in this study was audiovisual-based health education, while the dependent variable was the anxiety level of ICU patients' families, analyzed within the framework of Roy's Adaptation Model. The research instruments in this study included educational videos delivered through smartphones, a questionnaire on respondents' characteristics, and the Hospital Anxiety and Depression Scale (HADS) questionnaire to measure anxiety levels among family members of ICU patients, which had previously undergone validity and reliability testing. The questionnaire consists of 14 items, divided into two subscales: 7 items for anxiety (HADS-A) and 7 items for depression (HADS-D). Each item is scored on a 4-point Likert scale (0-3), yielding a total score range of 0-21 for each subscale. The interpretation of scores is categorized as follows: 0-7 = Normal (no clinically significant symptoms), 8-10 = Borderline (borderline abnormal/possible presence of symptoms), and 11-21 = Abnormal (indicative of clinical anxiety). This instrument measures only anxiety levels as the dependent variable, while depression was not assessed in this study.

The audiovisual-based health education intervention in this study was delivered through videos displayed on smartphones. Meanwhile, the control group only received health education using a leaflet as a learning aid. Participants accessed the health education material within a family context using their own smartphones, which were provided with the content by the researcher. Smartphones were chosen because they are easy to operate, widely available, and allow participants to replay or review the material as needed. The health education was delivered using educational videos accessible via smartphones. The content included information about the patient's condition in the ICU, explanations of medical equipment used, general care procedures, and the role of the family in supporting the patient. The duration of each health education session was approximately 20-30 minutes and was administered three times during the ICU care period. The intervention mechanism was carried out at the initial visit, in the middle of the care period, and toward the end of treatment, ensuring that families received continuous education aligned with their adaptive needs at each stage. In the control group, participants received a leaflet containing a summary of the same material, which they could read at any time.

The data collection process was carried out directly by the researcher without the assistance of enumerators. This approach ensured consistency in administering the research instrument and allowed the researcher to maintain control over the quality and accuracy of the data. Respondents who met the predetermined inclusion and exclusion criteria were selected by the researcher to ensure that participants were aligned with the

objectives of the study. By engaging directly with respondents, the researcher was also able to clarify any ambiguities in the questionnaire and ensure that responses were well understood, thereby contributing to the reliability of the collected data.

Data were collected on respondents' characteristics, including age, gender, and education level, as well as their anxiety levels before and after the intervention using the Hospital Anxiety and Depression Scale (HADS). The intervention group received health education through audiovisual media in the form of educational videos accessible via smartphones. Each session lasted approximately 20-30 minutes and was administered three times during the ICU care period: at the initial visit, in the middle of the care period, and toward the end of treatment, ensuring that families received continuous education aligned with their adaptive needs. Meanwhile, the control group received a leaflet containing a summary of the same material. The leaflet was provided once, but participants could read it at any time as needed.

The statistical test used in this study was the independent sample t-test to examine differences between groups with normally distributed data. The level of significance (α) was set at 0.05, indicating that the results were considered statistically significant if the p -value was less than 0.05. This study received an Ethical Clearance Waiver Certificate from RSUD dr. Loekmonohadi Kudus, with reference number 69/KEPK/RSLH/VIII/2024. All participants were provided with clear information regarding the objectives and procedures of the study and were asked to provide written informed consent prior to participation. Participation in this study was entirely voluntary without any form

of coercion, and participants retained the right to withdraw from

the study at any time without any consequences.

RESEARCH RESULTS

Table 1. Characteristics of Respondents

Characteristics	Intervention (n=28)				Control (n=27)			
	Min-Max	f	%	Mean	Min-Max	f	%	Mean
Age (years)	23-62	28	100	38.89	23-62	27	100	41.40
Gender								
Female		16	57.1			18	66.7	
Male		12	42.9			9	33.3	
Education Level								
Junior School	High	4	14.3			4	14.8	
Senior School	High	16	57.1			19	70.4	
Higher Education		8	28.6			4	14.8	

Based on Table 1 shows that in the intervention group, the majority of ICU patients' family members were female (16 respondents; 57.1%), with most having completed senior high school education (16 respondents; 57.1%), and a mean age

of 38.89 years (range 23-62). In the control group, most respondents were also female (18 respondents; 66.7%), with the majority having senior high school education (19 respondents; 70.4%), and a mean age of 41.40 years (range 23-62).

Table 2. Mean Distribution of Anxiety Levels Before and After Intervention in Intervention and Control Groups

Group		Mean	SD	Min-Max	95% CI
Intervention	Before	14.0	4.6	6-21	12.2-15.8
	After	11.0	3.9	5-18	9.7-12.3
Control	Before	14.5	4.3	7-21	12.7-16.3
	After	12.0	3.7	5-19	10.6-13.4

Table 2 shows that in the intervention group, the mean anxiety score of ICU patients' families before the audiovisual-based health education intervention was 14.0 ± 4.6 (range 6-21). After the intervention, the mean anxiety score decreased to 11.0 ± 3.9 (range 5-18). The 95% confidence interval indicated a significant reduction

from 12.2-15.8 before the intervention to 9.7-12.3 after. In the control group, the mean anxiety score before the intervention was 14.5 ± 4.3 (range 7-21) and decreased to 12.0 ± 3.7 (range 5-19) after the intervention. The 95% confidence interval also showed a reduction from 12.7-16.3 before the

intervention to 10.6-13.4 after the intervention.

Table 3. Analysis of Audiovisual Education on Anxiety Levels of ICU Patients' Families

Group	Mean	Mean Rank	Sum of Ranks	p-value
Intervention	11.0	26.57	744.00	0.017
Control	12.0	29.48	796.00	

Based on the independent sample t-test analysis presented in Table 3, the obtained p-value was 0.017 ($p < 0.05$), indicating that audiovisual-based health education

had a significant effect on reducing the anxiety levels of family members of ICU patients at RSUD dr. Loekmonohadi Kudus.

DISCUSSION

Description of Respondents' Characteristics

Based on the available data, the average age of respondents ranged from the late 30s to early 40s. This indicates that most family members of ICU patients were adults, an age group characterized by maturity in both mental and social aspects. This finding is consistent with previous opinions suggesting that the older a person is, the lower their level of anxiety tends to be, as adults possess better adaptive skills to cope with psychosocial problems such as anxiety. A previous study reported that the age range of family members of ICU patients was between 42-50 years (Sudarsih et al. 2022). Another study by (Widiastuti et al., 2023) found that 26.7% of family members of ICU patients were in the 37-48 age group. Anxiety disorders, however, may occur at any age but are more frequently observed in adulthood.

In terms of gender, the majority of respondents in both groups were female. This demographic distribution reflects the social reality in Indonesia, where caregiving responsibilities for critically ill ICU patients are often

carried out by female family members, such as wives or daughters. This aligns with Gender Role Theory, which explains how society assigns different expectations and responsibilities based on gender. Since most ICU patients were male, their wives often served as the primary companions, and wives as family members are particularly vulnerable to experiencing anxiety (Widiastuti et al., 2023).

The predominance of respondents with senior high school education suggests that they had an adequate basic understanding to receive health information and actively participate in interventions. Educational level is associated with an individual's ability to access information, develop cognitive coping mechanisms, and adapt in stressful situations (Waladani et al., 2024). A prior study found that 36.4% of respondents were high school graduates (Mariati et al., 2022). Another study by (Sudarsih et al., 2022) reported that 44.4% of respondents were high school graduates, while (Widiastuti et al., 2023) found a proportion of 53.3%. Higher education levels are associated with greater knowledge

and comprehension of new information, rational thinking, and better emotional regulation.

Description of Family Anxiety Levels Before and After Intervention in the Intervention and Control Groups

The study results indicate that family members experience anxiety due to having a relative admitted to the ICU, as observed in both the intervention and control groups. Family anxiety was reflected through symptoms such as feelings of worry, tension, fear, confusion, nervousness, and restless behavior, often visible in facial expressions. Anxiety occurs because of the strong emotional bond within the nuclear family, which amplifies the psychological impact when a family member is critically ill in the ICU (Winarti et al., 2024).

Family anxiety is a common reaction to the stressors of having a loved one in a life-threatening condition requiring intensive care. This anxiety may vary in severity, fluctuating from mild to severe (Bimantara, 2023). A previous study reported a mean pre-intervention anxiety score of 26.2, suggesting that not only patients but also family members experience significant distress, thereby highlighting the need for effective coping mechanisms. Nurses play a crucial role in reducing family anxiety through effective communication and supportive relationships with both patients and families (Agusrianto et al., 2021).

Excessive anxiety may manifest in physical and psychological symptoms, including muscle tension, fatigue, concentration difficulties, sleep disturbances, and impaired daily functioning (Regmi et al., 2024). Such anxiety responses are triggered by stress-related neuroendocrine

mechanisms, which function as protective but sometimes maladaptive responses to stressors (Stuart, 2020). Patients and families have the right to receive clear information about all treatments and care (Scott et al., 2020).

Family anxiety in the ICU setting is considered a natural reaction to stressors and misperceptions. Nurses play an essential role in alleviating this anxiety by providing education, which helps families adapt better (Avcı & Ayaz-Alkaya, 2021). Anxiety is often more pronounced in immediate family members due to stronger emotional ties (Boehm et al., 2023). Proper information delivery improves family understanding, reduces uncertainty, and subsequently lowers anxiety levels. One way to achieve this is by preparing family members mentally before critical events occur (Sutisnu et al., 2023).

This reduction in anxiety aligns with health education theory, which posits that health education enhances an individual's understanding of medical conditions, thereby alleviating anxiety stemming from uncertainty (Winarti et al., 2024). The educational intervention in this study included explanations of ICU procedures, patient conditions, and coping strategies for families. Moreover, psychoanalytic theory (Stuart, 2020) explains that anxiety results from conflicts between the Id and Ego, which can be alleviated through cognitive interventions such as accurate health information and education. This approach enables families to better understand their loved one's condition and develop more adaptive coping mechanisms (Regmi et al., 2024).

The Effect of Audiovisual Education on the Anxiety Levels of ICU Patients' Families

The results of the independent sample t-test analysis showed a p-value of 0.017 ($p < 0.05$), providing strong evidence of a significant effect of audiovisual education on the anxiety levels of families of ICU patients at Dr. Loekmono Hadi Kudus Hospital. This finding indicates that the audiovisual education intervention effectively reduced or managed anxiety levels among family members who received the education, compared to those in the control group who did not receive a similar intervention.

The difference in mean anxiety scores between the intervention and control groups was caused by the audiovisual-based education intervention. Within the high-pressure and uncertain ICU environment, families often experience elevated anxiety due to a lack of information, limited understanding of the patient's critical condition, and the complexity of medical procedures (Regmi et al., 2024). Audiovisual education helps overcome these barriers by presenting clear, systematic, and easily digestible information through a combination of visual and auditory channels. This enables families to better understand the situation, feel more prepared, and reduce the perceived threat that commonly triggers anxiety (Waladani et al., 2024).

The reduction in anxiety observed in the intervention group can be explained by learning theory. According to Mayer's Multimedia Learning Theory, audiovisual media optimizes information processing by engaging dual channels (visual and auditory). Information delivered through images, sound, and text makes it easier for respondents to comprehend health messages,

reduces misunderstanding, and enhances memory retention (Xiao et al., 2024). In the ICU context, audiovisual education allows families to understand the patient's critical condition, ongoing care procedures, and medical interventions, thereby reducing fear and uncertainty (Mansouri et al., 2020).

This effect is consistent with Uncertainty Reduction Theory, which states that individuals strive to reduce uncertainty in unfamiliar situations. The ICU environment and the patient's unstable condition often generate extreme uncertainty for families. Audiovisual education minimizes ambiguity by providing accurate and anticipatory knowledge, thus reducing anxiety sources (Chatterjee et al., 2021). As adult learners, family members benefit more when information is relevant, practical, and directly applicable. In this regard, audiovisual media serves as an andragogical tool (Knowles' Adult Learning Theory), enhancing motivation to learn and supporting families in managing crisis situations (Grilo et al., 2022).

Audiovisual education also equips families with more adaptive coping strategies. According to Roy's Adaptation Model, humans respond to stimuli through two coping subsystems: the regulator (automatic physiological responses) and the cognator (psychological, emotional, and cognitive responses). Audiovisual health education acts as a positive stimulus that activates the cognator subsystem, helping families understand the situation, regulate their emotions, and decrease anxiety (Hasanah et al., 2022). By providing clear and reassuring information, this intervention reduces perceived threats and fosters more adaptive coping mechanisms (Hosseini & Soltanian,

2022), (Yu et al., 2023). Families are thus able to adopt problem-focused coping (e.g., participating in informed decision-making) and emotion-focused coping (e.g., reducing feelings of helplessness), ultimately relieving emotional distress. These findings align with studies reporting that audiovisual educational programs positively affect both anxiety and depression among family members (Morgado et al., 2024).

In the researcher's view, these results demonstrate that audiovisual education is a strong and effective strategy for reducing anxiety among families of ICU patients. Anxiety is a common and complex emotional response among relatives of critically ill patients, often triggered by prognostic uncertainty, the unfamiliar and intensive ICU environment, and complex, intimidating medical information. Audiovisual educational interventions simplify complex information, make it easier to process, and help families visualize conditions and procedures that are difficult to grasp through verbal explanations alone.

CONCLUSION

The results of the study on audiovisual-based education and family anxiety in the ICU showed that the independent sample t-test produced a p-value of $0.017 < 0.05$, indicating that audiovisual-based education is effective in reducing family anxiety in the ICU.

Based on the findings of this study, it is recommended that hospitals and healthcare providers conduct an initial assessment of the family's anxiety level to ensure that the health education delivered is more targeted, effective, and capable of enhancing understanding while reducing the family's anxiety.

Health education interventions should utilize interactive audiovisual media, with the type of education tailored to the specific needs of the patient's family. Furthermore, the careful selection of appropriate media and the determination of the most suitable timing for the intervention are essential in effectively reducing family anxiety.

Acknowledgment

The author would like to express his thanks and appreciation to all research respondents who voluntarily participated in this study.

Data Availability

Authors can be contacted to access datasets created for and/or used in this study.

REFERENCES

- Agusrianto, A., Rantesigi, N., & Suharto, D. N. (2021). Efektifitas Terapi Relaksasi Autogenik Dan Aromaterapi Lavender Terhadap Penurunan Tingkat Kecemasan Pasien Di Ruang ICU RSUD Poso. *Healthy Tadulako Journal (Jurnal Kesehatan Tadulako)*, 7(3), 141-146.
<https://doi.org/10.22487/htj.v7i3.330>
- Avci, M., & Ayaz-Alkaya, S. (2021). Anxiety, social support and satisfaction of patients' families in intensive care units: A descriptive-correlational study. *Journal of Clinical Nursing*, 2(1).
<https://doi.org/https://doi.org/10.1111/jocn.16094>
- Bimantara, P. A. (2023). Pengaruh Terapi Relaksasi Autogenik Dan Aromaterapi Lavender Terhadap Kecemasan Keluarga Pasien Di Instalasi Rawat

- Intensif RSUD Dr. Soedirman Kebumen. *Jurnal Keperawatan*, 5(1), 1-14. <https://www.ncbi.nlm.nih.gov/books/NBK558907/>
- Boehm, L. M., Bird, C. M., Warren, A. M., Danesh, V., Hosey, M. M., McPeake, J., Potter, K. M., Su, H., Eaton, T. L., & Powers, M. B. (2023). Understanding and Managing Anxiety Sensitivity During Critical Illness and Long-Term Recovery. *American Journal of Critical Care: An Official Publication, American Association of Critical-Care Nurses*, 32(6), 449-457. <https://doi.org/10.4037/ajcc.2023975>
- Chatterjee, A., Strong, G., Meinert, E., Milne-Ives, M., Halkes, M., & Wyatt-Haines, E. (2021). The use of video for patient information and education: A scoping review of the variability and effectiveness of interventions. *Patient Education and Counseling*, 104(9), 2189-2199. <https://doi.org/https://doi.org/10.1016/j.pec.2021.02.009>
- Dharma, K.-K., & Rahayu, H. (2022). The effective post-stroke adaptation behavior model requires a family support system. *Enfermeria clinica*, 32(2), 123-130. <https://doi.org/10.1016/j.enfcle.2020.11.006>
- Grilo, A. M., Ferreira, A. C., Ramos, M. P., Carolino, E., Pires, A. F., & Vieira, L. (2022). Effectiveness of educational videos on patient's preparation for diagnostic procedures: Systematic review and Meta-Analysis. *Preventive Medicine Reports*, 28, 101895. <https://doi.org/10.1016/j.pmedr.2022.101895>
- Hasanah, I., Nursalam, N., Pandin, M. G. R., Ikhwan, D. A., & Rohita, T. (2022). A Critical Analysis of Using Roy's Adaptation Model in Nursing Research as an Empirical for Clinical Practice: a Systematic Review. *Europe PMC Plus*, May, 1. <https://doi.org/10.20944/preprints202205.0276.v1>
- Herman, A., Apriadi, W., Hasrima, Sarasmita, M. A., Atoy, L., Andareas, S., Husna, E., Haryati, Ardyawan, L. O. M. A., Upoyo, A. S., Sudiro, T. Y., Jasmin, Hajri, S., Rosanty, A., & Kartini. (2022). *Pengantar Keperawatan Kritis*. CV. Eurka Media Aksara.
- Hosseini, M., & Soltanian, M. (2022). Application of Roy's Adaptation Model in Clinical Nursing: A Systematic Review. *Journal of Iranian Medical Council*, 5(4), 540-556. <https://doi.org/10.18502/jimc.v5i4.11327>
- Hudak, C., & Gallo, B. (2021). *Critical Care Nursing: A Holistic Approach* (8th ed.). EGC.
- Kemenkes RI. (2023). *Profil Indonesia Sehat*. Kementerian Kesehatan RI. <https://kemenkes.go.id>
- Khaerunnisa, M., Sumarni, N., & Mulya, A. P. (2024). Asuhan Keperawatan Keluarga dengan Pasien Pascastroke Menggunakan Pendekatan Model Adaptasi Roy: Studi Kasus. *Ilmiah Keperawatan*, 8(2), 92-102.
- Mansouri, A., Baraz, S., Elahi, N., Malehi, A. S., & Saberipour, B. (2020). The effect of an educational program based on Roy's adaptation model on the quality of life of patients suffering from heart failure: A clinical trial study. *Japan Journal of Nursing Science* :

- JJNS, 16(4), 459-467.
<https://doi.org/10.1111/jjns.12255>
- Mariati, Hindriyastuti, S., & Dwi Winarsih, B. (2022). Gambaran Tingkat Kecemasan Keluarga Pasien Yang Di Rawat Di Icu Rumah Sakit Mardi Rahayu Kudus. *Journal of TSCS1Kep*, 7(1), 2775-0345.
<http://ejournal.annurpurwoda.ac.id/index.php/TSCS1Kep>
- Morgado, M., Botelho, J., Machado, V., Mendes, J. J., Adesope, O., & Proença, L. (2024). Full title: Video-based approaches in health education: a systematic review and meta-analysis. *Scientific Reports*, 14(1), 23651.
<https://doi.org/10.1038/s41598-024-73671-7>
- Pitoy, F. F., Manoppo, M. W., & Hutagalung, I. H. (2023). Kecemasan Keluarga Pasien saat Menunggu Anggota Keluarga yang Dirawat di Ruang ICU. *MAHESA: Malahayati Health Student Journal*, 3(9), 2718-2726.
<https://doi.org/10.33024/mahesa.v3i9.10930>
- Ratna, Bau, A. S., Sawitri, N. K. A., Paulina, Ngii, Y., Mariana, D., Ayu, S. A., Sulistiowati, N. M. D., Pitri, A. D., Ernawati, Y., Sahmad, Asda, P., & Dewi, I. M. (2023). Falsafah Dan Teori Dalam Keperawatan. In CV. Eureka Media Aksara *Purbalingga*. CV. Eureka Media Aksara.
- Regmi, S., Pradhan, B., Acharya, S. P., Shrestha, P. S., Pathak, S., & Shahi, S. (2024). Prevalence of anxiety and depression among family members of ICU patients in a tertiary-level hospital in Nepal: A cross-sectional observational study. *Journal of Nepalese Society of Critical Care Medicine*, 3(2), 13-20.
<https://doi.org/https://doi.org/10.3126/jnscm.v3i2.81085>
- Scott, P., Thomson, P., & Shepherd, A. (2020). Families of patients in ICU: A Scoping review of their needs and satisfaction with care. *Nursing Open*, 6(3), 698-712.
<https://doi.org/10.1002/nop2.287>
- Setiawan, A., Sriyono, & Maryanti, H. (2024). Effect of Audio-Visual Health Education on Psychological Distress of Perioperative Patients: a Systematic Review. *Nurse and Health: Jurnal Keperawatan*, 13(2), 275-285.
<https://doi.org/10.36720/nhj.k.v13i2.683>
- Simanjuntak, G. V., Susanto, W. H. A., Megasari, A. L., Purwoto, A., Agustin, W. R., Achmad, V. S., Waladani, B., Faizah, A., Surani, V., Nuliana, W., Kusumawaty, I., Rachman, N., Yunike, & Wulandari, I. S. (2022). *Keperawatan Kritis*. PT. Global Eksekutif Teknologi.
- Society of Critical Care Medicine (SCCM). (2022). *Critical Care Statistics*. Society of Critical Care Medicine.
<http://www.sccm.org/Communicatio%0Ans/Pages/CriticalCareStats.aspx>
- Stuart, G. W. (2020). *Buku Ajar Keperawatan Jiwa*. EGC.
- Sudarsih, Winarsih, B. D., & Widyaningsih, H. (2022). Hubungan Pemberian Informasi Penyakit Jantung Terhadap Kecemasan Keluarga Pasien Di Ruang Icu Rumah Sakit Mardi Rahayu Kudus. *Journal of TSCS1Kep*, 7(1), 23-36.
- Sutisnu, A. A., Sugiharto, F., Yulianita, H., & Eriyani, T. (2023). The Effect of Family Visit Management on Anxiety

- Levels Among Patients in the Intensive Care Unit: A Scoping Review. *Jurnal Berita Ilmu Keperawatan*, 16(2), 280-289. <https://doi.org/10.23917/bik.v16i2.1861>
- Waladani, B., Yuwono, P., Setianingsih, E., Widyaswara Suwaryo, P. A., & Ernawati, E. (2024). Association Between Anxiety Levels and Demographic Characteristics of ICU Patients' Family Members: A Cross-Sectional Study. *International Journal Of Pharmaceutical And Bio-Medical Science*, 05(07), 427-430. <https://doi.org/10.47191/ijpbms/v5-i7-03>
- WHO. (2021). *Mental Disorder*. WHO. <https://www.who.int/newsroom/factsheets/detail/mentaldisorders>
- Widiastuti, L., Gandini, A. L. A., & Setiani, D. (2023). Hubungan Lama Rawat Dengan Tingkat Kecemasan Keluarga Pasien Yang Dirawat Di Ruang ICU RSD Dr. H. Soemarno Sosroatmodjo. *SAINTEKES: Jurnal Sains, Teknologi Dan Kesehatan*, 2(2), 225-233. <https://doi.org/10.55681/saintekes.v2i2.78>
- Winarti, T. D., Trigantara, R., & Fatmawati, D. N. (2024). Nurses' therapeutic communication and its correlation with family anxiety in the intensive care unit setting. *The Journal of Palembang Nursing Studies*, 3(3), 127-133. <https://doi.org/10.55048/jpn.s135>
- Xiao, X., Wong, R. M., & Yang, W. (2024). Effectiveness of video-based health promotion: A systematic review and meta-analysis. *Patient Education and Counseling*, 119, 108095. <https://doi.org/10.1016/j.pec.2023.108095>
- Yeşilyurt, K. Ö. (2023). The Effect of Roy Adaptation Model on the Adaptation Status of Patients after Surgical Intervention. *Journal of Education and Research in Nursing*, 20(3), 277-283. <https://doi.org/10.14744/jern.2021.21246>
- Yu, Z., Jia, W., Sun, X., Zhang, S., Tan, J., & Feng, L. (2023). Effect of Roy's Adaptation, Model-based, Perioperative Nursing Service on Patients: A Clinical Observational Study. *Alternative Therapies in Health and Medicine*, 29(1), 118-123.
- Yuliati. (2021). *Konsep Keperawatan Kritis Serta Fungsi Dan Peran Perawat Dalam Keperawatan Kritis*. Esa Unggul.