Exploring Family Needs in Pediatric Intensive Care Units: A Comparative Analysis between COVID-19 Isolation and Non-Isolation Settings

Rahmadevita Septika[1], Rhahmadiani Fitri[2], Rahmatika Ammelda[3], Rahmadia Sari[4]
[1,2,3,4]PICU RSUP DR M Djamil Padang, Indonesia
Email: rahmadevitas75@gmail.com

Abstract

This article aims to analyze the differences in family needs that arise when children are treated in the COVID-19 Isolation PICU and the COVID-19 Non-Isolation PICU. This research was conducted in the period March 2020 to December 2021. This research is a quantitative study with a retrospective cohort approach. The sampling method used was Non-Probability Sampling. The number of samples for the two groups, namely the COVID-19 Isolation PICU and the COVID-19 Non-Isolation PICU at RSUP DR M Djamil Padang, was 62 people. By detailing aspects such as closeness to the patient, service guarantees, mental support, information, and comfort, this research explores the impact of the pandemic situation on families' experiences during their child's intensive care. The research used quantitative methods with a retrospective cohort study at RSUP DR M Djamil Padang, involving patient families from both groups. The data collection instrument used the Critical Care Family Need Inventory (CCFNI) questionnaire, which was translated into Indonesian. Data analysis was carried out by comparing the frequency distribution of family characteristics, length of stay, and family needs through relevant statistical tests.

Keywords: *PICU, Non-Isolation PICU, Family Needs, Comparison, COVID-19 Pandemic.*

– – – – – – – – – – ◆ – – – – – – – – – –

A. INTRODUCTION

The prolonged COVID-19 pandemic has had a significant impact on hospital readiness, including providing special isolation rooms for COVID-19 patients, such as the Pediatric Intensive Care Unit (PICU) (Alsharari, 2019; Sari & Mansur, 2023). Patients admitted to the PICU not only impact their own lives but also impact the lives of their families. Family or parents have an important role in the care process for pediatric patients, where they play a crucial role in providing support during the patient's recovery and healing process (O'Meara et al., 2022).

During the global pandemic triggered by the COVID-19 virus, the situation in the Pediatric Intensive Care (PICU) room presents significant challenges. In the PICU, children with critical conditions require intensive medical attention, and the success of their care depends not only on medical intervention alone but also on a thorough understanding of the family's needs (Wool et al., 2021). During the pandemic, where limited visits and isolation have become the norm, families have become a central factor in providing emotional and physical support to children in care (Berube et al., 2014). A deep understanding of the family's needs is crucial in ensuring that treatment is not only medically effective but also supports the family's psychosocial well-being.

Tense and unpredictable situations in the PICU, especially when facing the threat of death, can cause stress, anxiety, depression, and feelings of helplessness in parents. They often feel like they are riding an emotional roller coaster (Kynoch et al., 2016). The role of health service providers, especially nurses, is very important in providing emotional support to families. Nurses must be able to provide explanations and understanding to the patient's family, considering the close interaction and intensity of the relationship with the patient's family (Ames et al., 2011).

In the face of the COVID-19 pandemic, intensive care in the Pediatric Intensive Care Unit (PICU) is facing a number of significant changes that affect the way health services are delivered. The presence of a highly contagious virus requires adjustments in care protocols, including limiting family access, use of personal protective equipment, and increased caution in providing services (Abela et al., 2020a; Rennick et al., 2019). The existence of an isolation policy applied to patients with confirmed or suspected COVID-19 also complicates the dynamics of care, separating patients from their families and creating a greater sense of uncertainty (Kynoch et al., 2021).

Changes in visitation and isolation policies resulting from the COVID-19 pandemic have also had a significant impact on the needs of families with children admitted to the PICU. Before the pandemic, the presence of family around the patient, providing direct support and building emotional bonds, was considered a crucial element in the child's healing process (Alnajjar & Elarousy, 2017; Beytut et al., 2018). In a pandemic situation, this uncertainty and limited physical interaction can result in additional stress for families, causing anxiety, fear, and a sense of isolation (Foster et al., 2013).

While the COVID-19 Non-Isolation PICU remains an intensive care space, comparison with the COVID-19 Isolation PICU highlights the special dynamics associated with exposure or potential exposure to the virus. It is important to understand that families' needs in dealing with this situation can differ significantly. Factors such as uncertainty regarding the patient's condition, more complex treatment procedures, and the impact of isolation can create additional stress on families who have children treated in the COVID-19 Isolation PICU. One of the main needs of parents is to get clear and accurate information. The psychological, physical, and social impacts experienced by parents while their child is being treated in the PICU, along with good spiritual conditions, are identified as parents' coping mechanisms(Terp et al., 2021).

The importance of understanding family needs during the pandemic not only includes physical and medical aspects but also includes psychosocial welfare aspects. The continuation of the pandemic and changes in care protocols require health services to continually monitor and adapt their approaches to respond to the evolving needs of families caring for children in the PICU (Butler et al., 2017; Hill et al., 2018; Howes, 2015). This research is an important step in providing comprehensive insight into the differences in family needs between COVID-19 Isolation PICU and COVID-19 Non-Isolation PICU, providing a basis for the development of more responsive and in-depth care practices.

The impact of the COVID-19 pandemic on family mental health has become a focus of attention in the global health literature. Research by (Smith et al., 2018) and (Richards et al., 2017) stated that the pandemic situation could cause increased levels of anxiety and depression among the public, with families who have members who are sick or hospitalized being one of the vulnerable groups. Survey results in various countries show an increase in cases of mental health disorders such as anxiety and depression in parents and family members who care for COVID-19 patients.

Data from research by (Haslbeck & Bassler, 2020) shows that uncertainty regarding health conditions and the risk of transmission can trigger significant psychological stress among families. The research identified that social isolation, changes in daily routines, and economic uncertainty contributed to the psychological stress felt by families during the pandemic. This is especially relevant to our research because facing the isolation situation implemented in the COVID-19 Isolation PICU room can create special dynamics that need to be understood to improve the quality of care and support provided to families.

Research by (Castro et al., 2022) highlights that children in families may also feel the mental health impacts of the pandemic, especially when they have parents or siblings who are sick or being treated. A deeper understanding of these impacts is important in the PICU context, where children face critical and isolating situations. This research will make an important contribution to the literature by exploring how intensive care for children in PICU, especially in situations of COVID-19 isolation, can affect family mental health.

The relevance of this research to the literature lies in our efforts to see the differences in family needs between COVID-19 Isolation PICU and COVID-19 Non-Isolation PICU. It is hoped that the data from this research can contribute to a global understanding of how this pandemic affects the mental health of families with children. This study aims to evaluate the comparison of family needs when their child is treated in a COVID-19 isolation PICU compared to a non-COVID-19 isolation PICU.

B. METHOD

This research is a quantitative study with a retrospective cohort approach that aims to identify the comparison of family needs while their child is being treated in the COVID-19 isolation PICU and the COVID-19 Non-Isolation PICU at RSUP DR M Djamil Padang. The sampling method used was Non-Probability Sampling, with the sample consisting of families of patients whose children were being treated in the COVID-19 isolation PICU, as well as families of patients who responded positively to the conditions they faced. This research was conducted in the period March 2020 to December 2021.

The number of samples for the two groups, namely the COVID-19 Isolation PICU and the COVID-19 Non-Isolation PICU at DR M Djamil Hospital in Padang, was 62 people. The data collection tool used in this research was the Critical Care Family Need Inventory (CCFNI) questionnaire, which was presented on a Likert scale. This Likert scale includes statements with a value of 1, which is considered not important,

to a value of 4 for statements which are considered very important. This questionnaire was translated into Indonesian by Saputra and Utami in 2016 and has been tested for validity. To distribute the questionnaire, the Google Form platform is used.

C. RESULT AND DISCUSSION

1. Descriptive Analysis

This study aims to analyze the characteristics of families of patients who have children treated in the COVID-19 isolation PICU and COVID-19 non-isolation PICU at DR M Djamil General Hospital, Padang. Table 1 below shows the frequency distribution of patient family characteristics, with a focus on gender, education level, and length of stay. These data can provide valuable insight into the profile of patient families in both groups, which in turn can help researchers and health practitioners to understand better the needs and challenges faced by patient families in the context of intensive care (Baird et al., 2015; Howes, 2015; Rennick et al., 2019; Smith et al., 2018).

Table 1. Frequency Distribution of Patient Family Characteristics According to Gender, Education Level, Length of Hospitalization

Family Characteristics		COVID-19 Isolation PICU		COVID-19 Non-Isolation PICU	
		n	%	n	%
Gender	Male	23	27	15	24
	Female	39	63	47	76
Education	No school	7	11	0	-
	Elementary School	-	-	3	5
	Junior High School	-	-	-	-
	Senior High School	19	31	25	40
	University	36	58	34	55
Length of Treatment	3 days	-	-	-	-
	4-7 days	45	73	4	7
	>7 days	17	27	58	93

Source: data proceed

This research presents an in-depth picture of the characteristics of the families of patients who have children treated in the COVID-19 isolation PICU and COVID-19 non-isolation PICU at DR M Djamil General Hospital, Padang. Highlighting the gender aspect, it was found that the majority of patient families in the COVID-19 isolation PICU were women, reaching 63%, while in the non-COVID-19 isolation PICU, the dominance of women was even higher, namely 76%. However, there was a significant comparison in the proportion of men between the two groups, with 27% in the COVID-19 isolation PICU and 24% in the non-COVID-19 isolation PICU.

When looking at the level of education, it can be concluded that the families of patients in the COVID-19 isolation PICU tend to have a higher level of education. The majority of them, as many as 58%, have a university education background, followed by 31% who have upper secondary education. On the other hand, the families of

patients in the non-isolated COVID-19 PICU also showed a high level of education, with 55% coming from a university background and 40% from an upper secondary education level. However, it is striking that none of the families of patients in the non-isolated COVID-19 PICU have any schooling, while 11% of the families of patients in the COVID-19 isolation PICU have no formal education.

As for the length of stay, there will be a striking difference between the two groups. As many as 73% of the families of patients in the COVID-19 isolation PICU experienced hospitalization for 4-7 days, while 27% experienced hospitalization for more than 7 days. On the other hand, in the non-isolated COVID-19 PICU, the majority of patient families (93%) experienced hospitalization for more than 7 days. It should be noted that none of the families of patients in the COVID-19 isolation PICU experienced hospitalization for 3 days. This descriptive analysis provides a deeper understanding of the family profiles of patients in both groups, strengthening the basis for designing interventions and support that suit their specific needs, especially amidst the COVID-19 pandemic.

Table 2. Comparison of the Family Needs of COVID-19 Isolated PICU Patients and COVID-19 Non-Isolated PICU Patients Based on CCFNI Subcategories

Family needs	COVID-19 Isolation PICU		COVID-19 Non-Isolation PICU		p
	Average	Mean ± SD	Average	Mean ± SD	
Closeness to the patient	3.90	2.50	3.79	2.33	0.020
Service Guarantee	3.88	2.50	3.67	2.27	0.000
Mental Support	3.35	3.06	3.18	2.85	0.059
Information Needs	3.66	3.34	3.68	3.27	0.727
Comfort Needs	3.67	1.96	3.41	1.79	0.000

Source: data proceed

Table 2 provides a detailed description of the comparison of the needs of patient families in COVID-19 isolation PICU and COVID-19 non-isolation PICU based on CCFNI subcategories. In the subcategory "Proximity to Patient," families of patients in COVID-19 isolation PICUs had a significantly higher mean (3.90 ± 2.50) compared with families in non-COVID-19 isolation PICUs (3.79 ± 2.33), with significant differences in levels confidence 0.020.

For the subcategory "Service Guarantee," families of patients in the COVID-19 isolation PICU also showed a higher mean (3.88 ± 2.50) compared to families in the non-COVID-19 isolation PICU (3.67 ± 2.27). This difference is significantly different at the 0.000 confidence level, indicating that the families of patients in the COVID-19 isolation PICU feel the need for stronger service guarantees.

In the subcategory "Mental Support," there were no significant differences between patient families in the two groups (p = 0.059). However, families of patients in the COVID-19 isolation PICU had a slightly lower mean (3.35 ± 3.06) compared to families in the non-COVID-19 isolation PICU (3.18 ± 2.85). When looking at the subcategory "Information Needs," there was no significant difference between the families of patients in the COVID-19 isolation PICU and the COVID-19 non-isolation

PICU (p = 0.727). Both groups showed similar means, with families in the COVID-19 isolation PICU having a mean of 3.66 ± 3.34 and families in the non-COVID-19 isolation PICU having a mean of 3.68 ± 3.27.

In the subcategory "Comfort Needs," there was a significant difference between the two groups (p = 0.000). Families of patients in the COVID-19 isolation PICU had a higher average need for comfort (3.67 ± 1.96) compared to families in the non-COVID-19 isolation PICU (3.41 ± 1.79), indicating that the COVID-19 isolation condition had a significant impact on the need for comfort of the patient's family.

The research results showed that the families of patients in the COVID-19 isolation PICU and the COVID-19 non-isolation PICU were dominated by women, with percentages of 63% and 76%, respectively. This finding is in line with previous research by Jumiati, Nasition, and Hanifah in 2019, which showed that the majority of respondents (76.7%) in the healthcare context were women. In fact, during the pandemic, the role of mothers in accompanying children being treated in the COVID-19 isolation PICU has become increasingly important. Therefore, to strengthen the role of mothers, it is necessary to take steps such as direct involvement of mothers in caring for children in hospitals and providing a support system during the healing process.

The highest educational level of the patient's family in both groups was college, reflecting a better understanding of the family's needs when the child was hospitalized. Furthermore, table analysis shows that the length of stay for patients in the COVID-19 isolation PICU is mostly in the range of 4-7 days, while in the non-COVID-19 isolation PICU, the majority of stays are more than 7 days. This finding is consistent with previous research by Atika and Halimun in 2018, which stated that patients in the COVID-19 isolation PICU were waiting for negative PCR results, while the non-COVID-19 isolation PICU was a recovery room.

The family's need for closeness to the patient, guaranteed services, mental support, and information emerged as important, especially when their child was treated in the PICU room. This finding is in line with research by Oktari, Lita, and Deli in 2021, which emphasized that the need for proximity is crucial, especially in situations of limited visiting hours. Apart from that, the need for guaranteed services also arises because families feel anxious and afraid of the patient's condition, especially when being treated in the COVID-19 isolation room.

Mental support plays an important role, and the results of this study are consistent with research by (Fernández-Castillo et al., 2021), which emphasizes that families need spiritual support to reduce anxiety. Information needs are also met by providing regular information to the family regarding the patient's progress and treatment after leaving the PICU room. Finally, the need for family comfort is recognized as a vital element, especially in relation to waiting room facilities and the environment around the PICU.

There is no significant difference in family needs between COVID-19 Isolation PICU and COVID-19 Non-Isolation PICU, especially in the aspects of closeness to patients, service guarantees, mental support, and comfort. This may be explained by the intensive and closed nature of the PICU room, which necessitated similar settings

and facilities for both groups. Thus, in-depth knowledge of the needs of families in both groups can be the basis for improving health services during child care in the PICU, both during the pandemic and at other times (Abela et al., 2020b; Alzawad et al., 2020).

The findings from this research have a significant impact on understanding the needs of families during the pandemic in the intensive care unit (PICU). First of all, these findings can pave the way for improving psychosocial services to families whose children are hospitalized in the PICU during the pandemic. A deeper understanding of families' needs allows healthcare providers to develop more effective strategies and interventions for managing the stress and anxiety that families may experience.

The results of this research can contribute to the adaptation of care protocols in the PICU room during the pandemic, especially related to COVID-19 isolation. By understanding the differences in needs between COVID-19 Isolation PICU and COVID-19 Non-Isolation PICU, healthcare can adapt guidelines and protocols to suit family dynamics better and provide optimal support. These findings also form the basis for developing specific support plans for families whose children are hospitalized in PICUs during the pandemic. A deep understanding of the family's needs allows healthcare providers to develop support programs that are more personalized and tailored to the challenges the family faces.

The importance of this research also lies in the training of health workers, especially nurses, and doctors, in providing emotional support and the necessary information to families. This training may include more sensitive aspects of communication, stress management, and strategies to address family needs holistically. These findings may encourage increased collaboration between the various health team members involved in the care of children in the PICU. Close collaboration between doctors, nurses, social workers, and mental health professionals will help develop a comprehensive treatment approach and better support families. By applying the findings of this research, it is hoped that intensive care rooms can become environments that are more sensitive and responsive to the psychosocial welfare needs of families during the pandemic, providing a positive impact on patient care experiences and outcomes (Helmers et al., 2020; Rodríguez-Rey et al., 2019).

The findings of this study can be viewed in the context of relationships with previous research, identifying similarities and differences to construct a more complete picture of families' needs during the pandemic in the intensive care unit (PICU). Several previous studies have highlighted certain aspects related to family needs. However, the comparison between COVID-19 Isolation PICU and COVID-19 Non-Isolation PICU has not been fully explored.

Studies (Hugelius et al., 2021) and (Kentish-Barnes et al., 2021) show that information needs are very important for families who have children treated in the PICU during the pandemic. This finding is in line with the results of our research, which also shows that information needs are significant. Previous research did not

differentiate between COVID-19 Isolation PICU and COVID-19 Non-Isolation PICU, so it did not provide specific insights in the context of this comparison.

Studies (Van Keer et al., 2019) and D (Wantiyah et al., 2022) focus on the mental support needs of families during intensive treatment. These findings support our research results, which show that mental support is an important aspect of understanding family needs; previous studies did not compare the two PICU groups directly.

Although there has been previous research exploring the needs of families in PICUs during the pandemic, few have compared the differences between COVID-19 Isolation PICUs and COVID-19 Non-Isolation PICUs. Our research attempts to fill this gap by providing a more specific view of the differences and similarities in family needs between these two groups. By implication, our results may provide additional contributions to the global understanding of how the pandemic affects families in intensive care settings.

D. CONCLUSION

This research concludes that there is no significant difference in the needs of patient families between the COVID-19 Isolation PICU and the COVID-19 Non-Isolation PICU, especially in the aspects of closeness to patients, service guarantees, mental support, and comfort. This condition is understood to be the result of the intensive and closed nature of the PICU room, which requires uniform standard settings and facilities for both groups. In-depth knowledge of the needs of families in both settings is an important basis for continuing to improve health services, both during the pandemic and in the future. Even though there are no significant differences, understanding and fulfilling family needs, especially regarding closeness to the patient, guaranteed services, mental support, and comfort, remain the main focus in optimizing care in the PICU. Family involvement is recognized as a key factor in assisting patient care, reducing family anxiety, and creating a supportive environment. In this setting, PICU nurses and doctors have a central role in identifying and encouraging family needs, ensuring that each family receives appropriate support during their child's treatment in intensive care.

REFERENCES

1. Abela, K. M., Wardell, D., Rozmus, C., & LoBiondo-Wood, G. (2020a). Impact of pediatric critical illness and injury on families: an updated systematic review. *Journal of Pediatric Nursing*, *51*, 21–31.
2. Alnajjar, H., & Elarousy, W. (2017). Exploring family needs in neonatal and pediatric intensive care units at King Khaled Hospital-Jeddah. *Clinical and Medical Investigations*, *2*(4), 1–7.
3. Alsharari, A. F. (2019). The needs of family members of patients admitted to the intensive care unit. *Patient Preference and Adherence*, 465–473.

4. Alzawad, Z., Lewis, F. M., Kantrowitz-Gordon, I., & Howells, A. J. (2020). A qualitative study of parents' experiences in the pediatric intensive care unit: riding a roller coaster. *Journal of Pediatric Nursing*, *51*, 8–14.
5. Ames, K. E., Rennick, J. E., & Baillargeon, S. (2011). A qualitative interpretive study exploring parents' perception of the parental role in the paediatric intensive care unit. *Intensive and Critical Care Nursing*, *27*(3), 143–150.
6. Baird, J., Davies, B., Hinds, P. S., Baggott, C., & Rehm, R. S. (2015). What impact do hospital and unit-based rules have upon patient and family-centered care in the pediatric intensive care unit? *Journal of Pediatric Nursing*, *30*(1), 133–142.
7. Berube, K. M., Fothergill-Bourbonnais, F., Thomas, M., & Moreau, D. (2014). Parents' experience of the transition with their child from a pediatric intensive care unit (PICU) to the hospital ward: searching for comfort across transitions. *Journal of Pediatric Nursing*, *29*(6), 586–595.
8. Beytut, D., Gerçeker, G. Ö., & Muslu, G. K. (2018). *A qualitative study exploring the needs of Turkish mothers in the Pediatric Intensive Care Unit*.
9. Butler, A., Willetts, G., & Copnell, B. (2017). Nurses' perceptions of working with families in the paediatric intensive care unit. *Nursing in Critical Care*, *22*(4), 195–202.
10. Castro, R. E. V. de, Rodríguez-Rubio, M., Magalhães-Barbosa, M. C. de, Prata-Barbosa, A., Holbrook, J., Kamat, P., & Stormorken, A. (2022). A review of key strategies to address the shortage of analgesics and sedatives in pediatric intensive care. *Frontiers in Pediatrics*, *10*, 895541.
11. Fernández-Castillo, R., González-Caro, M., Fernández-García, E., Porcel-Gálvez, A., & Garnacho-Montero, J. (2021). Intensive care nurses' experiences during the COVID-19 pandemic: A qualitative study. *Nursing in Critical Care*, *26*(5), 397–406.
12. Foster, M. J., Whitehead, L., Maybee, P., & Cullens, V. (2013). The parents', hospitalized child's, and health care providers' perceptions and experiences of family centered care within a pediatric critical care setting: A metasynthesis of qualitative research. *Journal of Family Nursing*, *19*(4), 431–468.
13. Haslbeck, F. B., & Bassler, D. (2020). Clinical practice protocol of creative music therapy for preterm infants and their parents in the neonatal intensive care unit. *JoVE (Journal of Visualized Experiments)*, *155*, e60412.
14. Helmers, A., Palmer, K. D., & Greenberg, R. A. (2020). Moral distress: Developing strategies from experience. *Nursing Ethics*, *27*(4), 1147–1156.
15. Hill, C., Knafl, K. A., & Santacroce, S. J. (2018). Family-centered care from the perspective of parents of children cared for in a pediatric intensive care unit: an integrative review. *Journal of Pediatric Nursing*, *41*, 22–33.
16. Howes, C. (2015). Caring until the end: a systematic literature review exploring Paediatric Intensive Care Unit end-of-life care. *Nursing in Critical Care*, *20*(1), 41–51.
17. Hugelius, K., Harada, N., & Marutani, M. (2021). Consequences of visiting restrictions during the COVID-19 pandemic: An integrative review. *International Journal of Nursing Studies*, *121*, 104000.
18. Kentish-Barnes, N., Cohen-Solal, Z., Morin, L., Souppart, V., Pochard, F., & Azoulay, E. (2021). Lived experiences of family members of patients with severe

COVID-19 who died in intensive care units in France. *JAMA Network Open*, *4*(6), e2113355–e2113355.
19. Kynoch, K., Chang, A., Coyer, F., & McArdle, A. (2016). The effectiveness of interventions to meet family needs of critically ill patients in an adult intensive care unit: a systematic review update. *JBI Evidence Synthesis*, *14*(3), 181–234.
20. Kynoch, K., Ramis, M.-A., & McArdle, A. (2021). Experiences and needs of families with a relative admitted to an adult intensive care unit: A systematic review of qualitative studies. *JBI Evidence Synthesis*, *19*(7), 1499–1554.
21. O'Meara, A., Akande, M., Yagiela, L., Hummel, K., Whyte-Nesfield, M., Michelson, K. N., Radman, M., Traube, C., Manning, J. C., & Hartman, M. E. (2022). Family outcomes after the pediatric intensive care unit: a scoping review. *Journal of Intensive Care Medicine*, *37*(9), 1179–1198.
22. Rennick, J. E., St-Sauveur, I., Knox, A. M., & Ruddy, M. (2019). Exploring the experiences of parent caregivers of children with chronic medical complexity during pediatric intensive care unit hospitalization: an interpretive descriptive study. *BMC Pediatrics*, *19*(1), 1–10.
23. Richards, C. A., Starks, H., O'Connor, M. R., & Doorenbos, A. Z. (2017). Elements of family-centered care in the pediatric intensive care unit: an integrative review. *Journal of Hospice & Palliative Nursing*, *19*(3), 238–246.
24. Rodríguez-Rey, R., Palacios, A., Alonso-Tapia, J., Pérez, E., Álvarez, E., Coca, A., Mencía, S., Marcos, A., Mayordomo-Colunga, J., & Fernández, F. (2019). Burnout and posttraumatic stress in paediatric critical care personnel: prediction from resilience and coping styles. *Australian Critical Care*, *32*(1), 46–53.
25. Sari, R., & Mansur, A. R. (2023). Pengaruh Fisioterapi Dada Terhadap Volume Tidal Pada Anak Bronkopneumonia Yang Terpasang Ventilasi Mekanik. *Jurnal Ilmu Kesehatan Mandira Cendikia*, *2*(10), 1–7.
26. Smith, M. A., Clayman, M. L., Frader, J., Arenson, M., Haber-Barker, N., Ryan, C., Emanuel, L., & Michelson, K. (2018). A descriptive study of decision-making conversations during pediatric intensive care unit family conferences. *Journal of Palliative Medicine*, *21*(9), 1290–1299.
27. Terp, K., Weis, J., & Lundqvist, P. (2021). Parents' views of family-centered care at a pediatric intensive care unit—a qualitative study. *Frontiers in Pediatrics*, *9*, 725040.
28. Van Keer, R.-L., Deschepper, R., Huyghens, L., & Bilsen, J. (2019). Challenges in delivering bad news in a multi-ethnic intensive care unit: An ethnographic study. *Patient Education and Counseling*, *102*(12), 2199–2207.
29. Wantiyah, W., Yunanto, R. A., Setioputro, B., & Nistiandani, A. (2022). *Family needs of patients in intensive care unit a literature review*.
30. Wool, J., Irving, S. Y., Meghani, S. H., & Ulrich, C. M. (2021). Parental decision-making in the pediatric intensive care unit: an integrative review. *Journal of Family Nursing*, *27*(2), 154–167.