



Understanding Psychiatric Dimensions Related to Mental Health in Children with Special Needs: A Literature Review

Rosyidah Rizki Bahari, Adelia Gian Phalosa, Annisa Nurul Hikmah, Elsa Nurmaliah, Jeni Mediena Putri, Nabila Yulistina

Bachelor of Nursing Study Program, Universitas Pendidikan Indonesia Kampus Daerah Sumedang

Access this article online
Quick Response Code :



DOI : 10.22487/htj.v11i4.1683

Email Corresponding:
rosyidahrizkib@upi.edu

Page : 672-680

Article History:

Received: 2024-12-06

Revised: 2025-10-13

Accepted: 2025-10-13

Published by:

Tadulako University,
Managed by Faculty of
Medicine.

Website :

<https://jurnal.fk.untad.ac.id/index.php/htj/index>

OPEN ACCESS



This work is licensed under a
Creative Commons Attribution
4.0 International License

Abstract

Background: Children with special needs are children who possess different traits and characteristics, and they certainly require comprehensive support and care, especially in emotional aspects. **Objective:** The study aims to analyze the needs and services required for children with special needs to support their emotional, mental, and physical development, as well as evaluate the effectiveness of the provided support in improving their quality of life and social integration. **Methods:** This research uses a literature review method based on primary findings regarding children with special needs. The analysis technique used is qualitative synthesis, which combines findings from various sources to provide a deeper understanding of the topic. **Results:** The research shows that children with special needs have complex characteristics, categorized into specific groups as described by professionals. Some children with special needs require specialized services and attention, such as therapy with counseling, educational services, medical facilities, and family support. **Conclusion:** The well-being of children with special needs is influenced by several aspects of life, including healthcare services, educational and counseling services, social aspects of the community, family support, and religious aspects. Thus, the mental health dimension of children with special needs will be achieved when these aspects are adequately fulfilled.

Keywords: Children with Special Needs; Mental Retardation; Psychiatric Nursing

Introduction

Children with special needs, often referred to as ABK, are children who have different traits and characteristics than other children. While children generally have distinct mental, emotional, and physical abilities, this is different for ABK, who have mental, emotional, and physical disabilities. ABK groups are further categorized as: deaf, blind, physically disabled, mentally retarded, physically disabled, and others ¹.

Every individual desires mental health, including children with special needs. A healthy mind is a state of psychological well-being and the ability to participate in society ².

Children with special needs require support and care from both education and special services such as guidance and counseling to foster maximum progress in children with special needs ³.

Data research estimates that there will be a 10% increase in school-age children with special needs. In 2022, data from the Coordinating Ministry for Human Development and Culture (Kemenko PMK) showed that children with special needs in Indonesia aged 5-19 years old accounted for 3.3% of the total population of 66.6 million people, with the same age prevalence, resulting in a total of 2,197,833 children with special needs. BPS data from the Central Java Social

Service shows that the prevalence of children with special needs in Central Java is estimated at 150,334⁴.

According to the World Health Organization (WHO), the prevalence of children with autism worldwide reached 7.6 million in 2020, representing a ratio of 1 in 160. In 2020, according to data from the Central Statistics Agency (BPS) in Indonesia, of the 84.4 million children, 0.79%, or 650,000, had special needs. The 2020 census data recorded by BPS shows that 0.52 percent, or 299,710 children with disabilities, were children aged 5–17 years old⁵.

Children with special needs generally have unique characteristics and care that must be tailored to each individual's needs. Some children with special needs require intensive health care, while others require only limited support and supervision from their families. Therefore, it is important for the public to understand that children with special needs deserve equal opportunities to grow and develop in all aspects of life. Therefore, there is a need for childcare services for children with special needs, which serve as an effort to bridge the potential of children with special needs. These services provide educational, medical, and psychological support to foster emotional, mental, and physical maturity, enabling them to achieve a normal life in society⁶.

Special needs child care services, especially in emotional and mental development services, must ensure that children with special needs get the best emotional health potential, improve their quality of life, and help children with special needs in carrying out social activities in the community⁶. This study aims to analyze the needs and services required for children with special needs to support their emotional, mental, and physical development, as well as to evaluate the effectiveness of the assistance

provided in improving the quality of life and social integration in the community.

Materials and Methods

Research Design

This study employed a literature review method, which aimed to examine and analyze various primary findings related to children with special needs. This approach enabled researchers to identify, develop, and compare relevant theories and methods. The literature review process was conducted in accordance with the PRISMA (*Preferred Reporting Items for Systematic Reviews and Meta-Analyses*) guidelines.

Sample

The sample in this study consisted of scientific articles obtained from two major databases: Google Scholar and PubMed. The articles reviewed were selected based on established inclusion and exclusion criteria. Of the 2,675 articles obtained, after a selection process and evaluation of methodological quality and topic relevance, eight articles were found suitable for further analysis.

Data Collection Technique

Data collection was conducted through a search of scientific articles published between 2020 and 2024. The keywords used in the Google Scholar search were "children with special needs," "psychiatric nursing," and "mental disabilities." The English-language keywords used in PubMed were "children with special needs," "mental retardation," and "psychiatric nursing."

Inclusion and Exclusion Criteria

Inclusion criteria for this study included articles published within the last five years (2020–2024), using a quantitative or qualitative research design, containing full text, freely accessible, and focusing on interventions and development for children with special needs.

Exclusion criteria included articles that were irrelevant to the research topic, such as those that did not discuss nursing interventions, were not available in full text, or were not scientific articles.

Data Analysis Techniques

Selected articles were analyzed descriptively to identify the intervention approaches used, the findings, and their contribution to the development of psychiatric nursing for children with special needs. Methodological quality was also evaluated to ensure the validity of the findings. In addition, each study was reviewed to determine the extent to which its theoretical framework, intervention design, and outcome measures aligned with current evidence-based practices in child psychiatric nursing.

Ethical Consideration

Because this study is a *literature review* and does not directly involve human participants, ethical approval from a research ethics committee is not required. However, the researchers maintained academic integrity by including valid and accountable sources.

Results

For the initial literature search, 2,675 articles were obtained using relevant keywords. After locating these 2,675 articles, 2,622 were found to be irrelevant to the topic, leaving 53 articles. Of these 53 articles, 45 were further reviewed, finding them inconsistent with the research objectives. This resulted in eight articles serving as sources for this literature review, as shown in Table 1.

Table 1. Summary of Study Results

Literature Identification	Type of ABK	Sample and Research Site	Method	Results
Puti Artistia, Olfa Seviona Putri, Nurhaliza, Opi Andriani (2024). Karakteristik dan Klasifikasi Anak Berkebutuhan Khusus Secara Mental Emosional dan Akademik	Blind, deaf, mentally retarded, physically disabled, visually impaired, and physically disabled.	Children with special needs in inclusive schools.	Qualitative descriptive by conducting observations, interviews and documentation.	Children with special needs may be described by professionals as disabled, impaired, disordered, handicapped, or exceptional. Some children may require special rooms for therapy sessions or individual learning. A comprehensive and supportive healthcare facility is needed to provide healthcare and counseling services to children with special needs. Classrooms should be designed with flexibility to accommodate changes that may be necessary based on the child's needs ¹ .
Ni Luh Gede Karang Widiastuti (2020), Layanan Pendidikan Anak Berkebutuhan Khusus Dengan Gangguan Emosi dan Perilaku	Children with Emotional and Behavioral Disorders.	Children with emotional and behavioral disorders.	Descriptive qualitative method.	Children with special needs with emotional and behavioral disorders have complex characteristics and often their behavior is also carried out by other children such as disobedience, fighting, immorality, uttering dirty and indecent words, liking to give orders, behaving rudely, and being alone. The Education Service Model for children with special needs with emotional and behavioral disorders can be grouped into 3, namely segregated education services, integrated/integrated education services, and inclusive education ¹⁰ .
Reza Pahlevi, Prio Utomo, Zubaidah,	Autism.	Autistic children and	Field studies in the form of	The results of the study show that in providing services to autistic children,

Literature Identification	Type of ABK	Sample and Research Site	Method	Results
(2021). Kesejahteraan Psikologis Anak Autis Ditinjau dari Layanan Bimbingan dan Konseling Berkebutuhan Khusus di Sekolah		guidance counselors at SLBN 01 Bengkulu City in 2021.	interviews, observations and documentation.	the guidance counselor must be able to understand the characteristics of each child. This service pattern is usually one student to one guidance counselor. The guidance counselor also plays a role as an observer of the development of autistic children. Some characteristics that can be seen in autistic children include (1) They have difficulty communicating, whether speaking, writing, reading and understanding sign language; (2) They have difficulty socializing, most of them have difficulty relating to their surroundings; (3) Behavioral problems, some behavioral problems include crying, only liking certain foods; (4) Likes to bite their own hands; (5) Body movements tend to be stiff; (6) Prefers to be in their own world and alone and many others ¹¹ .
Saputri Kelana, (2022). Dukungan Sosial Keluarga Bagi Anak Berkebutuhan Khusus di Sekolah Luar Biasa Peduli Anak Nagari Kecamatan Akabiluru	Mentally Disabled and Autism.	2 parents of children with special needs, one mentally retarded child and one autistic child. at the Peduli Anak Nagari Special Needs School, Akabiluru District, Lima Puluh Kota Regency.	Qualitative descriptive field research.	Children with special needs need to be provided with care services in terms of support provided by their families. This includes emotional support, informational support, instrumental support, and assessment/reward support. Emotional support is when parents pay attention to the child's development in the form of sympathetic and empathetic support, love, trust, and attention. Informative support is when parents advise the child on how to be independent and motivate the child to do something useful for themselves. Instrumental support is when parents meet the child's daily needs and school needs. Assessment/reward support is when parents praise the child for doing something that is beneficial for themselves or others ¹² .
Siti Rohimah, M. Sanusi, Octa Abdul Ghafur, Risiko Aris Ardianto (2024) Anak Berkebutuhan Khusus Dalam Psikologi Pendidikan Islam	Children with special needs in general include the blind, physically disabled, mentally retarded, and autistic.	The research subjects consisted of: ABK educators, inclusive students and parents.	Descriptive qualitative method.	The inclusive school program launched by the government, through National Ministerial Regulation Number 70 of 2009, Article 2, is expected to provide the best solution for the education of children with special needs. However, in its implementation, various obstacles are still encountered. Islam is a comprehensive religion, and of course, it has solutions to every problem, including the education of children with special needs. Inclusive education specifically for children with special needs will be more complete if its implementation takes religious aspects into account ¹³ .

Literature Identification	Type of ABK	Sample and Research Site	Method	Results
Ika Siti Rukmana & Suyadi, (2020). Pola Pelayanan Lembaga Paud Inklusi Berbasis Islam dan Psikologi Pada Anak Berkebutuhan Khusus (ABK) Usia 2-6 Tahun	Children with Special Needs at the Rainbow Children's Islamic Inclusive School in Yogyakarta.	People who understand the service patterns provided by schools for children with special needs, from principals and teachers to parents, at the Pelangi Anak Negeri Islamic Inclusive School in Yogyakarta in 2020.	Descriptive qualitative method.	The results of the study indicate that there are two basic categories, namely Islamic-based service patterns and psychological-based service patterns. Islamic-based service patterns are in the form of service patterns provided by schools for ABK related to Islamic teachings such as the habit of ablution and congregational Dhuha prayer, Arabic-English language learning, Islamic songs, hadiths, taught to read Iqro' using the Ummi method, the habit of reading prayers at the beginning and end of each lesson, the provision of audio tartil Al-Qur'an in each class. Meanwhile, psychological-based service patterns are in the form of service patterns such as services from pediatricians, therapists, and child psychologists, providing fingerprint and blood type tests, providing speech therapy, occupational therapy, sensory integration, and behavior therapy, and using Pull Out and Cluster learning methods ¹⁴ .
Ebtesam Al-Enezi, Mohannad Alghamdi, Khaled Al-Enezi, Mohammed AlBalwi, William Davies and Wafaa Eyaid. (2024). Helsmoortel-Van der Aa syndrome in a 13-year-old girl with autistic spectrum disorder, dysmorphism, a right solitary kidney, and polycystic ovaries: a case report	(ADNP SYNDROME) Severe intellectual disability and autism spectrum disorder.	A 13-year-old patient at King Abdullah Specialist Children's Hospital, Saudi Arabia.	A case report.	Research suggests that genetic variations in the ADNP homeobox gene may contribute to the development of syndromic autism, worsening behavioral problems in approximately 78% of cases. There is evidence that behavioral symptoms in individuals with ADNP variants and autism can be managed with antipsychotic medication (risperidone). However, further research is needed to optimize treatment. Developmental delays, feeding difficulties, and persistent cyanosis are additional signs of HVDAS. Furthermore, mood disorders accompanied by hyperactivity are another symptom of intellectual disability in children in early childhood. These data also suggest the potential use of therapeutic tools to achieve behavioral function modification in the future ¹⁵ .
Josephine Barbaro et al. (2023). General practitioner perspectives regarding early developmental surveillance for autism within the Australian primary	Autism.	53 general practitioners in South West Sydney (n=30) and Melbourne (Victoria; n=23), also with an invitation	Randomized controlled trial.	Research findings indicate that patients with autism require special attention within the health, family, and community contexts. Doctors and other healthcare professionals must be willing to play a role in facilitating care that is relevant to the needs of autism patients, while also emphasizing the importance of parents or caregivers receiving a

Literature Identification	Type of ABK	Sample and Research Site	Method	Results
healthcare setting; a qualitative study		from caregivers of autism patients to complete the provided screening.		diagnosis and providing support and services as early as possible for their children. The role of doctors and healthcare professionals is expected to improve monitoring and supervision practices for the development of children with special needs, especially children with autism. Healthcare professionals highlight a key factor in creating positive care for autism patients, one of which is good communication. Positive care fosters quality relationships between patients and healthcare professionals ¹⁶ .

Discussion

Children with special needs are individuals who require special treatment due to developmental disorders and abnormalities suffered by the child⁷. The types of ABK include: learning dyslexia (difficulty learning), ADHD (difficulty focusing), autism (nervous disorders), speech delay (delayed speaking), Down syndrome (physical and mental retardation), mental retardation (disorders below average IQ), and deafness (hearing disorders)⁸. Most children with special needs experience relatively frequent emotional disturbances. They sometimes struggle to control themselves and find it difficult to trust themselves⁹. Based on these problems, it is necessary to develop relative methods that are able to improve the welfare of children with special needs based on psychiatric aspects.

Several studies have shown that comprehensive healthcare facilities support the emotional development of children with special needs. Furthermore, counseling services provided by healthcare providers for children with special needs are also crucial to further assess the mental health development of children with special needs¹. The provision of special education services that include segregated education, integrated education, and inclusive education must be facilitated to

improve the welfare of children with special needs¹⁰. Health facilitators must be able to form relevant collaborations with educational staff, especially with counseling teachers or those more commonly known as BK teachers¹¹.

Children with special needs need support from the people around them, especially support provided by families who are able to provide deeper emotional support, informative support, instrumental support, and assessment or reward support¹². Parents are at the forefront of interactions with children with special needs. To support their emotional well-being, parents must be willing to engage in playful situations that encourage interaction and respond to children in simple ways¹⁷. It is important to pay special attention to the fact that the higher the family support provided, the higher the functioning of children with special needs in the social environment¹⁸.

Furthermore, in the special education stage, the implementation of learning provided includes spirituality and religious teachings. Religious service patterns will be aligned with psychological service patterns. Spiritual service patterns focus on religious aspects, while psychological service patterns relate to medical personnel such as pediatricians, psychiatric nurses, child nurses, therapists, and child psychologists. These include fingerprint testing,

blood typing, speech therapy, occupational therapy, sensory therapy, integration therapy, and behavioral therapy, as well as utilizing pull-out and cluster learning methods¹⁴ with the hope of achieving mental well-being for ABK.

ABK is a condition where one of the causes is genetics¹⁵. Apart from genetics, specific causes of ABK are due to neurobiological factors, pre-natal factors, problems in early development, viral infections, radiation, brain abnormalities, aging of egg cells, and psychological factors¹⁹. Apart from that, ABK can also be caused by a lack of training for children during their development process, this is influenced by family and social factors²⁰. One of the implementations given to ABK in addressing their mental health is by providing medical drugs, namely antipsychotics, and can recommend the use of therapeutic tools to achieve modification of behavioral functions in the future¹⁵. Apart from that, the most important role in providing care to ABK is in the form of full support from the health sector, family and community¹⁶. The approaches used in providing care for children with special needs include a sensitive, caring and adaptive approach, openness and acceptance of people regarding the situation of their children with special needs, providing motivation and guidance for children with special needs, supervision and early monitoring of the growth and development of children to find out any problems in the child's development early²¹. Meanwhile, approaches that can be taken by medical personnel, particularly nurses, include understanding the unique characteristics and needs of children with special needs. This includes recognizing the child's situation, allowing nurses to care for them with compassion and understanding, implementing family education programs, physical care, and emotional support tailored to the child's needs, and providing family support resources in the health sector²².

Challenges faced by children with special needs include delays in identifying developmental disabilities, which can prevent children from receiving timely support and services. Furthermore, children with disabilities who are not detected early are more likely to experience health, developmental, learning, and behavioral problems that can negatively impact their lives²³. In addition, parents also face challenges in balancing parenting and medical care, and providing care in an environment where medical and social care delivery models are disconnected²³.

Therefore, medical personnel must be willing to improve the practice of monitoring and supervising the development of children with special needs, in order to achieve better welfare.

Conclusion

Based on the research results, it was concluded that the eight reviewed articles underlie the importance of special needs children in their developmental stages. This is because children with special needs have physical and emotional developmental conditions that differ from children of the same age. In this case, health services must be able to facilitate the availability of monitoring the growth and development of children with special needs. Not only health services play a crucial role, but also family support is a major factor in creating a well-being for children with special needs. Acceptance in the community is also a factor that needs to be considered in the physical and emotional developmental stages of children with special needs. Furthermore, therapies that can be used to train the cognitive and emotional development of children with special needs include good communication approaches, maintaining good social relationships, implementing counseling to monitor significant developments, approaching family and community support, providing appropriate

medication, and providing spiritual support to children with special needs in the hope that they will be able to develop even better. The results of this study can be used as literature review material to increase knowledge regarding the emotional well-being of children with special needs.

Acknowledgments

The researcher would like to thank the parties involved in the process of creating this literature review-based article.

References

- Putri OS, Artistia P, Nurhaliza N, Andriani O. Karakteristik Dan Klasifikasi Anak Berkebutuhan Khusus Secara Mental Emosional Dan Akademik. *J Pengabd Masy UIKA Jaya Sink*. Published online 2024. doi:10.32832/jpmuj.v2i1.2209
- Utami SR, Hidayati L, Wasniyati A. Implementasi Terapi Musik Klasik Pada Pasien Skizoafektif dengan gejala Utama Halusinasi Pendengaran: Case Report. *Heal Tadulako J (Jurnal Kesehat Tadulako)*. 2024;10(4):600-609.
- Maurenne DJ, Satiti IAD, Muntaha M. Hubungan Tugas Perkembangan Keluarga Tahap Iv Dengan Kemampuan Bersosialisasi Anak Berkebutuhan Khusus (Abk) Di Sekolah Luar Biasa (Slb) Kota Malang. *J Kesehat Tanbusai*. 2024;5(September):8406-8414.
- Arindo E, Utomo R, Sugiasih I. "Building and Maintaining Humanity in the Midst of Human Tragedies and Global Changes" Emotion Regulation with Self-Acceptance of Mothers Who Have Children with Special Needs in SLB Regency "X." *PSISULA Pros Berk Psikol*. 2024;6:92-104.
- Youlanda E, Nur A. Pengaruh Metode Aba (Applied Behavior Analysis) Terhadap Pengetahuan Dan Efikasi Menyikat Gigi Anak Autis. *JDHT J Dent Hyg Ther*. 2024;5 (2):139-144. doi:10.36082/jdht.v5i2.1795
- Wardhani DK. Perawatan Kesehatan Untuk Anak Berkebutuhan Khusus. *Innov J Soc Res*. 2023;3:2896-2907.
- Pitaloka AAP, Fakhiratunnisa SA, Ningrum TK. Konsep Dasar Anak Berkebutuhan Khusus. *Masaliq*. 2022;2(1):26-42. doi:10.58578/masaliq.v2i1.83
- Saputri MA, Widiyanti N, Lestari SA, Hasanah U. Ragam Anak Berkebutuhan Khusus. *J Pendidik Anak Usia Dini*. 2023;4(1):38-53.
- Asdaningsih FH, Erviana VY. Implementasi Pendidikan Karakter Pada Anak Berkebutuhan Khusus Di Sekolah Inklusi SD Negeri Wirosaban. *J Inov Dan Manaj Pendidik*. 2022;2(1):21-39. doi:10.12928/jimp.v2i1.4916
- Widiastuti NLGK. Layanan Pendidikan Anak Berkebutuhan Khusus Dengan Gangguan Emosi dan Perilaku. *Indones J Educ Res Rev*. 2020;3(2):1. doi:10.23887/ijerr.v3i2.25067
- Zubaidah Z, Utomo P. Kesejahteraan Psikologis Anak Autis Ditinjau dari Layanan Bimbingan dan Konseling Berkebutuhan Khusus di Sekolah. *J Hawa Stud Pengarus Utamaan Gend dan Anak*. 2021;3(1):25-32.
- Kelana S. Dukungan Sosial Keluarga Bagi Anak Berkebutuhan Khusus di Sekolah Luar Biasa Peduli Anak Nagari Kecamatan Akabiluru. *Ranah Res J Multidiscip Res Dev*. 2022;4(2):99-111. doi:10.38035/rrj.v4i2.441
- Rohimah S, Sanusi M, Ghafur OA, Ardianto RA. Anak Berkebutuhan Khusus Dalam Psikologi Pendidikan Islam. 2024;4:1522-1533.
- Rukmana IS, Suyadi S. Pola Pelayanan Lembaga Paud Inklusi Berbasis Islam Dan Psikologi Pada Anak Berkebutuhan Khusus (Abk) Usia 2-6 Tahun. *Tunas Cendekia J Progr Stud Pendidik Islam Anak Usia Dini*. 2020;3(2):160-171. doi:10.24256/cendekia.v3i2.1531
- Al-Enezi E, Alghamdi M, Al-Enezi K,

- AlBalwi M, Davies W, Eyaid W. Helsmoortel-Van der Aa syndrome in a 13-year-old girl with autistic spectrum disorder, dysmorphism, a right solitary kidney, and polycystic ovaries: a case report. *J Med Case Reports* . 2024;18(1). doi:10.1186/s13256-024-04746-2
16. Barbaro J, Winata T, Gilbert M, et al. General practitioners' perspectives regarding early developmental surveillance for autism within the australian primary healthcare setting: a qualitative study. *BMC Prim Care*. Published online 2023. doi:10.1186/s12875-023-02121-6
17. Tabari MF La, Nasir A, Amaret D, Agustiawan, Antariksa PM. Dampak Psikoedukasi Keluarga Untuk Mengurangi Stress Keluarga yang Mendampingi Anak dengan Retardasi Mental. *Heal Tadulako J (Jurnal Kesehat Tadulako)*. 2024;10(4).
18. Rohmayanti D, Sukandarno M, Sutiniangsih D. Hubungan Dukungan Keluarga Dengan Kekambuhan Pasien Skizofrenia Di Wilayah Upt Puskesmas Carita. *Heal J Tadulako (Jurnal Kesehat Tadulako)*. 2023;9(3):354-362.
19. Nurfadhillah S, Prabandani RO, Rini ES, et al. Analisis Anak Berkebutuhan Khusus Ketunaan ADHD di SDN Petir 2 Kota Tangerang. *Yasin*. 2021;1(2):192-203. doi:10.58578/yasin.v1i2.126
20. Ladapase EM. Keterlambatan Bicara (Speech Delay) Pada Anak Usia 4 Tahun. *J Mhs Psikol Univ Buana Perjuangan Karawang*. 2021;1(2):79-85.
21. Widhiati RSA, Malihah E, Sardin S. Dukungan Sosial dan Strategi Menghadapi Stigma Negatif Anak Berkebutuhan Khusus Dalam Pendidikan. *J Paedagogy*. 2022;9(4):846. doi:10.33394/jp.v9i4.5612
22. Fadillah AN, Cahyati M, Indonesia US, Syndrome D. Asuhan Keperawatan Pada Anak Berkebutuhan Khusus: Down Syndrom. *SEHATI J Kesehat Masy*. 2024;1(1).
23. Mafuba K. Children with intellectual disabilities and/or complex needs. *J Child Heal Care*. 2021;25(2):175-178. doi:10.1177/1367493515624007

Conflict of Interest Statement

The author(s) declare no commercial, financial, or personal conflicts of interest related to this research. All authors approved the final manuscript and consented to its publication in *Healthy Tadulako Journal*.

Copyright and Licensing

© Healthy Tadulako Journal. This open-access article is licensed under the Creative Commons Attribution-ShareAlike 4.0 International (CC BY-SA 4.0), allowing use, distribution, and reproduction with proper attribution.



Publisher's Note

Healthy Tadulako Journal, a peer-reviewed open access journals, is published by the Quality Assurance Unit, Faculty of Medicine, Tadulako University, Indonesia.