



Management of Men Diagnosed with Schizophrenia Using a Family Medicine Approach

Putri Nabila Febrianty, Raihan Akbar Darmawan, Azzahra Roudatul Jannah, Winsca Maghfirda Yasya, Dhia Adhi Perwirawati, Maria Selvester Thadeus, Tiwuk Susantiningih*

Professional Study Program, Faculty of Medicine, Universitas Pembangunan Nasional Veteran Jakarta

Access this article online
Quick Response Code :



DOI : 10.22487/htj.v12i1.1882

Email Corresponding:
tiwuksusantiningih@upnvj.ac.id

Page : 75-83

Article History:

Received: 2025-04-30

Revised: 2025-10-15

Accepted: 2026-01-31

Published by:

Tadulako University,
Managed by Faculty of
Medicine.

Website :

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



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

Abstract

Background: Family medicine emphasizes comprehensive and sustainable health care for individuals and families. **Objective:** This study aimed to identify clinical problems in patients with schizophrenia and their families, and to analyze factors influencing schizophrenia-related problems using a family medicine approach. **Methods:** Management was conducted using a family-centered approach designed to create comprehensive health conditions encompassing physical, mental, social, and emotional aspects. The intervention encouraged a supportive family environment for healthy living behaviors and increased family awareness of disease prevention and health promotion in schizophrenia. Family coaching and education were delivered using RANGKUL promotional media. **Results:** Family coaching demonstrated improved family understanding of schizophrenia, indicated by an increase in post-test scores of 50 out of 100 compared with pre-test results. Families showed better recognition of symptoms, treatment goals, and the importance of long-term care and medication adherence. **Conclusion:** Management of a male patient diagnosed with catatonic schizophrenia can be effectively implemented using a family medicine approach. Key supporting factors included high family enthusiasm, openness in providing information for family assessment, and strong commitment to maintaining the patient's medication compliance. Complicating factors included the parents' educational level, limited to junior and senior high school, requiring information delivery in simple language.

Keywords: Family medicine; RANGKUL; SCREAM; Schizophrenia.

Introduction

Family medicine is a science that provides community-oriented health services, with a focus on the family as the primary unit, not just on the sick individual. A family physician not only provides medical assistance but also approaches health problems holistically, considering environmental, social, economic, and cultural factors. Patients in family medicine may present with or without complaints, and the services provided are comprehensive and continuous¹⁻³.

Schizophrenia is a complex and chronic mental disorder that affects various aspects of an individual's life, manifesting through a

combination of positive, negative, and cognitive symptoms. Positive symptoms include hallucinations, delusions, disorganized speech, and behavior, while negative symptoms involve reduced motivation and expressiveness^{4,5}.

Although current diagnostic and treatment approaches emphasize psychotic symptoms, negative and cognitive symptoms also play a significant role in disrupting social and occupational function and often show a limited response to antipsychotic medication^{6,7}. Therefore, the management of schizophrenia requires a holistic approach that not only focuses on treating psychotic symptoms but also on preventing serious complications such

as suicide and improving the patient's overall quality of life^{8,9}. The prevalence of mental health issues, including stress and anxiety disorders, highlights the broader need for effective mental health strategies across various populations¹⁰. Furthermore, understanding psychiatric dimensions in vulnerable groups, such as children with special needs, underscores the complexity of mental health and the necessity for tailored approaches¹¹. This case report has high urgency given the importance of identifying clinical problems experienced by schizophrenia patients and their impact on the family. The patient's schizophrenia also has significant emotional, social, and economic impacts on the family. Thus, the family medicine approach becomes very relevant for understanding the various factors influencing the patient's condition holistically^{12,13}. Increasing the knowledge and healthy behaviors of both the patient and the family is also crucial in supporting the patient's recovery process. Active family involvement through a family medicine approach is expected to strengthen the role of family members in the patient's periodic health management. Moreover, this study can contribute to more effective family-based interventions in schizophrenia management¹⁴.

Materials and Methods

Study Design

This research uses a case report design focusing on a 19-year-old male patient living in Bedahan, Sawangan District, Depok. The patient has been diagnosed with schizophrenia since 2017 based on a medical examination at RSUD Khidmat Sehat Afiat. This diagnosis was made after the patient experienced disturbances including auditory and visual hallucinations, aggressive behavior, and a history of bullying since elementary school. Additionally, the patient has a family history of similar conditions on both the father's and

mother's sides, suggesting a possible genetic predisposition.

Sample

The subject of this case report is a 19-year-old male living with his father, mother, and younger brother. The patient's father works as a daily laborer, the mother is a housewife, and the patient's younger brother is currently in junior high school. The patient has been diagnosed with catatonic schizophrenia (F20.5), paranoid schizophrenia (F20), and schizoaffective disorder (F25.1) with symptoms including hypoactive behavior, blunted affect, hypothymic mood, as well as paranoid delusions and auditory and visual hallucinations. The patient has not attended formal education since 2017 and is currently unemployed.

Data Collection Technique

Data were collected through in-depth interviews with the patient's mother, direct observation of the patient's behavior, and a review of medical records from RSUD Khidmat Sehat Afiat. Additionally, a family resource assessment was conducted using the Family SCREEM instrument, which covers social, cultural, religious, economic, educational, and medical aspects. Additional information regarding the patient's pregnancy background, growth, and development was obtained from the patient's parents through a structured interview on April 15, 2025.

Data Analysis Technique

Analysis was conducted using qualitative descriptive methods to evaluate the patient's clinical condition, family background, and Family SCREEM assessment results. Data were analyzed by integrating medical information and relevant psychosocial aspects to support a family medicine approach. The interventions provided referred to the principles of Family Oriented Primary Care (FOPC) and

Community Oriented Primary Care (COPC), with the aim of increasing family involvement in patient care and improving the family's understanding of schizophrenia. The family medicine approach in managing this patient involved family education, monitoring of medication adherence, and family coaching conducted on April 9, 2025, and April 23, 2025. The success evaluation was conducted through pre-test and post-test assessments of the family's understanding of schizophrenia. The pre-test results showed a score of 50/100, indicating the family's understanding was still lacking, thus necessitating further educational intervention.

Ethical Consideration

This study was conducted in accordance with the principles of research ethics, including respect for patient and family autonomy, maintaining identity confidentiality, and providing clear information about the research objectives. Informed consent was obtained orally from the patient's family after a comprehensive explanation of the procedures and benefits to be received. Given that this research is a case study and does not involve invasive procedures or harmful risks, it was considered to have minimal risk and ethically feasible.

Results

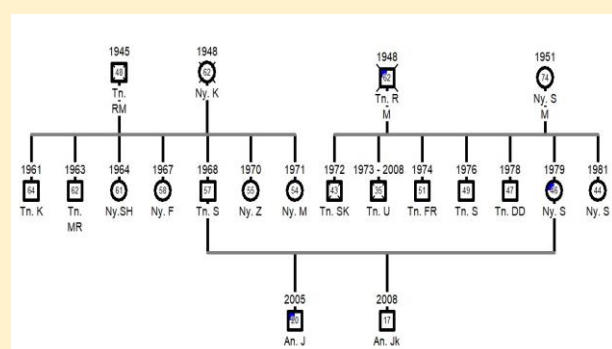


Figure 1. Genogram of the Schizophrenia Patient

The physical examination and diagnosis were F20.5 Catatonic Schizophrenia, F20 Paranoid

Schizophrenia, and F25.1 Schizoaffective Disorder. Appearance is age-appropriate, unkempt, and the patient's behavior and psychomotor activity are hypoactive and uncooperative. The patient has a blunted affect and hypothyroid mood.

Table 1. Family SCREEM Assessment

Component	Strengths	Weaknesses
Social	-	The patient has problems with interaction and socialization with non-family members. The patient also has difficulty expressing feelings since childhood.
Culture	The patient and family are of Betawi descent; there are no specific rituals performed by the family.	The family believes the patient's illness is caused by a mystical attack.
Religion	All family members are Muslim. They worship diligently according to Islamic teachings.	-
Economy	The main income currently comes from the patient's father, a laborer with a monthly income of 500,000 – 1,000,000 IDR. The family has electronic devices used by the mother and patient for communication.	-
Education	To obtain health information, the patient's mother and father rely on visits to the public health center.	The father's last education is high school, the mother's is junior high school, and the patient's is elementary school. The patient's brother is currently in junior high school.

Emotional assessment regarding flow, control, and empathy was difficult to evaluate. Speech is slow, with continuity and no logorrhea. Thought process assessment is coherent, with no neologisms, circumstantiality, loose associations, flight of ideas, or blocking. Thought content assessment shows sufficient ideas, no poverty of ideas or preoccupations.

Delusional assessment shows no bizarre delusions, no somatic delusions, but there are paranoid delusions. No thought withdrawal, thought insertion, thought broadcasting, or thought echo. No delusions of control, influence, passivity, or perception. There are auditory and visual hallucinations. Intellectual function is poor, concentration is poor, orientation to self is difficult to assess as the patient is hard to communicate with.

Orientation to place is difficult to assess as the patient is hard to communicate with. Orientation to time is difficult to assess as the patient is hard to communicate with. Memory is difficult to assess as the patient is hard to communicate with. Abstract thinking is difficult to assess as the patient is hard to communicate with complexly. Insight: the patient is somewhat aware that they are ill but simultaneously denies it.

The patient's diagnoses are F20.5 Catatonic Schizophrenia, F20 Paranoid Schizophrenia, and F25.1 Schizoaffective Disorder.

Management of a Schizophrenia Patient with a Family Physician Approach

Family medicine is a branch of medical science that focuses on comprehensive and continuous health services for individuals and families. This discipline encompasses various aspects of science, from biology and clinical to behavioral. The scope of family medicine services includes all age groups, genders, various organ systems, and the entire spectrum of diseases^{15,16}.

A family physician acts as a primary healthcare provider who is holistic, integrated, continuous, and oriented towards the needs of the family and community. Their central role lies in disease prevention efforts. As medical personnel directly connected to patients, family physicians have a strategic position in improving the quality of health services, being at the forefront of primary care facilities, with great responsibility in promotive and preventive actions¹⁷⁻²⁰.

Family medicine services are a form of primary health service aimed at improving the quality of public health services. This effort is necessary to enhance the family's health status by prioritizing preventive measures and ensuring the safety of every family member in the healthcare-seeking process^{21,22}. This

service includes various activities such as health promotion, specific protection, early diagnosis and prompt treatment, disability limitation, and rehabilitation, which are implemented comprehensively and paripurna^{10,12}.

In family medical services, there are two main approaches: Family Oriented Primary Care (FOPC) and Community Oriented Primary Care (COPC). FOPC emphasizes family involvement in the data collection, clinical assessment, and patient care processes, making the family an active participant in every stage of health management. Meanwhile, COPC is an approach that integrates clinical and public health sciences at the community level, aiming to improve the effectiveness of primary health services^{23,24}.

To achieve healthy conditions in family medicine services, several requirements are needed, such as service availability, accessibility, affordability, sustainability, comprehensiveness, integration, and high quality. According to Anies (2014), the principles of family medicine services include treating the patient as an individual who is part of a family and community, and the services provided are comprehensive, focusing on halting disease progression and identifying and managing diseases as early as possible^{12,25,26}.

A family physician is responsible for first-line and follow-up health services without distinguishing age, gender, or socioeconomic status, with a paripurna, integrated, holistic, continuous approach based on current medical knowledge^{27,28}. The management of a patient with schizophrenia using a family medicine approach was conducted on Wednesday, April 9, 2025. From the family coaching, the following results were obtained: the patient's family was able to provide all the information needed for the family assessment quite well.

Supporting factors for the success of the family approach therapy were the patient's

family's enthusiasm and ability to provide the necessary information for the family assessment well. The patient's family is committed to helping maintain the patient's medication adherence. A complicating factor is that the parents' education level is only junior high and high school, so information was delivered in lay language.

An indicator of the success of the family approach was that the researcher obtained consent from the patient's family to provide interventions related to the patient's condition and illness. The results of the family coaching were conducted on Wednesday, April 23, 2025. From the patient's family coaching, the following results were obtained. Understanding of the patient's illness, Schizophrenia, before the counseling was poor, thus requiring education about the disease^{29,30}. This was based on the family's pre-test filling with a final score of 50/100.

Family medicine services are a form of primary health service aimed at improving the quality of public health services. This effort is necessary to enhance the family's health status by prioritizing preventive measures and ensuring the safety of every family member in the healthcare-seeking process⁷. This service includes various activities such as health promotion, specific protection, early diagnosis and prompt treatment, disability limitation, and rehabilitation, which are implemented comprehensively and paripurna^{6,10}.

In family medical services, there are two main approaches: Family Oriented Primary Care (FOPC) and Community Oriented Primary Care (COPC). FOPC emphasizes family involvement in the data collection, clinical assessment, and patient care processes, making the family an active participant in every stage of health management. Meanwhile, COPC is an approach that integrates clinical and public health sciences at the community

level, aiming to improve the effectiveness of primary health services.

A family physician plays a key role as the frontline in primary health services. They are responsible as the first point of contact and as a gatekeeper who directs patients to follow-up health services according to their medical needs. This is in line with the basic principles of JKN which emphasize efficiency and effectiveness of health services through a family and community-based approach¹².

A family physician not only provides medical services but also plays a role in disease prevention, health promotion, and continuous management of chronic diseases through a holistic approach considering the physical, mental, social, and cultural aspects of the patient in every action. Additionally, the family physician also functions as a care coordinator, ensuring that patients receive timely and appropriate services according to their medical needs. The family physician collaborates with various other health personnel to provide integrated and comprehensive services, and makes referrals to specialists if needed^{6,9,10}.

In the context of JKN, the family physician has a strategic role in controlling health service costs. By providing effective and efficient services at the primary level, the family physician can prevent unnecessary use of health services at the secondary or tertiary level, thus helping to suppress overall health costs. Through their multifaceted role, the family physician supports the achievement of JKN's main goal, which is to improve access and quality of health services for all Indonesian people evenly and sustainably⁹⁻¹².

This patient is the first of two siblings living in one house with his father, mother, and younger brother. Assessment and analysis of information regarding the characteristics of access and utilization of health services perceived by the patient in several perspectives include the availability of health services,

which consists of health service facilities, human resources, and service hours. Physical access to reach the service location to get health services, which consists of road infrastructure conditions and the availability of transportation. Economic access, which consists of treatment costs, transportation costs to health services, and health insurance ownership; and social access, which consists of completeness of information from officers, officer friendliness, service satisfaction, and public trust in health officers.

The patient and family have characteristics of access and utilization of health services, namely the availability of health services. According to the patient's mother's information, the closest health service facility to their home is Pengasinan Public Health Center. For Tn. J's disease control, the patient is routinely taken to RSUD Khidmat Sehat Afiat every month. Every time he goes for routine control, the patient is always accompanied by his parents.

The distance from the patient's house to Pengasinan Public Health Center is ± 1.3 km. The distance from the patient's house to the public health center is covered in approximately ± 6 minutes using a motorcycle. There are no geographical or transportation barriers for the patient. The patient and all family members have a BPJS card which is used well for seeking treatment at the public health center. The patient's mother herself said that the patient is only active at home every day.

The APGAR assessment on the patient's family is 5, which means unhealthy. The SCREEM score shows that the family's resources are inadequate. The family also still considers the patient's illness mystical.

Based on the healthy home factors, the patient's house is in moderate condition. Lighting is insufficient, air circulation is not well maintained because not all windows in the

house can be opened. The patient has a functional degree score of 2 because the patient can perform light daily activities. The patient cannot communicate with many people and prefers to be at home.

Initially, the patient's family did not have a good understanding of Schizophrenia and considered the disease to be mystical, so the patient was once taken to a shaman before seeking treatment to a psychiatric specialist in 2017. Factors influencing the patient's illness are the bullying experienced by the patient and genetic influence.

Discussion

The patient's family routinely takes the patient for check-ups and alternately ensures the patient takes medication. However, non-pharmacological therapy is still rarely performed. The patient's family admitted this was because they did not have the knowledge. After an intervention in the form of counseling for the patient's family, the family committed to implementing RANGKUL, which is diligently consuming nutritious food, managing stress, avoiding drugs and alcohol, exercising 30 minutes a day, routinely controlling to a psychiatric specialist, trying to avoid trauma and violence, and communicating with family and friends.

Comprehensive Management consists of patient-centered care, namely promotive with education about Schizophrenia which includes definition, causes, risk factors, and treatment. Education on how to handle schizophrenia patients with acute symptoms. Preventive management is not present. Curative management with non-pharmacological therapy, namely education on how patients can be more open and control emotions, and pharmacological therapy by continuing the medications given by the psychiatric specialist. Rehabilitative management is periodically conducted in the form of education such as

supportive psychotherapy and psychoeducation.

Family Focus Management with Screening by conducting self-examinations at health service facilities for early detection of mental health disorders in the patient's family and detecting the causes of the patient's mental health disorders. Conducting counseling and education about Schizophrenia which includes definition, causes, risk factors, and treatment. Education on how to handle schizophrenia patients with acute symptoms.

Rehabilitative management is periodically conducted in the form of education such as supportive psychotherapy and psychoeducation. Periodically inviting the patient in activities so that the patient can set aside negative thoughts. Specific interventions, such as verbal de-escalation techniques, are also crucial for managing potential aggressive behaviors, ensuring safety for both the patient and family members³¹⁻³³.

Community Oriented Management with education for the patient's neighbors around the patient's house regarding the patient's disease condition so they do not continue the stigma against the patient and help if the patient needs help regarding access to health services. Asking for help from the public health center to inform cadres in the area of the patient's house, that in that area there is a schizophrenia patient and advising cadres to always monitor the patient and the patient's family.

The patient's prognosis is Quo ad Vitam is dubia ad bonam. Quo ad Functionam is dubia ad bonam and Quo ad Sanationam is dubia ad malam.

Suggestions are to increase the role of all family members in paying attention to the patient's condition and providing support to the patient regarding problems within the family as well as the patient's illness, and to increase the family's knowledge about schizophrenia and how to deal with schizophrenia patients.

Conclusion

The management of a patient diagnosed with schizophrenia was conducted using a family medicine approach aimed at creating comprehensive health conditions covering physical, mental, social, and emotional aspects, as well as encouraging the creation of a family environment that supports healthy living behaviors and increases family awareness of the importance of disease prevention and health promotion in schizophrenia cases.

Acknowledgment

The authors would like to thank UPTD Puskesmas Pengasinan Depok for assisting the authors in learning family medicine management for patients diagnosed with schizophrenia.

References

1. Anggraini MT, Novitasari A, Setiawan MR. Buku Ajar Kedokteran Keluarga. FK UMS; 2015.
2. Anies. Kedokteran Keluarga: Pelayanan Kedokteran yang berprinsip pencegahan. Semarang: Badan Penerbit Universitas Diponegoro; 2014.
3. Ekawati FM, Claramita M. Indonesian general practitioners' experience of practicing in primary care under the implementation of universal health coverage scheme (JKN). J Prim Care Community Health. 2021;13:2633714842. doi:10.1177/26337148421073368
4. Hany M, Rehman B, Rizvi A. Schizophrenia. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025.
5. Karina K, Zulkifli H, Novrikasari N. Gambaran stres kerja pada perawat wanita di RS X Palembang. Healthy Tadulako J. 2021;7(1):7–14.

6. Maramis WF. Catatan Ilmu Kedokteran Jiwa. 2nd ed. Surabaya: Airlangga University Press; 2009.
7. Maslim R. Buku Saku PPDGJ III dan DSM 5. Jakarta: FK Unika Atmajaya; 2015.
8. Rohmayanti D, Sakundarno M, Sutiningsih D. Hubungan dukungan keluarga dengan kekambuhan pasien skizofrenia di wilayah UPT Puskesmas Carita. *Healthy Tadulako J*. 2023;9(3):354-62.
9. Saifah A, Nur AF. Kemampuan keluarga merawat klien insomnia dan hipertensi. *Healthy Tadulako J*. 2020;6(3):14-21.
10. Sujardi. Kedokteran keluarga: Konsep dan implementasi dalam pelayanan kesehatan primer. Yogyakarta: Penerbit Kesehatan Masyarakat; 2014.
11. Perkasa T, Jaya MA, Namirah HA, Bakthiar IKA, Utami DF. Description of The Degree of Stress, Anxiety and Depression in Teachers at Wahdah Islamic School 03 Makassar. *Healthy Tadulako J (Jurnal Kesehatan Tadulako)*. 2025;11(3):361-369. doi:10.22487/htj.v11i3.1671
12. Werdhani RA. Medical problem in Asia Pacific and ways to solve it: The roles of primary care/family physician (Indonesia Xperience). *J Fam Med Prim Care*. 2019;8(5):1523-7. doi:10.4103/jfmprc.jfmprc_326
13. World Organization of Family Doctors (WONCA). The role of the general practitioner/family physician in health care systems: A statement from WONCA. Singapore: WONCA; 2002.
14. Viron M, Baggett T, Hill M, Freudenreich O. Schizophrenia for primary care providers: how to contribute to the care of a vulnerable patient population. *Am J Med*. 2012;125(3):S2–S8. doi:10.1016/j.amjmed.2011.09.010
15. Orfanel CL, Villafuerte MB. Effectiveness of family focused intervention in patients with schizophrenia in family and community practice: a meta analysis. *Filip Fam Physician*. 2023;(61):110-118.
16. Rodolico E, Bighelli I, et al. Effective family interventions for people with schizophrenia: a Lancet Psychiatry meta analysis. *Lancet Psychiatry*. 2021;8(5):453-464. doi:10.1016/S2215-0366(21)00091-2
17. Milstein M, et al. Schizophrenia. *Am Fam Physician*. 2022;105(10):27-35.
18. Dixon L, et al. Community based care of individuals with schizophrenia: combining treatments and social support. *Community Ment Health J*. 2018;54(4):344-352. doi:10.1007/s10597-017-0155-5
19. Smith J, et al. Needs, challenges, and coping strategies among primary caregivers of persons with schizophrenia: qualitative synthesis. *J Psychiatr Ment Health Nurs*. 2022;29(2):234-245. doi:10.1111/jpm.12849
20. Wira MB, Nia S, Syaharani R, et al. The influence of family expressed emotion on risk of relapse in schizophrenia: outcomes from a community medicine intervention. *J Community Med Public Health Res*. 2025;6(1):29-38.
21. Tandon R, Nasrallah HA. The diagnosis and treatment of schizophrenia in primary care. *Medscape CME*. 2025.
22. Kim SY, Kim AR. Effectiveness of community based interventions for patients with schizophrenia spectrum disorders: protocol for systematic review. *Syst Rev*. 2021;10:106. doi:10.1186/s13643-021-01628-9

23. American Medical Association. Diagnosing and treating schizophrenia. *AMA J Ethics*. 2009;11(1):123-130. doi:10.1001/virtualmentor.2009.11.1.cprst1-0901
24. González Blanch C, Álvarez Jiménez M. Family interventions reduce relapse or hospitalization in schizophrenia: EBMH review. *Evid Based Ment Health*. 2011;14(4):115-116. doi:10.1136/ebmh.14.4.115
25. Collins C, et al. Primary care and mental health: overview of integrated care models. *Prim Care Companion CNS Disord*. 2020;22(3):19nr02659. doi:10.4088/PCC.19nr02659
26. Bighelli I, et al. Family interventions for relapse prevention in schizophrenia: *Lancet Psychiat*. 2021;8(9):890-900. doi:10.1016/S2215-0366(21)00237-6
27. Moore B, Yeomans D, Fear C. Managing schizophrenia in primary care: validity of remission criteria. *Ment Health Fam Med*. 2009;6:107-112.
28. Kujoka R, et al. Family interventions in schizophrenia and their long term outcomes. *Fam Process*. 2008;47(2):327-345. doi:10.1111/j.1545-5300.2008.00238.x
29. APA Schizophrenia Work Group. American Psychiatric Association practice guideline for the treatment of patients with schizophrenia. *Am J Psychiatry*. 2021;178(1):1-61. doi:10.1176/appi.ajp.2020.20090702
30. Smith E, et al. Systematic review and meta analysis of family based interventions for early psychosis patients. *Schizophr Res*. 2025;233:24-36. doi:10.1016/j.schres.2024.11.025
31. Wulandari S, Hidayati LN, Sri Purwanti T. Application of Verbal De-Escalation and Assertive Training on Anger Control in Schizophrenia Patients with Violent Behavior. *Healthy Tadulako J (Jurnal Kesehatan Tadulako)*. 2025;11(4):583-591. doi:10.22487/htj.v11i4.1889
32. von Peter S, Priebe S, et al. Coordinated medical and psychiatric care in schizophrenia: holistic medical home model. *Am J Med*. 2011;124(12):1210-1217. doi:10.1016/j.amjmed.2011.06.020
33. Bahari RR, Phalosa AG, Hikmah AN, Nurmaliyah E, Putri JM, Yulistina N. Understanding Psychiatric Dimensions Related to Mental Health in Children with Special Needs: A Literature Review. *Healthy Tadulako J (Jurnal Kesehatan Tadulako)*. 2025;11(4):672-680. doi:10.22487/htj.v11i4.1683

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.