

Factors Influencing Officer Compliance in the Implementation of Integrated Management of Childhood Illness (IMCI) at Community Health Center in Banda Aceh City

Siska Safriana^{1*}, Raihan², Anidar³,
Teuku Muhammad Thaib⁴, Eka Yunita Amna⁵, Nora Sovira⁶

¹Universitas Syiah Kuala, Indonesia

^{2,3,4,5,6} Rumah Sakit Umum dr Zainoel Abidin Banda Aceh, Indonesia

Emails: siisiska27@gmail.com¹, raihanrais5@gmail.com², Anidarlatif@yahoo.com³,
thaib_tm@yahoo.com⁴, eya.delima18@gmail.com⁵, norasovira@unsyiah.ac.id⁶

Abstract

Integrated Management of Sick Toddlers (IMCI) is an integrated approach to improving child health and well-being, which aims to reduce morbidity and mortality and promote growth and development of children under five. Despite its importance, challenges in the quality of IMCI implementation in PHC centers still exist. This research aimed to identify factors that influence staff compliance in implementing IMCI at health centers in Banda Aceh city. This research method used an analytic observational research with a cross-sectional design, involving 64 IMCI service providers from November 2023 to June 2024. Data were collected using questionnaires and analyzed using the chi-square test and multivariate logistic regression. The results showed that staff compliance in implementing IMCI was 39%. Internal factors that significantly influenced compliance were motivation (OR=14.3, 95% CI: 3.039-67.505) and knowledge (OR=8.63, 95% CI: 1.694-43.978). External factors included the availability of complete logistics facilities (OR=8.05, 95% CI: 1.706-38.04). This research identified Ulee Kareng Health Center as having the highest number of PIA service providers (17%), while Banda Raya Health Center had the lowest number (7%). Most of the PIA service providers were aged 19-44 years (68.8%), mostly female (96.9%), and had high educational qualifications (93.7%). The implications of this research underscore the important role of motivation, knowledge, and logistical support in improving staff adherence to IOP protocols. The results of this research have implications for strengthening health care systems and improving the quality of IYCF implementation to meet the health needs of children under five in Banda Aceh city.

Keywords: Integrated management of sick children, compliance, knowledge, motivation, logistics, IMCI officers, puskesmas.

INTRODUCTION

Regulation of the Minister of Health of the Republic of Indonesia Number 25 of 2014 states that every child has the right to grow and develop and has the right to survival and protection from violence and discrimination, which needs to be carried out in an integrated, comprehensive, and sustainable manner (Kementerian Kesehatan, 2020). One of the goals of child health efforts is to ensure children's survival by reducing the mortality rate of newborns, infants, and toddlers (Ministry of Health, 2014). The coverage of under-five health services in

Aceh province from 2017-2021 fluctuated, and there was a very significant decline in 2021. Factors causing very low toddler health service coverage (Kilov et al., 2021); (Compilation, 2021)

Child mortality in Indonesia shows a decrease in mortality rates. According to the Directorate of Nutrition and Maternal and Child Health, the number of under-five deaths in 2021 was 27,566; this figure is lower than in 2020 (28,158 deaths) (Indonesian Ministry of Health, 2022). Infant mortality rate (IMR) is also one of the indicators used to determine the degree of public health. The Infant Mortality Rate (IMR) in Aceh from 2017 to 2022 has fluctuated; in 2017 and 2018, it was at 10/1,000 Live Births (LH), and in 2022, the IMR decreased again to 10/1,000 LH with a good category, but not by the target set by the Aceh Health Office, which in 2022 set a performance target for IMR of 8/1,000 LH (Health, 2022).

The most common cause of neonatal death in 2021 was the condition of Low Birth Weight (LBW), which amounted to 34.5%, and asphyxia at 27.8%. Other causes of death include congenital abnormalities, infections, COVID-19, neonatal tetanus, and others. The main causes of death in the under-five group (12-59 months) were diarrhea at 10.3% and pneumonia at 9.4%. Other causes of death were dengue fever, congenital heart defects, drowning, injuries, accidents, other congenital abnormalities, COVID-19, parasitic infections, and other causes (Indonesian Ministry of Health, 2022).

The newborn mortality rates found in Indonesia point to issues about the quality of care received by infants (UNICEF, 2020). One of the efforts in reducing under-five mortality rates is improving health workers' skills at health centers through the Integrated Management of Sick Toddlers (IMCI) approach since 1997. Implementing IMCI has been going on for a long time, but there are still many obstacles in practice, and it has not been optimized (Ministry of Health, 2020).

Efforts to reduce the mortality rate of newborns, infants, and toddlers, according to the Minister of Health Regulation Number 25 of 2014 article 21 concerning health services for infants, children under five, and preschoolers, health services for infants, children under five and preschoolers are carried out, among others, through the provision of exclusive breast milk (ASI), the provision of complementary foods (MPASI) starting at the age of 6 months, the provision of complete basic immunization for infants and the implementation of IMCI / MTBM (Ministry of Health, 2014).

The IMCI chartbook has been revised thrice in 2003, 2008, and 2015. From 2020 to 2022, the latest version of the 2015 IMCI chartbook was revised. National conditions, policies, and guidelines conducted this fourth revision. This revision was held by the Ministry of Health in Jakarta and invited MTBS experts and facilitators from various provinces (Laksono et al., 2023). The World Health Organization (WHO) recommends updating the Integrated Management of Childhood Illness (IMCI) based on the latest guidelines and research on clinical management (World Health Organization, 2005).

Research on IMCI in several provinces in Indonesia in 2016 showed that 80% of health centers in the eastern region had implemented IMCI. However, only 25% of health centers reached all children under five. 90% of health centers have been trained in IMCI, but only 15% have conducted post-training monitoring. Only 25% of health centers received supervision from the District Health Office in implementing IMCI. Monitoring and supervision of staff compliance is needed, as well as increasing the availability of equipment and supporting facilities/infrastructure for implementing IMCI (Suparmi et al., 2018).

Research on implementing IMCI at the Puskesmas of Pasuruan Regency found that the number of officers is not proportional to the number of sick toddlers visiting;. However, Standard Operating Procedures (SOPs) are available, not all officers use IMCI in child health services, coaching has not been carried out routinely, supervision is still general, and no follow-up is given (Firdaus & Mawarni, 2013). MTBS research has also been conducted at Puskesmas Indrajaya and Delima, Pidie Regency, Aceh Province. The results showed that the implementation of IMCI at Indrajaya Health Center was 75.4%, and at Delima Health Center

was 62.2%. Factors associated with staff performance in implementing the IMCI program are staff motivation and facilitative supervision. It is expected that there will be an increase in employee motivation through good teamwork, training, coaching, and supervision in a planned and continuous manner through facilitative supervision and providing feedback in order to increase MTBS coverage and improve the workability of MTBS officers (Faktor et al., 2021). Problem-solving efforts through cross-sectoral cooperation are related to further activating posyandu and increasing community empowerment. Health services for sick toddlers are services for toddlers using an integrated management approach for sick toddlers. (Compilation, 2021).

Improving the quality of IMCI services through workplace training or workshops was held in Aceh Jaya District and Langsa City at the end of 2018. In 2019, the Ministry of Health (MOH) decided to hold similar training in three locations, namely Singkil City, Simeulue, and Sabang. The ten provincial expert trainers in Aceh consisted of three provincial Health Office staff, three pediatricians from the Aceh Branch of the Indonesian Pediatric Association, two midwives from the Aceh Provincial Indonesian Midwives Association, two nurses from the Indonesian Nurses Association in Aceh, the district Health Office had at least two staff trained to supervise IMCI facilitation and 49 puskesmas had at least two staff trained to be IMCI mentors. As a result, IMCI implementation increased from 6% in February 2019 to 94% in June 2020 (Moh, Itagi, UNICEF, 2021).

One of the obstacles to implementing IMCI is the lack of personnel trained for it because training requires a large amount of money. However, the IMCI Workshop is very important and is one of the standards of child health services at the primary care level (Indonesian Ministry of Health, 2020). If factors associated with implementing IMCI in low- and middle-income countries are known, the likelihood of reducing infant morbidity and mortality can be increased (Mauricio & Sierra, 2020).

Based on the background description above, this study aims to determine the factors that influence officer compliance in the implementation of Integrated Management of Sick Toddlers (IMCI) at the Puskesmas Working Area in Banda Aceh City. Thus, the benefit of this study is to contribute to improving the quality of child health services by understanding the factors that influence staff compliance in the implementation of Integrated Management of Sick Toddlers (IMCI). The results of this study are expected to serve as a basis for policy makers and managers of health facilities in Banda Aceh in improving the compliance of health workers through the provision of more focused training, increased work motivation, facilitative supervision, and the provision of adequate logistical facilities.

RESEARCH METHOD

This research utilized a quantitative approach with an analytic observational design, employing cross-sectional data collection. Conducted across 11 health centers (Puskesmas) within Banda Aceh City—specifically Baiturrahman, Banda Raya, Jaya Baru, Batoh, Kuta Alam, Lampulo, Lampaseh Kota, Meuraxa, Jeulingke, Kopelma Darussalam, and Ulee Kareng—the study targeted health workers involved in Integrated Management of Childhood Illness (IMCI). The sampling technique used was purposive sampling, focusing on MTBS officers, general practitioners, midwives, and nurses who actively provided IMCI services. This resulted in a final sample of 63 participants who met the research inclusion criteria.

Data were collected through structured questionnaires designed to assess demographic factors, knowledge, motivation, and logistic support, along with other elements relevant to compliance in IMCI implementation. Data analysis began with validity and reliability testing to ensure instrument quality. Univariate analysis was performed to describe individual variables, followed by bivariate analysis to explore relationships between variables. Finally, multivariate analysis, specifically logistic regression, was applied to identify the most significant factors influencing compliance among IMCI implementing officers.

RESULT AND DISCUSSION

An overview of the number, basic characteristics, and compliance of IMCI officers in health centers in the working area of Banda Aceh City

Banda Aceh City's geographical location is between 05°30' —05°35' LU and 95°30' — 99°16' East. It consists of 9 sub-districts, 70 villages, and 20 urban villages with a total area of ± 61.36 km² (Figure 1).



Figure 1. Overview of the Banda Aceh Municipality⁵⁴

Source: Regional Development Planning Agency of Banda Aceh City.

The administrative boundaries of Banda Aceh City are to the north, bordering the Malacca Strait. Darul Imarah District and Ingin Jaya District, Aceh Besar Regency border the south. Peukan Bada District, Aceh Besar Regency border the west. The Barona Jaya sub-district and the Darussalam sub-district, Aceh Besar district.⁵⁴ border the East

Health service facilities in Banda Aceh City consist of 11 non-inpatient health centers, 68 clinics, and 15 hospitals based on hospital ownership in Banda Aceh City consisting of 3 Aceh government hospital units, 1 Banda Aceh City government hospital unit, 2 TNI / POLRI hospital units, nine private hospital units.

Table 1. Number of employees of health centers in the city of Banda Aceh.

Health Center	Number of Health Center Employees	Personnel involved in IMCI services	
		Number(n)	Percentage(%)
Baiturrahman	50	5	10
Batoh	60	8	13
Jaya Baru	47	5	11
Banda Raya	60	4	7
Kuta Alam	51	6	12
Lampulo	42	4	9
Lampaseh City	49	8	16
Meuraxa	52	4	8
Jeulingke	46	5	11
Kopelma Darussalam	51	6	12

Health Center	Number of Health Center Employees	Personnel involved in IMCI services	
Ulee Kareng	52	9	17

The research subjects were 64 IMCI poly officers from all 11 Puskesmas in Banda Aceh City, namely Baiturrahman Puskesmas, Banda Raya Puskesmas, Jaya Baru Puskesmas, Batoh Puskesmas, Kuta Alam Puskesmas, Lampulo Puskesmas, Lampaseh Kota Puskesmas, Meuraxa Puskesmas, Jeulingke Puskesmas, Kopelma Darussalam Puskesmas and Ulee Kareng Puskesmas. The highest percentage of officers involved in IMCI services is Ulee Kareng Health Center, which is 17%, as described in Table 1. The characteristics of the research subjects are presented in Table 4.2 as follows:

Table 2. Basic characteristics of IMCI staff

Characteristics	Frequency (n)	Percentage (%)
Age		
Adults (19-44 years)	44	68,8
Pre-elderly (45 - 59 years old)	20	31,5
Gender		
Male	2	3,1
Female	62	96,9
Education		
Low (< DII)	4	6,3
High (≥ DIII)	60	93,7
Total	64	100

Based on age group, the research subjects were dominated by the age group 19-44 years (68.8%) and female gender (96.9%). Most of the subjects came from Ulee Kareng puskesmas, with a percentage of 14.1%, followed by Batoh and Lampaseh Kota puskesmas (12.5% each). 93.7% of the research subjects had an education ≥ DI (Table 2).

Staff compliance in implementing IMCI procedures was assessed by monitoring the completion of the IMCI recording form. The compliance assessment standard is 80%, by the standards of the Ministry of Health of the Republic of Indonesia.⁴⁵

Table 3. Percentage of MTBS form completion compliance

Health Center	CFR Form Completion Rate (%)	Value Interpretation
Baiturrahman	53	Non-compliant
Batoh	91*	Compliant
Jaya Baru	82*	Compliant
Banda Raya	66	Non-compliant
Kuta Alam	79	Non-compliant
Lampulo	83*	Compliant
Lampasas City	83*	Compliant
Meuraxa	76	Non-compliant
Jeulingke	51	Non-compliant
Kopelma Darussalam	67	Non-compliant
Ulee Kareng	46	Non-compliant

Four (36.3%) out of 11 puskesmas complied with the MTBS Recording Form, namely Puskesmas Batoh, Puskesmas Jaya Baru, Puskesmas Lampulo, and Puskesmas Lampaseh Kota, as described in Table 3. Compliance assessment By the standards of the Ministry of Health of the Republic of Indonesia, the assessment form is filled out by taking 5 MTBS recording forms that have been filled in by MTBS officers at each puskesmas.

Table 4. Percentage of Compliance of Health Center Staff

Health Center	Officer Compliance	
	Compliant n (%)	Non-compliant n (%)
Lampaseh City	8 (12,5)	0 (0)
Batoh	8 (12,5)	0 (0)
Jaya Baru	5 (8)	0 (0)
Lampulo	4 (6)	0 (0)
Ulee Kareng	0 (0)	9 (14)
Kopelma Darussalam	0 (0)	6 (9,5)
Kuta Alam	0 (0)	6 (9,5)
Jeulingke	0 (0)	5 (8)
Baiturrahman	0 (0)	5 (8)
Banda Raya	0 (0)	4 (6)
Meuraxa	0 (0)	4 (6)
Total (100%)	39%	61%

The compliance of the health centers is in line with the compliance of the respondents in each health center; therefore, 25 (39%) out of 64 health workers completed the IMCI recording form as described in Table 4.

The relationship between internal factors and compliance of health center staff in implementing IMCI

Table 5 presents the relationship between internal factors and puskesmas staff compliance in implementing IMCI. Compliance was more common in the adult group (45.5%). 24 people (38.7%) were female, with high education (40%), a new MTBS clinic tenure (40%), high motivation (65.6%), and high knowledge (52.6%).

Table 5. The relationship between internal factors and staff compliance with IMCI implementation at Puskesmas in the working area of Banda Aceh City.

Characteristics	Officer compliance		P-value	OR	IK95%
	Compliant n = 25	Non-compliant n = 39			
Age, n (%)			0,120	0,4	0,123-1,29
Adults	20 (45,5)	24 (54,5)			
Pre-elderly	5 (25)	15 (75)			
Gender, n (%)			1,000	1,58	0,09 - 26,52
Female	24 (38,7)	38 (61,3)			
Male	1 (50)	1 (50)			
Education, n (%)			1,000	0,5	0,04 - 5,09
High	24 (40)	36 (60)			
Low	1 (25)	3 (75)			
MTBS clinic tenure n (%)			0,771	0,833	0,24 - 2,86
New	20 (40)	30 (60)			
Lama	5 (35,7)	9 (64,3)			
Motivation, n (%)			<0.001 *	0,75	0,02 - 0,26
High	21 (65,6)	11 (34,4)			
Low	4 (12,5)	28 (87,5)			
Knowledge, n (%)			0,007*	2,14	0,06 - 0,68
High	20 (52,6)	18 (47,4)			
Low	5 (19,2)	21 (80,8)			

*Significant (p<0.05)

Based on the statistical analysis of the Chi-Squared test, it was found that motivation and knowledge were internal factors that significantly ($p < 0.05$) influenced staff compliance in implementing IMCI in the Puskesmas working area of Banda Aceh City, as described in Table 5.

The relationship between external factors and compliance of health center staff in implementing IMCI

Table 6 presents the relationship between external factors and Puskesmas staff compliance in implementing IMCI. Compliance was found to be 58.8% at Puskesmas with complete logistics facilities. Other factors, such as MTBS training, workload, and supervision, did not affect the compliance of MTBS implementation.

The relationship between external factors and staff compliance with implementing IMCI at Puskesmas in the working area of Banda Aceh City.

Characteristics	Officer compliance		P* value	OR	IK95%
	Compliant n = 25	Non-compliant n = 39			
IMCI training, n (%)			0,628	0,778	0,281 - 2,81
There is	15 (41,7)	21 (58,3)			
No	10 (35,7)	18 (64,3)			
Workload, n (%)			0,231	0,53	0,191 - 1,49
Lightweight	16 (45,7)	19 (54,3)			
Weight	9 (31)	20 (69)			
Supervision, n (%)			0,442	0,67	0,24 - 1,84
Good	14 (43,8)	18 (56,3)			
Not good	11 (34,4)	21 (65,6)			
Logistics, n (%)			0,001*	0,14	0,04- 0,455
Complete	20 (58,8)	14 (41,2)			
Incomplete	5 (16,7)	25 (83,3)			

*Significant ($p < 0.05$)

Based on the statistical analysis of the Chi-Squared test, it was found that complete logistics facilities were an external factor that significantly ($p < 0.05$) influenced staff compliance in implementing IMCI at the Puskesmas in the working area of Banda Aceh City as described in Table 6.

Factors that most influence staff compliance with IMCI implementation

Multivariate analysis was conducted on internal factors (motivation and knowledge) and one external factor (logistics), which in the previous bivariate analysis showed a significant p -value < 0.05 .

Table 7. Factors that most influence staff compliance with IMCI implementation at Puskesmas in the working area of Banda Aceh City

Variables	B	Wald	OR	IK95%	P* value
Knowledge	2,155	6,732	8,63	1,694 - 43,978	0,009
Motivation	2,662	11,323	14,32	3,039 - 67,505	0,001
Logistics	2,086	6,940	8,05	1,706 - 38,04	0,008
Constant	-4,654				

*Logistic regression

Based on Table 7 above, the logistic regression test found that knowledge (OR 8.63; IK95% 1.694 - 43.978), motivation (OR 14.32; IK95% 3.039 - 67.505), and logistics (OR 8.05; IK95% 1.706 - 38.04) were factors associated with staff compliance in implementing IMCI ($p < 0.05$).

Furthermore, based on this data, the probability of compliance can be calculated. The calculation of the probability of compliance in health workers with knowledge, motivation, and logistics characteristics is as follows:

$$y = -4,654 + (2,155 \times 1) + (2,662 \times 1) + (2,086 \times 1) = -2,249$$

$$p = \frac{1}{1 + \exp(-(2,249))} = 1,105$$

Based on the above formulation, health workers with high knowledge and motivation,, as well as complete logistics at the health center,, are 1.105 times more likely to be adherent to implementing IMCI at the health center in the working area of Banda Aceh City.

An overview of the number, basic characteristics, and compliance of IMCI officers in health centers in Banda Aceh City

Of all the MTBS officers of health centers in Banda Aceh City, the most MTBS officers in this research came from Ulee Kareng Health Center, totaling nine people (14.1%), and the least from Banda Raya Health Center, four people (6.6%). This result is not much different from the research conducted by (Website et al., 2023) that the implementation of Integrated Management of Sick Toddlers (IMCI) at Puskesmas Kota Ratu was carried out by doctors and IMCI officers and health workers at the Puskesmas was sufficient. Namely, four people in the IMCI clinic had good service performance and competent staff. According to the IMCI and malnutrition training module, health workers at the Puskesmas play a role in implementing IMCI by their competence and authority. To provide comprehensive management of sick toddlers according to standards, capacity building is needed for facilitators and health workers in child health services (doctors, midwives/nurses, and nutritionists) as the IMCI service team at puskesmas. However, researchers did not find any theory or standard provisions from WHO, the Ministry of Health, the Health Office, or puskesmas regarding the number of staff that must be present in IMCI services.

The subjects in this research were 64 IMCI poly officers from all health centers in the working area of Banda Aceh City, which amounted to 11 Puskesmas. This research showed that officers who were compliant in filling out the IMCI recording form were 39%. The findings of this research do not differ much from the research (Radiyanti et al., 2016) At the Karanganyar Regency Health Center, which showed that most respondents 45.5% completed the MTBS sheet. Staff compliance in implementing the IMCI procedure was assessed by monitoring the completion of the IMCI recording form. The standard for compliance assessment was 80%, by the standards of the Ministry of Health of the Republic of Indonesia. This recording form is a very important tool for recording the child's condition and the results of examinations and actions or treatment provided by health workers so that continuous health services are organized (Indonesian Ministry of Health, 2022).

Puskesmas that are compliant in filling out the IMCI recording form in the Banda Aceh City area are 4 puskesmas (36.3%) out of a total of 11 puskesmas namely, Puskesmas Batoh, Puskesmas Jaya Baru, Puskesmas Lampulo, and Puskesmas Lampaseh Kota. Puskesmas with a percentage assessment of filling out the best MTBS recording form of 80% and above are Puskesmas Batoh (91%), Puskesmas Lampulo (83%), Puskesmas Lampaseh Kota (83%), and Puskesmas Jaya Baru (82%). According to data from the Ministry of Health based on the results of monitoring and evaluation in 2020 at puskesmas throughout Indonesia, it was found that puskesmas that had implemented IMCI reached 93.8% but with a low level of officer compliance, namely only 54.6% (Indonesian Ministry of Health, 2022). (Indarwati, 2014) found that most health centers did not use the IMCI form to handle sick toddlers, so all patients who came were generally treated without looking at the age level. The officer revealed that

there was no time to use the IMCI form because many patients and activities had to be handled. If using the IMCI form, the time to serve patients would not be enough, as one patient takes 10-15 minutes. Therefore, most officers did not comply with the procedures in IMCI.

The age category of most subjects in this research was the adult category, with an age range of 19-44 years, as many as 44 people (68.8%). This result is not much different from research (Afolalu, 2020) on 90 health workers in Ekiti, Nigeria, which found that the majority (37.8%) were aged 30-35. However, in theory, age affects productivity; the older the worker, the more his productivity decreases (Robbin, 2010). The difference in the age category of respondents is due to variations in the age category in each research.

The majority of the subjects of this research were female, as many as 62 people (96.9%). Research (Afolalu, 2020) on 90 health workers in Ekiti, Nigeria, found the same thing, namely, 84.4% of female subjects. Likewise with research (Tshivhase et al 2016) on 208 IMCI officers in South Africa found that the majority were women (90%) because IMCI officers in South Africa are mostly nursing staff and are dominated by women. According to WHO data, in 2019, 234 million workers in the health and social sector worldwide were dominated by women. Over the past 18 years, the number of female health workers in 104 countries has reached 67%. In most countries, most female workers are nursing and midwifery personnel (WHO, 2019).

There will be 47 million people in Asia Pacific countries in 2021 working in the health and social work sector, and women account for 67.6% of the workers. This is in line with the global trend, where the number of working women is 71.4%. (Sectoral & Market, 2022). The number of health human resources (HR) in health care facilities in Indonesia in 2023 was 2,077,473 people consisting of 183,694 medical personnel (8.8%), 1,317,589 health workers (63.4%), and 576,190 health support personnel (27.8%). Within the scope of health workers, nursing and midwifery workers occupy the highest proportion, 44.3% and 26.2% of all health workers, respectively (Indonesian Ministry of Health, 2022). However, the data in Indonesia does not mention the proportion of health workers by gender.

Based on data from the Aceh Provincial Health Office in 2023, the overall ratio between health workers working in health centers in Aceh Province varies, with the ratio of men and women ranging from 1: 3-6. The number of health workers at the Banda Aceh City health center consists of 5 male nurses, 68 female nurses, and 163 midwives (Aceh Health Office, 2023). The proportion of the subjects of this research was predominantly female due to the proportion of dominant health workers being female.

This research found that the higher education category (Diploma III / III and/or above) was found to be higher, reaching 93.7%. The same results were also found by (Banhae et al., 2022) the majority of MTBS officers' education at the puskesmas was DIII 66.7%, undergraduate 30%, and Masters 3.3%. Research (Radiyah et al., 2016.) of 77 respondents also found that the majority had a DIII education (94.8%), and a small proportion (5.2%) had a bachelor's degree, and it was stated that a person's level of education affects awareness of the importance of health which can encourage the need for health services including the IMCI program. Based on data from the Ministry of Health, in 2023, the number of DIII polytechnic graduates is 19,995 people, DIV 9,752 people, and professional programs 4,336 people and nursing research programs in Indonesia have the most graduates, namely 6,171 DIII graduates, and 1,849 DIV graduates. In general, there are more DIII graduates than DIV graduates in almost all research programs. The number of health workers in Indonesia who served in health centers was 530,338, an increase compared to the previous year, which was 521,304 people. The highest number of health workers in puskesmas are midwives at 221,323 and nurses at 165,742 (Indonesian Ministry of Health, 2022). The data is in accordance with

the results of this research; the majority of health workers at puskesmas have educational qualifications above the same as Diploma III.

The relationship between internal factors and compliance of health center staff in implementing IMCI

This research found that MTBS officers who were compliant in filling out the MTBS recording form and had high motivation 65.6% and there was a significant relationship ($p < 0.001$) between compliance in filling out the MTBS recording form and high motivation and health workers who had high motivation had compliance in filling out the MTBS recording form 0.75 times greater than officers who had low motivation. The results of this research are in accordance with (Banhae et al. 2022) in the Kupang City Health Center of 30 health workers had high motivation and compliance reached 66.6% ($p = 0.000$), and a significant relationship between work motivation and compliance with filling out MTBS forms by MTBS officers. The results of this research are not much different from the findings of (Omphemetse et al., 2019b) at Puskesmas Lubuk Buaya Padang; 62.2% of IMCI staff had high motivation. Work motivation refers to intrinsic factors such as achievement, recognition, work itself, and responsibility, as well as extrinsic factors such as policy, administration, supervision, interpersonal relationships, and working conditions related to work motivation. (Swarjana I ketut, 2022). However, in this research, the implementation of IMCI at the puskesmas has not provided rewards in the form of certificates, rotating trophies, or others, and periodic facilitative supervision has also not been routinely carried out to increase the motivation of IMCI officers.

This research also found that health workers with high knowledge about IMCI and who were compliant in implementing IMCI were 52.6%. This high knowledge was statistically significantly associated with compliance. These results are also in accordance with research (Marta, 2021) at the Baso Health Center in West Sumatra on 30 health workers, which showed a significant relationship between officer knowledge and compliance with MTBS implementation ($P = 0.003$). In accordance with the research of (Picauly et al., 2023) on 80 MTBS officers in Kupang Regency, East Nusa Tenggara Province found that MTBS officers with high knowledge reached 63.63% and there was a relationship between high knowledge and officer compliance in implementing MTBS ($p = 0.026$). In theory, high knowledge of health workers about MTBS affects the proper implementation of MTBS (N. Siregar et al., 2021)

Different from the research of (Damiete et al., 2023) studied 52 nurses in Nigeria, only 12 of whom had attended IMCI training and found that both nurses who had and had not attended IMCI training showed low knowledge of IMCI and there was no difference in the effect of knowledge between the two groups and it was explained that these findings might indicate a lack of assistance and supervision regarding IMCI protocols, the limitations of the research were the use of a new MTBS knowledge scale that was not standardized, and a cross-sectional design that made it difficult to determine causal relationships (Damiete et al., 2023)

IMCI officers who were compliant in implementing IMCI were in the adult category (19-44 years old) as much as 45.5%, and there was no association between age and education with officer compliance in implementing IMCI ($p = 0.120$). These results are not much different from those (Handayani, 2012) of 100 health workers; 57.8% of officers aged > 35 years had good performance, but no relationship was found between age and MTBS officer performance. In theory, age affects productivity, where the older the worker, the lower the productivity because skills, speed, dexterity, strength, and coordination decrease over time. (Robbin, 2010). This theory is consistent with this research, where 75% of CFR officers were non-compliant in the pre-elderly category (45-59 years old). However, non-compliant officers in the adult category (19-44 years) reached 54.4% as well; this result may be due to the

grouping of officer compliance, namely 25 people compliant and 39 people non-compliant and associated with the classification of adult and pre-elderly age, thus affecting the results of the majority percentage of CFR officer non-compliance.

Most of the respondents were female and compliance with the implementation of IMCI, but statistically, no relationship was found with officer compliance in implementing IMCI (Kabupaten & Raya, 2008) also found similar results in the Nagan Raya District, possibly due to the disparity in the number of male and female respondents, where women dominated up to 95.9% of all IMCI officers. The gender variable is difficult to intervene in, but it can be taken into consideration when appointing female officers to be in charge of implementing MTBS services. Likewise, in this research, female IMCI officers dominated up to 96.9%. This is in accordance with WHO data, which notes that health workers in 104 countries are dominated by women, up to 67%. (WHO, 2019). In this research, the MTBS officers were predominantly female because the distribution of MTBS officers at the health centers in Banda Aceh City was dominated by women.

Forty percent of MTBS officers at puskesmas who were compliant in implementing MTBS in the Banda Aceh city area had educational qualifications of DIII and higher, but there was no relationship between education and officer compliance in filling out MTBS forms. In line with research by (Banhae et al. 2022) on 30 health workers showed that the majority of respondents' education was DIII Nurse, namely 16 respondents (66.7%), but the relationship between education and compliance of MTBS officers was not analyzed, and it was argued that higher education level (DIII), MTBS officers will easily understand guidelines related to MTBS management. In this research, researchers found that 40% of CFR officers who were compliant and 60% who were not compliant were highly educated. This is different from the theory, which states that the non-compliance of officers implementing IMCI is due to their low education (Omphemetse et al., 2019b). In this research, MTBS officers were dominated by DIII educational qualifications and higher than that because the distribution of MTBS officers at the Banda Aceh City health center was dominated by DIII educational qualifications and higher than that.

Of MTBS officers who were compliant in implementing MTBS, 40% had a working period of under 2.5 years (new to work category), and 64.3% who were not compliant had a long working period (≥ 2.5 years), but no relationship was found between working period and officer compliance in implementing MTBS. The results of this research are in line with research (Banhae et al., 2022) on IMCI officers at the Kupang City Health Center; there was no relationship between the length of service and officer compliance in implementing IMCI. Different results were obtained (Handayani, 2012) in a research of 100 health workers at the Kulon Progo Regency Health Center. , 62.5% of officers with a tenure of 3 years or more had good performance and showed a significant relationship between tenure and MTBS officer performance ($p=0.020$), officers with a tenure of more than 3 years had a risk of 2.9 times having poor performance compared to tenure above the same as 3 years. Officers who have worked for a long time have become accustomed to the conditions of their duties so that it is easier to complete the tasks assigned to them. Length of service of ten, called seniority, shows a positive relationship with work productivity. Someone who has worked for a long time will have broader insights and more experience that can shape behavior (Robbin, 2010). The longer the officer's service, the more skillful he is in carrying out his duties because he has a lot of experience. The different results found in this research may be due to officers being accustomed to the conventional method, which is a faster process than the IMCI approach.

The relationship between external factors and compliance of health center staff in implementing IMCI

The external factor associated with staff compliance in implementing IMCI is logistical completeness ($p=0.001$). (Website et al., 2023) Also a relationship between complete facilities and/or logistics in the implementation of IMCI ($p=0.009$). Some types of logistics that must be prepared include drugs, vaccines, medical devices, IMCI chart books, management forms for sick toddlers and young infants, outpatient register books, referral forms, MCH books, and several other IEC media that support the implementation of IMCI both print and audiovisual. (IMCI 2019). Some types of logistics that are already available at the Banda Aceh City puskesmas include recording forms, MTBS chart books, MCH books, outpatient register books, length, and height measuring instruments, LiLA measuring tapes, available nutrition counseling posters/leaflets, infant and child weight scales, available immunization stations, available cold chains that are functioning properly and available medicines include paracetamol, amoxicillin, cotrimoxazole, metronidazole, albendazole, pyrantel pamoate, iron/folate tablets, vitamin A 200.000 IU, vitamin A 100,000 IU, 1% chloramphenicol eye ointment, ORS, ringer lactate infusion fluid, 0.9% NaCl infusion fluid were also available.

In this research, it was found that there were still health centers in Banda Aceh City that did not have an IMCI service place/room, effective IMCI service flow, Corner Oral Rehydration Efforts (URO), equipment such as axilla thermometers, children's blood pressure gauges, timers/watches with second hands, while for drug availability it was sufficient but there was no primaquine drug, and Artemisin Combination Therapy (ACT). Research conducted by (Anggraini et al., 2022) by purposive sampling concluded that facilities and infrastructure, although considered sufficient, are still equipment and drugs that are not available to support the implementation of IMCI; there is no MTBS special room that is separate from other rooms, there is no special funding related to the implementation of IMCI at the Nanggalo Health Center and Lubuk Buaya Health Center (Anggraini et al., 2022).

Health workers who were compliant in implementing IMCI and had attended training were 41.7%. However, there was no relationship between MTBS training and staff compliance in implementing MTBS. In contrast to (Kilov et al., 2021), a research of 531 health workers in 47 health facilities in Malawi, South Africa, found that more than half of the health workers scored below 50% for the MTBS knowledge variable and health workers who had attended MTBS training had an effect on increasing compliance with MTBS officers. In contrast research (Picauly et al. 2023) on 80 MTBS officers in Kupang Regency, East Nusa Tenggara Province, found that MTBS officers who had attended MTBS training reached 85.29% and there was a relationship between high knowledge and officer compliance in implementing MTBS ($p=0.000$). Research (Health, 2018) of 291 health workers in Ethiopia found the most common problem in IMCI implementation was the lack of trained staff (56.2%). Lack of training among professional nurses was identified as an obstacle affecting the proper implementation of IMCI (Omphemetse et al., 2019a). The survey showed that the main barriers to improving IMCI include inadequate training budget and human resource issues (staff turnover and motivation). These barriers illustrate the causes of poor health worker performance (Omphemetse et al., 2019b). Integrated management of sick children has been shown to be effective in improving the quality of pediatric health services, increasing healthcare cost savings, and possibly reducing the number of child deaths in developing countries. However, many countries still experience barriers in health worker training and health systems, as well as political and financial constraints in the implementation of IMCI. (Lastianingsih, 2021).

In this research, it was found that health workers who had a light workload and complied were 45.7% and did not comply with 54.3%. While health workers with heavy workloads were 31% compliant and 69% non-compliant. Health workers with a light workload were 0.5 times

more compliant in implementing IMCI than those with a heavy workload, but no relationship was found between workload and compliance in filling out the IMCI form. The results of this research are similar in line with research (Hartati et al., 2023) showed that there was no relationship between officer workload and the completeness of filling out the Integrated Management of Sick Toddlers (IMCI) form at the Puskesmas. But in contrast to the findings (H. K. Siregar, 2024), respondents with moderate workload have a 2.9 times greater risk of reduced performance in implementing the IMCI program than respondents with light workload, and there is a relationship between workload and midwives' performance in implementing the IMCI program at Puskesmas Indrajaya and Delima, Pidie Regency ($p=0.015$), excessive workload includes assessing the physical activities needed to complete work such as visiting patients, making reports and completing all work and there are 14.7% of respondents with low workload but have poor performance; this may be due to lack of leadership supervision (H. K. Siregar, 2024). In this research, it was also found that the light workload of CFR officers who were not compliant reached 54.3%; this may also be due to a lack of supervision by the leadership.

(Indarwati, 2014) conducted research at the health center in Bantul Regency and found that the implementation of IMCI in most health centers has not been effective. This condition is due to the limited number of MTBS personnel who have been trained, the transfer of personnel who have been trained, the lack of time to use the IMCI form due to the many patients and activities that must be handled, and the lack of complete supporting facilities and infrastructure.

The results of this research showed that respondents who received good supervision (≥ 2 times a year) had 43.8% compliance in the implementation of IMCI, while poor supervision showed a non-compliance rate of 65.6%. There was no relationship between facilitative supervision and staff compliance when implementing IMCI. In contrast to research conducted by (Website et al., 2023) on 30 health workers who found a relationship between leadership support and the implementation of IMCI. (Damiete et al., 2023) Recommended periodic MTBS refresher training accompanied by mentoring and supervision for health workers to improve the effectiveness of the MTBS strategy. Facilitative supervision is part of quality management with a process approach, namely by researching the performance of health workers in their workplace (Indonesian Ministry of Health, 2022). Effective supervision of primary healthcare workers is important to maintain and improve practice after IMCI training. (Strengthening, n.d.).

Facilitative supervision of health workers involved in IMCI services at puskesmas and their networks can be carried out internally by the head of the puskesmas and the puskesmas doctor assisted by the coordinating midwife. Externally, it is carried out by the person in charge of IMCI-related programs at the District Health Office (MCH, P2M, Nutrition, Immunization, Community Health, Surveillance, Person in Charge of Drugs and Person in Charge of Infrastructure and Equipment), and professional organizations such as the Indonesian Doctors Association (IDI), the Indonesian Midwives Association (IBI), and the Indonesian National Nurses Association (PPNI). The implementation time of facilitative supervision is divided into 2 times. The first is routine, which is carried out twice a year, and the second is during post-training and post-orientation supervision (4-6 weeks) (2019 IMCI) Data reported by WHO reported that supervision was only conducted 6.3% of the time in the last six months at community-level health facilities in countries with high under-five mortality rates (World Health Organization., 2017). In this research, facilitative supervision was carried out by the Banda Aceh City Health Office together with the Banda Aceh branch of UNICEF only once in 2024 due to limited funding for the IMCI program. Therefore, cross-sectoral

cooperation is needed to optimize the implementation of facilitative supervision in IMCI services.

Factors that most influence staff compliance with IMCI implementation

The factors that have the most influence on staff compliance in implementing IMCI in this research are knowledge ($p = 0.009$), motivation ($p = 0.001$), and logistics ($p = 0.008$). Health workers with high knowledge are 8.6 times more compliant than those with low knowledge. These results are different from Purwanti's research in Banyumas Regency on 99 respondents, which found that knowledge has no significant relationship with officer performance ($p=0.163$) and p -value <0.25 so that it is continued to multivariate analysis obtained health workers who have high knowledge, have good performance 2.1 times better health workers who have low knowledge (Purwanti, S. 2010). This research is also different from Firdaus's research in Nagan Raya Regency, where respondents with a high level of knowledge had a proportion of compliance of 52.4%, while respondents with a low level of knowledge had a proportion of compliance of 44.1% and a proportion of respondents with a high level of knowledge had a proportion of compliance of 44.1%.

There is no significant relationship between knowledge and staff compliance when implementing IMCI procedures in Nagan Raya District. The OR value is 1.393, which means that respondents with high knowledge have a 1.3 times greater chance of being compliant than respondents with low knowledge. However, in theory it is said that MTBS officers to be able to provide comprehensive services require an increase in MTBS knowledge according to standards (Indonesian Ministry of Health, 2022). Good knowledge of IMCI officers will provide optimal IMCI services (Lastianingsih, 2021).

Health workers with high motivation were 14.3 times more compliant in implementing IMCI than those with low motivation. This result is in accordance with research (Purwanti, S. (2010). In Banyumas Regency, 99 respondents found that high motivation was associated with officer performance ($p=0.007$) and health workers who had high motivation had good performance 3.8 times greater than respondents who had low motivation. This research is also in line with research (Radiyah 2016) 77 health workers found a significant relationship between motivation and the completeness of the IMCI sheet with ($p=0.011$) and health workers who had less motivation had a 1.7 times risk of not completing the IMCI sheet compared to health workers who had good motivation. In theory, one of the motivations for implementing IMCI is the training and retraining (refreshing) of health workers and the availability of logistics (Damiete et al., 2023).. In addition to the skills and knowledge of health workers in implementing IMCI, commitment and motivation are also needed because a lack of commitment from health workers will affect the implementation of IMCI, which is expected to reduce child mortality or child health status (Lastianingsih, 2021).

Health workers with health centers that have complete logistical equipment are 8 times more compliant in implementing IMCI than those with incomplete logistics. The results of this research are in accordance with research (Hidayati & Novita, 2023) in Lebakwangi, Kuningan Regency, West Java Province, which found that the facilities and infrastructure factor had an effect of 3.38 times on compliance with the implementation of IMCI. The same thing was also found (Health, 2018) of 185 IMCI officers in Ethiopia found that 44% of IMCI officers reported that the most common problem encountered was the lack of medicines and essential supplies in the implementation of IMCI. Therefore, support for the health care system is in line with improving access to supplies of medicines and other equipment for optimal IMCI implementation (Health, 2018).

Logistics is an important and integral part of IMCI services. It must be planned properly, maintained and ensured to be ready to use. This condition will only be achieved if it is

supported by a recording and reporting mechanism according to applicable rules. (2019 IMCI) The lack of resources such as space, chart booklets and IMCI-recommended medicines also makes it difficult for professional nurses to implement IMCI (Omphemetse et al., 2019b). The main barriers in scaling up IMCI include weak mentoring and supervision systems, and lack of facility readiness (drug procurement and supply chain management). In general, these barriers describe the causes of poor health worker performance (Omphemetse et al., 2019b). A systematic review conducted by Pinto et al. concluded that factors that influence the implementation of IMCI include leadership, logistical support, monitoring and supervision, and coordination (Pinto et al., 2024).

CONCLUSION

The conclusion of this study is that the distribution of Integrated Management of Sick Toddlers (IMCI) officers in Banda Aceh City health centers is uneven, with the highest number in Ulee Kareng Health Center and the lowest in Banda Raya Health Center. The majority of IMCI officers are 19-44 years old, mostly female, and have at least a DIII education. The compliance of health center staff in implementing PPI was classified as moderate, as many as 25 people (39%). The main internal factors influencing compliance were knowledge and motivation, while external factors included the availability of logistical facilities. Among these factors, motivation had the strongest influence on compliance, followed by knowledge and logistical support..

This study contributes valuable recommendations for IMCI program managers within the Health Office, emphasizing the need to enhance staff knowledge, boost motivation through targeted training and incentives, and secure ongoing logistical support at health centers. Additionally, regular evaluations of IMCI data recording and reporting procedures—aligned with the Integrated Health Center Recording and Reporting System (SP2TP)—are necessary to ensure compliance with standardized practices. Future research should consider employing a prospective cohort design to reduce bias and capture more precise, comprehensive insights, thereby supporting the enhancement of IMCI implementation quality in broader regions..

BIBLIOGRAPHY

- Afolalu, T. D. (2020). Factors Influencing the Implementation of Integrated Management of Childhood Illnesses in Selected Health Center Open Access. *International Journal of Family Medicine and Primary Care*, 1(6), 1-5.
- Anggraini, R., Fitri Yani, F., & Rasyid, R. (2022). Analisis Implementasi Manajemen Terpadu Balita Sakit (MTBS) Terhadap Kualitas Pelayanan Manajemen Terpadu Balita Sakit di Puskesmas Kota Padang. *Jik Jurnal Ilmu Kesehatan*, 6(2), 339. <https://doi.org/10.33757/jik.v6i2.572>
- Banhae, Y. kristiani, Subani, N. D., Rindu, Y., & Abanit2, Y. M. (2022). Hubungan Waktgu Pelayanan dengan Motivasi MTBS Petugas dengan Kepatuhan Mengisi Formulir MTBS Kota Kupang. *Indonesian Journal of Global Health Research*, 2(4), 281-288.
- Damiete, M., Amachree, M., & Msn, C. E. (2023). *Inadequate Knowledge Of Imci Intervention Strategy Among Healthcare Providers In Port Harcourt Primary Healthcare Centres , Nigeria*. 1, 58-67.
- Dinas Kesehatan Aceh. (2023). *Jumlah tenaga keperawatan dan Kebidanan di Fasilitas Kesehatan Puskesmas*.
- Faktor, A., Berhubungan, Y., Kinerja, D., Dalam, B., Kabupaten, D., Afraini, N.,

- Ichwansyah, F., Rani, H. A., & Syahputra, F. (2021). *Jurnal Aceh Medika*. 5(1), 15–27.
- Firdaus, N., & Mawarni, A. (2013). *Implementasi Program Manajemen Terpadu Balita Sakit (MTBS) Puskesmas Wilayah Kabupaten Pasuruan*. 01(01).
- Handayani, T. (2012). *Faktor-Faktor yang Berhubungan dengan Kinerja Petugas MTBS (Manajemen Terpadu Balita Sakit di Puskesmas Kabupaten Kulon Progo*. 1–93.
- Hartati, B., Menap, & Sulaiman, L. (2023). Pengetahuan, Sikap, Presepsi Beban Kerja, Supervisi Petugas dengan Kelengkapan Pengisian Formulir Manajemen Terpadu Balita Sakit (MTBS). *Jurnal Keperawatan*, 16(1), 383–396.
- Health, P. (2018). *A survey on Integrated Management of Neonatal and Childhood Illness implementation by nurses in four districts of West Arsi zone of Ethiopia*. 1–7.
- Hidayati, A., & Novita. (2023). Analysis Of Implementation Of Integrated Management Of Sick Toddlers (MTBS) By Midwife. *Global Health Science Group*, 4(2), 525–528.
- Indarwati, F. (2014). Perspektif Perawat Tentang Manajemen Terpadu Balita Sakit di Puskesmas Wilayah Kabupaten Bantul Yogyakarta. *Muhammadiyah Journal Of Nursing*, 1(2), 93–98.
- Kabupaten, D. I., & Raya, N. (2008). *Firdaus*.
- Kemendes, ITAGI, UNICEF, dan W. (2021). *Kompendium Praktik Baik*.
- Kemendes RI. (2014). *Peraturan Menteri kesehatan Republik Indonesia Nomor 25 Tahun 2014*. 14(02).
- Kemendes RI. (2020). Kurikulum Pelatihan Manajemen Terpadu Balita Sakit (MTBS). *Kementrian Kesehatan Republik Indonesia*, 1–45.
- Kemendes RI. (2022). Profil Kesehatan Indonesia 2021. In *Pusdatin.Kemendes.Go.Id*.
- Kementerian Kesehatan, R. I. (2020). *Profil Kesehatan Indonesia Tahun 2020*.
- Kementerian Kesehatan RI. (2022). Modul Pelatihan Manajemen Terpadu Balita Sakit dan Gizi Buruk. In *Cetakan I*.
- Kesehatan, D. (2022). *Dinas kesehatan aceh 2022*. 6.
- Kilov, K., Hildenwall, H., Dube, A., Zadutsa, B., Banda, L., Langton, J., Desmond, N., Lufesi, N., Makwenda, C., & King, C. (2021). Integrated Management of Childhood Illnesses (IMCI): a mixed-methods study on implementation, knowledge and resource availability in Malawi. *BMJ Paediatrics Open*, 5(1).
- Laksono, I. S., Mulyadi, A. W. E., Arguni, E., Haryanti, F., Widyaningsih, S. A., Alma, N. A., & Rastiwi, N. (2023). The 2022 Indonesia Integrated Management of Childhood Illness (IMCI): Advantages of the Chart Booklet updates during the COVID-19 pandemic. *Journal of Global Health*, 13, 1–6. <https://doi.org/10.7189/JOGH.13.03024>
- Lastianingsih, S. (2021). Integrated Management Childhood Illness (IMCI) in Primary Health Care: Literature Review. *Science and Technology, Imci*, 77–79.
- Marta, Y. (2021). *Faktor-faktor yang memengaruhi pelaksanaan MTBS pada masa pandemi covid-19 di Puskesmas Baso*. skripsi.
- Mauricio, A., & Sierra, G. (2020). *Integrated Management of Childhood Illnesses implementation-related factors at 18 Colombian cities*. 0, 1–10.
- MTBS. (2019). *Pedoman Peningkatan MTBS 2019.pdf*.
- Omphemetse, F., Makhado, L., & Matsipane, M. (2019a). Factors inhibiting

- implementation of Integrated Management of Childhood Illnesses (IMCI) in primary health care (PHC) facilities in Mafikeng sub- district International Journal of Africa Nursing Sciences Factors inhibiting implementation of Integrated. *International Journal of Africa Nursing Sciences*, 11(July), 100161. <https://doi.org/10.1016/j.ijans.2019.100161>
- Omphemetse, F., Makhado, L., & Matsipane, M. (2019b). International Journal of Africa Nursing Sciences Factors inhibiting implementation of Integrated Management of Childhood Illnesses (IMCI) in primary health care (PHC) facilities in Ma fi keng sub- district. *International Journal of Africa Nursing Sciences*, 11(May 2018), 100161. <https://doi.org/10.1016/j.ijans.2019.100161>
- Penyusun, T. I. M. (2021). ACEH.
- Picauly, I., Hama, P., & Pellokila, M. R. (2023). Implementation of Integrated Management of Sick Infant in the Stunting Prevalence Area , Kupang Regency , East Nusa Tenggara Province , Indonesia. *International Journal of Sciences: Basic and Applied Research (IJSBAR)*, 67(1), 89–99.
- Pinto, J., Puspitasari, Y., Periostiwati, Y., Tilman, C. B., Pinto, A., & Ximenes, E. M. (2024). Impact to Integrated Management of Childhood Illness (IMCI) Implementation in Developing Countries: A Literature Review. *Asian Journal of Pediatric Research*, 14(5), 36–49. <https://doi.org/10.9734/ajpr/2024/v14i5345>
- Purwanti, S. (2020). Analisis Pengaruh Karakteristik Individu, Fasilitas, Supervisi, Dan Motivasi Terhadap Kinerja Petugas Pelaksana Pelayanan Rogram Mtbs (Manajemen Terpadu Balita Sakit) Di Kabupaten Banyumas Tahun 2010. Universitas Jendral Soedirman. Sk.
- Radiyahanti DCA, Wijayanti AC, P. S. (2016). Hubungan motivasi dan sikap bidan dengan kelengkapan pengisian lembar MTBS di Puskesmas Kabupaten Karanganyar. *Universitas Muhammadiyah Surakarta*.
- Robbin, S. . (2010). *Perilaku Organisasi Edisi Kesepuluh*. Gramedia.
- Sectoral, P., & Market, L. (2022). *Asia – Pacific Sectoral Labour Market Profile : 01*, 1–10.
- Siregar, H. K. (2024). *Kepegawaian Terhadap Kinerja Bidan Dalam Melaksanakan Program Manajemen Terpadu Balita*. 2(1), 20–31.
- Siregar, N., Sukmawati, Y., & Yuliarni, E. (2021). *Basic and applied nursing research journal 2021*,. 2(1), 12–16. <https://doi.org/10.11594/banrj.02.01.03>
- Strengthening, H. S. (n.d.). *Implementation in the Western Pacific Region IMCI and Health Systems Strengthening*. Imci.
- Suparmi, S., Maisya, I. B., Rizkianti, A., Sari, K., Rosha, B. C., Amaliah, N., Pambudi, J., Wiryawan, Y., Putro, G., Soekotjo, N. E. W., Daisy, L., & Sari, M. (2018). Pelayanan Manajemen Terpadu Balita Sakit (MTBS) pada Puskesmas di Regional Timur Indonesia. *Media Penelitian Dan Pengembangan Kesehatan*, 28(4), 271–278. <https://doi.org/10.22435/mpk.v28i4.125>
- Swarjana I ketut. (2022). *Konsep Pengetahuan, Sikap, Perilaku, Persepsi, Stres, Kecemasan, Nyeri, Dukungan Sosial, Kepatuhan, Motivasi, Kepuasan, Pandemi covid-19, Akses layanan Kesehatan* (pp. 154–159). Andi offset.
- Tshivhase, L., Madumo, M. M., Govender, I., Health, S. M., Africa, S., Health, P., Africa, S., Tshivhase, L., & Province, L. (n.d.). *Challenges facing professional nurses implementing the Integrated Management of Childhood Illness programme in rural primary health care clinics , Limpopo Province , South Africa*. 1–6.

- UNICEF. (2020). the State of Children in. *The State of Children in Indonesia p Trends, Opportunities and Challenges for Realizing Children's Rights.*, 65.
- Website, A., Arifiyanti Syafitri Rodja, D., & ODodo, D. (2023). Evaluasi Pelaksanaan Manajemen Terpadu Balita Sakit (MTBS) Di Puskesmas Kota Ratu Kabupaten Ende Tahun 2021 Informasi Abstract. *Jurnal Keperawatan Muhammadiyah*, 8(3), 57–68.
- WHO. (2019). Gender Equity In The Health Workforce: Analysis of 104 Countries. *World Health Organization, March*, 1–8.
- World Health Organization. (2017). *Integrated Management of Childhood Illness global survey report*. www.who.int/maternal_child_adolescent/documents/im.
- World Health Organization. Department of Child and Adolescent Health and Development. (2005). *Technical updates of the guidelines on integrated management of childhood illness (IMCI) : evidence and recommendations for further adaptations*. 38.

Copyright holders:

**Siska Safriana, Raihan, Anidar, Teuku Muhammad Thaib,
Eka Yunita Amna, Nora Sovira (2024)**

First publication right:

AJHS - Asian Journal of Health and Science



This article is licensed under a [Creative Commons Attribution-ShareAlike 4.0 International License](https://creativecommons.org/licenses/by-sa/4.0/).