

# Determinants of an integrated management of childhood illness program implementation in Indonesia

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## Abstract

**Purpose:** This study aims to identify the factors related to health system support that influence the implementation of Integrated Management of Childhood Illness (IMCI) in primary health care facilities in Indonesia, specifically in relation to leadership. **Methods:** The research method used is a literature review. Database searches of *Garuda*, Google Scholar, Proquest, Science Direct, Biomed, and Pubmed were performed from 2012 to 2022 using the keywords “*manajemen terpadu balita sakit*”, “IMCI Indonesia”. **Results:** A total of 1,238 articles were screened for eligibility and five published articles met the inclusion criteria and objectives of this literature review. Based on five articles reviewed, nine variables associated with IMCI implementation were analyzed in this study, including leadership support, supervision, completeness of medicine and medical equipment, presence of consultation room, motivation, attitudes, knowledge, and completeness of filling out forms. **Conclusion:** The support of the health system is a key challenge in implementing IMCI. Therefore, strengthening health system support is needed to optimize the implementation of IMCI. In addition, there is a need to strengthen leadership and provide regular supervision and feedback to ensure that IMCI implementation is in accordance with standards and to increase health worker motivation to improve their performance in providing health services.

**Keywords:** integrated management of childhood illness (IMCI); implementation factors; leadership

## Submitted:

February 14th, 2023

## Accepted:

March 22nd, 2023

## Published:

March 29th, 2023

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## INTRODUCTION

Several studies show that Integrated Management of Childhood Illness (IMCI) effectively reduces mortality and morbidity in under-five children if implemented according to standards [1–3]. The percentage of primary health care facilities (*puskesmas*) implementing the IMCI in Indonesia is 89.2%, with the highest percentage in Bali province (99.2%) and the lowest in Papua province (51.7%) [4]. Although the coverage of primary health care facilities implementing IMCI is quite high, it is not followed by

compliance with IMCI procedures, and its implementation varies considerably inter-provinces.

Various challenges are faced in the implementation of IMCI in Indonesia, including a limited number of health workers at *puskesmas* who have been trained in IMCI [5–9], a low number of *puskesmas* conducting IMCI workshops [8], limited availability of medication [8], inadequate facilities and infrastructure [6,8–12], inadequate supervision from the Health Office [8, 10, 12], supervision conducted without involving IMCI personnel [13], lack of budget/financing [11,14], incomplete recording and reporting of IMCI or

non-compliance to filling out IMCI forms [12,13], lack of adherence to IMCI procedures [5,6,9,10,12,13] and incomplete coverage of toddlers managed with the IMCI approach at *puskesmas* [12,13].

IMCI implementation factors in various countries include leadership support [15,16], supervision from the head of primary health care or health office [3,15,17–19], availability of medication [3,15,17,20–22], the presence of a clinic [1,15], completeness of equipment [15,23], motivation [15,24], attitudes [3,17], IMCI training [17,18], knowledge and skills [17,23,25,26], and completeness of form filling [17].

The IMCI is an important innovative effort to ensure that children receiving healthcare services receive comprehensive care and are protected from errors in disease management. Although many barriers to implementation have been documented, issues related to system support in IMCI implementation have not been widely discussed. This review explores themes related to IMCI system support.

## METHODS

The research method used was a literature review. Articles were searched for through various databases such as *Garuda*, Google Scholar, Proquest, Science Direct, Biomed, and Pubmed, using keywords “*manajemen terpadu balita sakit*”, “IMCI Indonesia.” The inclusion criteria for this study were research articles that examined the implementation of IMCI in Indonesia as the dependent variable. These articles were written in Indonesian or English, published between 2012 and September 2022, cross-sectional

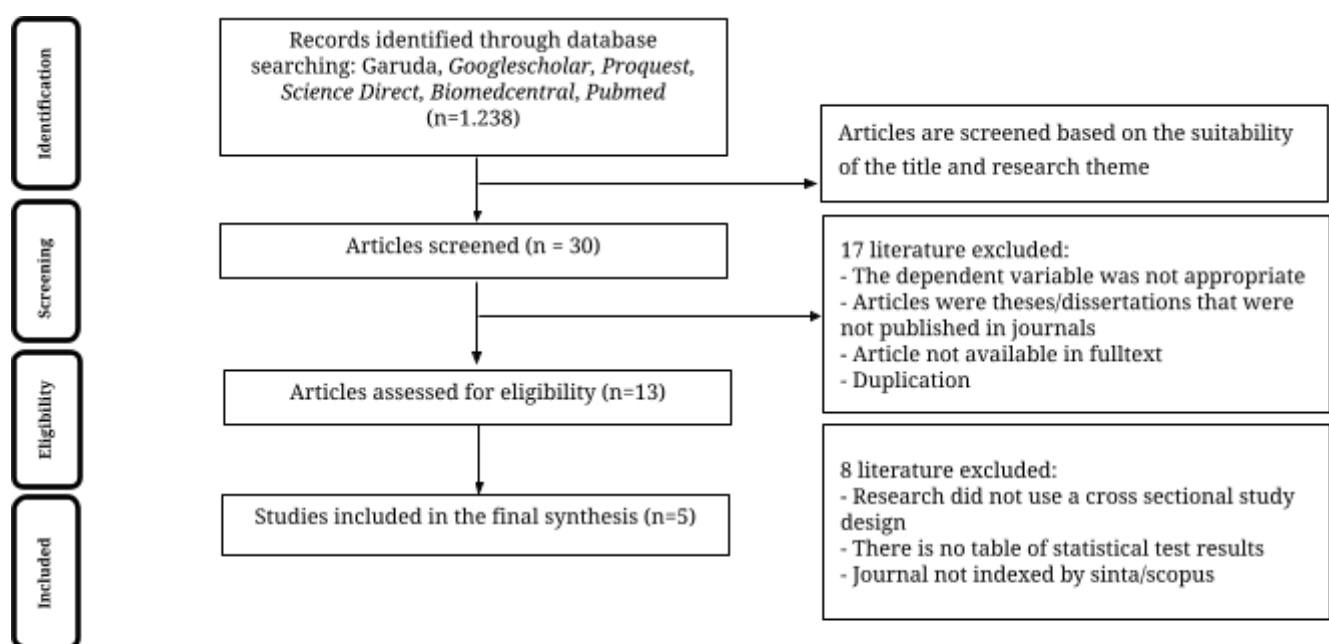
design, available in full-text, and published in a journal indexed by at least Sinta 6 or Scopus. Exclusion criteria included articles that did not include tables of statistical test results, articles that were not published in journals, unpublished articles (theses/dissertations), and proceedings (Picture 1).

## RESULTS

Table 1 identifies and analyzes five articles that met the criteria for this study after conducting the search. These articles highlight several factors that influence the implementation of MTBS, including leadership support, supervision, availability of medicine and medical equipment, the existence of a polyclinic, motivation, attitude, knowledge, and completeness of filling out IMCI forms.

## DISCUSSION

IMCI implementation involves three key interdependent components, which include improving the skills of health workers, strengthening health systems, and improving family and community practices [32]. Health system strengthening is an essential strategy to ensure universal access to quality services. Various challenges in IMCI implementation can be analyzed using the six building blocks according to the WHO health system frameworks (leadership and governance, financing, health workforce, medical products, vaccines and technologies, health service delivery, and health information for planning, monitoring, and evaluation [33].



Picture 1. PRISMA Diagram of article identification and selection

**Table 1. Summary of the literature of factors related to the implementation of IMCI in Indonesia**

Research title (researcher, year)	Results
The correlation between self-motivation and the supervision of the coordinating midwife with compliance in implementing Integrated Management of Newborn and Childhood Illness (IMNCI) [27]	Self-motivation and supervisory support from coordinating midwives affect the implementation of IMCI.
Analysis of factors affecting the implementation of Integrated Management of Childhood Illness (IMCI) in primary health care [28]	Motivational and attitude factors of IMCI implementing officers influence the implementation of IMCI.
Individual factors related to the implementation of Integrated Management of Childhood Illness (IMCI) in Sambas [29]	Motivational factors are related to implementation. Meanwhile, age, knowledge, and performance factors are unrelated.
The dominant factors influencing the implementation of Integrated Management of Childhood Illness (IMCI) in all primary health care in Tasikmalaya, West Java [30]	Implementation factors. First, leadership and health worker capabilities: knowledge, leadership support, supervision, and completeness of form filling. Second, internal health worker and support: attitudes, motivation, and completeness of medication. Thirdly, infrastructure and facilities: clinic availability and the completeness of equipment. The dominant factors are supervision, the attitudes of health workers, and the completeness of equipment for IMCI implementation.
The relationship between the level of knowledge of midwives and the success of Integrated Management of Childhood Illness (IMCI) at the Teupun Raya community health center in Glumpang Tiga sub-district, Pidie district [31]	The level of knowledge of midwives is related to the implementation of IMCI.

Several studies have reported that the main challenge in IMCI implementation is inadequate system support for IMCI implementation [1,3,8,15,16,34,35]. This is consistent with this literature review that found various obstacles in IMCI implementation in Indonesia, especially related to system support which includes leadership, supervision, provision of medicine and medical equipment, service facilities, and health worker capacity building.

A study conducted in 2018-2019 reported that successful implementation of IMCI requires a program structure with strong leadership and governance, where health workers are dedicated to expanding the implementation of the IMCI program at the national, provincial, and district/city levels to impact child health positively [1]. However, only a few countries have fully expanded, and implementation is often incomplete, especially in primary healthcare facilities [32,36]. Poor leadership dynamics and ineffective decentralization are the main causes of IMCI program implementation failure [1]. Previous research identified leadership and governance issues as critical factors contributing to implementation failure [16].

Previous studies have reported several challenges related to leadership support in IMCI implementation,

including insufficient financial resources, inadequate training, mentoring, and supervision, and fragmented leadership and governance [15]. Leadership and governance play a critical role in determining the success of IMCI implementation and improving child health outcomes [16].

Leadership is a crucial component of the health system. From all of the reviewed IMCI research articles in Indonesia, only one article discussed leadership support as a factor affecting the IMCI implementation [30]. Leadership support is crucial for financial support, provision of medicine and health equipment, and improvement of health workers' capacity, among others. Implementing IMCI has faced challenges, with leadership support at primary health care centers (*puskesmas*) being one of the contributing factors [37].

In line with this literature review, another study also mentioned that the lack of mentoring and supervision is among the factors in the health service support system [3]. Based on previous research, supervision was the weakest component of the second IMCI component, with only 15% of countries reporting that more than three-quarters of first-level facilities received at least one supervision visit within six months before the survey [36]. Another study in

Afghanistan reported that only 11% of health workers received supervision during the last six months [38]. Meanwhile, a study in Indonesia also reported a lack of supervision in implementing IMCI [8]. Other studies have reported that the IMCI training time and cost are short, and there is a lack of supervision and follow-up after training, which has impacted the performance of health workers [1].

The implementation of IMCI supervision aims to strengthen the skills of health workers and formulate solutions to problem-solving [27]. It also aims to conclude from monitoring and evaluation results based on field visits and observations of IMCI implementation to improve the quality of health services. Of the five reviewed literature, two studies analyzed the supervision variable and found a relationship between supervision and implementing IMCI [27,30]. The studies found that better supervision was associated with improved health workers' compliance in implementing IMCI [27].

Supervision is essential for IMCI as it has been shown to improve the performance of health workers [3,18,39]. Field visits can be used for post-training monitoring and supervision [3,15,39]. It is recommended that field visits for supervision should be conducted within 4 to 6 weeks after training to ensure that health workers can apply IMCI according to standards [15]. A study in Tanzania suggested that at least one supervision visit should be conducted every quarter [3]. The study also concluded that coaching and supervision for IMCI implementation are greatly needed in many districts in South Africa. High-quality IMCI training and supervision can improve the quality of healthcare provided by all service providers, regardless of their levels of pre-service training [19]. Several studies have shown that the lack of supervision reduces the coverage and impact of IMCI in most countries [19] and contributes to worker burnout [17].

The absence of system support and supervision can lead to a loss of motivation among health workers [1]. Health workers often do not receive sufficient recognition for their daily work from their supervisors, and they may also receive minimal feedback on the reports they submit [15]. Consequently, without motivation, health workers may generate poor-quality data, making decision-making and data utilization challenging [40].

Out of the five reviewed studies, four concluded that there is a relationship between the motivation of health workers and the implementation of IMCI [27–30]. High motivation can encourage health workers to execute each stage in the IMCI form [27]. Motivation is the driving force behind a person's behavior, making them enthusiastic about working hard and achieving

high productivity [27]. The higher the motivation of health workers, the better their compliance with implementing IMCI will be. Motivation is generally defined as an individual's willingness to exert and sustain the effort to achieve organizational goals [24]. Low intrinsic motivation also emerged as a significant factor when health workers explained their low compliance with IMCI guidelines in Africa [24].

## CONCLUSION

The support of the health system is a key challenge in implementing IMCI. Therefore, strengthening the support of the health system is needed to optimize IMCI implementation. Additionally, there is a need to strengthen leadership and provide regular supervision and feedback to ensure that IMCI implementation is in accordance with standards and to increase health worker motivation to improve their performance in providing health services.

## REFERENCES

1. Reñosa MD, Dalglish S, Bärnighausen K, et al. Key challenges of health care workers in implementing the integrated management of childhood illnesses (IMCI) program: a scoping review. *Global Health Action*. 2020; 13.
2. Gera T, Shah D, Paul G, et al. Integrated management of childhood illness (IMCI) strategy for children under five. *Cochrane Database Systematic Review*. 2016; 6.
3. Kiplagat A, Musto R, Mwizamholya D, et al. Factors influencing the implementation of integrated management of childhood illness (IMCI) by healthcare workers at public health centers & dispensaries in Mwanza, Tanzania. *BMC Public Health*. 2014; 14: 277.
4. Kementerian Kesehatan RI. Laporan Riset Fasilitas Kesehatan 2019 Puskesmas. Jakarta, 2019. Available from: [Website]
5. Firdaus N, Sudiro, Mawarni A. Implementasi Program Manajemen Terpadu Balita Sakit (MTBS) Puskesmas Wilayah Kabupaten Pasuruan. *Jurnal Manajemen Kesehatan Indonesia*. 2013; 1: 54–59.
6. Hasibuan II, Lubis NL, Moriza T. Studi kajian dan penerapan kegiatan mutu terpadu balita sakit di Puskesmas Labuhan Rasoki, Kecamatan Kota Padang Sidempuan tahun 2018. *Jurnal Kesehatan Ceadum*. 2019; 1: 52–60.
7. Mansur H. Evaluasi sistem pelaksanaan manajemen terpadu balita sakit. *Jurnal Ilmiah Bidan*. 2017; 2: 19–25.
8. Titaley CR, Jusril H, Ariawan I, et al. Challenges to

- the implementation of the integrated management of childhood illness (IMCI) at community health centres in West Java Province, Indonesia. *WHO South East Asia of Journal Public Health*. 2014; 3: 161–170.
9. Wartana IK, Herawaty N. Evaluasi pelaksanaan Manajemen Terpadu Balita Sakit (MTBS) di Puskesmas Sangurara Kota Palu. *Jurnal Ilmiah Kesmas-IJ*. 2016; 16: 44–51.
  10. Puspitarini D, Hendrati LY. Evaluasi pelaksanaan MTBS pneumonia di puskesmas di Kabupaten Lumajang Tahun 2013. *Jurnal Berkala Epidemiologi*. 2013; 1: 291–301.
  11. Sudirman AA, Ali L. Penerapan Manajemen Terpadu Balita Sakit (MTBS) di Puskesmas Kota Gorontalo. *Zaitun (Jurnal Ilmu Kesehatan)*. 2015;3.
  12. Suparmi, Maisya IB, Rizkianti A, et al. Pelayanan Manajemen Terpadu Balita Sakit (MTBS) pada Puskesmas di Regional Timur Indonesia. *Media Penelitian dan Pengembangan Kesehatan*. 2018; 28: 271–278.
  13. Purwanti S, Mawarni A, Irene K. M. Kinerja petugas pelaksana dalam pelayanan program Manajemen Terpadu Balita Sakit (MTBS) di Kabupaten Banyumas. *Jurnal Ilmiah Kesehatan Keperawatan*. 2012; 8.
  14. Rahmah R, Astuti Y. The implementation of integrated management of children illness in primary health community in Yogyakarta, Indonesia. *Open Access Macedonian Journal of Medical Sciences*. 2021; 9: 315–318.
  15. Reñosa MDC, Bärnighausen K, Dalglis SL, et al. The staff are not motivated anymore: Health care worker perspectives on the Integrated Management of Childhood Illness (IMCI) program in the Philippines. *BMC Health Services Research*. 2021; 21: 270.
  16. Pandya H, Slemming W, Saloojee H. Health system factors affecting the implementation of integrated management of childhood illness (IMCI): qualitative insights from a South African Province. *Health Policy and Planning*. 2018; 33: 171–182.
  17. Meno FO, Makhado L, Matsipane M. 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*. 2019; 11.
  18. Rowe AK, Rowe SY, Holloway KA, et al. Does shortening the training on Integrated Management of Childhood Illness guidelines reduce its effectiveness? A systematic review. *Health Policy and Planning*. 2012; 27: 179–193.
  19. Hoque DME, Arifeen SE, Rahman M, et al. Improving and sustaining quality of child health care through IMCI training and supervision: experience from rural Bangladesh. *Health Policy and Planning*. 2014; 29: 753–762.
  20. Afolalu TD. Factors influencing the implementation of integrated management of childhood illnesses in selected health center. *International Journal of Family Medicine and Primary Care*. 2020; 1: 1027.
  21. Idindili B, Zaeem UH, Ayella S, et al. Factors influencing implementation of integrated management of childhood illness in Lindi Region, Southern Tanzania. *Tanzania Journal of Health Research*. 2018; 20.
  22. Tshivhase L, Madumo MM, Govender I. Challenges facing professional nurses implementing the Integrated Management of Childhood Illness programme in rural primary health care clinics, Limpopo Province, South Africa. *South Africa Family Practice (2004)*. 2020; 62: e1–e6.
  23. Kilov K, Hildenwall H, Dube A, et al. Integrated Management of Childhood Illnesses (IMCI): a mixed-methods study on implementation, knowledge and resource availability in Malawi. *BMJ Paediatrics Open*. 2021; 5.
  24. Lange S, Mwisongo A, Mæstad O. Why don't clinicians adhere more consistently to guidelines for the Integrated Management of Childhood Illness (IMCI)? *Social science & medicine*. 2014; 104: 56–63.
  25. Edward A, Kumar B, Niayesh H, et al. The association of health workforce capacity and quality of pediatric care in Afghanistan. *International Journal for Quality in Health Care*. 2012; 24: 578–586.
  26. Nguyen DTK, Leung KK, McIntyre L, et al. Does integrated management of childhood illness (IMCI) training improve the skills of health workers? A systematic review and meta-analysis. *PLoS One*. 2013; 8.
  27. Hariyani F. Korelasi motivasi diri dan supervisi bidan koordinator dengan kepatuhan dalam melaksanakan manajemen terpadu bayi muda. *Husada Mahakam: Jurnal Kesehatan*. 2014; 3: 407–415.
  28. Rohayati R, Sulastri S, Purwati P. Analisis faktor pelaksanaan manajemen terpadu balita sakit (MTBS) di puskesmas. *Jurnal Ilmiah Keperawatan Sai Betik*. 2015; XI.
  29. Trisna C, Asfian A. Faktor-Faktor Individu yang Berhubungan dengan Pelaksanaan Manajemen Terpadu Balita Sakit di Sambas. *Jurnal Vokasi Kesehatan*. 2017; 3.
  30. Setiawan A, Budiman B, Chatarina C. Faktor Dominan yang Mempengaruhi Pelaksanaan Manajemen Terpadu Balita Sakit (MTBS) Di Seluruh

- Puskesmas Kota Tasikmalaya Jawa Barat. [Healthcare Nursing Journal](#). 2019; 2.
31. Rahmi ES, Halimatussakdiah H, Humaira P. Hubungan Tingkat Pengetahuan Bidan dengan Keberhasilan Manajemen Terpadu Balita Sakit di Puskesmas Teupun Raya Kecamatan Glumpang Tiga Kabupaten Pidie. [Journal of Healthcare Technology and Medicine](#). 2020; 6.
32. Costello A, Dalglish S. Towards a Grand Convergence for Child Survival and Health: A strategic review of options for the future building on lessons learnt from IMNCI. [Geneva](#). 2016.
33. WHO. Integrated Management of Childhood Illness (IMCI) Implementation in the Western Pacific Region: Information Package. [World Health Organization](#). 2013.
34. Fick C. Twenty years of IMCI implementation in South Africa: accelerating impact for the next decade. [South African Health Review](#). 2017; 1.
35. Seid SS, Sendo EG. A survey on Integrated Management of Neonatal and Childhood Illness implementation by nurses in four districts of West Arsi zone of Ethiopia. [Pediatric Health Medicine Therapeutics](#). 2018; 9: 1–7.
36. Boschi-Pinto C, Labadie G, Dilip TR, et al. Global implementation survey of Integrated Management of Childhood Illness (IMCI): 20 years on. [BMJ Open](#). 2018; 8: e019079.
37. Indarwati F. Perspektif Perawat Tentang Manajemen Terpadu Balita Sakit di Puskesmas Wilayah Kabupaten Bantul Yogyakarta. [IJNP \(Indonesian Journal of Nursing Practices\)](#). 2015; 1: 93–98.
38. Mansoor GF, Chikvaidze P, Varkey S, et al. Quality of child healthcare at primary healthcare facilities: a national assessment of the Integrated Management of Childhood Illnesses in Afghanistan. [International Journal for Quality in Health Care](#). 2017; 29: 55–62.
39. Steinhardt LC, Onikpo F, Kouamé J, et al. Predictors of health worker performance after Integrated Management of Childhood Illness training in Benin: a cohort study. [BMC Health Service Research](#). 2015; 15: 276.
40. USAID Momentum. Barriers and Enablers of IMCI Implementation: A Desk Review Report. [USAID Momentum](#). 2022.