

Impact Health Promotion Strategy and Role Local Wisdom in the Implementation of Integrated Management of Childhood Illnesses (IMCI): A Systematic Review

Joaquim Pinto¹, Yenny Puspitasari², Sayekti Wahyuningsih³, Yuli Peristiowati⁴
Carlos Boavida Tilman⁵, Novita Anna Angraini⁶, Atik Setiawan Wahyuningsih⁷

Faculty of Medicine and Health Sciences of National University Timor Loro Sa'e
²³⁴ Strada Indonesia University

Abstract

Background : Integrated Management of Childhood Illness (IMCI) is needed to prevent mortality rate under five years old in sub-Saharan African and South Asian countries with occurring 11 million annually, due from diarrhea, pneumonia, measles, malnutrition, and newborn care problems. This study aimed to assess health promotion strategies in the process implementation of integrated management of childhood illnesses (IMCI).

Methods: The research design uses a systematic review, namely library research, that examines critical quality health journals, which inclusion criteria have filtered. It uses several Google Scholar, PubMed, Science Direct, and Research Gate databases as literacy in this study. There are 718 results according to integrated management of childhood illnesses (IMCI) keywords, which were screened into 28 journals in accordance theme and analyzed with the approach of using the promotion strategy health in the implementation of integrated management of childhood illnesses (IMCI).

Finding: Research results show that a health promotion strategy is needed to implement an integrated management of childhood illnesses (IMCI) policy to reduce mortality and morbidity rates.

Interpretation: The review suggests that a comprehensive approach to child health, which includes both the prevention and treatment of illnesses, is essential for improving child health outcomes. Health promotion strategies play a critical role in this approach and can lead to significant improvements in child health when implemented effectively.

Keywords: Strategy, health promotion, integrated management, childhood illnesses, IMCI.

BACKGROUND

A health system is needed to deal with under-five deaths in sub-Saharan African and South Asian countries (including Indonesia), which occur 11 million years due to diarrhea, pneumonia, measles, malnutrition, and newborn problems¹. These deaths have occurred regularly over the last few decades. These death cases are related (compounded) by the still high prevalence of malaria and the increasing transmission of HIV/AIDS. Since the 1990s, WHO has developed a strategy called Integrated Management of Childhood Illness (IMCI)².

Integrated Management of Childhood Illness (IMCI) is an integrated approach to managing sick children, focusing on the overall health of child with aged 0-59 years. IMCI is not a health program but an approach to managing sick children. The IMCI approach, first introduced by WHO, is a form of health service effort strategy to reduce mortality, morbidity, and disability of infants and toddlers in developing countries³.

According to WHO data, three out of four sick children often have several other complaints and at least suffer from 1 of the five most common diseases in children, which is the focus of IMCI. In the world, acute respiratory infection prevention has started to be effective where children treated with the IMCI approach increased 60% clinically compared to the non-IMCI approach, namely 12%¹.

The importance of family and community practice in implementing IMCI Requirements are needed to get the maximum impact from the IMCI implementation strategy. Namely, the three components above are running in a proper balance. When one of the components does not work correctly, countries implementing IMCI will get disappointing results. So far, many countries implementing IMCI have been slow or need to remember to implement family and community practices in the IMCI approach, which has resulted in a persistently high infant mortality rate².

According to WHO and UNICEF, 80% of under-five deaths occur at home (with little or no contact with health workers). The problem in the community is the need for more compliance of health workers and community cooperation regarding the health problems of their babies to health workers⁴. Therefore, community-based IMCI activities strive for a link between health workers and the community. The aim

is to support & improve family and community practices in child care at home to ensure child survival, reduce morbidity and promote family practices to improve growth and development of the child⁵.

Community empowerment is widely accepted in health promotion practice and has become a program development and implementation strategy⁶. WHO distinguishes between individual and community empowerment. Individual empowerment refers primarily to an individual's ability to make decisions and has control over their personal life. Community empowerment involves the social ability of the community to make decisions and has control over life in the community.

Public health promotion is very much needed and related to IMCI, considering that health promotion factors also influence the success of IMCI. Health promotion strategies are ways to achieve the vision and mission of health promotion effectively and efficiently through advocacy, atmosphere building, empowerment, and partnership movements⁷. Research reveals the influence of IMCI for counseling on the behavior of caring for children with fever by mothers⁸.

Health promotion is a revitalization of health education in the past, in which the concept of health promotion is not only a process of raising public awareness in terms of providing and increasing knowledge in the health sector but also an effort capable of bridging changes in behavior, both within society and within the community. Within the organization and its environment⁹, the successful implementation of the IMCI program is greatly influenced by community empowerment in the health sector. Therefore, the IMCI program is essential in empowering public health.

METHODS

Strategies used in article search is using article study following the topic on database Google scholar, PubMed, Science Direct, and Research Gate¹⁰.

This systematic review is limited to a literature search within the last six years (2016-2022) with the use key word as "IMCI," "IMCI Strategy," "Implementation IMCI," and "integrated management of childhood illnesses" by determining questions following the PICO technique. Where every question P is a sample with or without a strategy, I am IMCI Implementation on the experimental study, C is a sample without IMCI Strategy, and O is Process IMCI implementation strategy. Criteria inclusion in study literature This is an article-shaped full-text that speaks Indonesian or English published in a 6-year final article study. It includes two or more search keywords in the database. Journal review flow customized with the following picture. Full-text articles are examined to select the appropriate research journal with sample inclusion criteria. Twenty-one articles met the inclusion criteria and abstract, which is relevant for analyzing health promotion strategy in implementing integrated management of childhood illnesses (IMCI).

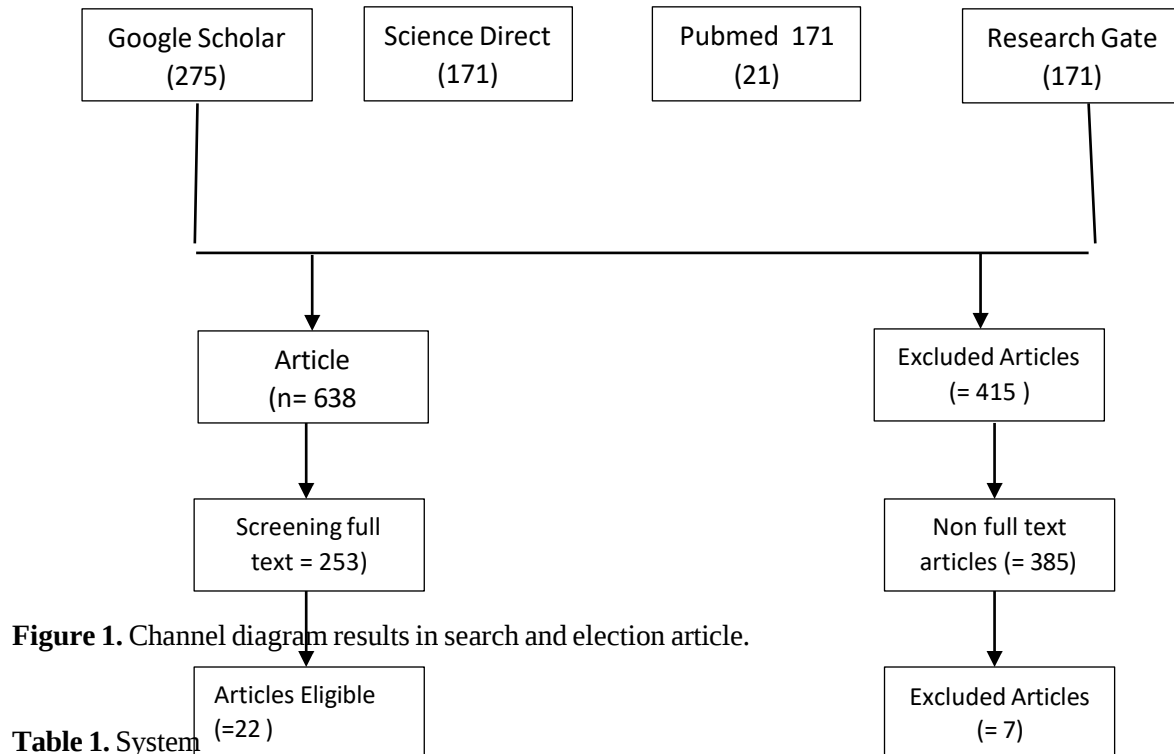


Figure 1. Channel diagram results in search and election article.

Table 1. System

No.	Article Identity	Article Summary
1	https://www.sdiarticle5.com/review-history/116020 DOI: 10.9734/AJPR/2024/v14i5345	Exclude 1 Articles (= 28) ors causes to implementation IMCI are d by head community health, district authority, attitude of health workers, logistics support, experience, knowledge, and perception of health staffs trained on IMCI determine in process application in each health facility. The impact on IMCI implementation process. Has a leadership, logistic support, monitoring and supervision and coordination.
2	https://www.sciencedirect.com/journal/healthcare	Parameter values observed were assessment, classification, treatment, counseling to mothers, and follow-up were 83.3%, 97.10.5%, 88.45%, 44.76%, and 39%, respectively. Implementing IMCI requires routine monitoring, evaluation, and supervision from the Community Health Center authorities. The level of compliance with the guidelines for implementing IMCI in Ailed City is only 70.64%.
3	https://pubmed.ncbi.nlm.nih.gov/27378094/	Implementing integrated pediatric disease management strategies can reduce child mortality. IMCI may have little or no effect on nutritional status and may have little or no effect on vaccine coverage. The mother's care-seeking behavior is in accordance with IMCI, which affects adherence to exclusive breastfeeding.
4	https://academic.oup.com/heapol/article/33/2/171/4638453	The obstacles that IMCI faces include poor service for children, incompetence of trained

		nurses by inappropriate rotation practices, use of inappropriate indicators to track progress, coordination of activities with poor role delineation, and fragmented vertical governance programs included in IMCI, such as immunization.
5	https://bmjopen.bmj.com/content/8/7/e019079	Eighty-one percent of countries reported that implementing IMCI included all three components. Nearly half (46%; 44 countries) reported implementation in 90% or more districts, and all three components were in place. These fully implementing countries are 3.6 (95% CI 1.5 to 8.9) times more likely to achieve Millennium Development Goal 4 than other countries. Despite reported high implementation rates, this strategy only reaches the children who need it most, as implementation is lowest in countries with high mortality rates (39%; 7/18).
6	https://scielo.isciii.es/pdf/eg/v17n52/en_1695-6141-eg-17-52-252.pdf	The most used practice was related to competency for disease control strategy subjects (80% to 99.3%). However, a high percentage (66.9%) did not recognize general dangerous signs; infrequently used practices related to health promotion and prevention of common diseases (23%-57.9%). Social mobilization with an ethnocultural approach has a medium frequency of use (60% to 79%). Diarrhea and pneumonia predominated, more permanent studies related to critical practices 11, 12, and 17; less implemented are critical practices 3, 7, 8, 9, and 10. Lower sustained mortality rates were observed after the implementation of the IMCI strategy.
7	https://www.sciencedirect.com/science/article/pii/S2214139118300428	Participants were professional nurses aged between 25 and 50 years. From these data, among others, the organizational and structural factors that hinder the implementation of IMCI; education, training, and awareness; behavior and attitudes of nurses towards implementing IMCI; and factors related to caregivers in implementing IMCI.
9	https://pdfs.semanticscholar.org/3624/2c352c669fdcbf7438a40bac52fbfc43c198.pdf	The results show that failure to implement all IMCI components can prevent these professionals from detecting treatable diseases in primary health care, thereby increasing the number of preventable hospitalizations.
10	https://revistas.ufg.br/fen/article/download/49053/26641/234260	The findings raise some concerns, as failure to implement all the components of IMCI may prevent these professionals from detecting treatable diseases in primary health care, thereby

		increasing the number of preventable hospitalizations.
10	https://www.scienceopen.com/document_file/9d752767-4d51-4d3b-b4fb-79295d7af9df/PubMedCentral/9d752767-4d51-4d3b-b4fb-79295d7af9df.pdf	Data were obtained from 201 healthcare professionals, resulting in a response rate of 100%. IMNCI implementation is 58% high-level implementation and 42% low-level implementation. In multivariate analysis of the implementation of IMNCI higher among trained health workers IMNCI 2.7, 95% CI: (1.1.278, 4.562)] and among those who constantly refer to the booklet chart [2.76, 95% CI: (1.753, 5.975)]. The IMNCI strategy can be better implemented by providing training for health workers.
11	https://www.thelancet.com/pdfs/journals/eclinm/PIIS2589-5370(22)00241-3.pdf	IMCI providers performed pulse oximetry assessments of all eligible children in the routine outpatient setting, in which 99% of assessments were successful, 85% in one try, and 69% in one minute. Compliance with standard operating procedures related to pulse oximetry was 92%, and agreement with the identification of hypoxemia was 97%. The mean performance time was 36 seconds (IQR 20.75) among those classified as pneumonia or severe pneumonia.
12	https://www.banglajol.info/index.php/AJMBR/article/view/53309	Among respondents, 42.6% did not know one of the goals and 46.8% of respondents knew one of the IMCI components, 51.5% knew that IMCI was to improve the health system, and 35.3% of respondents knew that IMCI was to improve family and community practices. Signs of diarrhea in infants aged 0-2 months were unknown by 27.8% of respondents. Most respondents (72.2%) knew an increased respiratory rate was a sign of pneumonia. Among the respondents, 42.6% had less knowledge about IMCI, 28.7% had good knowledge, and (28.7%) had moderate knowledge. The level of knowledge is significantly related to age ($p<0.026$), gender ($p<0.001$), workplace ($p<0.001$), position ($p<0.001$), type of work ($p<0.001$), length of work ($p<0.001$), training status ($p<0.002$).
13	https://pubmed.ncbi.nlm.nih.gov/32501038/	Implementing the IMCI strategy by IMCI-trained professional nurses in Vhembe's Community Health Centers (CHS's) continues to face challenges, making it difficult for professional nurses to follow the guidelines. These challenges range from staff bottlenecks, management bottlenecks, poor management processes, and poor infrastructure, leading to poor quality of care for sick childrens.
14	https://www.walshmedicalmedia.com/open-access/utilization-of-integrated-	Data were obtained from 185 nurses, 131 (70.8%) male-more than half of 103 (55.7%)

	management-of-neonatal-and-childhood-illness-imnci-guidelines-and-associated-factors-among-nurse-at- publ-2090-7214-1000313.pdf	respondents aged between 25 and 29. The mean ($\pm$ SD) age was $26.65 \pm (1.7)$ with a range of 20-43 years, and 107 (57.8%) were diploma nurses. The overall utilization of the IMNCI protocol is 58.7%. In multivariate analysis, the odd number of IMNCI utilization in nurses who have attended IMNCI training is 2.76 times higher compared to nurses who have never attended IMNCI training [AOR=2.76, 95% CI:1.388, 5.51]. Nurses who have practice always referral chart booklet during each case management process are three times more likely to take advantage of the IMNCI protocol [AOR=2.95, 95% CI: 1.48, 5.89] compared to their counterparts.
15	https://journals.plos.org/plosntds/article?id=10.1371/journal.pntd.0010832	The survey resulted in a consensus to integrate dengue into IMCI better and extend the age range for IMCI guidelines above five years. The interview results showed that their country has stand-alone clinical guidelines for dengue, which must be integrated into the IMCI approach. Laboratory testing for dengue is required on the third day of fever. A large multicentric study in children aged 5-15 years found that the probability of dengue increased with successive fever days. A significant proportion of children (36%) will be missed if laboratory testing is only performed on the third day of fever in a row.
16	https://www.ajol.info/index.php/ajhs/article/view/237594	The results showed that most (68.1%) respondents were trained in IMCI, and most (65.3%) had sufficient knowledge about IMCI. Slightly above the average of the participants, they strongly perceived the lack of adequately trained staff (52.8%) and the scarcity of trained staff regarding the large number of children seeking treatment (52.8%) as obstacles in implementing IMCI. The identified motivators for implementing IMCI were health workers' training and retraining and providing work aids.
17	https://adc.bmj.com/content/archdischild/early/2019/09/25/archdischild-2019-317072.full.pdf	IMCI is not completely used either as a strategy or as an algorithmic diagnostic and treatment decision tools. Built-in incentives include: economic factors are preferred evidence and the child's best interest in treatment decision; financing mechanisms and payment schemes provide incentives for unnecessary or prolonged hospitalization; prescription drugs other than IMCI drugs for income generation or because it is believed to be superior by a doctor or parent; parents' perceptions of parenting quality at the primary health care level are poor; invasive treatment and medical treatment.
18	https://brieflands.com/articles/jme-110046.pdf	Participants in the trained group scored much higher than those in the untrained group in

		identifying and managing major childhood diseases ($P < 0.05$). No significant differences were found between the trained and group untrained in assessing children's immunization status. In the trained group, a strong positive correlation ($r = 0.87$) existed between the percentage of participants present during the training session and the scores scored in the evaluation ($P < 0.001$).
19	http://ijnnet.com/journals/ijn/Vol_9_No_1_June_2022/3.pdf	Respondents who did not receive IMCI training (score 45.8%, criterion 70%). IMCI knowledge of respondents who attended IMCI training (50%). There was no significant difference in knowledge about IMCI between groups (trained vs. untrained, $p = >0.05$). Knowledge regarding IMCI was inadequate among the IMCI training participants, and untrained and untrained health care providers did not increase IMCI knowledge significantly. In the recommendations, mentoring and supervision should be explored in addition to frequent refreshes.
20	https://www.panafrican-med-journal.com/content/article/39/242/pdf/242.pdf	Implementing the integrated management of childhood illnesses strategy can drastically reduce child mortality through innovation, national healthcare worker training coverage, enhanced supervision, and guidelines.
21	https://ojs.uib.ac.id/index.php/icohetech/article/view/1090/933	No specific data describes the role, competence, training, and level of education of the integrated management method in nursing sick toddlers (IMCI). We have seen from IMCI who have attended training and previous work experience. Based on the discussion above from the ten pieces of literature, it is found that implementing IMCI in every Community Health Center in every country, especially in Indonesia, still needs to meet the standards in providing health services to sick children.
22	https://oamjms.eu/index.php/mjms/article/view/8670/7063	The results are differentiated based on input, process, and output components. Most of the IMCI implementers have not received specific training (input); there are no specific guidelines for children who are sick during the (process) of the COVID-19 pandemic; and the target of implementation of IMCI has not been achieved with a percentage below 60–70% (output).

RESULTS AND DISCUSSION

Implementation of Integrated Management of Childhood Illnesses (IMCI)

IMCI is a program that is very efficient and effective because, in its implementation, it is carried out in an integrated and comprehensive, which means that every sick child who is brought to the health facilities must be assessed from general danger signs to immunization. As reported by WHO, IMCI focuses on sick children with aged 0-59 months and can be handled thoroughly; IMCI is a health program but something approach or method manager a sick child. The IMCI approach that was first introduced by WHO was

something form of business strategy service that indicated health for the lower number of deaths, illness, and disability of babies and children's in developing countries³. To improve the quality of IMCI services in every health facility, trained personnel are needed to understand the implementation IMCI procedur sistematically with assessment, classification, identify treatment, treatment, counseling, and follow-up. The assessment, classification, treatment, counseling of mothers, and follow-up¹¹ support this. Further, where are the results of the study show a need for more monitoring, evaluation, and supervision routine from authorities, district, and national levels, so the health workers are also not motivated in obedience to the use of guidelines IMCI. This is also strongly supported by research which shows obstacles to implementing IMCI include the inability to be nurse trained and lack of coordination at various levels in implementation¹². Likewise, IMCI is very suitable to be implemented in developing countries. There still needs to be more health workers where 81% of implementation IMCI includes increasing capacity officer health, strengthening the health system, and community empowerment¹³. One of the research results to compare the usage of IMCI and Non-IMCI approaches in the management child with fever-high (≥ 390) indicates failure to detect disease and treat it early in primary health care, so may refer to the in-patient ward¹⁴.

The IMCI strategy is a guideline that provides opportunities for stakeholders and partnerships in its implementation. As reported by the researchers, the practice of IMCI is significantly related to competency division control disease (80% to 99.3%), and (66.9%) do not recognize signs of danger; rare practice used related to the promotion of health and prevention disease standard (23%-57.9%)¹⁵. Mobilization social with approach ethnocultural own level frequency use medium (60% to 79%). Likewise, per the study, IMCI services do oximetry test for all hospitalized children, where; 69-95% per min¹⁶. In cases of pneumonia, severe pneumonia also affects oximetry values. At the same time, the research showed that the successful implementation of the IMCI strategy properly would help reduce the drastic infant mortality before the age of five¹⁷.

Factors Inhibiting the Implementation of IMCI

Factors inhibitor implementation of IMCI in the primary health care (PHC) are the age factor of health professionals, namely nurses professional aged between 25 and 50 years; factor of organization and structure, which hinders education, training, and awareness; behavior and attitude of nurse to implementation of MTBS; and factors related nanny in implementation of IMCI¹⁸. One of the factors hindering the implementation of IMCI is the national and regional strategy which needs to provide more space for stakeholders to review, monitor and evaluate the program. Factors implementation of the IMNCI strategy by health professionals in institutions health society only reached 58%¹⁹.

The economic factor also influences the community to bring their child to primary health health facilities; this is supported by factors economy, which is an important indicator to assist people in making decisions to bring their children for treatment²⁰.

Health Promotion Strategy

The promotion of health society is essential and related to the implementation success of IMCI caused as well influenced by factors promotion and strategy promotion health to use reach mission and vision promotion health effectively efficiently through community empowerment, social support, and advocacy. The results show that the management strategy of disease-integrated children can reduce the death of a child. mothers' behavior to seek maintenance, especially mothers busy with work, must be made aware of the importance of exclusive breastfeeding on children's health²¹.

Community empowerment is an effort by individuals, groups and communities in a planned, integrated and sustainable manner to achieve the highest degree of community health with the aim of improving the quality of human resources and increasing the degree of public health. Empowerment in the community can be realized through health promotion activities to make people aware of bringing their childrens to health facilities if they have symptoms likely coughing or difficulty breathing, fever, diarrhea, ear problems and other health problems. One of the strategies for implementing IMCI is to develop Community-IMCI (C-IMCI) so that the community can also access information through community-based training activities, namely training for family members, community leaders, religious leaders and non-governmental organizations.

CONCLUSION

Integrated Management of Childhood Illness (IMCI) is an integrated unified approach to manage sick children with a focus on healthy child with aged 0-5 years. Activity IMCI is something effort to help lower pain and death and increase the quality of service at various levels of essential health services such as the health center, Help Post., mobile clinic and home visit.

Health promotion strategies in the implementation of integrated management of childhood illnesses (IMCI) include (1) community empowerment, including; (a) increasing public knowledge of child health and (b) adherence to exclusive breastfeeding. (2) Management organization, good governance, as well as Adequate infrastructure, (3) Maximum service to society, such as (a) behavior and attitudes nurses to implementation IMCI, (b) Compliance to guidelines IMCI, (4) Increasing human resources through education and training, (5) Monitoring, evaluation, and routine supervision by health authority, as well level obedience to adherence IMCI guidelines in implementation process.

REFERENCES

- 1 WHO IMCI information Integrated Management of Childhood Illness (IMCI). Published in 1999.
- 2 Doctor Information. The Importance of Community-Based MTBS (IMCI-M) or Community IMCI (C-IMCI). <https://www.infodokterku.com/index.php/en/image-gallery/96-daftar-isi-content/info-kesehatan/helath-programs/194-the-importance-of-mtbs-based-masyarakat-mtbs-m-or-community-imci-c-imci>.
- 3 WHO EMRO IMCI Strategy. Published 2020.
- 4 Rosales A, Weinbauer K. C-IMCI HANDBOOK Community-Integrated Management of Childhood Illness. Catholic Relief Services; 2003.
- 5 WHO, & UNICEF. (1999). IMCI planning Guide Integrated Management of Childhood Illness Gaining experience with the IMCI strategy in a country.
- 6 Sulaeman ES. Community Empowerment in the Health Sector: Theory and Implementation. Gadjah Mada University Press; 2021.
- 7 Hernitati, Syafrani, Oktavia Dewi, Novita Rany, Agus Alamsyah. Health Promotion Strategy for Community Behavior in Implementing the Covid-19 Health Protocol. *J Hum Care*. 2022;7(1):189-200.
- 8 Divika Aroftya Dewi. (2015). The influence of counseling about integrated management of sick toddlers (IMCI) on the care of children with fever by mothers in the working area of Kasihan II health center, Bantul.
- 9 Kenre, I. (2022). Health promotion concepts and theories. Muhammadiyah Sidrap Institute of Health Technology and Science.
- 10 Sugiyono. (2016). Quantitative Research Methods, Qualitative and R&D. Bandung: Alfabet. <https://doi.org/10.1016/j.drudis.2010.11.005>
- 11 Pinto, J., Tmch, M., Boavida Tilman, C., Fátima, E., Pereira, X., Enf, L.,.....Purba, L. I. N. (2022). Integrated Management of Childhood Illness (IMCI) implementation at community health centers in Aileu municipality, Timor Leste: Health Workers "Perceptions." *Healthcare*. <https://www.sciencedirect.com/journal/healthcare>.
- 12 Pandya, H., Slemming, W., & Saloojee, H. Health system factors affecting implementation of integrated management of childhood illness (IMCI): Qualitative insights from a South African province. *Health Pol Plan* 2018;33(2):171–182.
- 13 Boschi-Pinto, C., Labadie, G., Dilip, TR, Oliphant, N., Dalglish, SL, Aboubaker, S., Agbodjan-Prince, OA, Desta, T., Habimana, P., Butron-Riveros, B., Al-Raiby, J., Siddeeg, K., Kuttumuratova, A., Weber, M., Mehta, R., Raina, N., Daelmans, B., & Diaz, T. (2018). Global implementation survey of integrated management of childhood illness (IMCI): 20 years on. *BMJ Open*, 8(7).
- 14 Sallam SA, El-Mazary A-AM, Ashraf OM, Bahaa MA. Integrated Management of Childhood Illness (IMCI) Approach in management of Children with High Grade Fever ≥ 39 o. *Int J Health Sci*. 2016;10(2):313-318.
- 15 Padilla-Choperena C, Amador-Ahumada C, Puello-Alcocer E. Effectiveness of the implementation of community IMCI strategy in Montería, Colombia. *Enfermeria Global*. 2018;17(4):265-277.
- 16 Ehsanur Rahman, A., Ameen, S., Tasnim Hossain, A., Perkins, J., Jabeen, S., Majid, T., Azim Uddin, A., Ziaul Haque Shaikh, M., Shariful Islam, M., Jahurul Islam, M., Ashrafee, S., Md Shah Alam, H., Saberlin, A., Ahmed, S., Banik, G., Ehtesham Kabir, A., Ahmed, A., Jobayer Chisti, M., Cunningham, S., Campbell, H. (2022). Introducing pulse oximetry for outpatient management of childhood pneumonia: Implementation research adopting a district implementation model in selected rural facilities in Bangladesh. *EclinicalMedicine*, 50, 101511.
- 17 Tjirare, LT, & Tlale, L. (2021). Improving child healthcare in Botswana: What can be done? *Pan African Medical Journal*, 39.
- 18 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. *Int J Africa Nurs Sci*. 2019;11:100161.
- 19 Abebe AM, Kassaw MW, Mengistu FA. Assessment of factors affecting the implementation of integrated management of neonatal and childhood illness for treatment of under five children by health professionals in health care facilities in Yifat Cluster in North Shewa Zone, Amhara Region, Ethiopia. *Int J Pediatr*. 2019;2019:1-9.

20 Carai S, Kuttumuratova A, Boderscova L, et al. Review of Integrated Management of Childhood Illness (IMCI) in 16 countries in Central Asia and Europe: Implications for primary healthcare in the era of universal health coverage. *Arch Dis Child*. 2019;104(12):1143-1149.

21 Gera T, Shah D, Garner P, Richardson M, Sachdev HS. Integrated management of childhood illness (IMCI) strategy for children under five. *Cochrane Database Syst Rev*. 2016;2016(6) CD010123.