

Knowledge And Implementation of Integrated Management of Childhood Illnesses Among Health Workers in Model Primary Health Center Rumuodomaya, Rivers State, Nigeria

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ABSTRACT

Integrated management of childhood illness (IMCI) is an integrated approach to child Health that focuses on the wellbeing of the whole child (WHO, 2018). Infants and child mortality remains high in developing countries where almost 10 million deaths occur annually in children under five years old (UNICEF, 2016). The study is on the knowledge and implementation of integrated management of childhood illness among health workers in Model Primary Health care Centre Rumuodomaya, Rivers State. The objectives of the study are to assess the level of knowledge of IMCI, to investigate the extent of implementation of IMCI. To find out the barriers to the implementation of IMCI. The target population of the study was 30 health care workers in Primary Health Centre and the sample size of all the 30 health workers was used for the study because the population size was few. A purposive sampling technique was used. The instrument used for data collection was a self-constructed questionnaire. Data was analyzed using percentage, table and mean scores which revealed there is high level of knowledge of integrated management of childhood illness among health care workers. With grand mean of 4.15 ± 0.76 , Investigate the extent to which Integrated Management of Childhood Illness (IMCI) is implemented among health care workers with the grand mean of 4.04 ± 0.59 . There are barriers to the implementation of integrated management of childhood illness (IMCI) among health workers. Some of these barriers are misunderstanding about how to administer oral treatment antibiotic (3.83 ± 0.46), unavailability of essential drugs (4.07 ± 0.78), malnutrition and uneducated caregiver (4.07 ± 0.25). With respect to the finding, implications to nursing were stated and recommendations were made, suggestion for further studies were also made.

KEY WORDS: *Knowledge, Implementation, Integrated, Illness, Childhood, Management*

Introduction

Integrated management of childhood illnesses (IMCI) is an integrated approach to child health that focuses on the well being of the whole child (WHO, 2018). Its aims are to reduce death, illnesses, disability and to promote growth and development among children under five years of age. The processes of integrated management of childhood illnesses are both preventive and curative elements that are implemented by the families and communities as well as the health facilities (WHO, 2017). About ten million children under five years old die yearly in low and middle-income nations from malaria, pneumonia, diarrhea, measles, and malnutrition (Meno, Makhado & Matsipane, 2019). In a bid to reduce the global impact of childhood diseases, the World Health Organization developed and adopted the Integrated Management of Childhood Illness (IMCI) strategy in 1992 (UNICEF, 2016).

Infants and child mortality remains high in developing countries, where almost 10 million deaths occurs annually in children under five years old (UNICEF, 2017). These deaths are from common preventable and easily treatable childhood disease (Black-Morris 2017). In 2015 World Health Organization reported that 5.9million children under age five (5) died in 2015, 16,000 every day. The risk of a child dying before completing five years of age is still high. In the WHO African region, 81 per 1000 live births die which is about 7 times higher than that in the WHO European region (11 per 1000 live births). This is possibly connected with the fact that primary health care services are well planned and established in most developing countries, Nigeria inclusive.

According to WHO (2017), proper implementation of IMCI by primary health care facilities which includes applying the standard of IMCI clinical guidelines to the health needs of a country, its policies, available drugs, and local foods will go a long way to prevent and reduce child mortality and morbidity rate. The integrated management of childhood illness strategy (IMCI) has now been introduced into 28 countries in Africa. The strategy aims to improve the skills of health workers, the health system itself, and also the knowledge and practices of families in relation to their young children (see box).¹ It has been operating for about three years, and most evaluations show positive results.

Nigeria adopted the Integrated Management of Childhood Illness (IMCI) strategy in 1996, and since then some training programs have been organized by the government for some providers in the primary health level of public service. However, these training programs have not been very consistent over the years and the benefits of Integrated Management of Childhood Illness (IMCI) intervention are yet to reflect on the nation's health indicators. The nation's under-5 mortality rate has risen from 128 to 132 deaths per 1,000 live births from the year 2013 to 2018 (National Population Commission and ICF, 2019).

The increasing national child mortality statistics warrant a review of the knowledge base of primary health care providers concerning the Integrated Management of Childhood Illness (IMCI) strategy. It is hence essential to gain insight into the association between in-service training on Integrated Management of Childhood Illness (IMCI) and the knowledge of Integrated Management of Childhood Illness (IMCI) among primary care providers, (Damieta & Chinemerem, 2022). Implementation of IMCI strategies in primary health facilities promotes

accurate identification of childhood illnesses, ensures appropriate combined treatment of all major illnesses, strengthens the counseling of caretakers, and speeds up the referral of severely ill children. Athumani (2020), opined that people's awareness of the importance of integrated management of childhood illnesses is one of the main pillars of IMCI implementation. Increasing people awareness is done through the counseling sessions and during health services to prevent and reduce misconception among families or care givers for example IMCI involves a long duration of treatment but the resulting overall care and management is more comprehensive. Although quiet a number of people are not aware of integrated management of childhood illnesses, this call for collaboration with health workers to develop knowledge, skills and provide information about IMCI using posters, leaflets which is beneficial to improve awareness of the people on IMCI in the community (Benguigui 2011). Some of the barriers in the implementation of integrated management of childhood illnesses as perceived by health workers are lack of facilities and infrastructure to support IMCI implementation, shortage of health workers leading to increased work load, others includes lack of proper knowledge in IMCI strategy despite having received IMCI training and lack of community awareness on IMCI implementation.

Information from such insight could inform policy recommendations that could improve the effectiveness of the Integrated Management of Childhood Illness (IMCI) Program. In Port Harcourt (southern Nigeria), the under-five mortality rate was documented in 2018 to be 79 deaths per 1,000 live births (National Population Commission and ICF, 2019). Although this statistic is lower than the national under-5 mortality rate of 132 deaths per 1,000 live births, it however falls short of the Sustainable Development Goals target of less than 12 under-5 mortality per 1000 live births. Previous studies by Afolalu (2020) and Pandya, Slemming and Saloojee (2018) have blamed the lack of in-service training as one of the factors limiting the effectiveness of the Integrated Management of Childhood Illness (IMCI) in semi-rural parts of Nigeria and Africa respectively.

The knowledge of health works about IMCI can be instrumental in facilitating its uptakes but few hold negative perception on its priorities, they may undermine the programme leading to implementation failure. (Cesar et al., 2013). This study recognizes that without achieving the first component of IMCI strategy which is to improve health care workers skills. It may be difficult to effectively implement other components of integrated management of childhood illnesses.

Globally, every year 700,000 children die in the world and most of them are due to common problems like measles, malnutrition, acute respiratory infection, diarrhea and other vaccine preventable disease etc. For a number of reasons health care facilities are not well planned and have not paid attention to health needs of the children (Ndu, 2015). WHO (2018), reported that 5.9million children under 5 years died in 2015, 16,000 every day risk of a child dying before completion of age five (5) is still highest in African region.

In Nigeria, about 20% of children under 5 years still suffer malaria, diarrhea, measles, etc which are common childhood diseases and illnesses that are preventable. In Rumodomaya community, the researcher also observed that some of these preventable and treatable childhood diseases are common. This study therefore seeks to assess the level of knowledge and implementation of IMCI among health care workers in Rumuodomaya Model Primary Health Care Centre. Since health workers play a vital role in the management of childhood illnesses, it is therefore of great importance that they are knowledgeable of the IMCI concept and programme, thus reducing

childhood morbidity and mortality rate. The following research questions were formulated for the study:

1. What is the level of knowledge of integrated management of childhood illnesses among health care workers in Model Primary Health Centre Rumuodomaya?
2. What is the extent to which integrated management of childhood illnesses (IMCI) is implemented among health workers in Rumuodomaya model primary health care centre?
3. What are the barriers to the implementation of integrated management of childhood illnesses (IMCI) among Rumuodomaya health care workers in model primary health care centre?

Methodology

The descriptive research design was adopted in this study with a target population which comprised of 30 health care workers in model primary health center Rumuodomaya which includes nurses, pharmacist, laboratory scientist, and doctors. This was gotten from the health records and statistics office through the medical officer of health. The total population (30) was used for the study because the health staffs are few. The study adopted thum rule. The thum rule allows the researcher to use the population of the study as the sample size due to the small size of the population. Purposive sampling technique was adopted. Data was collected using a self-structured questionnaire.

The data was collected through face to face administration of questionnaire to the respondents in the clinical area. The administration took a period of one week and complete questionnaire retrieved. Data for the study was collated, and analyzed using, percentage, frequency and mean score which was presented in tables. For ethical consideration, a formal letter of introduction was obtained from the Head of Department of Nursing UPTH, to obtain administrative permission and same was forwarded to the medical officer of health in model primary health center Rumuodomaya. Confidentiality was assured and maintained. The respondents were assured of respect of their freedom of choice and that they will not be prejudiced in anyway.

Results

The results of the study are shown below:

Table 1: Socio-Demographic Characteristics of Respondents

S/n	Variables	Items	Frequency	Percent
1	Sex	Female	25	83.3%
		Male	5	16.7%
		Total	30	100.0
2	Age	20-29years	20	66.7%
		30-39years	6	20%
		40-49years	3	10%
		50years and above	1	3.3%
		Total	30	100.0
3	Marital Status	Married	20	66.7%
		Single	10	33.3%
		Total	30	100.0

4	Educational background	OND	9	30.0%
		HND/B.Sc.	11	36.7%
		Others	10	33.3%
Total			30	100.0

Source: Field Survey, 2023

The analysis shows that more female 25(83.3%) responded to the issue at stake than male 5(16.7%). Also, 20(66.7%) respondents falls in the age bracket of 20-29 years, 6(20.0%) respondents falls in the age bracket of 30-39 years, 3(10.0%) respondents falls in the age bracket of 40-49 years. But for 1(3.3%) is in age bracket of 50years and above. The analysis of the table shows that the age bracket of 20-29years 20(66.7%) respondents has the highest respondents. Also, 20(66.7%) of the respondents are married, 10(33.3%) are single, it shows that there are more married people than single. The analysis of the table shows that the 9(30.0%) respondents has OND degree, while 11(36.7%) respondents has HND/B.Sc. degree and 10(33.3%) the lowest.

Table 2: Level of knowledge of Integrated Management of Childhood Illness (IMCI) among Health Workers

S/n	Items	\bar{X}	SD	Remark
1	Heard about integrated management of childhood illness.	4.47	0.51	High
2	Received formal training on integrated management of childhood illness.	3.80	0.85	High
3	Integrated management of childhood illness is a schematic approach to child health which focuses on the well-being of a child between the age of 0 to 5years, achieved by providing continuous and comprehensive care of the sick child.	4.53	0.51	High
4	Integrated management of childhood illness is haphazard used in diagnosing childhood killer diseases.	4.43	0.50	High
5	IMCI is an integrated approach to child health that focuses on the wellbeing of the child.	4.90	0.31	High
6	Objective of IMCI includes reduce death, minimize the frequency and severity of illness, Sarb disability and Improve growth and development.	3.40	1.65	High
7	Steps in IMCI: Do assessment of a child by checking first danger signs, classify a child illness by using color coded triage system, Identify specific treatment for a child, Provide practical treatment instructions.	4.00	0.83	High
8	IMCI is not easy to adopt and time consuming.	3.73	0.64	High
9	Vomiting, unconsciousness, intolerance of fluid/breast milk are danger signs.	4.10	1.06	High
Grand Mean		4.15	0.76	High

Criterion mean = 3.00.

Source: Field Survey, 2023

Table 2 revealed the level of knowledge of Integrated Management of Childhood Illness (IMCI) among Health Workers. The result showed that the grand mean of 4.15 ± 0.76 is greater than the criterion mean of 3.00, indicating a high level of knowledge. Thus, the level of knowledge of Integrated Management of Childhood Illness (IMCI) among Health Workers in Model Primary Health Centre Rumuodomaya was high.

Table 3: Mean and standard deviation showing extent to which Integrated Management of Childhood Illness (IMCI) is implemented among Health Workers

S/n	Items	\bar{X}	SD	Remark
1	Integrated management of childhood illness has components.	2.40	1.04	Low
2	Amoxicillin, Chloramphenicol, Salbutamol and Chlorpromazine are essential drugs used in integrated management of childhood illness.	3.93	0.45	High
3	Improvement of healthcare systems is a component of integrated management of childhood illness.	3.87	0.90	High
4	Children from birth to 5 years of age is the category of children covered by the integrated management of childhood illness strategies.	4.23	0.63	High
5	Pneumonia, whooping cough and measles are disease conditions integrated management of childhood illness aims at eradicating.	4.33	0.66	High
6	To reduce death, illness and disability, promote survival, growth and development among children under 5 years of age is the aim of integrated management of childhood illness.	4.70	0.47	High
7	To educate communities on home management of diseases and prevention improve quality of health care provided to sick children in order to significantly reduce morbidity and mortality rates is one of the goals of IMCI.	4.30	0.53	High
8	Integrated management of childhood illness provide opportunities for important preventive interventions such as urbanization and improve infant and child feeding including breastfeeding.	4.03	0.18	High
9	Administer Vitamin A to all children on admission and vitamin K to all new born.	4.57	0.50	High
	Grand mean	4.04	0.59	High

Criterion mean = 3.00. Source: Field Survey, 2023

Table 3 revealed the extent to which Integrated Management of Childhood Illness (IMCI) is implemented among Health Workers. The result showed that the grand mean of 4.04 ± 0.59 is greater than the criterion mean of 3.00, indicating a high extent of implementation. Thus, the extent

to which Integrated Management of Childhood Illness (IMCI) is implemented among Health Workers in Model Primary Health Centre Rumuodomaya was high.

Table 4: Mean and standard deviation showing barriers to the implementation of Integrated Management of Childhood Illness (IMCI) is implemented among Health Workers

S/n	Items	\bar{X}	SD
1	Lack of proper classification of illness according to need for urgent referral treatment specific medical treatment can make the sick child into more danger.	4.30	0.47
2	Lack of provision of practical treatment instructions such as advice on drug administration feeding and treatment of local infections at home is a barrier to IMCI.	4.83	0.38
3	Lack of provision of referral services and follow-up care affects the implementation of IMCI.	4.40	0.50
4	Sometimes essential drugs is not available.	4.07	0.78
5	During history taking, I ask at least one question about the mother's health.	4.33	0.48
6	Malnutrition and uneducated caregiver are danger signs.	4.07	0.25
7	Check the mother's understanding of the topics thought and ask caretakers reasons for bringing the child to the health facility.	4.40	0.50
8	Uneducated mothers can affect the implementation of Integrated Management of Childhood Illness.	3.90	1.32
9	Explaining how to administer oral treatment antibiotic, antimalarial and ORS can be misunderstanding.	3.83	0.46
Grand mean		4.24	0.57

Criterion mean = 3.00. Source: Field Survey, 2023

Table 4 revealed the barriers to the implementation of Integrated Management of Childhood Illness (IMCI) is implemented among Health Workers. The result showed that the barriers included: lack of proper classification of illness (4.30 ± 0.47), lack of provision of practical treatment instructions (4.83 ± 0.38), lack of provision of referral services (4.40 ± 0.50), unavailability of essential drugs (4.07 ± 0.78), malnutrition and uneducated caregivers (4.07 ± 0.25), and misunderstanding about how to administer oral treatment antibiotic (3.83 ± 0.46).

Discussion of Findings

Previous study by Fatma et al. (2011) which found implementation by healthcare personnel to be good (53%). The results showed that healthcare personnels were able to perform assessment, classification, determine action, and provide medication, counsel the mother, and provide follow up action properly, therefore reducing prevalence of pneumonia in children under 5 years old. A study by Roberts (2014) found a significant relationship between healthcare personnel's knowledge and training with healthcare personnel's compliance in implementing pneumonia

management according to Integrated Management of Childhood Illness (IMCI). Healthcare personnels who attended training had 2 times higher compliance compared to healthcare personnel who did not attend the training.

A different result was found by Kalu et al., (2014) who found that Integrated Management of Childhood Illness (IMCI) training did not have significant influence on healthcare personnel's ability in determining classification and providing Integrated Management of Childhood Illness (IMCI) medication. Slemming (2015) also stated that there was no correlation between Integrated Management of Childhood Illness (IMCI) training and good Integrated Management of Childhood Illness (IMCI) implementation.

Based on studies by Titaley et al., (2014), non-routine follow up, non-routine Integrated Management of Childhood Illness (IMCI) training, lack of Integrated Management of Childhood Illness (IMCI) forms, equipment, and facilities availability, and lack of medical doctors were also factors which inhibit Integrated Management of Childhood Illness (IMCI) implementation. Integrated Management of Childhood Illness (IMCI) training attendance and routine follow up had influence on increase of quality of care. Therefore, if healthcare personnel did not receive opportunity to attend routine Integrated Management of Childhood Illness (IMCI) training and after training follow up, it would cause decrease in healthcare quality (Hill et al., 2014).

A study by Farhad et al. (2011) also found that Integrated Management of Childhood Illness (IMCI) supporting equipment had influence on prevalence of pneumonia in children under 5 years old. Idinchli et al., (2015) stated that routine follow up was advised in order to increase the quality of Integrated Management of Childhood Illness (IMCI) implementation, particularly in community health centers which had old age respondents, therefore, routine follow up could improve attitude mistake in management implementation by respondents with long work experience and old age.

This was different with a study by Mupara et al., (2012) which found supporting factor of Integrated Management of Childhood Illness (IMCI) implementation, namely respondent's knowledge and perception towards Integrated Management of Childhood Illness (IMCI) program. Knowledge regarding Integrated Management of Childhood Illness (IMCI) could be acquired from education, through experience which was acquired during their job, and through Integrated Management of Childhood Illness (IMCI) training.

Idinchli et al., (2015) stated that the more experience which was possessed by the respondents caused change of attitude in respondents which caused them to carry out numerous mistakes during their work. Besides that, presence of experience made the respondents did not use Integrated Management of Childhood Illness (IMCI) diagram book as basis for treatment. Steinhardt also reported that respondents with longer work experience had low ability in terms of treatment aspect, namely around 15-88%. In similar finding it was also stated that there was no significant relationship between health care personnel's age, work experience, level of education, and level of knowledge of Integrated Management of Childhood Illness (IMCI) program executioner and prevalence of pneumonia in children under 5 years old. Meanwhile, according to Darmstadt et al. (2005), pneumonia case finding in children under 5 years old could be affected by availability of Integrated Management of Childhood Illness (IMCI) supporting facility in community health center.

A study by Prabawa & Azinar (2017) stated that prevalence of pneumonia in children under 5 years old could be influenced by midwife's knowledge regarding pneumonia, multiple task which had to be carried out, duration of program possession, and support from head of community health center towards pneumonia case finding in children under 5 years old. Meanwhile, midwife's age, attitude, Integrated Management of Childhood Illness (IMCI) facility availability and work partner support in community health center did not have significant influence towards prevalence of pneumonia in children under 5 years old (Shewade & Anggarwal, 2013). The majority of respondents implemented Integrated Management of Childhood Illness (IMCI) in incompetent category, particularly in the assessment step (92.3%), Classification (56.5%), and action (54.3%), while in medication and counseling steps, half of the respondents (50%) performed those steps competently. This was in accordance with a study by Bjornstad *et al.*, (2014) which found that only few respondents could perform proper pneumonia diagnosis (30%), proper action (<25%), and did not give proper referral for children with severe pneumonia (40.8%). In similar finding with Bjornstad, Tuhebwe *et al.*, (2014) also found that majority of healthcare personnels could not mention pneumonia danger signs. In medication steps, majority of healthcare personnel gave unadvised beverage to children with pneumonia and only few of the respondents (31.7%) which gave proper antibiotics. The discrepancy in findings could be related to the background characteristics of the respondents.

Conclusion

Based on the findings of the study, it was concluded that both knowledge and extent of implementation of Integrated Management of Childhood Illness (IMCI) among Health Workers in Model Primary Health Centre Rumuodomaya was high. The knowledge of danger signs of common childhood illnesses by mothers in this study was high. A good number of them had positive attitude towards the identified danger signs with appropriate practices directed towards management of the childhood illnesses. Health care providers should consistently provide health education to mothers on danger signs of common childhood illnesses and employ the IMCI strategy in their management. Knowledge and education of IMCI was found to be a major factor on the utilization of IMCI. The effect of education operates through knowledge, and self-confidence and it enables them to participate in IMCI. Pneumonia, whooping cough and measles are disease conditions integrated management of childhood illness aims at eradicating.

Recommendations

Here are the recommendations for the study:

1. This study therefore recommends that, IMCI-related knowledge and IMCI-trained and untrained healthcare providers should be made available to all health care system.
2. There should be intense IMCI training for health care workers and mothers. In addition to frequent re-fresher IMCI training for healthcare providers, mentorship and supervision should be explored.
3. In a long run, women empowerment through education and income generating activities as well as involvement of husbands during information education and communication are recommended.
4. Community health practitioners, public health educators and social workers should plan appropriate technique to modify and accommodate the implementation of IMCI.

5. Mass media should play a significant role in presenting the knowledge, implementation and benefits of IMCI to the general public.
6. Future research should be directed to conducting including both urban and rural community to provide national data. With large number providing more education and training courses for health team especially nurses to improve their knowledge and to take their roles in the implementation of IMCI.
7. The Ministry of Health should organize seminars and symposiums to educate and equip health workers on the subject matter.

REFERENCES

- Afolalu, T. (2020). Factors influencing the implementation of integrated management of childhood illnesses in selected health centres. *International Journal of Family Medicine and Primary Care*, 1(6), Article ID 1027.
- Athumani, (2020). Knowledge, attitudes and practices of mothers on symptoms and signs of integrated management of Childhood Illnesses (IMCI) strategy at Buguruni Reproductive and Child Health clinics in Dar es Salaam. *Dar Es Salaam Med Stud J*. 2010; 15(1): 4-8. Google Scholar
- Benguigui, (2011). Integrated management of childhood illness (IMCI): an innovative vision for child health care. *Rev Bras Saude Mater Infant*. 2001;1(3): 223-236. Google Scholar.
- Cesar, Taghreed, Jennifer, David, Dean, Joel, & Anthony, (2016). Integrated Management of the Sick Child. In: *Disease Control Priorities in Developing Countries*, 2nd edition. Washington (DC): The International Bank for Reconstruction and Development/The World Bank. 2006 Chapter 63. PubMed|Google Scholar
- Damiete, M. A. & Chinemerem, E. (2022). Knowledge Concerning IMCI Intervention Strategy among Trained And Untrained Healthcare Providers in Port Harcourt Primary Healthcare Centres, *International Journal of Nursing*, Vol. 9, No. 1, June 2022
- Darmstadt, G.L., Bhutta, Z. A., Cousens, S., Adam, T., Walker, N., de Bernis, L. (2005). Evidence based, cost-effective interventions: how many newborn babies can we save? *Lancet*, 365(9463):977-988.
- Fatma, Z., Rina, T., Purwanta. (2018). Knowledge and Implementation of Integrated Management of Childhood Illness at East Kalimantan, *KEMAS* 14 (2) (2018) 163-171, *Journal Kesehatan Masyarakat*.
- Farhad, Malihe, Fatemeh, & Mahmood, (2019). The Knowledge, attitude and practice of mothers regarding acute respiratory tract infection in children. *Biosci Biotechnol Res Asia*. 2014;11 (1): 343-8. Google Scholar
- Hill, Kirkwood, & Edmond (2014), World Health Organization. Family and community practices that promote child survival, growth and development: a review of the evidence. Geneva: World Health Organization. 2004.
- Kalu, N., Lufesi, N., Havens, D., & Mortimer, K. (2016). Implementation of World Health Organization Integrated Management of Childhood Illnesses (IMCI) Guidelines for the Assessment of Pneumonia in the Under 5s in Rural Malawi. *PLoS ONE*, 11(5), Article ID e0155830.

- Meno, F., Makhado, L., & Matsipane, M. (2019). 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*, 11(1), Article ID 100161. National Population Commission and ICF. (2019). Demographic and health survey 2018. Abuja: NPC and ICF Pandya, H.,
- National Population Commission (2019). *Health and demographic survey*. National Population Commission.
- Ndu, Ekwochi, Osuorah, Onah, Obuoha, & Odetunde, (2015). Danger signs of childhood pneumonia: caregiver awareness and care seeking behavior in a developing Country. *Int J Pediatr*: 167261. PubMed| Google Scholar
- Roberts, Akanni, Odugbemi, & Oshinaike, (2013). Recognition of childhood illness danger signs, prehospital actions and satisfaction to care at a tertiary health facility, Lagos, Nigeria. *Niger Hosp Pract*. 2013;12(3-6):30-5. Google Scholar.
- Slemming, W., & Saloojee, H. (2018). Health system factors affecting implementation of integrated management of childhood illness (IMCI): qualitative insights from a South African province. *Health Policy and Planning*, 33(2), 171-182.
- Tshivhase, L., Madumo, M., & Govender, I. (2020). Challenges facing professional nurses implementing the Integrated Management of Childhood Illness programme in rural primary health care clinics, Limpopo Province, South Africa. *South African Family Practice*, 62(1), Article ID a5060.
- Idinchli, B., Zacem, U. H., Iyella, S., Sumaiy, G. (2010). Factors Influencing Implementation of IMCI Lindi Region. *Southern Tanzania Journal of health research* Vol. 104-209
- Mupara, L. U. & Lubbe, J.C. (2016). Barriers in Implementation of Integrated Management of childhood illness Strategy challenges and recommendation Botswana, *Glob Health Action* Vol. 9,29(417)
- Titaley, C.R. & Jusril, (2014). Barriers in implementation of integrated of childhood illnesses, community health centre. West Java Province Indonesia. *WHO South East Asia Journal of public health* 3(2):161-170.
- United Nations Children's Fund (2016). *Integrated Management of Childhood Illness (IMCI) in the 21st century: a review of the scientific and programmatic evidence*. New York: UNICEF.
- UNICEF, (2017). Levels and trends in child mortality. *Journal of UNICEF child survival* 103) 264-269, accessed January 2019, <http://unicef.org>
- WHO, (2017). The Process of Integrated Management of childhood illness Accessed 2019 <http://who.int> January.
- WHO, (2018). *Integrated Management of childhood illness (MCT)*. Accessed January 2019.