

ANALYSIS OF THE IMPLEMENTATION OF INTEGRATED MANAGEMENT OF SICK CHILDREN (IMCI) FOR TODDLER DIARRHEA IN THE BANDARHARJO HEALTH CENTER, SEMARANG CITY

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ABSTRACT

Diarrhea is loose, watery, and more frequent bowel movements with blood or mucus which can lead to the decline in body fluids and severe dehydration. Integrated Management of Childhood Illness (IMCI) is an integrated approach to the management of sick children focusing on the overall health of children aged 0-59 months. Integrated Management of Childhood Illness is an integrated approach to the management of a sick child who visits outpatient services of basic health facilities. Referring to graphic data of Puskesmas Bandarharjo, the highest number of diarrhea cases in 2019 was in children aged < 5 years with 940 cases (67.3%) and children aged <1 year with 40 cases (2.87%). Based on the 2019 service achievement graph, the scope of finding cases of diarrhea in children under five was 1,449 cases and has met the service target of 1,528. The results from this research is behaviour and quantity of health workers are insufficient. Facilities, infrastructure, funding sources, and component include planning, implementation, evaluation are good. This research aims to analyze the implementation of the integrated management of the sick child on the incidence of diarrhea in the working area of Puskesmas Bandarharjo, Semarang City based on the input, process, and output components.

Keywords: IMCI, diarrhea in children under five, Puskesmas Bandarharjo

BACKGROUND

Diarrhea is loose, watery, and possible more-frequent bowel movements with blood or mucus which can lead to a decline in fluids and severe dehydration (CDC, 2018).

Globally, diarrhea causes 1.5 million deaths per year, especially among children under five in developing countries (UNICEF, 2018). UNICEF reports that 88% of diarrhea-related deaths are caused by unsafe water, poor sanitation, and poor hygiene (Robert E Black 1, Saul S Morris, 2018). Moreover, the World Gastroenterology Organization global guidelines (2019) explain that acute diarrhea is divided into four causes, namely bacteria (*Shigella*, *Salmonella*, *E.coli*, *Gol. Vibrio*, *Bacillus cereus*, *Clostridium Perfringens*, *Staphylococcus aureus*, *campylobacter Aeromonas*), viruses (Rotavirus, adenovirus, Norwalk virus), *parasites* (protozoa, *Entamoeba histolytica trichura*, *cryptosporidium parvum*, *stronglyoides stercoralis* and non-infectious (malabopsies, food poisoning, allergies, motility disorders, immunodeficiency, dan eating difficulties).

The Semarang City Health Office data show that diarrhea sufferers in children under five reached 12,502 cases in 2017. It increased to 16,826 cases in 2018 a total of 50,021 cases (105%) with the highest number of cases in children > years (3,195 cases) and the lowest cases in children < 1 year (5,093 cases) with the quality of diarrhea management of 100% in 2018. Based on the graphic data of Puskesmas Bandarharjo, the highest cases of diarrhea in 2019 were in children <5 years with 940 cases (67.3%) and <1 year with 40 cases (2.87%). The coverage of services for diarrhea sufferers in 2018 reached 105%, while the quality of management for diarrhea sufferers in 2018 was 100% in which the treatment services for diarrhea sufferers were well-served with appropriate treatment (Central Java Provincial Health Office, 2018). Based on the 2019 service achievement graph, the coverage of finding cases of diarrhea for children under five was 1,449 cases of the target of 1,528 cases. Improving the skills of health workers in dealing with sick children, and improving health services in the community by implementing the Integrated Management of Childhood Illness (IMCI) which focuses on the overall health of children aged 0-59 months can be done to reduce

the diarrhea cases (Ministry of Health, 2020). IMCI is an integrated approach to the management of sick children who come for treatment at outpatient facilities for basic health services like curative efforts against pneumonia, diarrhea, measles, malaria, ear infections, malnutrition, and promotive and preventive efforts including immunization and provision of vitamin A and feeding counseling. The main goal of the treatment is to reduce infant and child mortality as well as morbidity due to the disease (Ministry of Health of the Republic of Indonesia, 2020). IMCI aims to improve the quality of health services in the outpatient unit of basic health facilities which is expected to reduce morbidity and mortality in infants and children under five. The implementation of IMCI can increase efforts to find early cases by improving the management of handling and treatment, promoting and increasing the knowledge of mothers in caring for their children at home (Vera Damayanti and Sugiarto, 2018). HL explains four main factors affecting the degree of public health which become the determinants of the emergence of health problems, namely:

a. Community behavior

Community behavior is a factor affecting the health status of the community because individual, family, and community environmental health are highly dependent on human behavior. Behavior is affected by habits, customs, beliefs, socioeconomic, education, and others. A clean and healthy living culture should be developed in the community to maintain health. In the incidence of diarrhea in children under five, the low community behavior covers knowledge, attitude, and behavior.

b. Environment

The environment plays the greatest influence and role. The environment is varied and generally classified into three categories of physical, social, and biological aspects. In the incidence of diarrhea in children under five, the environment is very influential. The aspects affecting the occurrence of diarrhea in children under five are physical aspects including waste, water sanitation, air, soil, climate, housing, and others, and social aspect of the interaction between humans such as culture, education, and economy. and others, and the biological aspect of animals and plants.

c. Genetic

Genetic or heredity is a factor that has existed in humans and is brought from birth.

d. Health services

Health services affect the degree of community health because the existence of health facilities is vital for health services, disease prevention, treatment, and nursing as well as groups and communities that require health services. The availability of facilities in health services is affected by location, health care workers, information and community motivation to obtain services, and health service programs.

Analysis of health services is to find any gaps in ongoing health efforts. The gap can occur in the input, process, and output components. The input covers the manpower, source of funds, and infrastructure. The process covers activities to achieve service coverage capacity based on planning, implementation, and evaluation. The output includes the program achievement levels and the results achieved from the implementation of a program in accordance with the target or the service coverage of IMCI.

Puskesmas Bandarharjo implements the Integrated Management of Childhood Illness to handle cases of sick children. The implementation is based on the Blum's theory (2005) (Azwar, 1996) (Ministry of Health of the Republic of Indonesia, 2006) (Adining, 2016) with the following modifications:

1. Input Component

1) Human Resources (availability of health care workers)

A program can be said successful with the availability of sufficient human resources both in terms of quantity and quality. In the implementation of IMCI, health care workers have the skills and abilities to assess general danger signs, check the children's diarrhea condition, ask the mothers about breastfeeding and complementary foods, and provide appropriate therapy. In implementing IMCI, the attitudes and actions of health workers must be in accordance with the Minimum Health Service Standards. Their skills, abilities, and

behavior can also be assessed based on consumer perceptions or parents of children under five. Assessment of health service behavior can be seen from the relationship between humans and social and psychological interactions between consumers and health care workers

2) Facilities and infrastructure (supporting facilities for the implementation of IMCI)

The supporting facilities for the implementation of IMCI are:

a. Examination room

The examination room is fitted with equipment and other supporting facilities for examining children.

b. IMCI Form and Advice Card for Mothers (KNI).

Health care workers directly give the Advice Card to mothers at the time of counseling. The card is useful as a guide in caring for sick children. Besides, during the counseling, mothers will be informed about how to care for the child at home, how to feed and give medicine properly to speed up the recovery process, and the time for the return to health facilities. In the implementation of the IMCI, the IMCI card and Advice Card make it easier to provide health services.

c. Logistics

The implementation of the IMCI requires facility and infrastructure including medicine in handling diarrhea. The medicines used in the treatment of sick children are common drugs as included in the National Essential Medicines Lists (DOEN) (Ministry of Health of the Republic of Indonesia, 2006b). In the implementation of IMCI, the treatment of children with diarrhea uses ORS and zinc.

3) Source of funds

The source of funds or puskesmas financing or budget refers to money as capital for financing all puskesmas activities. However, for the implementation of IMCI, most puskesmas still expect facilities and infrastructure assistance from the city and even provincial levels.

2. Process Component

1) Planning

Planning in administration is important. The planning covers various activities and resources that will be carried out. The planning of the implementation of the IMCI includes the preparation of trained personnel, facilities, and infrastructure.

2) Implementation

The implementation of IMCI is an effort to provide direction by listening to complaints and problems in implementation and providing suggestions to address the problems in order to increase the effectiveness and implementation of health services in puskesmas. The implementation of IMCI includes the socialization for mothers of children under five regarding the IMCI services and the flow of service when mothers of children under five come to access the IMCI services.

3) Evaluation

Evaluation is an activity to provide input and suggestions for a program. The evaluation aims to provide consideration for policymakers to make the decision. The evaluation compares the results that have been achieved and the plans from the policy formulation and program implementation levels. In the implementation of IMCI, the evaluation covers reports from the person in charge of IMCI and evaluations related to visits to IMCI services.

3. Output Component

1) Coverage of health services according to IMCI standards

Outputs are used as an approach to assess health services. The assessment is based on the standard of expected results of medical services. The assessment is expected to provide input for better. In the implementation of IMCI, the coverage of IMCI services refers to the percentage of sick children who receive services in accordance with IMCI standards of total visits of sick children at the puskesmas (Azwar, 1996).

METHOD

This study used a qualitative approach with a case study design. Data were collected from in-depth interviews. Qualitative research is based on the philosophy of post-positivism to examine the condition of natural objects where the researcher is the key instrument (Sugiyono, 2018a).

Data were collected by triangulation or combination. This study used both primary and secondary data sources. Primary data were obtained from observations and in-depth interviews. The determination of informants used a purposive sampling technique consisting of. This study involved 1 person and 5 midwives in charge of the IMCI program and the triangulation informant consisted of 1 MCH staff at the Semarang City Health Office, the head of Puskesmas Bandarharjo, and 5 parents of children under five. Secondary data are additional data to complement the primary data. Additional data can be obtained from reports, documents, textbooks, and other relevant literature. Additional data in this study were in the form of data archives of patients with diarrhea (children under five), Puskesmas profile, and coverage services of patients with diarrhea. The instruments used were interview guidelines, voice recorders, and stationery (Abd Nasir, 2018).

Data were collected from observation, in-depth interviews, and documentation. The validity of the data was checked using triangulation techniques. Data were analyzed based on Miles and Huberman's model which covered 3 stages, namely data reduction, data display, and conclusion drawing (Sugiyono, 2018b).

RESULT AND DISCUSSION

This study involved one person in charge of the IMCI program, 5 midwives in charge of the implementation of the IMCI program, and the triangulation informants consisting of 1 staff of child health from the Semarang City Health Office, the head Puskesmas Bandarharjo, and 5 parents of children under five.

Table 1. Informants

Informant (1)	Initials (2)	Sex (3)	Age (years) (4)	Education (5)	Position (6)
Informant 1	EE	Female	40 years	D3 Midwifery	Person in charge and implementer of IMCI
Informant 2	E	Female	49 years	D4 Midwifery	IMCI implementer
Informant 3	NC	Female	26 years	D3 Midwifery	IMCI implementer
Informant 4	SF	Female	28 years	D3 Midwifery	IMCI implementer
Informant 5	M	Female	40 years	D3 Midwifery	IMCI implementer

Table 2. Triangulation Informant

Informant (1)	Initials (2)	Sex (3)	Age (years) (4)	Education (5)	Position (6)
IT 1	DSW	Female	40 years	S1 Medicine	MCH Staff
IT 2	SSP	Male	56 years	S1 Medicine	Puskesmas head
		Female	26 years	Senior High School	Parent of children under five
IT 4		Female	28 years	Senior High School	Parent of children under five
IT 5		Female	40 years	Senior High School	Parent of children under five

1. Input Component

The input component relates to human resources (HR). Based on the in-depth interviews, the implementation of IMCI covers the number of human resources, facilities and infrastructure, and sources of funds.

- 1) Number of human resources including healthcare workers

"Recently, human resources including health workers are insufficient, the availability of special health workers for the IMCI is limited." (Informant 1)

"Insufficient human resources" (informant 2)

In this case, the triangulation informants expressed that:

"I think it's enough" (IT KA. MCH, 40 years old)

"health care workers in IMCI is insufficient, very limited health care workers" (Head of Puskesmas Bandarharjo, 56 years old)

2) Facilities and Infrastructure

"The supporting facilities and equipment for the implementation of the IMCI are sufficient and available. The room is available, the medicines are sufficient, the IMCI form uses SIMPUS (Puskesmas management information system) and the Advice Card is not provided because of the paperless system, so the advice is delivered directly" (Informant 1).

The results of interviews with triangulated informants can be seen below:

"Concerning the rooms, most of the puskesmas have separated rooms for IMCI and MCH. The medicines are sufficient. Everything using paper has been tried to reduce, like the Advice Card because we are moving to a paperless system. Puskesmas Bandarharjo uses SIMPUS to recap the patient data including children who suffer from illness." (IT1: KA. MCH, 40 years old)

"Facilities and infrastructure are sufficient but still need an update. SIMUS can backup the data needed when recapitulating data for reporting" (Triangulation Informant: Head of Puskesmas Bandarharjo, 56 years old)

"The room for examining children is available, the tools are also available." (Triangulation Informant: Parents of children under five).

3) Source of Fund

"The source of funding for IMCI is from the BLUD puskesmas, which is allocated for IMCI infrastructure and human resources, for example, non-civil servant workers and civil servant, while from the district health office is for supporting" (Informant 1).

The results of interviews with triangulation informants are:

"The source of funding is from the BLUD puskesmas and the APBD" (IT2: Head of Puskesmas Bandarharjo, 56 years old)

"The source of funding is from APBD and BLUD Puskesmas." (IT1: KA. MCH, 40 years old)

2. Process Component

1) Planning

Preparation of trained personnel and facilities and infrastructure that will be used in the implementation of IMCI.

The results of the interviews are:

"After the officers received direction from the Semarang City Health Office, they conveyed it to the leaders covering the completeness of infrastructure, health workers and guidelines for IMCI services" (Informant 2).

"Directed by superiors such as the person in charge of the program and the puskesmas head to prepare tools for the implementation of IMCI and health workers IMCI services" (Informant 1).

The results of interviews with triangulated informants are;

"At the city level, planning covers orientation training for health workers, the next stage is the IMCI at puskesmas level, procurement of medical equipment and facilities and infrastructure related to the implementation of IMCI including medicines, rooms, and tools." (IT 1: KA. MCH)

"It is started with the preparations regarding facilities and infrastructure, human resources including, and guidance in IMCI services. Then, it was continued checking data, facilities and infrastructure needed during

service so that at the time of implementation, everything is ready for use" (IT 1: Head of Puskesmas Bandarharjo, 56 years old).

2) Implementation

The socialization of the implementation and training of IMCI services is done when providing counseling to mothers of children under five to access IMCI services and the flow of the implementation of IMCI services.

The results of the interview are:

"Yes, during the anamnesis, SIMPUS are filled by the counter officer. Then, the MTBS examination officer or health workers asks the caregiver." (informant 1).

"First is registration at the counter, IMCI poly, anthropometric measurements, temperature measurement, physical examination, auscultation, inspection, palpation, diagnosis, administration of drugs, and education or counseling for mothers of children under five" (Informant 2).

The results of interviews with triangulated informants are:

"The implementation of IMCI is in accordance with the referral chart and flow. Some children are fussy which then obstruct the implementation." (IT 1: KA. MCH, 40 years old)

"IMCI implementation is in accordance with the order and standards of the IMCI. Officers are still trying and are demanded to improve skills in communicating, conducting examinations with standard tools, and counseling" (IT 2: Head of Puskesmas Bandarharjo, 56 years old)

3) Evaluation

The results of interviews concerning the report from the person in charge of IMCI and evaluation related to IMCI service visits are:

"The report is monthly and data are complete and accurate. Data are collected from DKK using email called SIP Online. So, so we collect it through the official application and city administration" (informant 1).

The statement from a triangulation informant can be seen below:

"Sending the data via email now uses the application and Puskesmas Bandarharjo, in this case, the procedure is complete and correct" (IT 1: KA. MCH, 40 years old).

3. Output Component

The interview results regarding the implementation of IMCI at Puskesmas Bandarharjo in terms of coverage of diarrhea cases and the coverage of diarrhea services for children under five in IMCI who received services according to the IMCI standards in puskesmas:

"Regarding the coverage at Puskesmas Bandarharjo, it has reached the target" (informant 1)

"I don't know." (informant 2)

The statements of the triangulation informants are:

"There were 26,168 cases (59%) in Puskesmas Bandarharjo in 2019 and the service coverage reached <60%" (IT 1: KA. MCH, 40 years old).

"There were 1,449 cases at Puskesmas Bandarharjo in 2019 and the service coverage reached 1,528" (IT 2: Head of Puskesmas Bandarharjo, 56 years old)

DISCUSSION

1. Human resource Component

1) Human Resource

Human resources cover health workers, facilities, and infrastructure in the implementation of IMCI and the sources of funds available at the puskesmas. Based on the results of interviews, Human Resources (HR), namely health workers, are not sufficient and the availability of special health workers at the IMCI polyclinic is limited. It is in line with a previous study by Sudirman and Ali (2019) that human resources are the main asset

in an organization that become planners and active actors in every organizational activity. The insufficient human resources make puskesmas unable to provide effective and efficient services for sick children.

Facilities and infrastructure are supporting tools for the implementation of health service activities in health facilities. The results of the interview are in line with a previous study by Mulyana and Kusumastuti (2021) that good facilities and infrastructure are working conditions that support the completion of tasks for the implementers of IMCI.

- 2) Based on the results of the interview, the source of funds for Puskesmas Bandarharjo is in line with a previous study by Mansur et al. (2019) that the implementation of IMCI uses the APBD and BLUD Puskesmas. According to the Ministry of Health Regulation No. 70 of 2013 concerning the implementation of Integrated Management of Childhood Illness, especially article 10, the funding in IMCI comes from APBD and other sources according to the laws and regulations (Ministry of Health Regulation, 2013). BLUD puskesmas is a form of financing derived from the APBD and then submitted to the City Health Office and then distributed to the puskesmas.

2. Process Component

1) Planning

Factors affecting the planning of IMCI implementation cover attitude, age, training, facilities, and infrastructure including the availability of drugs, allocation of funds, and evaluation. In this case, the implementation planning in the implementation of IMCI at Puskesmas Bandarharjo is by evaluating and observing facilities and infrastructure, namely by preparing tools supporting IMCI. The results of the interviews are in line with (Tat et al., 2021) that in planning, facilities and infrastructure are very influential in the implementation of the IMCI.

2) Implementation

The flow of IMCI services in Puskesmas Bandarharjo covers registration at the counter, IMCI polyclinic, anthropometry measurement, temperature measurement, physical examination, auscultation, inspection, palpation, diagnosis, drug administration, and education or counseling for mothers of children under five. Counseling and socialization to caregivers or mothers of children under five covers knowledge about when and how to give medicine, additional fluids, and foods at home to children.

In this case, Puskesmas Bandarharjo has carried out the ICMI service flow in accordance with the standards of the IMCI and provides socialization or counseling to caregivers or mothers of children with diarrhea (Ministry of Health, 2015).

3) Evaluation

IMCI reports are done by evaluating by sending through DKK using email. The period of the report is 1 month. The report is timely and accurate.

3. Output Component

1) Coverage of health services based on the IMCI standard

Based on the IMCI standard, the service coverage is the percentage of services for sick children of the number of child visits to puskesmas.

In Puskesmas Bandarhajo, in terms of case findings and service coverage, patients with IMCI diarrhea reached 1,449 cases in 2019 and had met the service target of 1,528. According to the Ministry of Health Regulation No. 43 of 2016 concerning minimum service standard for child health is 100%. Based on the results of the interview, the coverage of diarrhea services is in line with (Mansur et al., 2019) that the achievement of IMCI is 100%.

CONCLUSION AND SUGGESTION

Based on the results of research and analysis of the implementation of integrated management of childhood illness (IMCI) in Puskesmas Bandarharjo, it can be concluded that The input components in the implementation of IMCI show the sufficient availability of health workers, insufficient facilities and infrastructure, and sufficient sources of funds. In terms of planning, implementation, and evaluation, the IMCI officers are classified as good and in accordance with the IMCI guidebook. The coverage rate of finding cases of diarrhea in children under five and the coverage of services for children under five with diarrhea at Puskesmas Bandarharjo meet the target of 100%.

Suggestion for City Health Office are Improving the capacity of health workers through training and workshops, Hiring more health workers by recruiting in accordance with the procedures. Suggestion for Puskesmas is Helping health care workers in implementing IMCI by involving internship students at Puskesmas Bandarharjo, and for Future Researcher is deeper studies with wider respondents and samples for identifying variables that have not been researched are needed.

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