

## **The Implementation of Toddler Public Health Center During The Covid-19 Pandemic: A Scoping review**

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### **Abstract**

*Public Health Center shows some decreases in health service during Covid 19 Pandemic. This scoping review aims to review evidence related to the implementation of PHC during Covid-19 Pandemic. This paper adopted Arksey & O'Malley framework consisting of five stages: identifying scoping review questions and relevant articles; searching for articles, conducting charting data; compiling, summarizing and reporting results. This paper reviewed 6 articles. Three themes were obtained: the role of cadres; barriers; and innovations at PHC. The results conclude that the practice of PHC in Indonesia does not accomodate the community need adequately yet. Therefore it s necessary to evaluate PHC activities and improve partnership with community and related stakeholders.*

**Keywords:** *implementation, public health center, mothers toddler, covid-19 pandemic*

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### **INTRODUCTION**

One of Sustainable Development Goals (SDGs) is to reduce child mortality. As one of vulnerable groups and is the next generation of the nation, infants and toddlers need special attention in improving their health such as monitoring nutritional status, infectious diseases, growth and development and increasing the coverage of basic immunizations (UNICEF, 2020). Globally 5,6 million toddlers died, 15.000 every day. In other words, there are ten toddlers died every minute. Approximately 73% of toddlers' deaths occurred in two regions in 2017, WHO Africa (49%) and WHO Southeast Asia (24%) (Sinaga *et al.*, 2019). Indonesia has made significant progress in reducing the child mortality rate to 25,4 per 1.000 live births. Indonesia estimates that 147.000 toddlers die each year, meaning that there are still children who die every minute, with almost half of toddler deaths occurring in the first month after birth (UNICEF, 2020).

One of the government's efforts to reduce the number of illness and death of toddlers is to carry out health care. Toddler health care is emphasized on the effort of preventing and increasing health, medication, and rehabilitation which

can be done at Public Health Center. *Public health center* can provide primary health services that monitor infants and toddlers' growth and development to detect early health problems to get quick and appropriate treatment (Indonesia Health Profile, 2018; Ministry of Health RI, 2019).

*Public health center* is a form of Community Based Health Efforts (UKBM). It is managed and organized the community in the implementation of health development as community empowerment aimed to involve the community to participate actively in public health and provide assistance to the community in obtaining primary health services, significantly to accelerate the reduction in maternal and infant mortality (Kemenkes RI, 2011). The program is similar to the growth monitoring and promotion program (GMP) in Ethiopia, activities to provide health counseling and childcare, supplementation, and detection of infant growth and treatment of diseases in children (Tekle *et al.*, 2019).

Constraints in implementing the program include the practice of *Public health center* is not optimal (Adekanmbi *et al.*, 2017). Classic problems such as financial problem, human resource capacity, medicine and equipment supplies, and inadequate collaboration between related sectors in urban and rural areas (Setiawan and Christiani, 2018). In addition to insufficient maternal knowledge about growth monitoring and promotion activities, cadres' low counseling (Daniel *et al.*, 2017) and public awareness about the importance of *Public health center* activities for maternal and child health must be improved (Ediana *et al.*, 2019).

Under normal circumstances, the implementation of *Public health center* in Indonesia is still a big challenge, especially in times of disaster. Currently, Indonesia is facing a non-natural national disaster, Covid-19. WHO has declared Covid-19 as a world pandemic (WHO, 2020). The Head of the National Disaster Management Agency (BNPB) through Decree No. 9 A of 2020 extended through Decree No. 13 A of 2020) has also declared the status of specific emergencies due to the Corona virus outbreak in Indonesia. Presidential Decree No. 11 of 2020 established a public health emergency status, then updated with Presidential Decree No. 12 of 2020 concerning the determination of non-natural disasters of the spread of Corona Virus Disease 2019 as a national disaster (Kemenkes RI, 2020). The government must prevent the spread of Covid-19, on the other hand, to still concern about efforts to reduce infant mortality. One of them is by activating *Public health center* (Kemenkes RI, 2020).

Health services for infants and toddlers during the Covid-19 pandemic are needed to strengthen *Public health center* programs with innovations tailored to health protocols (Bakri, 2020). There are three components of *Public health center* implementation in the Covid-19 pandemic era. First, cadres will make agreements, set schedules with restrictions on visits and rotating invitations (Tang, 2020); Second, make a home visit or "*door to door*." Infants and toddlers will be weighed using stepped scales. Once used and when it is reused, the scales are cleaned first. Besides, the tool used repeatedly can be sprayed disinfectant in advance; the last component is the implementation of *Public health center* through an online system.

According to data from the provisional results of a quick study of the role of health centers in handling the covid-19 outbreak in Indonesia in June 2020,

only 19,2% of health centers continue to practice *Public health center*, while 45,9% do not practice *Public health center* and 34,4% of health centers decrease or reduce the practice of *Public health center* (Pritasari, 2020). The decrease in *Public health center* practice or the postpone of *Public health center* activities during the Covid-19 pandemic significantly decreases the number of visits to maternal and child (KIA) nutrition and health services. Monitoring the growth of children under five years old is not carried, while the decline of basic immunization program services can lead to the potential for double outbreaks. The existence of fictitious reports or *Public health center* reporting is not valid even though there must be reporting every month, which becomes the basis for planning and follow-up activities. Moreover, the *Public health center* five-table service is not optimal because the *Public health center* practice place during the Covid-19 pandemic requires a large place to set the service desk distance at least 1 meter. Counseling activities are limited so that in the end, the targets that come to *Public health center* are only weighed, recorded, or then the weight is written in the KMS card (Growth Chart) without clearly outlining the process and results.

The findings are in accordance with several studies showing the influence of pandemics on health services. There were 50% and 32% decrease in antenatal visits and childbirth during the Ebola outbreak in Liberia (Kumar, 2017), whose trend did not improve after the outbreak ended (Delamou *et al.*, 2017). Another study found indications of a decline in Sierra Leoneans immunizing and weighing their children in health facilities during the Ebola outbreak (Miller *et al.*, 2018). As community facilitators during the covid-19 pandemic, Cadres have not been able to innovate services in the community that causes a decrease in public interest in visiting Public health center. People's fear of covid-19 transmission is high, making people reluctant to visit Public health center directly (Juwita, 2020). Based on the background above, researchers are interested in conducting "Scoping Review: The Implementation of Toddler Public health center during the Covid-19 Pandemic".

## RESEARCH METHODS

The method of this scoping review used Arksey and O'Malley framework (Arksey and Malley, 2005). There are 5 stages of the review process namely (a) identification of review questions, (b) identification of relevant studies, (c) selection of studies, (d) data mapping (data charting), and (e) compiling, summarizing, and reporting the results.

### A. Identification of Review Questions

The research question is: how is the implementation of *Public health center during the Covid-19 Pandemic?*.

Table 1. PICO Framework

<b>Population</b>	Mothers Who Have Toddlers, Mothers
<b>Intervention</b>	The Covid-19 Pandemic
<b>Comparison</b>	-
<b>Outcome</b>	Toddler Public Health Service Implementation, Public Health Service Implementation, Practice of Public health center, Public health center

**B. Identification of Relevant Studies**

Inclusion criteria include sorting the articles published between 2016-2020, published in English or Indonesian, original articles, peer-reviewed published in the Journal and articles discussing mothers of toddlers as the respondents. In searching for evidence, relevant databases are used such as PubMed and Grey Literature used Google Scholar. Boolean operators are used to set flexible search (*PubMed: The Bibliographic Database - The NCBI Handbook - NCBI Bookshelf*, no date).

**C. Selection of the Study**

In the search for articles from all accessed databases, 312 articles were identified that were relevant to the scoping review question. Then the article was eliminated again after full text-reading; it was found that 6 articles could be used and reviewed independently based on predetermined inclusion and exclusion criteria. In the process of selecting the articles, the researcher used a flow chart prism to transparently describe the process that was carried out. Prism flow chart is considered appropriate because it can improve the quality of reporting publications (Liberati *et al.*, 2009; Moher *et al.*, 2009; Peters *et al.*, 2015). Critical appraisal applied The Joanna Briggs Institute (JBI) Critical Appraisal Tools.

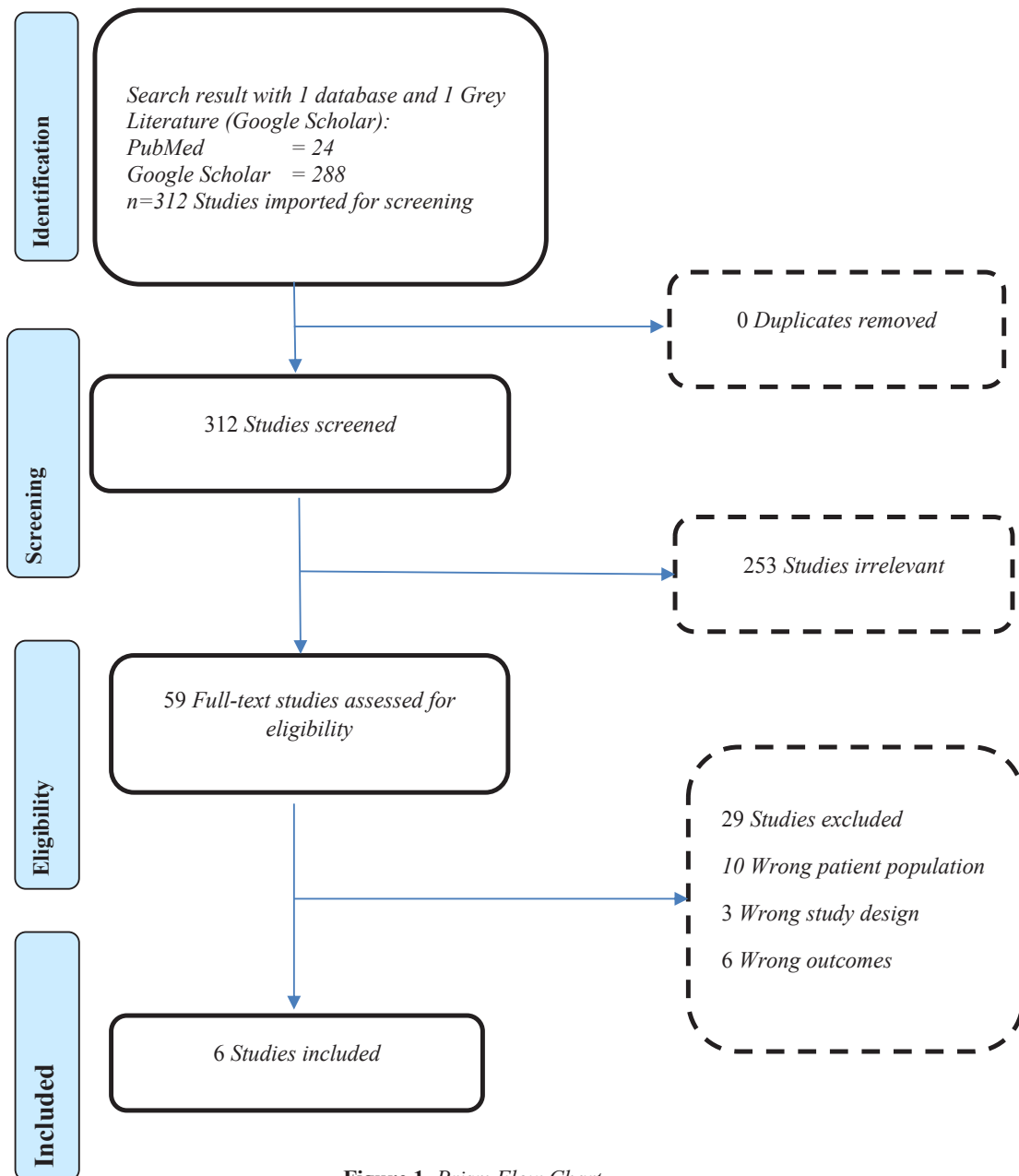


Figure 1. Prism Flow Chart

**D. Data Charting**

**Table 2.** Data Charting

No	Author/Year/ Grade./Title	Country	Aim of Study	Type of Research	Method	Result
1	(Juwita, 2020) / A/ The meaning of Public health center as a means of non- formal learning during Covid 19 Pandemic	Indonesia	The research aims to know the meaning of infant and toddler health services and an overview of Public health center implementation during the Covid-19 Pandemic at Public health center Mekar Sari, Pahandut District, Palangka Raya City	Qualitative design with case study	a. Sample size: mothers who had children under five and the cadre. b. Data collection: indepth interview, focus group discussion, and documentation c. Data analysis: Data collection, data reduction, data presentation	a. Cadres as community facilitators during the Covid-19 pandemic have not been able to innovate services to the community which has resulted in decreased public interest in visiting Public health center b. Public health center are still held every month according to schedule, in the era of the Covid- 19 pandemic, Public health center cadres and supervisors were more creative in providing services because during the pandemic period, the presence of the community had greatly decreased.
2	(Anggraini and Agustin, 2020)/ B/ Effectiveness of parental knowledge of childrens under three years old on the accuracy of basic and booster immunizations during the Covid-19 pandemic in Public health center the area of Puskesmas Colomadu	Indonesia	The purpose of this research to analyze the effectiveness of parental knowledge of childrens under three years old on the accuracy of basic and booster immunizations during the Covid-19 pandemic	Quantitative study with cross sectional approach	a. Technique sampling: purposive sampling b. Sample size: 40 respondents c. Instrument: questionnaire	There is a relationship between the level of parental knowledge during the Covid-19 pandemic and the accuracy of immunization.

3	(Sari and Utami, 2020)/ A / Analyze study the level of anxiety and compliance of mothers of toddlers to the Public health center visit during the Covid-19 pandemic	Indonesia	The purpose of this research to analyze the relationship between the level of anxiety and compliance of mothers of toddlers to the Public health center visit	Quantitative study with cross sectional approach	a. Sample size: 47 mothers who came to Public health center b. Analysis data: bivariate test analysis with Chi-square statistical test	There is a relationship between anxiety levels and compliance to Public health center visits during the Covid-19 pandemic with $P < 0.05$ .
4	(Miller et al., 2018)/ B/ Community health workers during the Ebola outbreak in Guinea, Liberia, and Sierra Leone	Sierra Leone	This study assessed the impact of Ebola on community-based maternal, newborn, and child health (MNCH) services, documented the contribution of CHWs and other community-based actors to the Ebola response, and identified lessons learned to strengthen resilience in future emergencies	Mix methods study	a. Data collection: Data qualitative: Qualitative data were collected through in-depth interviews and focus group discussions with stakeholders at national, district, and community levels. b. Quantitative program data were used to assess trends in delivery of community-based MNCH services. Analysis data: Thematic analysis	a. There was a sharp decline in MNCH service provision due to weak service delivery, confusion over policy, and the overwhelming nature of the outbreak. b. CHWs faced mistrust and hostility from community members because of their linkages to health facilities, the relationship between CHWs and communities proved resilient over time, and CHWs were more effectively able to carry out Ebola-related activities than outsiders
5	(Aditianti et al., 2019)/ A/ Qualitative study of implementation of child growth monitoring At integrated health service in Bandung	Indonesia	This study aims to know the implementation of child growth monitoring at Public health center in Bandung district	Qualitative study	a. Sample size: District Health Office, Primary Health Center, and health workers, village officials, cadres and mothers of underfives	This research show Public health center activities have been going well but have not implemented monitoring function of child growth. Plot weight were not doing well in KMS, interpretation of child growth were still unsuitable, and counseling had

regency	children not done well.	<p>b. Data collection: indepth interview, focus group discussion, and observation</p> <p>c. Data analysis: deductive analysis with fenomenology approach</p>	<p>The purpose of the research to investigate the factors influencing participation of mothers in Public health center.</p>	Indonesia	<p>(Nazri et al., 2016)/ A/ Factors influencing mother's participation in Public health center for improving nutritional status of children under-five in Aceh Utara district, Aceh province, Indonesia</p>	<p>a. Sample: mothers who had children under five.</p> <p>b. Technique Sampling: Technique Random Sampling</p> <p>c. Data Collection: Questioner</p> <p>d. Data Analysis: Fisher's Exact Test using EZR (version 1.21)</p>	<p>a. There were no significant differences in age, marital status, education level, occupation, family size, and distance to Public health center between low participation group except for the monthly household income.</p> <p>b. Among the socio-demographic factors, only monthly household income had a significant association with the frequency of mothers' participation.</p> <p>c. Satisfaction, attitude, and intention were associated with participation.</p>
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## RESULTS AND DISCUSSION

Stage 5: compiling, summarizing and reporting the results

### A. Characteristics of Articles

Based on the articles obtained, as many as 6 articles were selected using 2 qualitative methods, 3 articles of cross Sectional, and 1 article of mix methods with grade A as many as 4 articles and grade B as many as 2 articles. The articles from low middle income country (LMIC), 5 articles from Indonesia and 1 article from Sierra Leone.

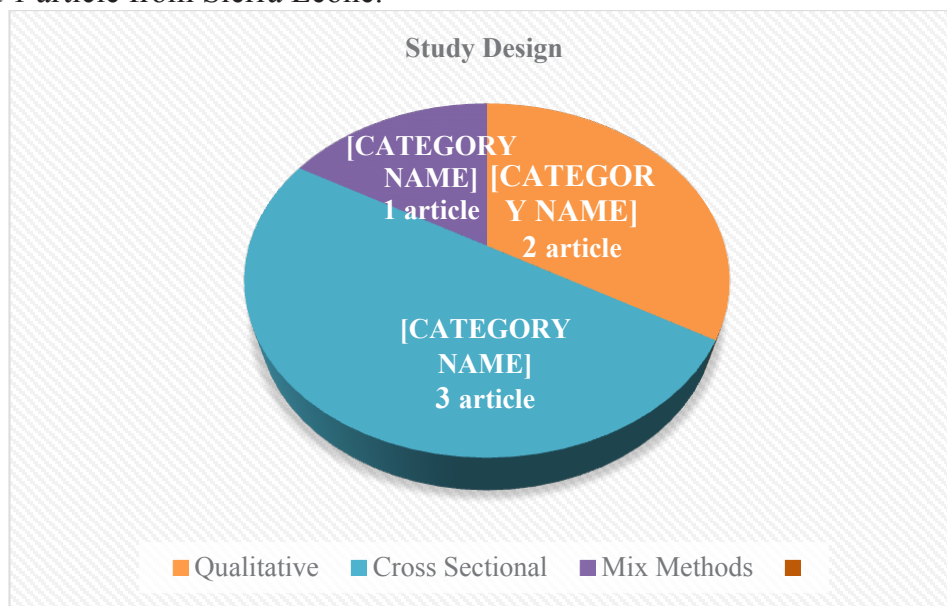


Diagram 1. Study Design

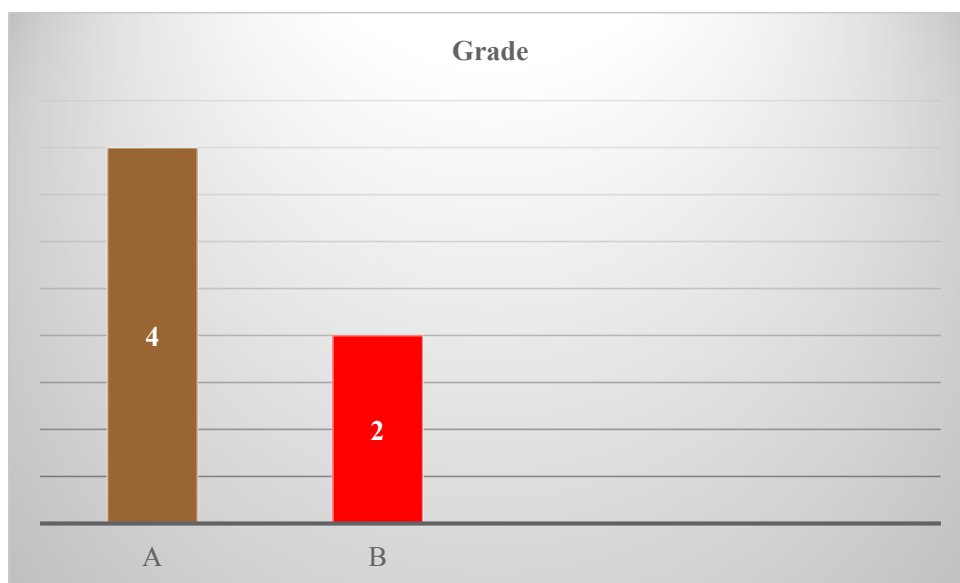


Diagram 2. Grade

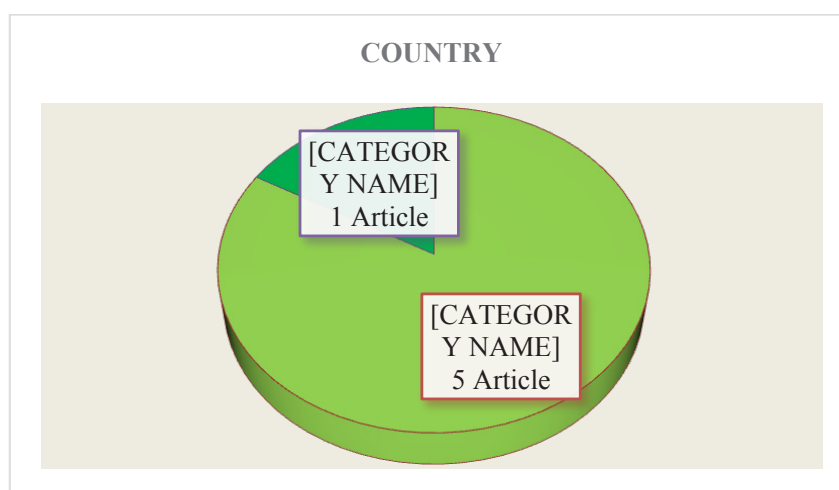


Diagram 3. Country

## B. Themes

In this mapping step, the researcher mapped 3 themes, namely Cadre role: activeness of cadres and weak involvement of cadres; Public health center barriers: fear and anxiety of mothers having baby under five; Innovation in implementing *Public health center* during the covid-19 pandemic.

Table 3. Cadre Role

No	Cadre Role	Article
1	Activeness of cadres	3,4
2	Weak involvement of cadres	4,5,6

Table 4. *Public health center* Barriers

No	<i>Public health center</i> Barriers	Article
1	Fear and anxiety of mothers having baby under five	1,2,3

Table 5. Innovation in implementing *Public health center* during the Covid-19 pandemic

No	Innovation in implementing <i>Public health center</i> during the Covid-19 pandemic	Article
1	Innovation in implementing <i>Public health center</i> during the Covid-19 pandemic	1,4

## C. Discussions

### 1. Cadre Role

#### a. Activeness of cadres

The activeness of cadres in providing motivation, information about health protocols, and the need to monitor the growth of toddlers by health workers can improve maternal compliance in visiting *Public health center*. Compliance refers to a situation when an individual's conduct is commensurate with the recommended action or advice proposed by a health practitioner or information obtained from another source of

information. Factors that influence compliance are age, education, knowledge, attitude, and motivation. In line with Sari and Utami's research (2020) stated that the level of compliance in *Public health center* visits from the research results is that most respondents are obedient in implementing *Public health center* during the Covid-19 pandemic from August to October 2020 (Sari and Utami, 2020).

According to Miller et al. (2018) research, cadres' primary role is social mobilization and community involvement in Ebola prevention and control. Activities include raising awareness about Ebola, explain how to avoid Ebola, advocate the implementation of prevention strategies and distribute basic ingredients, including buckets, soaps, hand sanitizers, and gloves. These activities include raising awareness about Ebola; explain how to avoid it, advocate for the implementation of prevention strategies, and distribute basic materials including buckets, soap, hand sanitizers and gloves. Cadres are also tasked with carrying out tracer contacts, namely by creating and searching a list of all contacts known to be associated with Ebola cases, isolating and monitoring them to determine whether they have Ebola symptoms or not. Any contact who shows signs or symptoms, cadres will report and refer them for treatment. Cadres are also trained and deployed as active case seekers, cadres will isolate and report cases to health workers and make referrals to health facilities (Miller *et al.*, 2018).

#### **b. Weak involvement of cadres**

According to Miller (2018) there was a sharp decline in maternal and child health services when the Ebola outbreak occurred in Sierra Leone. Weak healthcare delivery, confusing policies, and the overwhelming nature of the Ebola outbreak were making the case even worse. This happened because there was unclear and consistent guidance for cadres and community leaders during the pandemic. In addition, there was also no facilitation from the Government in developing cadres' abilities in emergency preparedness, response plans and responsibilities as well as a reporting system for cadres and figures (Miller *et al.*, 2018). The stigma in society also arose, where many people blamed the health system for the Ebola outbreak. They considered cadres to be carriers of the plague who spread Ebola so that people were afraid and reluctant to come to health services. This had an impact on decreasing visits for infants and toddlers, thereby disrupting the process of monitoring their growth and administering immunizations. This posed a challenge to the role of cadres. On the other hand, cadres also faced challenges because they were not given adequate incentives and inadequate facilities even though they remained active in providing services during the pandemic.

According to Nazri's (2016) research, *Public health center* cadres are required to have sufficient knowledge of their duties and responsibilities, such as weighing methods, filling KMS (growth chart) and providing additional food. The lack of cadres at the time of implementing *Public health center* cause cadres to do multiple jobs such as registering as well as measuring children and plotting KMS. In fact, there were still many who did not plot the results of weighing on KMS,

interpretations of changes in body weight had not been carried out correctly, and counseling had not gone well (Nazri *et al.*, 2016).

Counseling and outreach activities were carried out only if there were health workers. Cadres felt unable to conduct counseling and outreach activities due to a lack of knowledge and skills (Aditianti *et al.*, 2019), so that in the end those who came to *Public health center* were only weighed, recorded or written down the results of their weighing in the KMS without being clearly explained the process and results. In addition, mothers of toddlers whose children had received complete immunization did not want to come to *Public health center* again because they felt they had not benefited from this activity (Nazri *et al.*, 2016). From this explanation, it can be concluded that the *Public health center* activities have been running well but have not implemented the function of monitoring the growth of children under five. Therefore, it is necessary to reposition *Public health center* as a means of monitoring the growth of children under five. Efforts to increase the knowledge of health workers and cadres are also needed.

## **2. *Public health center* barriers (fear and anxiety of mothers having baby under five)**

There were several concerns and anxieties felt by *Public health center* participant mothers, the worst worry was that they were afraid of their child and them would be infected with Covid-19 when they came to *Public health center*. The anxiety that is felt is natural because until now the Covid-19 outbreak has not been resolved. Anxiety is a common feeling of fear and anxiety. This is a natural feeling of the body that signals the impending danger and the need to take action (Anggraini and Agustin, 2020). This anxiety can be minimized by several things, including active *Public health center* cadres and health workers in providing information about Covid-19 and always reminding about the implementation of health protocols that must be obeyed when implementing *Public health center*.

During this pandemic, the community would experience high panic and anxiety so that it would have an impact on people's behavior, especially those related to health. There were several health behaviors that had improved such as wearing masks, washing hands, exercising, but there were also several health behaviors that had decreased such as fear of coming to health services, fear of seeking treatment or fear of leaving the house to come to *Public health center*. They felt anxious about contracting Covid-19 from health workers or from other health service visitors (Sari and Utami, 2020). If the anxiety was excessive, there would be symptoms such as generalized anxiety disorder, depression, stress, anger, and difficulty in sleeping. These findings are in line with research that showed people's anxiety and fear of Covid-19 transmission was greater and this made people reluctant to visit *Public health center* directly (Juwita, 2020).

## **3. Innovation in implementing *Public health center* during the Covid-19 pandemic**

The implementation of *Public health center* activities is one of the government's efforts to detect early nutrition problems in children under five,

namely by monitoring growth and giving immunizations. *Public health center* activities are the first step to detect toddlers with growth problems so that they can be immediately referred to health workers for treatment as soon as possible (Kemenkes RI, 2011). In the Covid-19 pandemic situation, monitoring the growth of children under five was still carried out through the application of health protocols, namely by complying with the principles of infection prevention and physical distancing, namely: a) Cleaning and ensuring that *Public health center* service area was sterile before and after service according to the principle of preventing infection transmission; b) Adjusting the distance of the table (minimum 1-2 meters) so that it was not too close; c) Health workers / cadres made rotating schedules with clear times for mothers and toddlers so that the queue was not long because in one *Public health center* the maximum consisted of only 10 people; d) Appealing to parents / caregivers of babies and toddlers to bring their own cloth or sarong for weighing or to weigh babies together with parents; e) Cadres helped ensure that toddlers and parents / caregivers were in good health; f) Visitors who entered the service area were arranged as best as possible so that not many people gathered in one room (maximum 10 people in the service area including officers); g) Provision of means of washing hands using soap with running water or disinfectant which was available in the *Public health center* area; h) Application of the principle of safety injection, namely before returning home, children who had been immunized (injected) were asked to wait around (outside) the service area for about 30 minutes in an open place (Kemenkes RI, 2020).

Cadres as implementing *Public health center* activities during the Covid-19 pandemic were not able to innovate services to the community which resulted in a decrease in the number of *Public health center* visits. The mothers of toddlers hoped that cadres could innovate in providing services because they needed information, monitoring the growth and development of infants and toddlers was still running, and face-to-face services were not expected to reduce the essence of *Public health center* services (Juwita, 2020). This could be done by utilizing online media such as social media, videos and so on. Thus *Public health center* services could run well by utilizing social media which was integrated with home visits (Kemenkes RI, 2020). However, this online program was less effective, because not all mothers were aware of social media, especially those who lived in rural areas (Miller *et al.*, 2018).

## CONCLUSION

*Public health center* can provide basic health services by monitoring the growth and development of infants and toddlers so that they can detect health problems early and they can get prompt and precise treatment. From the results of the review, it was found that a gap was still limited in literature discussing the topic so that further research was needed on the implementation of *Public health center* for toddlers during the Covid-19 pandemic. The results of the review showed that the implementation of *Public health center* in Indonesia had not met the needs of the community properly. Meanwhile, in Sierra Leone, cadres

received stigma from the community, so it was necessary to evaluate the implementation of *Public health center* activities and increased community partnerships with community leaders. Of the 6 articles studied, no cadres training was found on emergency preparedness and response when a pandemic occurred. Therefore, it is necessary to have a policy to provide training to cadres and involve the community as an important partner in emergency preparedness and response. In addition, there were no articles that discussed information technology-based *Public health center* services. It is expected that *Public health center* cadres and supervisors will be more creative in providing information technology-based services so that monitoring of the health development of infants and toddlers can still be done.

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