BKM Public Health & Community Medicine
(Berita Kedokteran Masyarakat)

Volume 38 **Number** 2, 2022
Pages 37-42
DOI: 10.22146/bkm.v38i02.3817

Factors affecting differences in measles-rubella bias immunization during the COVID-19 pandemic and before the COVID-19 pandemic in Kulon Progo District 2020

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Submitted:
December 29th, 2021
Accepted:
February 23th, 2022
Published:
February 28th, 2022

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Abstract

Purpose: This study examines the differences between MR bias immunization and the implementation of MR BIAS before (2019) and during (2020) the pandemic. **Methods:** This study was a qualitative study with a descriptive approach. Qualitative samples were selected using purposive sampling techniques. Twelve subjects were chosen as samples with occupations such as public health center officer, teacher, and parent. **Results:** Factors that influenced the implementation of the MR BIAS program before the pandemic (2019) and during the Pandemic (2020) were environmental factors, behavioral factors, and healthcare factors. Environmental factors that affect the implementation of vaccinations include online-based learning, delayed school immunization programs because of COVID-19 cases in schools, and the role of schools and teachers. Behavioral factors that affect the implementation of BIAS are the implementation of health protocols and the attitude of children and parents. Healthcare factors influencing vaccination implementation are immunization services constrained by human resources (HR) and personal protective equipment (PPE). **Conclusion:** There were differences in the implementation of monthly school immunization programs in 2019 and 2020 during the pandemic. Kulon Progo Regency maintained immunization coverage before and during the pandemic.

Keywords: COVID-19; immunization; measles rubella; pandemic

INTRODUCTION

Measles cases increased to 869,770 in 2019, the highest number reported since 1996, with increases in all regions. Global mortality is up nearly 50% since 2016, with about 207,500 people dying from measles in 2019 [1,2]. Surveillance activities conducted annually report more than 11,000 suspected cases of measles. The results obtained laboratory confirmation of the cases, 12-39% of which are measles (confirmed), and as many as 16-43% are rubella [3]. The target of immunization coverage in DIY is 95, and it has been met for the DIY area. The report results show that immunization coverage 2019 has met the target because it is already above the 95% mark [4].

Coronavirus Disease 2019 (COVID-19) is an infectious disease caused by Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2). COVID-19 infection generally has typical signs and symptoms of acute respiratory disorders, such as fever, cough, and shortness of breath. The average incubation period is 5-6 days, with the longest being more than 14 days. In severe cases, COVID-19 can cause pneumonia, acute respiratory syndrome, kidney failure, and even death [5].

WHO has published guidance on immunization services during the COVID-19 pandemic with UNICEF that can be a principle and consideration in implementing vaccination. Due to the high number of pain and deaths related to PD3I outbreaks, WHO recommends that countries continue to provide routine immunization services if possible. Many countries have temporarily postponed mass immunization campaigns to prevent or counteract outbreaks in affected countries. PD3I outbreaks and the COVID-19 pandemic at once can make determining the correct set of actions complicated.

Based on the report of the health profile of Kulon Progo Regency in 2020, it has excited the national target of only 85%. However, some schools experience delays in scheduled School Children Immunization Month (BIAS) because there is a cluster of COVID-19 in the village area, and conditions in schools are also maintained because AS is implemented condition because they are ill-doing online learning [6].

The mechanism of work needed to be improved during the COVID-19 pandemic. Centers, provinces, and districts delayed and hampered vaccine preparations. MR immunization officers are also charged with duties as COVID-19 vaccination officers. Currently, the MR vaccine is also used to store the COVID-19 vaccine. Until now, no cold chain special COVID-19 vaccine has been procured.

With has been procured essential services, School Children's Immunization Month (Bulan Imunisasi Anak Sekolah/ BIAS MR) disrupted; researchers are interested in seeing how Measles Rubella (MR) immunization is implemented, identifying inputs, processes, and outputs. It also aims to find out the different factors of BIAS implementation before COVID-19 (2019) and when COVID-19 (2020) using qualitative studies so that they can see more in-depth specifics.

METHODS

The study used qualitative methods with descriptive to look at the factors that made a difference in MR immunization activities before the pandemic and during the pandemic at the time of the pandemic in Kulon Progo District. The qualitative samples were selected with purposive sampling techniques, with puskesmas criteria that experienced a decrease in immunization coverage bias MR during the COVID-19 pandemic in 2020 and puskesmas that experienced increased coverage during the COVID-19 pandemic in 2020. So, selecting health centers also simultaneously includes choosing elementary schools and guardians of students in the health center's work area. The study subjects were 3 jurim puskesmas, 7 teachers, and 2 parents. The data collection techniques in this study are interview, observation, documentation, and triangulation.

RESULTS

The implementation of MR immunization activities during the pandemic is still being carried out, considering immunization is a significant health service protecting children from measles and rubella. Kulon Progo Regency, with 21 health centers in its territory, conducts measles and rubella immunization activities by implementing strict health protocols. The impact of the COVID-19 pandemic led to a decrease in MR immunization coverage as well as delays in immunization services in schools because the school environment falls into the category of red zones (positive confirmation cases), decreased coverage occurred in public health Pengasih I and public health center Kokap I, following a comparison of immunization coverage data in 2019 and 2020 during the pandemic (Figure 1).

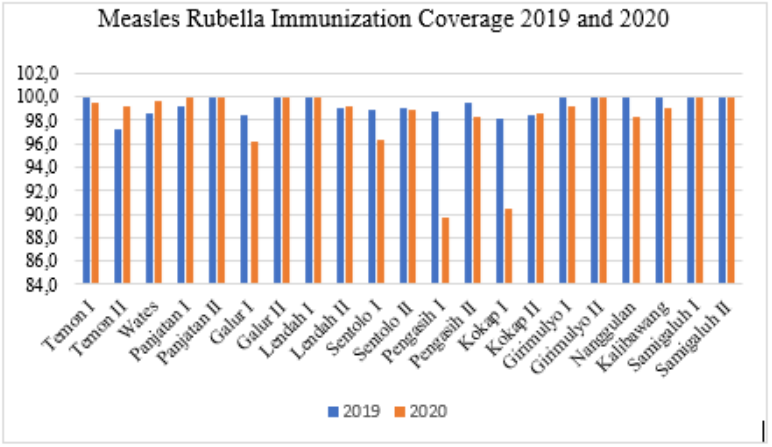

Figure 1. Measles-Rubella immunization coverage 2019 and 2020

Table 1. Analysis of factors that influence the implementation of BIAS MR activities before pandemics and during pandemics

Factor	BIAS (2019)	BIAS (2020) During the pandemic	Strategy BIAS
Environmental			
Learning System	- Offline learning. - BIAS schedule adjusts school time	- Online learning	1. Invite students 2. Create an injecting session
Cluster COVID-19	- Before COVID-19 pandemic	- Prohibited to do BIAS in the red zone of COVID-19	1. Schedule Delays 2. doing BIAS in the community health center
Role of School & Teacher	- Teachers prepare data & ask about the condition of student's parents - Set up a place in class	- Teacher's assignments to record and screen COVID-19 students - Prepare immunization places according to prokes	1. Socialization and education through WhatsApp group (BIAS & COVID-19 Screening) 2. Setting the immunization site by health protocols
Behavior			
Health Protocols	- PHBS - There is no specific protocol. - Personal Protective Equipment officers are hands-coon only	- Implementation of health protocols in children and introductions - The application of health protocols to officers and teachers.	1. Health center officials collaborate with teachers for the implementation of health protocols
The child's attitude during immunization	- Fear of being injected	- Fear of being injected - The child feels unfamiliar and afraid of the officer's Personal Protective Equipment	1. Creating a conducive classroom atmosphere 2. Mentoring from the teacher
Student guardian's anxiety	- No worries about side effects BIAS	- Anxiety related to the possibility of transmission of COVID-19 transmission in schools.	1. Education of parents related to COVID-19 2. Implementation of health protocols during vaccination by officers, teachers, targets, and guardians of students.
Health care			
Immunization Services	- BIAS services by immunization procedures BIAS MR Complete human resources	Shortage of officers for helping with COVID-19 Personal protective equipment and logistics are hampered (vaccines & extra buffers)	1. Asking for the help of schoolteachers 2. BIAS scheduling is made when logistics are already in the Dinkes.

Factors of difference between immunization 2019 and 2020: Learning systems in different schools used to be face-to-face (2019) during the pandemic (2020) using online systems. The role of schools and teachers is increasing in preparing and implementing immunization. The emergence of COVID-19 cases in the environment around the school is the reason for the delay in immunization activities at the school. Immunization during the pandemic period (2020) is required to adapt to the implementation of health protocols, thus affecting the attitude of children and parents when participating in immunization activities. Immunization services in schools during the pandemic experienced obstacles such as service delays, lack of human resources puskesmas, and Personal Protective Equipment (APD) that followed the rules of health protocols (Table 1).

Kulon Progo district successfully maintains measle rubella immunization coverage, such as: a) Appropriate policy making related to immunization in the pandemic period such as delays if there are cases of COVID-19 in the environment around the school; b) Measles rubella immunization program in 2020 that can adapt to the situation of COVID-19 such as the implementation of strict prokes, applying the distribution of injection sessions, the use of Personal Protective Equipment and serving immunizations in public health centers.

DISCUSSION

This research was used to inform the implementation of online learning policies by the Kulon Progo Regency Government during the pandemic. The policy is intended to minimize the transmission of COVID-19 and prevent the emergence of COVID-19 clusters in schools [7].

Local government policies implement immunization services during the COVID-19 pandemic. Analysis of the epidemiological situation of the spread of COVID-19, PD3I, and routine vaccination coverage became the basis for implementing immunization services during the COVID-19 pandemic [8].

MR BIAS was implemented in Kulon Progo Regency in 2019 and does not use special protocols. Officers only use hand scoons to encourage children to perform PHBS. The implementation of MR BIAS in 2020 requires all activities in the community to use health protocols to reduce the rate of transmission of COVID-19. The implementation of health protocols during BIAS MR 2020 must be implemented by all students, introductory students, teachers, and immunization officers. Students and introductions must follow health protocols to wear masks, wash hands with soap, check the temperature, and keep a distance. The health center collaborates with teachers in supervising the implementation of health protocols, this is done because of the limitations of health center officers in conducting supervision either indoors or outdoors. During the pandemic, the JUKNIS Immunization Service implemented MR BIAS in the Kulon Progo Regency. Parents or delivery people should use masks when accompanying children [5].

Immunization BIAS MR in 2020, carried out during the pandemic, gave rise to various reactions from parents of students. Parents of students are supportive, and some are doubtful. A quick assessment of the perception of parents and caregivers is one of the results of immunization services obtained by two-thirds of parents and caregivers trying to immunize their children during the pandemic and 23% of respondents decided not to take their child for immunization, then 13% of parents and caregivers have not decided or hesitated [9].

Based on the interview results, there are differences in the use of Personal Protective Equipment by MR BIAS immunization service officers before and during the pandemic. Puskesmas which is a place of research has different policies in the application of the use of Personal Protective Equipment for the services of BIAS MR such as Puskesmas Temon II using Personal Protective Equipment (N95, handscoon, hazmat, goggles), Puskesmas Pengasih 1 Wear personal protective equipment (masker medis, handscoon, Gown, face shield) dan Puskesmas Kokap I Wearing personal protective equipment (masker medis, handscoon, Gown, face shield). According to the Ministry of Health in Juknis Immunization Services in the pandemic period, the use of personal protective equipment of health workers, namely medical masks, handscoons, Gown/Apron/Hazmat clothing if available, and face shield [6]. The use of Personal Protective Equipment follows the zoning of the spread of COVID-19 in the region, resulting in differences in the use of Personal Protective Equipment.

MR BIAS logistics, such as vaccines and extra buffers, experienced distribution delays caused by the focus on handling COVID-19. Logistical delays made the health center postpone the BIAS schedule that had previously been scheduled with the school, so the puskesmas were made. Hence, schedules were made when the logistics reached the district health office so there was no schedule change. According to the Ministry of Health, delays in vaccine distribution and logistics are caused by travel restrictions carried out by the government [8].

CONCLUSION

The implementation of the BIAS program in 2019 and 2020 showed notable differences due to the COVID-19 pandemic. In 2019, face-to-face learning allowed smoother immunization activities, while in 2020, schools adapted to online systems, increasing the role of teachers and schools in immunization planning and execution. The pandemic caused delays in school-based immunization due to COVID-19 cases in the vicinity, alongside challenges such as limited healthcare personnel, delays in services, and the need for Personal Protective Equipment (PPE) to adhere to health protocols.

Despite these obstacles, the Kulon Progo district successfully maintained measles-rubella immunization coverage through adaptive policies, such as postponing activities in areas with COVID-19 cases, implementing strict health protocols, scheduling injection sessions, and utilizing public health centers for immunizations. Health services must improve the efficiency of MR BIAS immunization services by performing mass BIAS services with strict health protocols. School socialization and education on measles, rubella, and

COVID-19 immunization and the latest information must also be improved. If there is a delay in immunization services BIAS MR in schools, the service can be done at the health center.

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