ORIGINAL ARTICLE

Modern Contraceptive Use of National Health Insurance Participants before and during the COVID-19 Pandemic in South Kalimantan, Indonesia: Using Data from the Official Website of the National Population and Family Planning Agency

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ABSTRACT

Objective. This study aims to explore and analyze the modern contraceptive use of National Health Insurance (NHI) participants before and during the COVID-19 pandemic in South Kalimantan, Indonesia.

Methods. This research is an ecological study using aggregated data from 13 Districts/Cities in South Kalimantan. This study used secondary data in 2018-2020 from the official website of the National Population and Family Planning Agency. Spatial analysis and paired T-test were used.

Results. There were 30.7% of Districts/Cities in stagnation and 30.7% in the decline of modern contraception use during the pandemic (2019-2020). In addition, the study showed that there were differences in the use of modern contraception before (2019) and during the COVID-19 pandemic (2020) among active family planning acceptors of NHI participants (p=0.048).

Conclusion. The existence of NHI, especially recipients of contribution assistance, can increase the use of modern contraception in South Kalimantan. There are differences in the use of modern contraception before and during the COVID-19 pandemic among NHI participants.

Keywords: modern contraceptive use, National Health Insurance, COVID-19, contribution assistance recipients, spatial

Paper was presented at the 52nd Asia-Pacific Academic Consortium for Public Health (APACPH) Conference 2021, October 27-28, 2021, Surabaya, Indonesia.

eISSN 2094-9278 (Online)
Published: August 15, 2024
https://doi.org/10.47895/amp.vi0.5185

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INTRODUCTION

The prevalence of modern contraception is used to track progress in achieving universal access to reproductive and sexual health services, including family planning, as part of the Sustainable Development Goals (SDGs) 3.7.1 by 2030. This indicator is used for measuring improvements in maternal health through birth control. In addition, it is a proxy to measure access to reproductive health services are essential.[1] The use of contraception is the main determinant of the fertility rate.[2,3] The Total Fertility Rate (TFR) in Indonesia in the last 10 years is at 2.4 and 2.45 with no significant difference.[4,5] South Kalimantan is one of the provinces in Indonesia that had a relatively stagnant TFR. According to data from Indonesia Demographic and Health Survey (IDHS), TFR in South Kalimantan did not have a significant decline, 2.5 (2012) and 2.4 (2017).[6,7]

Based on IDHS data, the use of modern contraception in Indonesia decreased from 57.9% to 57.2%. This figure hasn't reached the National Population and Family Planning Agency (BKKBN) Strategic Plan (Renstra) target of 61.78 in 2020; 62.16 in 2021; and 63.41 in 2024.[8] The use of modern contraception in South Kalimantan according to the IDHS, is 66.4 (in 2012) and 64.4 (in 2017). Modern contraception in Indonesia consists of Intrauterine Devices (IUD), implants, pills, injections, vasectomy, and tubectomy.[9]

The NHI Program through The Health Social Security Administering Agency (BPJS Kesehatan) in Indonesia was launched on January 1, 2014. This program aims to improve public access to comprehensive and quality health services. For this purpose, every Indonesian citizen is obliged to become a NHI participant. Basically, health insurance is part of efforts to achieve universal health coverage, which is a health system in which every citizen in the population has equitable access to quality promotive, preventive, curative, and rehabilitative health services at affordable costs. Indonesia is currently in a transition period towards a universal health care system.[10] According to Presidential Regulation (Perpres) No.19, 2016, since April 1, 2016, family planning services are guaranteed by the Health Social Security Administration (BPJS). The Health Social Security Administration (BPJS) membership is divided into two groups, that is Contribution Assistance Recipients (PBI) and Non-Recipient Participants Contribution Assistance (Non-PBI).[11]

To improve services in the field of family planning, the National Family Planning Coordinating Board has also issued Regulation of the Head of the BKKBN Number 55/HK-010/B5/2010 concerning Minimum Service Standards for Family Planning and Prosperous Family (SPM KB KS) in Districts/Cities. One of the focuses of Minimum Service Standards in the field of Family Planning and Prosperous Families in Districts/Cities is the provision of contraceptive devices and drugs to meet public demand. The local government, in this case the District/City, should fulfill the SPM KB KS following the potential of the area so that the use of modern contraception is expected to increase and further improve the health status of the mother. The existence of this SPM KB KS needs to be investigated using modern contraception with a district scope.[12]

The COVID-19 outbreak was first discovered in Wuhan City, Hubei, China on December 1, 2019, and was declared a pandemic by WHO on March 11, 2020.[13] In Indonesia, the emergence of COVID-19 cases was officially confirmed by the President of Indonesia on March 2, 2020.[13] The Head of the National Disaster Management Agency (BNPB) extended the emergency status of COVID-19 in Indonesia through Decree Number 13A of 2020. Then by looking at the developing situation and conditions, it was updated with Presidential Decree No. 12 of 2020 concerning the Determination of Non-Natural Disasters for the spread of COVID-19 as a National Disaster. As of April 26, 2020, COVID-19 has infected 2,900,422 globally[14] and Indonesia has experienced 8,882 cases of COVID-19 with a total of 1,107 recovered cases and 743 deaths, with most of the confirmed cases (44%) in the productive age[14]. In the face of this COVID-19 non-natural disaster outbreak, a Large-Scale Social Restriction (PSBB) policy was implemented to prevent the transmission of COVID-19. This condition has an impact on the continuity of public health services, including family planning and reproductive health services.[14] Research on contraceptive use in South Kalimantan has been carried out by Lae and but is not based on membership of NHI.[15] The objectives of this research are to explore and analyze modern contraceptive use in National Health Insurance participants before and during the COVID-19 pandemic.

METHODS

Study Design

This research is an ecological study using aggregated data, from 13 Districts/Cities in South Kalimantan. This study uses secondary data from the BKKBN official website for public information anddata, that is the Field Control Report in 2018-2020.

Data is taken from the official BKKBN website (https://www.bkkbn.go.id/# or through http://aplikasi.bkkbn.go.id/sr/),with details as follows:

1. Monthly Data Field Control Form 2013, Table 14. Fertile Age Couples and NHI Participation;
2. Monthly Data Field Control Form 2013, Table 19. Active Family Planning Acceptor, NHI Contribution Assistance Recipients by Contraception Method;
3. Monthly Data Field Control Form 2013, Table 20. Active Family Planning Acceptor of NHI, not a recipient of NHI contribution assistance by Contraception Method.

Field Control Recording and Reporting (Dalap) is an activity to record and report the results of the implementation of the Population, Family Planning and Family Development Program in the field. The recording is carried out by activity cadres and reported in stages to family planning field officers through the Village Family Planning Assistance Assistant, which is recapitulated and reported up to the Center. The reporting time period is set at each regional level. The results of the reporting are periodically fed back monthly and yearly. In addition, the results are also disseminated to related partners at each regional level.[16]

These three tables provide monthly data which contains the number of couples of childbearing age (15-49 years), the number of PBI NHI participants, the number of Non-PBI NHI participants, the number of active family planning acceptors of NHI contribution assistance recipients (PBI NHI), and the number of active family planning acceptor of non-National Health Insurance contribution assistance recipients (Non-PBI NHI). The Routine Statistical Data Processing Site is a web-based application developed to provide information on the Achievement of the National

Population and Family Planning Program following Perka No. 255/PER/G4/2011.11.[16,17]

The definition in this study are:

1. National Health Insurance (NHI) is a nationally administered social security program based on the principles of social insurance and the principle of equity to ensure that participants receive health care benefits and protection in meeting their basic health needs. A government-operated paid health system implemented by The Health Social Security Administration (BPJS or *Badan Penyelenggara Jaminan Sosial*)
2. The Health Social Security Administration (BPJS) is a legal entity formed to administer the program Social Security in Indonesia.[16]
3. Contribution Assistance Recipients (PBI) are Participants who are classified as poor and needy people whose contributions are paid by the Government.
4. The poor are people who have absolutely no source of livelihood and/or have a source of livelihood but cannot meet basic needs that are appropriate for the life of themselves and/or their families;
5. Disadvantaged people are people who have a source of livelihood, salary, or wages that are only able to meet proper basic needs but are unable to pay Health Insurance contributions for themselves and their families.[16]
6. Active family planning acceptor is Couples of Reproductive Age who are currently using any form of contraception without being interspersed with pregnancy.[16]
7. Active family planning acceptor of NHI participants is the average proportion of fertile age couples of active acceptor of NHI participants per total fertile age couples of NHI participants.
8. Active family planning acceptor of NHI contribution assistance recipients is the average proportion of fertile age couples of active acceptor of National Health Insurance contribution assistance recipients per total fertile age couples of National Health Insurance contribution assistance recipients.
9. Active family planning acceptor of Non-NHI contribution assistance recipients is the average proportion of fertile age couples of active acceptor of Non-NHI contribution assistance recipients per total fertile age couples of Non-NHI contribution assistance recipients.

Statistical Analysis

The analysis uses non-spatial and spatial techniques. The non-spatial statistical analysis calculates the minimum, maximum, mean, and standard deviation values, while spatial analysis uses natural break mapping from Geoda software. A natural break map is a mapping method by grouping observations in such a way that homogeneity within groups is maximized.[18] Tobler's law implies that a missing data value will be like its neighbor value in space and/or time. Therefore, we can use the mean, minimum, maximum, or median of neighboring values to fill in the missing values.[19] Interpolation was carried out to fill in the blank data, that is Tanah Laut, Balangan, and Banjarmasin. Interpolation is done by taking the value of the neighboring areas based on the Queen Contiguity method. The queen criterion is somewhat more encompassing and defines neighbors as spatial units that share the same edges or common vertices.[20] In addition, a paired T-test was used in this study to analyze the relationship between modern contraceptive use before and during the COVID-19 pandemic.

RESULTS

This research was done by using secondary data from the National Population and Family Planning Agency (BKKBN). The description of the data was shown in Tables 1-5 and Figures 1-4.

Data marked with an asterisk are empty data that are filled in using interpolation based on the Queen Contiguity method. The mean of neighboring values is used to fill in the missing values. The districts whose data are empty are Banjarmasin, Tanah Laut, and Balangan. The Queen Contiguity method is a method that calculates neighboring areas based on angles and sides. Banjarmasin is neighboring Barito Kuala and Banjar. Tanah Laut is neighboring Banjarbaru, Banjar, and Tanah Bumbu. Balangan is neighboring Kotabaru, Hulu Sungai Utara, Hulu Sungai Selatan, and Tabalong. Table 1 shows the use of modern contraception in all types of NHI participation fluctuated in 2018-2020. However, the use of modern contraception has decreased or stagnated in 2019-2020.

Trends in the use of modern contraception stagnated and/or decreased in 2019-2020 can be seen in Table 2. Areas where the use of modern contraception is stagnant in all types of NHI are Hulu Sungai Utara and Tanah Laut.

Table 3 shows that there are variations in the minimum, maximum, mean, and standard deviation values of modern contraceptive use in NHI participants in 2018-2020. However, the mean of modern contraceptive use of NHI participation increases in 2018-2020.

Table 4 shows the areas where the proportion of modern contraceptive use is below the mean. Banjarbaru is always at the below mean for all types of NHI Participants in 2018-2020.

Figure 1 illustrates the location of districts/cities in South Kalimantan. It consists of 13 Districts/Cities. Two cities are Banjarmasin and Banjarbaru.

Figures 2, 3 and 4 depict mappings that classify regions by maximizing variation within regions. The regional classification is described with Geoda software.

Table 5 shows areas where the use of modern contraception is low based on natural break mapping in Geoda. Banjar District is always at the lowest interval in the natural break map for active family planning and family planning acceptor of National Health Insurance contribution assistance recipients (PBI NHI). In addition, Banjarbaru is always

Table 1. The Proportion of Modern Contraceptive Use in NHI Participants, South Kalimantan (2018-2020)

District/City	Active family planning acceptor of NHI Contribution Assistance Recipients (PBI NHI)			Active family planning acceptor of non-NHI Contribution Assistance Recipients (Non PBI NHI)			Active family planning acceptor of NHI participants (NHI)		
	2018	2019	2020	2018	2019	2020	2018	2019	2020
Tabalong	0.75	0.77	0.76	0.81	0.82	0.81	0.80	0.82	0.81
Balangan	0.80	0.79	0.83	0.75	0.77	0.82*	0.77	0.78	0.83*
Hulu Sungai Utara (HSU)	0.78	0.79	0.79	0.78	0.83	0.82	0.78	0.81	0.81
Hulu Sungai Tengah (HST)	0.85	0.82	0.84	0.79	0.83	0.83	0.81	0.83	0.83
Hulu Sungai Selatan (HSS)	0.78	0.78	0.79	0.76	0.79	0.78	0.76	0.79	0.78
Tanah Bumbu	0.85	0.82	0.83	0.81	0.90	0.87	0.84	0.83	0.84
Kota Baru	0.88	0.85	0.90	0.75	0.75	0.81	0.81	0.79	0.85
Tapin	0.86	0.87	0.87	0.77	0.74	0.76	0.82	0.82	0.83
Banjar	0.72	0.71	0.76	0.77	0.81	0.80	0.75	0.76	0.85
Banjarbaru	0.76	0.77	0.81	0.71	0.72	0.74	0.72	0.73	0.76
Tanah Laut	0.77*	0.86	0.86*	0.76	0.75	0.75	0.77*	0.78	0.78*
Banjarmasin	0.75*	0.73*	0.75*	0.78*	0.77*	0.76*	0.76*	0.76	0.76*
Barito Kuala	0.78	0.81	0.89	0.78	0.82	0.83	0.78	0.82	0.85

**Interpolation results are based on the average of the proportion values of neighboring areas using the Queen Contiguity method*

Table 2. Summary of Proportion of Modern Contraceptive Use in NHI participants, South Kalimantan (2019-2020)

District/City	Year	Summary
Tabalong	2019-2020	PBI (decrease 0.01) Non PBI (decrease 0.01) NHI (decrease 0.01)
Hulu Sungai Utara	2019-2020	PBI (stagnant) Non PBI (decrease 0.01) NHI (stagnant)
Hulu Sungai Tengah	2019-2020	Non PBI (stagnant) NHI (stagnant)
Hulu Sungai Selatan	2019-2020	PBI (decrease 0.01) Non PBI (decrease 0.01)
Tanah Bumbu	2019-2020	Non PBI (decrease 0.01)
Tapin	2019-2020	PBI (stagnant)
Tanah Laut	2019-2020	PBI (stagnant) Non PBI (stagnant) NHI (stagnant)
Banjar	2019-2020	Non PBI (decrease 0.01)
Banjarmasin	2019-2020	Non PBI (decrease 0.01) NHI (stagnant)

Table 3. Summary of Proportion of Modern Contraceptive Use in NHI participants, South Kalimantan (2018-2020)

Variable and Description	2018	2019	2020
Active family planning acceptor of NHI Contribution Assistance Recipients (PBI NHI)			
Min	0.72	0.71	0.75
Max	0.88	0.87	0.90
Mean	0.79	0.80	0.82
Standard Deviation	0.05	0.05	0.05
Active family planning acceptor of non NHI Contribution Assistance Recipients (Non-PBI NHI)			
Min	0.71	0.72	0.74
Max	0.81	0.90	0.87
Mean	0.77	0.79	0.80
Standard Deviation	0.03	0.05	0.04
Active family planning acceptor of NHI participants (NHI)			
Min	0.72	0.73	0.76
Max	0.84	0.83	0.85
Mean	0.78	0.79	0.81
Standard Deviation	0.03	0.03	0.03

at the lowest interval on the natural break map for active family planning acceptors of no national health insurance contribution assistance recipients (Non-PBI NHI) and active family planning acceptors of NHI participants. Based on the natural break map, the study shows that there is an increase in the lowest cut-off interval for all types of NHI in 2018-2020 (Table 5).

Table 6 shows that there were differences in the use of modern contraception before (2018) and during the COVID-19 (2020) pandemic in active family planning acceptors of NHI contribution assistance recipients (PBI NHI), active family planning acceptors of non-NHI contribution assistance recipients (Non-PBI NHI), and active family planning acceptor of NHI participants (NHI). In addition, the study results show that there were differences in the use of modern contraception before (2019) and during the COVID-19 pandemic (2020) among active family planning acceptors of NHI participants (NHI).

The good points of this result are:

1. Active family planning acceptor of NHI Contribution Assistance Recipients (PBI NHI) was increasing before and during the pandemic;

Table 4. Summary of Areas with Values below the Average Proportion of Modern Contraceptive Use in NHI Participants, South Kalimantan (2018-2020)

Year	Variable	Mean	District/City
2018	Active family planning acceptor of National Health Insurance Contribution Assistance Recipients (PBI NHI)	<0.79	Tabalong, HSU, HSS, Banjar, Banjarbaru, Tanah Laut, Banjarmasin, Barito Kuala
	Active family planning acceptor of non National Health Insurance Contribution Assistance Recipients (Non PBI NHI)	<0.77	Balangan, HSS, Tanah Bumbu, Banjarbaru, Tanah Laut
	Active family planning acceptor of NHI participants (NHI)	<0.78	Balangan, HSS, Banjar, Banjarbaru, Banjarmasin, Tanah Laut
2019	Active family planning acceptor of National Health Insurance Contribution Assistance Recipients (PBI NHI)	<0.80	Tabalong, Balangan, HSU, HSS, Banjar, Banjarbaru, Banjarmasin
	Active family planning acceptor of non National Health Insurance Contribution Assistance Recipients (Non PBI NHI)	<0.79	Balangan, Kotabaru, Tapin, Banjarbaru, Tanah Laut, Banjarmasin
	Active family planning acceptor of NHI participants (NHI)	<0.79	Balangan, Banjar, Banjarbaru, Tanah Laut, Banjarmasin
2020	Active family planning acceptor of National Health Insurance Contribution Assistance Recipients (PBI NHI)	<0.82	Tabalong, HSU, HSS, Banjar, Banjarbaru, Banjarmasin
	Active family planning acceptor of non National Health Insurance Contribution Assistance Recipients (Non PBI NHI)	<0.80	HSS, Tapin, Banjarbaru, Tanah Laut, Banjarmasin
	Active family planning acceptor of NHI participants (NHI)	<0.81	HSS, Banjarbaru, Tanah Laut, Banjarmasin

2. Active family planning acceptor of non-NHI Contribution Assistance Recipients (Non-PBI NHI) was increasing before and during the pandemic, but still lower than active family planning acceptor of National Health Insurance Contribution Assistance Recipients (PBI NHI);
3. Active family planning acceptor of NHI participants (NHI) was increasing before and during the pandemic, but higher than active family planning acceptors of non-NHI Contribution Assistance Recipients (Non-PBI NHI), and lower than Active acceptor of NHI Contribution Assistance Recipients (PBI NHI).

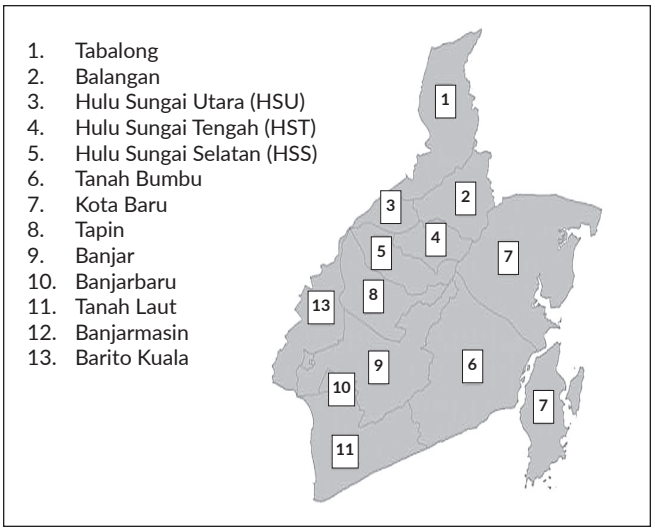

Figure 1. Map of South Kalimantan.[28]

DISCUSSION

The use of modern contraception is different in each region. In general, the use of modern contraception in 2018-2020 varies in each region and each type of NHI participant. According to Teplitskaya, geographic disparities in access to family planning still exist. Access is the link between the healthcare system and the population served. In India, access to services has the largest and strongest relationship in dopting contraceptive use for 20 years. This gap allows the occurrence of other obstacles in the health system such as lack of health facilities and pharmacies, long distances to health facilities, stock depletion of preferred methods, provision of couples counseling, and availability of personnel to offer a mix of basic methods, and attitudes of undesired providers. Increased access to various methods available in nearby health facilities is very important for increased contraceptive use.[21-27]

The use of modern contraception shows a decline and stagnation occurring from 2019 to 2020. There are 8 Districts/Cities out of 13 Districts/Cities (61%) in South Kalimantan that have stagnant or decreasing use of modern contraception which can be seen in Table 2. On March 2, 2020, the first case of COVID-19 in Indonesia was reported. Since then, the number of confirmed cases of COVID-19 has continued to grow. Data on December 31, 2020 showed that the highest number of cases was in Banjarmasin City and Banjarbaru City with a total of 4,025 and 1,634 cases, respectively. The average of new cases per month is 1,888 cases. This condition has an impact on health services, including contraceptive services. According to the research by Xiao[29] and Lambung Mangkurat,[30] there was a significant decrease in healthcare utilization.

Some areas in Indonesia such as Yogyakarta have also experienced a decline in the use of modern contraception.[31,32] Family planning services were forgotten for about two months since the first case of COVID-19 appeared in

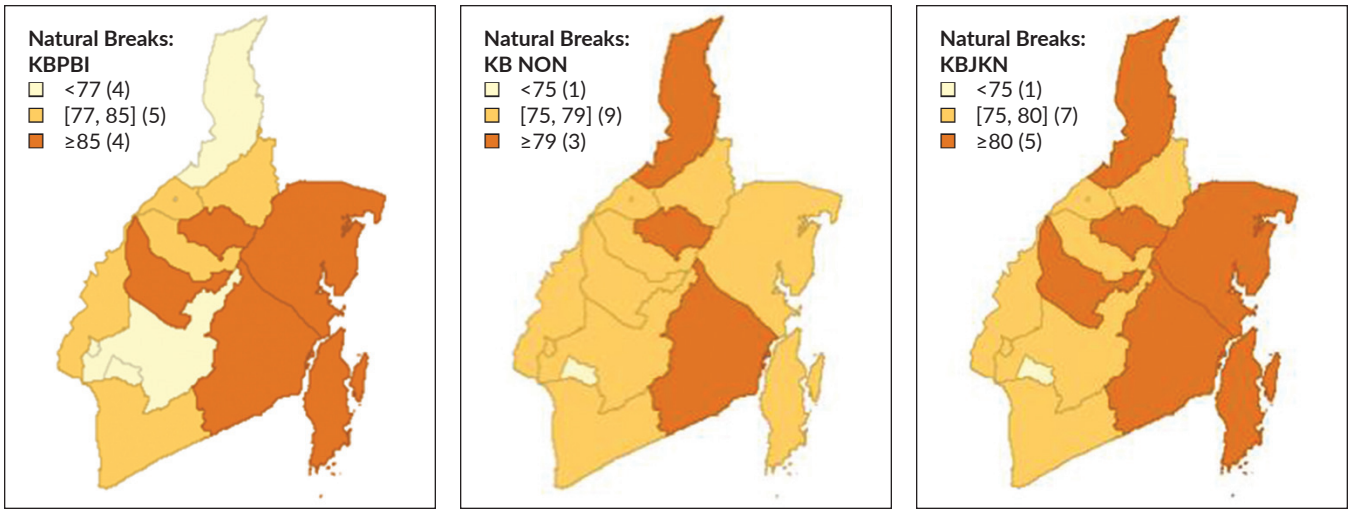

Figure 2. Natural break map in South Kalimantan (2018).

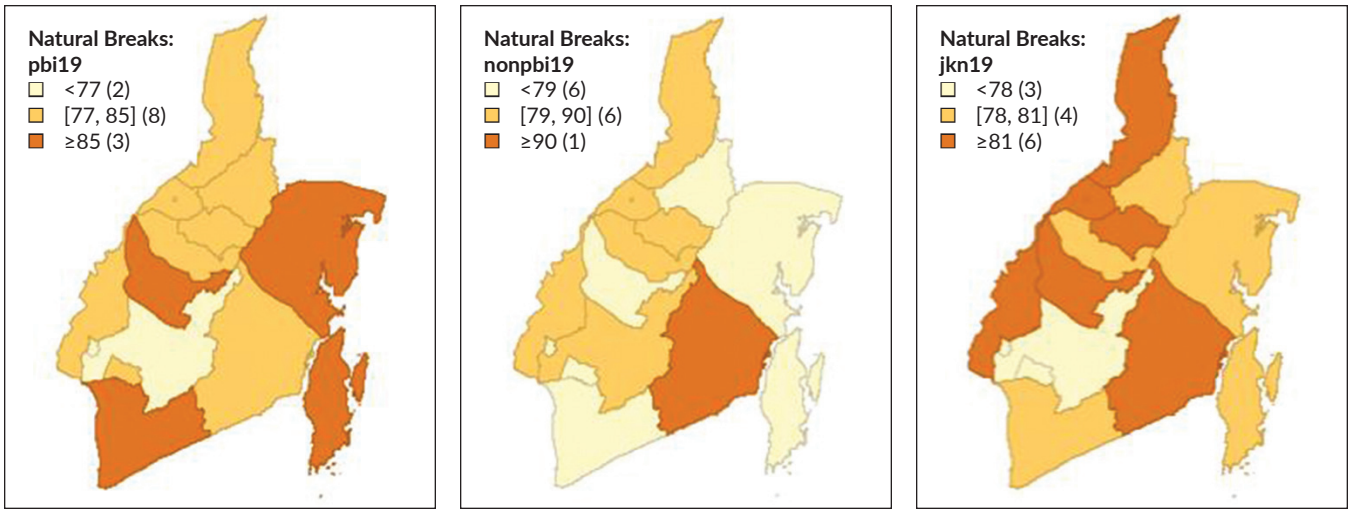

Figure 3. Natural break map in South Kalimantan (2019).

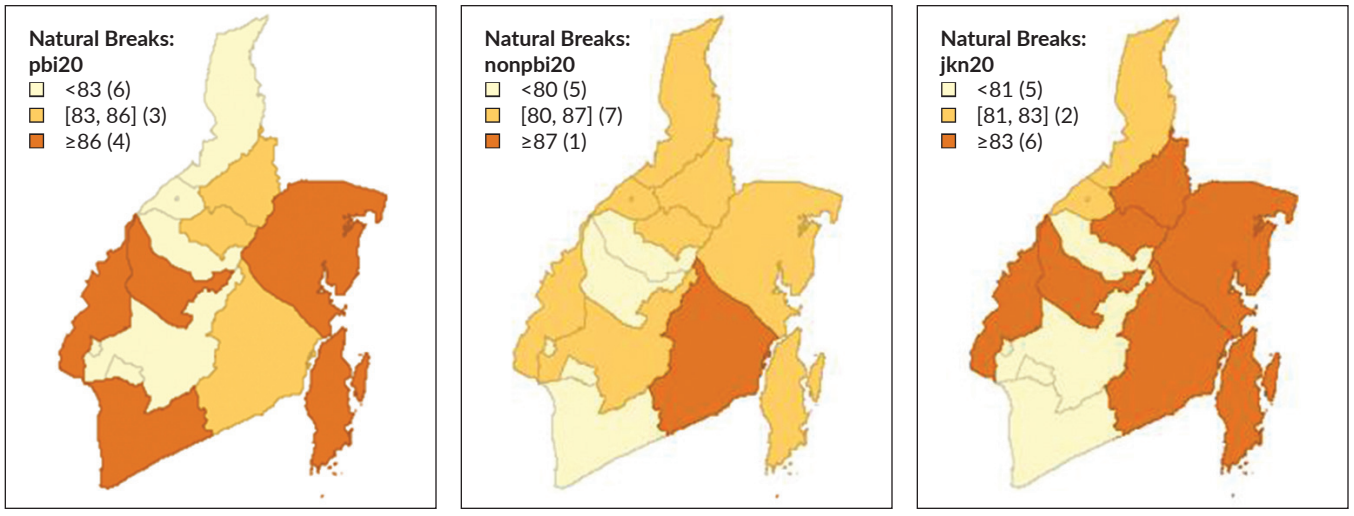

Figure 4. Natural break map in South Kalimantan (2020).

Table 5. Summary of Lowest Interval in Natural Break Map, South Kalimantan (2018-2020)

Year	Variable	Lowest interval	District/City
2018	Active family planning acceptor of National Health Insurance Contribution Assistance Recipients (PBI)	<0.77	Tabalong, Banjarmasin, Banjarbaru, Banjar
	Active family planning acceptor, no National Health Insurance Contribution Assistance Recipients (Non PBI)	<0.75	Banjarbaru
	Active family planning acceptor of NHI participants (NHI)	<0.75	Banjarbaru
2019	Active family planning acceptor of National Health Insurance Contribution Assistance Recipients (PBI)	<0.77	Banjar
	Active family planning acceptor, no National Health Insurance Contribution Assistance Recipients (Non PBI)	<0.79	Banjarmasin, Banjarbaru, Tanah Laut, Tapin, Kotabaru, Balangan
	Active family planning acceptor of NHI participants (NHI)	<0.78	Banjarmasin, Banjarbaru, Banjar
2020	Active family planning acceptor of National Health Insurance Contribution Assistance Recipients (PBI)	<0.83	Banjarmasin, Banjarbaru, Banjar, Tabalong, Hulu Sungai Selatan, Hulu Sungai Utara
	Active family planning acceptor, no National Health Insurance Contribution Assistance Recipients (Non PBI)	<0.80	Banjarmasin, Banjarbaru, Tanah Laut, Tapin, Hulu Sungai Selatan
	Active family planning acceptor of NHI participants (NHI)	<0.81	Banjarmasin, Banjarbaru, Banjar, Tanah Laut, Hulu Sungai Selatan

Indonesia, because the government's main priority at the beginning of the COVID-19 pandemic was to reduce the transmission of COVID-19.[33] According to Wijayanti et al., the COVID-19 pandemic had an impact on reducing family planning services.[34] During the said pandemic, family planning services were not as usual. There were adjustments in the implementation of family planning services such as restrictions on hours and the number of visits, implementation of scheduling mechanisms, service restrictions, and partner involvement for the distribution of short-term contraceptives to family planning acceptors.[33] The results of studies in other countries also show that there is a decrease in the use of modern contraception during the COVID-19 pandemic, such as in Bangladesh.[35] In France, long-term contraceptive prescribing was substantially most affected during the COVID-19 pandemic.[36]

The existence of the National Health Insurance is intended to reduce the gap in economic access between regions in Indonesia to health services, especially contraceptive services to achieve universal health coverage. Universal Health Coverage means that all individuals and communities receive the health services they need without suffering financial hardship. It includes the full spectrum of essential, quality health services, from health promotion to prevention, treatment, rehabilitation, and palliative care across the life course.[37] Economic access will increase the use of modern contraception. Economic accessibility refers to the extent to which the costs of reaching the service provision or supply point and obtaining contraceptive services/supply are within the economic capabilities of the majority of the target population.[38] Based on Table 3, the mean of modern contraceptive use increased in 2018-2020. Moreover, Table 5 shows that there is an increase in the lowest cut-off interval for all types of NHI in 2018-2020. Study shows that the existence of NHI can increase the use of modern contraception in South Kalimantan. According to Suwantika et al., the use of modern contraception, especially the long-term method, has become more cost-effective since the implementation of the National Health Insurance system. NHI coverage can increase access to modern contraceptive services, especially long-term and permanent contraception.[24,39]

Table 6. The Significant Value of Modern Contraceptive Use among NHI Participants before and during COVID-19 Pandemic

Variable	*P*-value (2018 & 2020)	*P*-value (2019 & 2020)
Active family planning acceptor of national health insurance contribution assistance recipients (NHI PBI)	0.006*	0.398
Active family planning acceptor of no national health insurance contribution assistance recipients (Non PBI NHI)	0.022*	0.132
Active family planning acceptor of NHI participants (NHI)	0.033*	0.048*

**P-value <0.05*

Based on Table 3, the mean of contraceptive use in NHI PBI is higher than in Non-PBI NHI every year. This shows that assistance can increase the use of modern contraception. PBI NHI participants include people who are classified as poor and people who cannott afford it. The criteria for the poor and the underprivileged are determined by the minister in the social sector after coordinating with the minister and/or the head of the relevant institution.[1] The results showed that the use of NHI, especially for family planning services, was widely used by recipients of contribution assistance. This indicates that the existence of NHI helps the poor and the underprivileged in increasing the need for family planning services. Family planning services

for the PBI-NHI successfully reach out to more poor people than those who could afford it.[40]

The existence of NHI can increase access to services. Increased access to services can increase the use of modern contraceptives. The results of previous studies show that there is a relationship between free access to short-term and long-term contraceptive methods and the use of modern contraception.[41] Similar to Kavanaugh's finding that insurance coverage was significantly related to contraceptive use across the state.[42] In Nigeria, sexually active women who are covered by health insurance have a higher chance of using modern contraceptives compared to sexually active women who do not have health insurance coverage.[43]

The limitation of this study is that the results are only for the regional level and cannot be applied at the individual level. Data quality depends on data collectors, reporters, and inputters. This study allows for an ecological fallacy.

CONCLUSIONS

The COVID-19 pandemic has impacted, to a certain degree, the use of contraceptives among the people residing in South Kalimantan, Indonesia. However, those who were receiving contribution assistance were more likely to practice contraceptive use compared to those who were not receiving any contribution assistance. The study based on secondary ecological data showed that there was stagnation and decline of modern contraceptive use in 30.7% of Districts/Cities in South Kalimantan, Indonesia with the onset of the pandemic. There was, however, a mean increase in the proportion of modern contraceptive use among Active family planning acceptors of the NHI contribution. The recommendation for future research is to use the observational method with primary data to describe the recent condition. In addition, there is a need for further investigation, into what factors caused the differences in the use of modern contraception before and during the COVID-19 pandemic and what factors influenced contraceptive use in general at the regional level.

Statement of Authorship

Both authors certified fulfillment of ICMJE authorship criteria.

Author Disclosure

Both authors declared no conflicts of interest.

Funding Source

The Indonesian Education Endowment Fund (LPDP) has provided funding for this research.

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