

THE DISTRIBUTION OF CONTRACEPTIVE USE BEFORE AND AFTER THE COVID-19 PANDEMIC IN INDEPENDENT MIDWIFE PRACTICE, NORTH KALIMANTAN

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ABSTRACT

Background: COVID-19 pandemic seemed to have affected contraceptive use in North Kalimantan. This study aimed to describe the distribution in contraceptive use by type before and after COVID-19 pandemic at the independent midwife practices in North Kalimantan.

Subjects and Method: This was a descriptive study using available secondary data, in North Kalimantan in 2021. Quantitative data were obtained from the monthly field report and family information system at the independent midwife practices. The data were described in percent.

Results: The distribution of contraceptive use by type before COVID-19 pandemic was as follows: intrauterine devices (39.3%), tubectomy (40.0%), vasectomy (100%), condoms (40.9%), implants (39%), injection (40%), and pill (40%). The distribution of contraceptive use by type after COVID-19 pandemic was as follows: intrauterine devices (40.6%), tubectomy (37.5%), vasectomy (0%), condoms (30%), implants (40%), injection (45.4%), and pill (39.7%).

Conclusion: There was difference in the distribution of contraceptive use before and after the COVID-19 pandemic at the independent midwife practices, in North Kalimantan.

Keywords: contraceptive, user, COVID-19 pandemic.

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BACKGROUND

COVID-19 infection has spread to various countries including Indonesia so that it requires comprehensive management and handling (WHO, 2020; Guo et al., 2020; Huang et al., 2020). Data on COVID-19 cases in Indonesia with a total of 51,427 confirmed cases and 2,683 deaths based on data on 27 June 2020 (BPS, 2020). Indonesia is a developing country that cannot be separated from population problems so it must get appropriate management, especially regarding population density (Susilo et al., 2020). The problem in the population sector faced by Indonesia is the increasing

population and the relatively high rate of population growth. The total population of Indonesia reaches 258,704,986 people, with a population growth rate of 3.24 million per year (Central Bureau of Statistics, 2016). Efforts made by the government to control the rate of population growth is to reduce the birth rate by implementing the Family Planning (FP) program. Family Planning (FP) is an effort to create a quality family through promotion, protection, and assistance in the context of realizing reproductive rights as well as providing services, arrangements and support needed to form a family with the ideal marriageable age,

regulating the number, distance and the ideal age for giving birth to children, regulating pregnancy and fostering resilience and child welfare (BKKBN, 2015). The welfare of the family is expected to improve the social welfare of the community (Matovu, 2017). The new problem in the midst of increasing the implementation of the family planning program is the problem of the COVID-19 pandemic (Ministry of Health, 2020).

Emergency public health services are the main focus for reducing and controlling problems in the public sector due to the health and socio-economic impacts of COVID-19 (Li et al., 2020; Rhotan and Byrareddy, 2020). Comprehensive reproductive health services, especially in the field of family planning, are one of the keys to suppressing the rate of population growth (Riley et al., 2020). Pregnant women and children are vulnerable populations to be infected with COVID-19 during the pandemic (Lei et al., 2020). Immune factors and physiological changes during pregnancy are one of the reasons pregnant women are susceptible to being infected with COVID-19. Therefore, the viral pandemic can affect reproductive health and antenatal care, especially in developing countries so that prevention of pregnancy through access to family planning services is very important to pay attention to in developed and developing countries (Donders et al., 2020). In addition, some drugs used for the treatment of infections such as hydroxy-CHLOROQUINE can increase the incidence of spontaneous abortion, prematurity and IUGR (Leroux et al., 2015; Kaplan et al., 2016; Vivien et al.,

2018). Abdelbadee and Abbas' research (2020) shows that pregnant women with low levels of education are a vulnerable group to be infected with COVID-19, so it is expected that maternal health services to provide antenatal and postpartum care, one of which is counseling about family planning to manage pregnancy spacing. These health services must be adapted to the family planning service system during the COVID-19 pandemic.

Optimal access to family planning services depends on functional health facilities. During the COVID-19 pandemic, health protocols to support family planning services were prepared in various health facilities, including the independent practice of midwives to prevent COVID-19 transmission, fulfill community needs related to family planning services and improve family planning services. use of contraception (Kemenkes RI, 2020). Data from the National Population and Family Planning Agency (BKKBN) shows that in 2016, the number of active family planning participants for couples of childbearing age in Indonesia was 74.8%. Details of active family planning participants for couples of childbearing age are injectable contraceptives (47.96%), pills (22.81%), implants (11.20%), IUDs (10.61%), condoms (3.23%), tubectomy (3.54%), vasectomy (0.64%). The highest contraceptive use is 47.97% injection and the IUD use is still low at 10.61% (BKKBN, 2017). The proportion of couples of childbearing age (15-49 years) in 2017 who had the need for family planning and used modern methods of contraception was 57.20%, with the largest proportion of needs being in Lampung 65.50% and North

Kalimantan being at number 22 with the proportion by 46.9% (BPS, 2020). The results of a preliminary study on contraceptive use in March-April in Tarakan City, North Kalimantan Province during the COVID-19 pandemic included injections (4,217), IUD (14), implants (15), pills (294), and condoms (20).

The high number of infected cases and deaths due to the impact of COVID-19 in Indonesia, which has affected the decline in family planning use with an increasing proportion of family planning needs in North Kalimantan Province, shows that the COVID-19 pandemic is an urgent problem that must be resolved immediately. The COVID-19 pandemic appears to have affected the use of contraceptives in North Kalimantan. This study aims to describe the distribution of contraceptive use by type before and after the COVID-19 pandemic in independent practice midwives in North Kalimantan.

SUBJECTS AND METHOD

1. Study Design

This research is a descriptive study using secondary data in North Kalimantan in 2021. Quantitative data were obtained from monthly field reports and family information systems in the practice of independent midwives.

2. Population and Sample

The population in this study were all contraceptive acceptors in North Kalimantan. Sampling was carried out using purposive sampling technique.

3. Study Variable

The dependent variable is the COVID-19 pandemic. The independent variable is the use of contraception.

4. Operational Definition of Variables

COVID-19 pandemic is the event of the spread of COVID-19 disease throughout the world for all countries including Indonesia, divided into two categories before and after the COVID-19 pandemic.

Contraceptive use is a woman of childbearing age, one of whom uses one method or contraceptive for the purpose of preventing pregnancy, either through program or non-programme.

5. Data Analysis

Univariate analysis to see the frequency distribution and the percentage of characteristics of research subjects.

6. Instrument

Data were collected by non-participatory observation and observation of monthly field control report documents at the village/kelurahan level (Sistem dan Family Information (SIDUGA). Data collection tools consisted of documents, stationery, laptops, and cameras.

7. Research Ethics

Research ethics include research approval (informed consent), anonymity, confidentiality and ethical clearance. Research ethics number is No. 007/KEPK-FIKES UBT/VII/2021.

RESULTS

Distribution of contraceptive use by type before the COVID-19 pandemic in government services, including: contraceptive devices (60.7%), tubectomy (60%), vasectomy (100%), condoms (0%), implants (59.1%), injections (61%), injections (60%), and pills (10%). The distribution of contraceptive use by type before the COVID-19 pandemic in private services included: contraceptive

devices (39.3%), tubectomy (40.0%), vasectomy (100%), condoms (40.9%), implants (39%), injection (40%), injections (40%), and pills (40%) (Table 1).

Table 1. Distribution of family planning subjects based on the place of service before the COVID-19 pandemic

Family Planning (KB)	Service Place			
	Government Service		Private Service	
	n	%	n	%
IUD	37	60.7	24	39.3
Tubectomy	18	60	12	40
Vasectomy	0	0	2	100
Condom	26	59.1	18	40.9
Implant	25	61	16	39
Inject	273	60	182	40
Pill	150	60	100	40

Source: Monthly Field Control Report at the Village

Distribution of contraceptive use by type after the COVID-19 pandemic in government services, including: contraceptive devices (59.4%), tubectomy (62.5%), vasectomy (100%), condoms (70%), implants (60%), injections (54.6%), and pills (60.3%). Distribution of

contraceptive use by type after the COVID-19 pandemic in private services including contraceptives (40.6%), tubectomy (37.5%), vasectomy (0%), condoms (30%), implants (40%), injections (45.4%), and pills (39.7%) (Table 2).

Table 2. Distribution of Family Planning subjects by place of service during the COVID-19 pandemic

Family Planning	Service Place			
	Government Service		Private Service	
	n	%	n	%
IUD	38	59.4	26	40.6
Tubectomy	20	62.5	12	37.5
Vasectomy	2	100	0	0
Condom	35	70	15	30
Implant	27	60	18	40
Inject	318	54.6	264	45.4
Pill	155	60.3	102	39.7

Source: Monthly Field Control Report at the Village

DISCUSSION

The family planning program is not only aimed at controlling the rate of population growth, but also to meet the public's demand for quality family planning and reproductive health (KR) services, reduce maternal mortality (MMR) and infant mortality (IMR) as well as overcoming reproductive health

problems. to form a quality small family (Yuhedi and Kurniawati, 2013). Based on the results of the study, it showed that there were a small number of subjects using IUD KB, as many as 64 subjects (6.20%) with most of the subjects with IUD using government services, as many as 38 subjects (59.4%) for the installation of IUD and

Implant, as many as 45 subjects (4.4%). Intra Uterine Device (IUD) is a contraceptive device made of flexible plastic and is installed in the uterus (BKKBN, 2016). The IUD is a small device consisting of a flexible plastic material that is inserted into the uterine cavity, which must be replaced if it has been used for a certain period. The IUD has 97-99% effectiveness for preventing pregnancy and long-term use (Marikar et al., 2015; Kohn et al., 2015).

According to Ahmed et al. (2019) the IUD is a type of non-hormonal contraception that is ideal for spacing pregnancies, the IUD is a contraceptive device that is inserted through the cervix and placed in the uterus. The use of IUD contraception can guarantee at least three years of birth spacing, in addition, because the IUD is a non-hormonal contraceptive, it has no effect on weight gain so that mothers do not have to worry about weight gain due to the IUD contraception (Mohammed et al., 2017; Narulita and Prihatin, 2007). 2017). Setting a birth spacing of more than two years can help women have healthy children and increase their chances of survival by 50% (Jalang'o et al., 2017; Njotang et al., 2017). The prevalence of IUD use is mostly used by women aged between 30-40 years (Wijayanti and Novianti, 2017; Mahumud et al., 2015).

The results showed that the use of injectable family planning had increased during the COVID-19 pandemic, thereby indicating that there was an attempt to use a type of contraception with a longer duration compared to the use of the pill and condom as an effort to prevent pregnancy, especially during the COVID-19 pandemic. 19

which is expected to delay pregnancy. The Indonesian Ministry of Health (2020) provides recommendations to family planning and reproductive health officers in providing family planning services during the COVID-19 pandemic. The recommendation is that family planning clients whose release time is not possible, should use condoms by contacting PLKB officers/cadres, the traditional way (periodic abstinence or interrupted intercourse). In addition, Health Officers and cadres can coordinate the provision of condoms to clients with the following conditions: family planning clients who have expired (IUD/-Implant/injection) and cannot come to health workers. Hartanto (2016) stated the low use of IUD contraception is due to the acceptor's ignorance about the advantages of the contraceptive method. The ignorance of the acceptors about the advantages of the IUD contraceptive method was due to the incomplete information provided by the family planning service officer. The results showed that in Tondo Sub-district there were fewer IUD users than injections and pills. This is because the IUD is more difficult to use and requires assistance from health workers and the side effect is excessive menstrual bleeding, resulting in a lack of blood. Many housewives do not use the IUD contraception even though this contraceptive is a convenient type of contraception. Maryam (2015) and Nita et al. (2015) also explained that the importance of positive perceptions of mothers regarding the benefits of IUDs can increase IUD use. Pitriani (2017); Solanke (2017) also explains that the positive perception of mothers is influenced by

the level of education and knowledge. Thus, it is necessary to increase counseling regarding the importance of using family planning, especially the IUD by midwives (Sulastri et al., 2016; Teffera and Wondifraw, 2015).

Fruzzetti et al. (2020) explained that there are several things that health workers, especially midwives, must pay attention to in family planning services during the COVID-19 period by looking at the type of contraception used by the IUD, which can be continued in COVID-19 patients, either asymptomatic or symptomatic. Makins et al. (2020) explained that the use of the IUD does not need to be removed while infected with COVID-19, for those whose use has expired, the release of the IUD does not need to be in a hurry for removal. Patients must adjust to the condition of the body because of the effectiveness of the IUD because the IUD license for a period of time is lower than the effective duration or can use contraceptives for protection such as condoms. The results showed that the number of IUD use before and after the COVID-19 pandemic did not show an increase, which means it was different from the results of the study which showed that the decrease in family planning visits was caused by the policy of limiting the number of visits and hours of service in health facilities, one of which was in the clinic. KB, besides that, many health facilities were forced to close due to limited services (Purwanti, 2020).

The results of this study indicate that there are a small number of subjects using tubectomy as many as 32 subjects (3.1%) and vasectomy as many as 2 subjects (0.2%). Based on the

results of the study, it shows that there are differences in the number of tubectomy and vasectomy family planning before and after the COVID-19 pandemic, but the increase is smaller than other types of family planning. The results of this study are in line with the research of Wijayanti et al. (2021) which showed that there was a 15% decrease in vasectomy, one of which was due to a decrease in the level of family income so that it was related to a decrease in the participation of the head of the household in the use of MOP.

Hossain et al. (2018) explained that the factor related to the use of contraception is place of residence, mothers who live in rural areas have a smaller percentage, which is 23% smaller than mothers from urban areas (OR= 0.77; 95% CI= 0.69 to 0.86), then mothers from rural areas are 0.77 times less likely to use contraception than mothers from urban areas. A house distance of 20m² from COVID-19 patients or commonly called regional zones increases anxiety because it affects the risk of COVID-19, this is related to close contact and lack of social distancing both in the community and workplace (Wang et al., 2020).

The provision of correct and appropriate information is very much needed by family planning acceptors so that prospective family planning acceptors are sure and steady with their choice regardless of the cost of paying for the contraceptive, especially during the COVID-19 pandemic with the increasing need for both health and contraceptive needs as an effort to delay pregnancy. Incorrect and inappropriate information about the

contraceptives used can cause family planning acceptors to complain because of the effects and costs that are too expensive for the contraceptives to be used so that it has an impact on negative attitudes towards the use of family planning, especially in the mass COVID-19 pandemic with The income of the community has decreased, thus there is a positive relationship between attitudes and the use of family planning. This study concludes that there are differences in the distribution of contraceptive use before and after the COVID-19 pandemic in the practice of independent midwives in North Kalimantan.

AUTHOR CONTRIBUTION

Rahmi Padlilah, the main researcher who played a role in collecting data, Elfanda Sholihah who played a role in describing the research data; Ika Yulianti, examines the conceptual framework and research methodology.

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CONFLICT OF INTEREST

There is no conflict of interest in this study.

REFERENCES

Abdelbadee AY, Abbas AM (2020). Impact of COVID-19 on reproductive health and maternity services in low resource countries. *Eur J Contracept Reprod*

Health Care. 25(5): 402-404. doi: 10.1080/13625187.2020.1768527

Ahmed F, Mahmoud AME (2019). Impact of hormonal contraceptive on body mass index, lipid profile and blood pressure of women at bearing age in Rural Area, Northern Sudan. *CPQ Nutrition*. 3(3): 1-7. Retrieved from: https://www.researchgate.net/publication/332817550_.

Badan Kependudukan dan Keluarga Berencana Nasional (BKKBN) (2015). Rapat pengendalian program dan anggaran data januari 2015 (January 2015 data budget and program control meeting). Jakarta: Direktorat Pelaporan dan Statistik.

Badan Kependudukan dan Keluarga Berencana Nasional (BKKBN) (2017). Rencana strategis badan kependudukan dan keluarga berencana nasional tahun 2015-2019 (National population and family planning agency strategic plan 2015-2019). Jakarta.

Badan Pusat Statistik (BPS) (2020). Statistik Indonesia 2020 (Indonesia Statistics 2020). Jakarta: BPS.

Badan Pusat Statistik (BPS) (2016). Statistik Indonesia 2020 (Indonesia Statistics 2020). Jakarta: BPS

Donders F, Lonnée-Hoffmann R, Tsikalos A, Mendling W, Martinez de Oliveira J, Judlin P, Xue F, Donders GGG, et al. (2020). ISIDOG Recommendations Concerning COVID-19 and Pregnancy. *Diagnostics (Basel)*. 10(4): 243. doi: 10.3390/diagnostics10040243.

- Fruzzetti F, Cagnacci A, Primiero F, Leo VD, Bastianelli C, Bruni V, Caruso, et al. (2020). Contraception during Coronavirus-COVID-19 pandemic. Recommendations of the Board of the Italian society of contraception. *Eur J.* 25(3): 231-232. doi: 10.1080/13625187.-2020.1766016.
- Guo YR, Cao QD, Hong ZS, Tan YY, Chen SD, Jin HJ, Tan KS, et al. (2020). The origin, transmission and clinical therapies on coronavirus disease 2019 (COVID-19) outbreak – an update on the status. *Mil Med Res.* 7(11). doi: <https://dx.doi.org/10.1186%2Fs40779-020-00240-0>.
- Hartanto W (2016). Analisis data kependudukan dan KB hasil susenas 2015 (Analysis of population and family planning data from the 2015 Susenas). Rapat Koordinasi Nasional (Rakornas). Jakarta: BKKBN.
- Hossain MB, Khan MHN, Ababneh F, Shaw JEH (2014). Identifying factors influencing contraceptive use in Bangladesh: evidence from BDHS 2014 data. *BMC Public Health.* 18: 192. doi. 10.1186/s12889-018-5098-1.
- Huang C, Wang Y, Li X, Ren L, Zhao J, Hu Y, Zhang L, et al. (2020). Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. *Lancet.* 395: 497–506. [https://doi.org/10.1016/S0140-6736\(20\)30183-5](https://doi.org/10.1016/S0140-6736(20)30183-5).
- Jalang'o R, Thuita F, Barasa SO, Njoroge P (2017). Determinants of contraceptive use among postpartum women in a county hospital in rural KENYA. *BMC Public Health.* 17(604): 1-8. <https://dx.doi.org/10.1186%2Fs12889-017-4510-6>.
- Kaplan YC, Ozsarfati J, Nickel C, Koren G (2015). Reproductive outcomes following hydroxychloroquine use for autoimmune diseases: a systematic review and meta-analysis. *Br J Clin Pharmacol.* 81(5): 835–848. doi. <https://dx.doi.org/10.1111%2Fbcp.12872>.
- Kemenkese RI (2014). Pedoman manajemen pelayanan keluarga berencana (Family planning service management guidelines). Jakarta: Kementerian Kesehatan.
- Kemenkes RI (2016). Situasi dan Analisis Keluarga Berencana (Family Planning Situation and Analysis). Jakarta: Pusat Data dan Informasi Kementerian Kesehatan Republik Indonesia.
- Kemenkes RI (2020). Panduan pelayanan keluarga berencana dan kesehatan reproduksi dalam situasi pandemi COVID-19 (Guidelines for family planning and reproductive health services in the COVID-19 pandemic situation). Retrieved from: <http://kesga.kemkes.go.id/images/pedoman/Panduan%20pelayanan%20KB%20dan%20Kespro%20dalam%20situasi%20Covid19.pdf>
- Kohn JE, Lopez PM, Simons HR (2015). Weight and body mass index among female contraceptive clients. *Contraception.* 91(6): 470–473. doi. 10.1016/j.contraception.2015.02.006.
- Lei J, Li J, Li X, Qi X (2020). CT imaging of the 2019 Novel coronavirus (2019-nCoV) Pneumonia.

- Radiology.295(1): 18. doi. 10.114-8/radiol.2020200236.
- Leroux M, Desveaux C, Parcevaux M, Julliac B, Gouyon JB, Dallay D, Pellegrin JL, et al. (2015). Impact of hydroxychloroquine on pre-term delivery and intrauterine growth restriction in pregnant women with systemic lupus erythematosus: a descriptive cohort study. *Lupus*. 24(13): 1384-91. DOI: 10.1177/0961203315591027
- Li Q, Guan X, Wu P, Wang X, Zhou L, Tong Y, Ren R, et al. (2020). Early transmission dynamics in wuhan, china, of novel coronavirus–infected pneumonia. *N Engl J Med*. 382(13): 1199-1207. doi. 10.1056/NEJMoA2001316.
- Mahumud RA, Hossain MG, Sarker AR, Islam MN, Hossain MR, Saw A, Khan JA (2015). Prevalence and associated factors of contraceptive discontinuation and switching among Bangladeshi married women of reproductive age. *J Contracept*. 6:13-19. doi: 10.2147/OAJC.S76070.
- Makins A, Arulkumaran S, FIGO P, Family PC (2020). The negative impact of COVID-19 on contraception and sexual and reproductive health: Could immediate postpartum LARCs be the solution? *Int J Gynecol Obstet* 2020; 150(2): 141–143. doi. 10.1002/ijgo.13237.
- Maryam S (2015). Analisis persepsi ibu tentang program keluarga berencana (kb) dengan penggunaan kontrasepsi di Desa Sumberdadi Kecamatan Sumbergempol Kabupaten Temanggung Tahun 2014 (Analysis of mother's perception of the family planning program (KB) with the use of contraception in Sumberdadi Village, Sumbergempol District, Temanggung Regency in 2014). *Jurnal Universitas Tulungagung Bono- rowo*. 1(2): 65-71. <https://doi.org/10.36563/bonorowo.v1i2.16>.
- Marikar APK, Kundre R, Bataha Y. (2015). Faktor-faktor yang berhubungan dengan minat ibu terhadap penggunaan Alat Kontrasepsi Dalam Rahim (AKDR) di Puskesmas Tuminting Kota Manado (Factors related to maternal interest in the use of intrauterine contraceptive devices (IUD) at Tuminting Health Center Manado City). *e-Journal Keperawatan (eKp)*. 3(2): 0–5.
- Matovu JK, Makumbi F, Wanyenze RK, Serwadda D (2017). Determinants of fertility desire among married or cohabiting individuals in Rakai, Uganda: a cross-sectional study. *Reprod Health*. 14(1):2. doi: 10.1186/s12978-016-0272-3.
- Mohammed Z, Idriss MM, Nora BAB, Fatiha F (2017). The association between body mass index, lipid profiles and total cholesterol among married versus spinster. *J Gastroenterol Dig Dis*. 2(1): 18-21. <http://dx.doi.org/10.5812/jjhs.12769>.
- Narulita E, Prihatin J (2017). Kontrasepsi hormonal, jenis, fisiologi dan pengaruhnya bagi Rahim (Hormonal contraceptives, types, physiology and their effects on the uterus). *UPT Penerbitan Universitas Jember: Jember*. 53-54. Retrieved from: <http://repositori>

- tory.unej.ac.id/handle/1234567-89/82580.
- Nisa NK, Susilani AT, Hadnisari N (2015). Persepsi tentang IUD pada wanita usia subur di BPS widya dusun Juwangen Kelurahan Purwomatani Kecamatan Kalasan Kabupaten Sleman (Perceptions of IUDs in women of childbearing age at BPS widya, Juwangen hamlet, Purwomatani Village, Kalasan District, Sleman Regency). *Jurnal Permata Indonesia*. 6(5): 46-56.
- Njotang PN, Yakum MN, Ajong AB, Essi MJ, Akoh EW, Mesumbe NE, Ako S, et al. (2017). Determinants of modern contraceptive practice in yaounde-cameroon: a community based cross sectional study. *BMC Res Notes*. 10(1): 219. doi. 10.1186/s13104-017-2543-7.
- Pitriani S (2015). Hubungan pendidikan, pengetahuan dan peran tenaga kesehatan dengan penggunaan kontrasepsi Intra Uterine Device (IUD) di Wilayah Kerja Puskesmas Rawat Inap Muara Fajar Pekanbaru (The relationship between education, knowledge and the role of health workers with the use of Intra Uterine Device (IUD) contraception in the Muara Fajar Inpatient Health Center Work Area Pekanbaru). *Jurnal Kesehatan Komunikasi*. (1): 25. <http://dx.doi.org/10.25311/jkk.Vol3.Iss1.97>.
- Purwanti S (2020). Dampak Penurunan Jumlah Kunjungan KB terhadap Ancaman Baby Boom di Era Covid-19 (The Impact of the Decline in the Number of Family Planning Visits on the Threat of Baby Booms in the Covid-19 Era). *Jurnal Bina Cipta Husada*, 16(2): 105-118.
- Riley T, Sully E, Ahmed Z, Biddlecom A (2020). Estimates of the potential impact of the COVID-19 pandemic on sexual and reproductive health in low- and middle-income countries. *IPSRH* 46: 73-76.
- Rothan HA, Byrareddy SN (2020). The epidemiology and pathogenesis of coronavirus disease (COVID-19) outbreak. *J Autoimmun*. 109: 10-2433. doi. 10.1016/j.jaut.2020.-102433.
- Solanke BL (2017). Factors influencing contraceptive use and non-use among women of advanced reproductive age in Nigeria. *J Health Popul Nutr*. 36:1. doi. <https://doi.org/10.1186%2Fs41043-016-0077-6>.
- Sulastris S, Shaluhiah Z, Sriatmi A (2016). Analysis of determinant factors of midwives behaviour on the implementation of infection prevention standard at family planning services in Malang District. *Jurnal Manajemen Kesehatan Indonesia*. 2(2): 150-160. doi. <https://doi.org/10.14710/jmki.2.2014.%25p>.
- Susilo A, Rumende M, Pitoyo CW, Santoso WD, Yulianti M, Herikurniawan (2020). Coronavirus Disease 2019: Review of Current Literatures. *J Penyakit Dalam Indonesia*. 7(1): 45-67. <https://doi.org/10.7454/jpdi.v7i1.415>.
- Teffera AS, Wondifraw AS (2015). Determinants of long acting contraceptive use among reproductive age women in Ethiopia: evidence from EDHS 2011. *IJPHS*. 3(1):

- 143-149. <https://doi.org/10.1186/s13104-019-4445-3>.
- Vivien G, Alice B, Thomas B, Christophe R, Marie-Elise T, Julien S, Pierre D, Estibaliz L (2018). Hydroxychloroquine for the prevention of fetal growth restriction and prematurity in lupus pregnancy: a systematic review and meta-analysis. 85(6): 663-668. doi. 10.1016/j.jbspin.2018.03.006
- Wang C, Pan R, Wan X, Tan Y, Xu L, Ho CS, Ho RC (2020). Immediate psychological responses and associated factors during the Initial Stage of the 2019 coronavirus disease (COVID-19) epidemic among the general population in china. *Int. J. Environ. Res. Public Health*. 17(5): 1729. doi. 10.3390/ijerph17051729.
- Wijayanti R, Novianti (2017). Penggunaan KB metode kontrasepsi jangka panjang (MKJP) Di Wilayah Kerja Puskesmas Kecamatan Sawah Besar Jakarta Pusat (The use of long-term contraceptive methods (MKJP) in the work area of the Puskesmas Sawah Besar District, Central Jakarta). *Jurnal Ilmiah WIDYA*. 4.
- Wijayanti UR, Nindiyastuti NAI, Najib N (2021). Dampak pandemi Covid-19 terhadap pelayanan KB (The impact of the Covid-19 pandemic on family planning services). *HIGEIA*. 5(3). <http://journal.unnes.ac.id/sju/index.php/higeia>
- World Health Organization (2020). Coronavirus Disease (COVID-19) Situation report –107. Retrieved from https://www.who.int/docs/defaultsource/coronaviruse/situation-reports/20200519-COVID-19-sitrep-120.pdf?sfvrsn=51-5cabfb_2. Accessed.
- Yuhedi LT, Kurniawati T (2013). Buku Ajar kependudukan dan pelayanan KB (Textbook of population and family planning services). Jakarta: EGC.