



## The Association Between Knowledge and Parity of Family Planning Acceptors and Interest in Using Female Surgical Method Contraception

Hervina Winerti<sup>1</sup>, Rauza Sukma Rita<sup>2✉</sup>, Miranie Safaringga<sup>3</sup>, Asih Dewi Setyawati<sup>4</sup>

<sup>1-3</sup> Faculty of Medicine, Universitas Andalas, Indonesia

<sup>4</sup> National Taipei University of Nursing and Health Sciences, Taiwan

✉rauzasukmarita@med.unand.ac.id, Phone: +6281267123395

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### Abstract

Female surgical contraception is a secure and effective means of preventing pregnancy. On the other hand, Indragiri Hulu Regency had the fifth-lowest adoption rate of female surgical method contraception in Riau province in 2019. The purpose of this study is to find out the association of knowledge and parity of family planning acceptors with interest in the use of female surgical method contraception in the working area of Air Molek Public Health Center, Indragiri Hulu Regency. This research is a quantitative study with a cross-sectional design conducted in the working area of Air Molek Public Health Center, Indragiri Hulu Regency, from February to October 2021. The population in this study is 1799 active and new family planning participants in the working area of Air Molek Public Health Center of Indragiri Hulu Regency, and the sample is as many as 92 respondents. The sample was taken with a proportional sampling technique. Data analysis using chi-square analysis ( $p \leq 0.05$ ). The results showed that 33 people (35.9%) had high interest, 30 people (32.6%) had moderate interest, and 29 people (31.5%) had low interest. There is an association of knowledge of family planning acceptors with interests ( $p=0.036$ ) and acceptor parity with interest ( $p=0.001$ ).

**Keywords:** Family Planning; Female Surgical Method Contraception; Knowledge; Parity; Interest

### INTRODUCTION

The World Health Organization reports that the use of contraceptives has increased worldwide, from 778 million in 2017, become 992 million in 2019, with the highest rates occurring in Asia, Latin America, and Sub-Saharan Africa. (World Health Organization, 2019) In contrast, there has been a decrease in active family planning users in Indonesia. In 2018, active family planning users in Indonesia amounted to 63.27%, while in 2019, it decreased to 62.5%. This coverage is still below the national target of 66%. (Kementerian Kesehatan Republik Indonesia, 2019, 2020)

The ten provinces that have the lowest coverage of active family planning participants are West Papua

(25.4%), Papua (29.1%), East Nusa Tenggara (38.2%), Maluku (39.0%), Riau Islands (45.8%), North Sumatra (49.7%), North Kalimantan (49.9%), Riau (51.5%), North Maluku (52.4%) and Southeast Sulawesi (53.1%). Riau province ranks 8 out of 10 provinces with family planning participants in Indonesia. (Kementerian Kesehatan Republik Indonesia, 2020)

Indonesia classifies contraceptives into two: Long-term Contraceptive Methods and Non-Long-Term Contraceptive Methods. (Fajarningtiyas et al., 2021) Long Term Contraception Methods consist of Intra-Uterine Device (IUD), Male Surgical Method or vasectomy, Female Surgical Method or tubectomy, and implants. (Al-Husban et al., 2022; Pratiwi et al., 2021) At the same time, the Non-Long-Term Contraceptive

Method consists of condoms, pills, and injections. Tubectomy is any procedure on both female fallopian tubes resulting in the woman not having any more children. (Kaur & Manku, 2023; Mills et al., 2021; Sarkar et al., 2022) This contraception is permanent because a woman's fallopian tubes are blocked by tying, cutting, or burning. (Abdul Aziz & R., 2020; Gormley et al., 2021; Tasset & Jensen, 2023) One of the population and family planning development targets is to increase the use of long-term contraceptive methods. The National Medium-Term Development Plan target was to become 23.5% in 2019, but until now, Long Term Contraceptive Methods in Indonesia are still low at 18.3%.

Female Surgical Method or tubectomy family planning acceptors in Indonesia rank third compared to other Long Term Contraceptive Methods, implant users (7.4%), IUD (7.4%), Female Surgical Method (2.7%), and Male Surgical Method (0.5%). Data on the use of Long-Term Contraceptive Methods in Riau province in 2019 were implants (5.6 %), IUD (3.4 %), Female Surgical Method (1.4%), and lastly, users of the Male Surgical Method (0.5 %). Female Surgical Method family planning users in Riau Province decreased in 2016 by 1.71%, by 2017 was 1.37%, and by 2018 was 1.36%, but from 2018 to 2019, it increased to 1.4%. (Kementerian Kesehatan Republik Indonesia, 2020) Based on the Health Profile Riau Province in 2019, 3 districts have the lowest coverage of active family planning participants, namely Rokan Hilir Regency (34%), Kuantan Singingi Regency (57.2%), and Indragiri Hulu Regency (60.9%) (Dinas Kesehatan Provinsi Riau, 2020)

Internal factors, such as knowledge, age, education, parity, attitude, and occupation, influence the decision to use contraception. Support from the husband, the family, healthcare professionals, socio-culture, and the economy are examples of external factors. (Antarini, 2022) Other research shows that

marital status and parity influence the use of contraception in Indonesia. (Mas'udah et al., 2021)

Formal education factors influence knowledge itself. Knowledge is closely related to education, where it is hoped that the person will have more comprehensive knowledge with higher education. However, it should be emphasized that it does not mean someone with low education has low knowledge. A person's knowledge of an object contains two aspects, namely, positive and negative aspects. These two aspects will determine a person's attitude. The more positive aspects and objects are known, the more positive attitudes will be toward certain objects. (Yanniarti et al., 2022)

The best pregnancies and births mean low risk for the mother with a low number of births or a low parity. Women with high parity require safe and effective contraception to terminate births because this group will experience increased morbidity and mortality if pregnant. In choosing contraceptives, women with multiple parities, such as grand multiparity, are directed to long-term contraceptive methods such as tubectomy. (Laksono et al., 2022; Thosmas et al., 2021; Youssefzadeh et al., 2022)

The initial survey results obtained from the family planning register data of Air Molek Public Health Centre (Puskesmas Air Molek) Indragiri Hulu Regency showed that family planning acceptors who choose Female Surgical Method contraception have grand multipara parity. The interview conducted with the Person in Charge of the Family Planning Program at Air Molek Public Health Centre of Indragiri Hulu Regency revealed that contraceptive acceptors who do not use Female Surgical Method contraceptives are of the causes are lack information known by family planning acceptors. Previous studies have found that low knowledge affects a person's low interest in participating in contraception. (Bekele et al., 2020; Moreira et al., 2019) Research on the relationship

between parity and the use of Female Surgical Method contraceptives showed no significant relationship between the number of parities and the use of Female Surgical Method contraceptives. Because of that, this study aims to determine the relationship between knowledge and parity acceptor's family planning with interest in using contraceptives Female Surgical Method in the working area of Air Molek Public Health Centre Indragiri Hulu Regency.

## METHOD

This study uses a Cross-Sectional approach conducted in the Working Area of Air Molek Public Health Centre of Indragiri Hulu Regency from February to October 2021. The instrument used in this study was a research questionnaire about knowledge and parity with interest in female surgical method contraception. The questionnaire used has been tested for validity and reliability. The validity test for the knowledge questionnaire showed that the value of the  $r$  tabel was 0.444, while the average value of the  $r$  count was 0.574. From this result, we can conclude that the questionnaire was valid because  $r$  count  $>$   $r$  table. The interest questionnaire showed a similar result: the  $r$  table value was 0.444, and the average value of the  $r$  count was 0.563, indicating that the interest questionnaire was valid. The reliability test showed that the value of Cronbach's Alpha for the knowledge and interest questionnaire were 0.883 and 0.756, indicating that both questionnaires were valid (Cronbach's Alpha  $>$  0,70)

Filling out the questionnaire was carried out with research subjects through guided interviews. Secondary data in this study uses data that can be obtained from an annual report on the number of active family planning participants in the working area of Air Molek Public Health Centre.

The population in this study are active family planning acceptors in the working area of Air Molek

Public Health Centre in Indragiri Hulu Regency as many as 1799 people. The sample in this study was an active family planning acceptor with 92 respondents, and then using proportional sampling technique based on population in 13 villages in Air Molek. The inclusion criteria of respondents were recorded in the list of active family planning acceptors at Air Molek Public Health Centre; have at least two children; can communicate well, and are willing to be a research sample and fill out a research questionnaire. Exclusion criteria were family planning acceptors who have used long-term contraception and respondents who could not be found three times in a row study.

The data were analyzed using chi-square ( $p < 0.05$ ). This research has passed the ethical test from the Faculty of Medicine Ethics Commission Universitas Andalas with number 523/UN.16.2/KEP-FK/2021.

## RESULT AND DISCUSSION

Based on Table 1, it can be seen that most respondents were in the age group of 30-40 years, with a frequency of 41 people (44.6%). Most respondents had 2-4 children, as many as 54 people (58.7%). This study also found that most of the respondents' education was senior high school, with 35 people (38%). Most respondents work as housewife, as many as 54 people (58.7%). This study showed a similar result to Rohmah et al. (2021), which found that women between 30 and 39 (70 %) utilized contraception the most. They also found that the most parity group was multipara (66.4%) compared to other groups (primipara and grande multipara). Different results were found at the education level, with junior high school the most (64.9%) (Rohmah et al., 2021)

The results showed an association between knowledge and parity of birth control acceptors interested in using Female Surgical Method contraceptives (Table 2) with a  $p$ -value  $<$  0.05. According to National Population and Family Planning

Agency in 2013, factors that affect the selection of contraception are internal factors, namely knowledge, education, age, work, parity, and attitude. Formal educational factors influence knowledge itself. Knowledge is closely related to education, where the person is expected to be more knowledgeable with higher education. But it should be emphasized that it does not mean that someone educated is low-knowledgeable. A person's knowledge of an object contains two aspects, namely, positive and negative aspects. These two aspects will determine a person's attitude. The more positive aspects and known things will give rise to a more positive attitude towards a particular object. (Rua et al., 2022)

Respondents' knowledge in the Air Molek Public Health Centre, Indragiri Hulu Regency's working area is classified as sufficient knowledge (42.4%). Still, it is highly interested in using the Female Surgical Method of contraception (53.8%). Meanwhile, respondents with good knowledge (14.1%) tend to have low interest (38.5%). One internal factor that influences interest is responsiveness. (Britton et al., 2020) Responsiveness is the number of events that remain in memory after making observations. According to the researcher, the response occurs after the observation. The more clearly the individual observes an object, the more positive the response. There are also external factors that strengthen interest, namely the environment, both the physical environment, such as the availability of access to health services, and the social environment, where interactions occur between individuals with other individuals that can have a specific influence on the individual. In addition, the role of cadres and health workers in providing health promotion can influence postpartum mothers' interest in using the Female Surgical Method of contraception.

Based on data in Table 2, there is an association between knowledge and interest in family planning acceptors in using the Female Surgical Method of

contraception in the work area of Air Molek Public Health Centre, Indragiri Hulu Regency, with  $p$ -value = 0.036 ( $p < 0.05$ ). This is in accordance with the theory that a person's knowledge is the basis for action; therefore, a person's ability to do something depends on the knowledge possessed. (West et al., 2019) Based on knowledge about using the Female Surgical Method of contraception, especially its benefits in preventing pregnancy, family planning acceptors can be interested in using the Female Surgical Method of contraception.

Parity is the number or number of deliveries the mother has ever experienced, both live births and stillbirths. Parity 2 to 3 is the safest in terms of maternal mortality. Mothers with a high parity of over 3 have a high maternal rate because endometrial disorders can occur. The cause of endometrial diseases is due to repeated pregnancies. (Pirtea et al., 2021; Ticconi et al., 2019) Meanwhile, the first parity is at risk because the uterus receives the product of conception for the first time, and the uterine muscle flexibility is still limited for fetal growth. Women with high parity need safe and effective contraception to limit births because this group will experience increased morbidity and mortality if they become pregnant. In choosing contraceptives, women with multiple parities, such as grand multiparity, are directed to long-term contraceptive methods. (Dasa et al., 2022; Laksono et al., 2022) Research at the Tibawa Health Center, parity of primiparas who did not use the Female Surgical Method (53.2%) and multiparas who did not use the Female Surgical Method (45.2%). In contrast, grand multipara using the Female Surgical Method (1.6%). (Bahu et al., 2019)

The parity of respondents in the Puskesmas Air Molek, Indragiri Hulu Regency's working area was mostly multipara (58.7%) and had a low interest (48.1%). Meanwhile, most grand multipara parity (41.3%) had a high interest (68.4%) in using the Female Surgical Method of contraception. However, there are

still grand multipara parity respondents with low interest (7.9%). This can happen because parity is related to seeking information about the knowledge of pregnant women and postpartum/breastfeeding mothers. This is related to the influence of one's own experience and that of others on the knowledge that can influence current or future behavior. The experience gained can expand one's knowledge. (Alameer et al., 2022)

Based on the results in Table 3, there is a significant association between parity and interest in using contraceptives of the Female Surgical Method in the work area of the Air Molek Public Health Centre, Indragiri Hulu Regency (p-value = 0.001). This is in line with research by Mas'udah, which showed that parity affected the use of contraception in adult people. (Mas'udah et al., 2021) The number of children is related to the interest in Long Term Contraceptive

Methods. Mothers with two or more children tend to be interested in using Long Term Contraceptive Methods because mothers start thinking about stopping having children, especially if the mother is at an unproductive age. After all, she starts thinking about the risks of childbirth. In couples with a small number of living children, there is a tendency to use low-effective contraceptive methods. (De Vargas Nunes Coll et al., 2019) Meanwhile, in couples with many living children, there is a tendency to use contraceptive methods with higher effectiveness, in this case, the Female Surgical Method of contraception is a choice. This study is in line with Anita's research that mothers with high parity can influence the choice of Female Surgical Method contraception because mothers with many children tend to want to pay attention to their children, such as education, health, growth, and development. (Anita, Nzabona, & Tuyiragize, 2020)

Table 1. Respondent Characteristics

Characteristics	f	%
<b>Age (years)</b>		
20-29	16	17.4
30-40	41	44.6
>40	35	38.0
<b>Education</b>		
Elementary School	15	16.3
Junior High School	18	19.6
Senior High School	35	38
Diploma 1/Diploma 3	9	9.8
Bachelor	15	16.3
<b>Parity</b>		
2-4	54	58.7
>4	38	41.3
<b>Work</b>		
Government employees	10	10.9
Private employees	4	4.3
Self-employed	15	16.3
Contract worker	9	9.8
Housewife	54	58.7

Table 2. The association between knowledge of family planning acceptors and interest in using Female Surgical Method Contraception

Knowledge	Interest						Amount		p-Value
	High		Moderate		Low		f	%	
	f	%	f	%	f	%			
Good	4	30,8	4	30,8	5	38,5	13	100	0.036
Sufficient	21	53,8	10	25,6	8	20,5	39	100	
Lack	8	20	16	40	16	40	40	100	
Amount	33	35,9	30	32,6	29	31,5	92	100	

Table 3. The association between family planning acceptors' parity and interest in using Female Surgical Method Contraception

Parity	Interest						Amount		p-Value
	High		Moderate		Low		f	%	
	f	%	f	%	f	%			
Multiparity	7	13	21	38,9	26	48,1	54	100	0,001
Grand Multiparity	26	68,4	9	23,7	3	7,9	38	100	
Amount	33	35,9	30	32,6	29	31,5	92	100	

## CONCLUSION

It can be concluded that there is a significant association between knowledge and parity of family planning acceptors with interest in using the female surgical method of contraception. This study has limitations; not all factors influencing the selection of the Female Surgical Method of contraception studied, such as attitudes and behaviors. Further research is recommended to examine internal and external factors influencing the female surgical method of contraception selection.

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## REFERENCES

Abdul Aziz, F. T., & R., K. (2020). Clinical study of tubectomy and it's complications. *International Journal of Reproduction, Contraception, Obstetrics and Gynecology*, 9(6), 2550.

<https://doi.org/10.18203/2320-1770.ijrcog20202346>

Alameer, M. I., Muqri, K. Y., Awlaqi, A. A., Azyabi, F. Y., Yaqoub, A. M., Suhail, H. M., Shabaan, S., Moafa, M. H., Alhazmi, M. A., & Alhazmi, A. (2022). Knowledge, Attitude and Practices regarding Contraceptive Pill and Its Side Effects among Women in Jazan Region, Saudi Arabia. *Clinics and Practice*, 12(3), 268–275. <https://doi.org/10.3390/clinpract12030032>

Al-Husban, N., Kaadan, D., Foudeh, J., Ghazi, T., Sijari, Y., & Maaita, M. (2022). Factors affecting the use of long term and permanent contraceptive methods: a Facebook-focused cross-sectional study. *BMC Women's Health*, 22(1). <https://doi.org/10.1186/s12905-022-01784-0>

Anita, P., Nzabona, A., & Tuyiragize, R. (2020). Determinants of female sterilization method uptake among women of reproductive age group in Uganda. *Contraception and Reproductive Medicine*, 5(1). <https://doi.org/10.1186/s40834-020-00131-8>

Antarini, A. (2022). Factors of Tubal Ligation Use For Age Less Than Forty in Urban Areas of Pangkal Pinang, Bangka Belitung Province, Indonesia. *Jurnal Biometrika Dan*

- Kependudukan*, 11(1), 11–18.  
<https://doi.org/10.20473/jbk.v11i1.2022.11-18>
- Bahu, R., Hasania, E., & Hilamuhu, F. (2019). Hubungan Paritas dan Dukungan Suami dengan Rendahnya Minat Penggunaan Alat Kontrasepsi Metode Tubektomi di Puskesmas Tibawa. *Akademika Jurnal Ilmiah*, 67–77.
- Bekele, D., Surur, F., Nigatu, B., Teklu, A., Getinet, T., Kassa, M., Gebremedhin, M., Gebremichael, B., & Abesha, Y. (2020). Knowledge and attitude towards family planning among women of reproductive age in emerging regions of ethiopia. *Journal of Multidisciplinary Healthcare*, 13, 1463–1474.  
<https://doi.org/10.2147/JMDH.S277896>
- Britton, L. E., Alspaugh, A., Greene, M. Z., & McLemore, M. R. (2020). An Evidence-Based Update on Contraception: A detailed review of hormonal and nonhormonal methods. In *American Journal of Nursing* (Vol. 120, Issue 2, pp. 22–33). Lippincott Williams and Wilkins.  
<https://doi.org/10.1097/01.NAJ.0000654304.29632.a7>
- Dasa, T. T., Okunlola, M. A., & Dessie, Y. (2022). Multilevel analysis of grand multiparity: Trend and its determinants in the Sidama National Regional State of Ethiopia: a cross-sectional study design from demographic and health survey 2000-2016. *BMJ Open*, 12(8).  
<https://doi.org/10.1136/bmjopen-2022-061697>
- De Vargas Nunes Coll, C., Ewerling, F., Hellwig, F., & De Barros, A. J. D. (2019). Contraception in adolescence: The influence of parity and marital status on contraceptive use in 73 low- and middle-income countries. *Reproductive Health*, 16(1).  
<https://doi.org/10.1186/s12978-019-0686-9>
- Dinas Kesehatan Provinsi Riau. (2020). Profil Kesehatan Provinsi Riau 2019. *Dinas Kesehatan Provinsi Riau*.
- Fajarningtiyas, D. N., Sulistiawan, D., Naibaho, M. M. P., & Arifa, R. F. (2021). Pattern and determinant of contraceptive use among women in indonesia from 2007 to 2017: Evidence from demographic and health survey. *Open Access Macedonian Journal of Medical Sciences*, 9, 1363–1370.  
<https://doi.org/10.3889/oamjms.2021.7417>
- Gormley, R., Vickers, B., Cheng, B., & Norman, W. V. (2021). Comparing options for females seeking permanent contraception in high resource countries: a systematic review. *Reproductive Health*, 18(1).  
<https://doi.org/10.1186/s12978-021-01201-z>
- Kaur, A. P., & Manku, H. (2023). Trends of various techniques of tubectomy among eligible couples: a five year study in a tertiary hospital. *International Journal of Research in Medical Sciences*, 11(8), 2901–2907. <https://doi.org/10.18203/2320-6012.ijrms20232420>
- Kementerian Kesehatan Republik Indonesia. (2019). Profil Kesehatan Indonesia 2018. *Kementerian Kesehatan Republik Indonesia*, 1, 1–556.  
<http://www.kemkes.go.id>
- Kementerian Kesehatan Republik Indonesia. (2020). Profil Kesehatan Indonesia 2019. *Kementerian Kesehatan Republik Indonesia*, 1–487.
- Laksono, A. D., Rohmah, N., & Megatsari, H. (2022). Barriers for multiparous women to using long-term contraceptive methods in Southeast Asia: case study in Philippines and Indonesia. *BMC Public Health*, 22(1). <https://doi.org/10.1186/s12889-022-13844-z>
- Mas'udah, A. F., Pristya, T. Y. R., & Andarmoyo, S. (2021). Parity and marital status as factors influencing contraceptive use among adolescents in Indonesia. *Kesmas*, 16(1), 33–38.  
<https://doi.org/10.21109/KESMAS.V16I1.3276>
- Mills, K., Marchand, G., Sainz, K., Azadi, A., Ware, K., Vallejo, J., Anderson, S., King, A., Osborn, A., Ruther, S., Brazil, G., Cieminski, K., Hopewell, S., Rials, L., & Klipp, A. (2021). Salpingectomy vs tubal ligation for sterilization: a systematic review and meta-analysis. In *American Journal of Obstetrics and Gynecology* (Vol. 224, Issue 3, pp. 258-265.e4). Mosby Inc.  
<https://doi.org/10.1016/j.ajog.2020.09.011>

- Moreira, L. R., Ewerling, F., Barros, A. J. D., & Silveira, M. F. (2019). Reasons for nonuse of contraceptive methods by women with demand for contraception not satisfied: An assessment of low and middle-income countries using demographic and health surveys. *Reproductive Health, 16*(1). <https://doi.org/10.1186/s12978-019-0805-7>
- Pirtea, P., Cicinelli, E., De Nola, R., de Ziegler, D., & Ayoubi, J. M. (2021). Endometrial causes of recurrent pregnancy losses: endometriosis, adenomyosis, and chronic endometritis. In *Fertility and Sterility* (Vol. 115, Issue 3, pp. 546–560). Elsevier Inc. <https://doi.org/10.1016/j.fertnstert.2020.12.010>
- Pratiwi, I. G., Hamidiyanti, B. Y. F., Arifin, A., Husin, F., Pandudita, R., Ristrini, R., Bachtiar, A., Putro, G., Dramawan, A., & Wiwin, M. (2021). Virtual Reality Improves The Knowledge of Midwives in IUD (Intra Uterine Device) Training. *Jurnal Kesehatan Prima, 15*. <https://doi.org/10.32.248/jkp.v15i1.641>
- Rohmah, N., Yusuf, A., Hargono, R., Laksono, A. D., Masruroh, Sujoso, A. D. P., Ibrahim, I., Marasabessy, N. B., Pakaya, N., Seran, A. A., Adriyani, R., & Walid, S. (2021). Barrier to contraceptive use among childbearing age women in rural Indonesia. *Malaysian Family Physician, 16*(3), 16–22. <https://doi.org/10.51866/oa1020>
- Rua, Y. M., Nitsae, V., & Usfinit, P. M. (2022). Relationship between Knowledge and Compliance with the Implementation of Health Protocols in the Area of Educational Institutions in SMA/SMK in the District of Noemuti. *Jurnal Manajemen Kesehatan Indonesia, 10*(2), 125–130.
- Sarkar, A., Panneer, S., Vanya, V., & Wadhawan, I. (2022). A Prospective Quality Improvement Initiative to Address the Barriers to Postpartum Tubal Ligation Among Multiparous Women. *Cureus*. <https://doi.org/10.7759/cureus.29641>
- Tasset, J., & Jensen, J. T. (2023). Efficacy of Tubal Surgery for Permanent Contraception: Considerations for the Clinician. *Open Access Journal of Contraception, Volume 14*, 53–59. <https://doi.org/10.2147/oajc.s385255>
- Thosmas, S. T., Adewole, N. D., Muhammad, R. B., Adebayo, F. O., Offiong, R. A., & Agida, T. E. (2021). Trends in female sterilization in north central Nigeria. *International Journal of Research in Medical Sciences, 9*(5), 1253. <https://doi.org/10.18203/2320-6012.ijrms20211428>
- Ticconi, C., Pietropolli, A., Di Simone, N., Piccione, E., & Fazleabas, A. (2019). Endometrial immune dysfunction in recurrent pregnancy loss. In *International Journal of Molecular Sciences* (Vol. 20, Issue 21). MDPI AG. <https://doi.org/10.3390/ijms20215332>
- West, S., van Kerkhoff, L., & Wagenaar, H. (2019). Beyond “linking knowledge and action”: towards a practice-based approach to transdisciplinary sustainability interventions. *Policy Studies, 40*(5), 534–555. <https://doi.org/10.1080/01442872.2019.1618810>
- World Health Organization. (2019). Contraception. In *World Health Organization*. Johns Hopkins University Press. <https://doi.org/10.9745/GHSP-D-15-00374>
- Yanniarti, S., Revika, N., Widiyanti, D., Savitri, W., & Rahayu, E. S. (2022). Individual Methods of Health Education Improving Knowledge and Attitudes of Pregnant Women About Hepatitis B. *Proceeding B-ICON, 1*(1), 303–309. <https://doi.org/10.33088/bicon.v1i1.53>
- Youssefzadeh, A. C., McGough, A. M., Sweeney, H. E., Mandelbaum, R. S., Ouzounian, J. G., & Matsuo, K. (2022). Patient characteristics of contraception and sterilization selection at vaginal delivery. *F and S Reports, 3*(4), 361–365. <https://doi.org/10.1016/j.xfre.2022.09.001>