



(RESEARCH ARTICLE)



The relationship between maternal characteristics and the choice of contraceptive methods in family planning acceptors: Cross sectional study

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GSC Advanced Research and Reviews, 2024, 20(02), 069–076

Publication history: Received on 17 June 2024; revised on 28 July 2024; accepted on 31 July 2024

Article DOI: <https://doi.org/10.30574/gscarr.2024.20.2.0283>

Abstract

This study aims to analyze the characteristics of mothers associated with the choice of contraceptive methods. By linking maternal characteristics, it is hoped that it can become a material and basis for taking strategies to increase the coverage of contraceptive use in the coming year.

The Family Planning Program is a strategy to help assists married couples avoid unwanted pregnancies, have planned births, space pregnancies, control the timing of birth in relation to managing the age of the couple, and determine the number of children in the family. Contraceptive methods are essential for reproductive health, its providing individuals and couples the ability to prevent unintended pregnancies and plan their families effectively. However, the choice of contraception method is influenced by many factors. Understanding these determinants is essential for enhancing quality of care specifically in contraceptive counseling. The use of contraceptive methods has been associated with health, social, and economic, including improved maternal and child health outcomes, enhanced educational, employment opportunities for women, and reduced healthcare costs related to unwanted pregnancies. Despite the availability of various contraceptive options, the choice of method is influenced by a multitude of factors, including demographic, socio-economic, cultural, and personal preferences. Understanding the factors that influence the choice of contraception is essential for healthcare providers, policymakers, and public health practitioners. By identifying these factors, interventions can be designed to address barriers to contraceptive use, improve counseling practices, and ensure that individuals have access to the most suitable contraceptive options for their needs.

The objective of this study is to analyze the characteristics of women associated with the choice of contraceptive method.

A cross-sectional study was conducted with a sample of women of reproductive age whom used a contraceptive method in Indonesia. Data was collected by medical record covered age, educational level, occupation, parity, birth spacing and the choice of contraceptive methods.

The analysis revealed that parity (p value = 0.024) and birth spacing (p value = 0.043) have a significant relationship with the choice of contraceptive method. Age, education level, and occupation did not have a significant relationship with the choice of family planning method.

Keyword: Family planning; parity; Birth spacing; Women; Reproductive health

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1. Introduction

According to the World Health Organization (WHO), family planning is an strategy that helps couples to avoid unwanted pregnancies, get planned births, set the interval between pregnancies, control the time of birth in relation to the age of the couples and determine the number of children in the family(1). As a developing country that has one of the main problems is the high population, Indonesia launched a family planning program to form a healthy and prosperous family by limiting the number of births. In Indonesia, The National Family Planning Coordinating Agency (BKKBN) was established in 1970, following the development of this program since 1951. In addition, the family planning program is one of the strategies to reduce maternal mortality, especially mothers with conditions; too young to give birth (under the age of 20 years), too frequent births, too close birth spacing, and too old to give birth (over the age of 35 years)(2).

Contraceptive services constitute a significant aspect of family planning, encompassing Communication, Information and Education (IEC), counseling, infertility care, sex education, pre-marital and marital consultation, genetic consultations, malignancy tests, and adoption(2). This program is a preventive effort, was carried out by the Indonesian government with the aim of limiting pregnancies by using contraceptive methods. Indirectly using contraception methods can reduce the high maternal morbidity and mortality rate due to pregnancy experienced by the women. The maternal mortality rate, reflecting the effectiveness of maternal health efforts, represents the number of maternal deaths per 100.000 live births resulting from pregnancy, childbirth, or their management . In Indonesia, data shows a decrease in maternal mortality during the period 1991-2015 from 390 to 305 in 100.000 live births. However, this figure is still far from the projection that must be achieved based on the SDG's target by 2030, which is to reduce MMR to below 70 in 100.000 birth lives (3).

The family planning program, which has been launched by the Indonesia government for 70 years, can certainly reduce the population, minimize maternal mortality and morbidity. However, many women find it difficult to make a choice of contraceptive method due to several reasons, including the limited choice of contraceptive methods, the cost of obtaining contraception, husband or partners consent, and contraindicated from medical condition to accept contraceptive methods, or even the experience of incompatibility with the use of contraception methods. Thus, women become reluctant to become family planning acceptors. Consequently, the population is growing uncontrollably, and it is challenging to lower rates of maternal morbidity and mortality(4).

In Indonesia, the Contraceptive Prevalence Rate (CPR) was 62.54% (2019) and the Total Fertility Rate (TFR) was 2.45 (2020) with a target of 2.26 in 2024. Modern contraceptive techniques were selected by 8.500.247 new acceptors of family planning. DKI Jakarta, as a one of Province at Indonesia, in 2021 for average monthly family planning services had 1.595 IUD acceptors, 831 condom acceptors, 785 implant acceptors, 11.613 injection acceptors, and 2.371 pill acceptors(5). Over the past three years, the percentage of active family planning in the DKI Jakarta area has declined. The BPS-Statistics Indonesia data indicates that from 2018 to 2020, the province's active family planning coverage was 50.93%, 50.10%, and 49.28%, respectively (6). The latest decline was influenced by the pandemic situation which had an impact on all sectors of people's lives. Decreases in family planning coverage are expected to lead to higher fertility rates, which could raise rates of morbidity and mortality among mothers and their offspring. This will certainly have an influence on the strategy for implementing development in the long term.

Acceptors' decisions about contraceptive methods are influenced by a number of factors, such as age, parity, occupation, education level, and birth spacing. The effectiveness of the family planning program will also be impacted by these variables. Women with aged 35 years who were considered at risk used more injectable contraceptive methods. There is a correlation between education level and the choice of contraceptive method, with elementary school education levels leading to a preference for injectable methods. Parity had also affected contraceptive methods, multiparous (having given birth two to four times) mostly using injectable methods(7).

The term "national target" refers to the indicators included in the 2030 SDG's program that aim to reduce the MMR to less than 70/100.000 birth lives, and IMR to 12/100,000 birth lives. Additionally, the national target talks about guaranteeing that everyone has access to sexual and health services, including contraceptive services. A fundamental factor is the characteristics of women of reproductive age which will relate to both internal and external factors of this situation. It is believed that additional research on this will support the policies that healthcare facilities will adopt and that medical personnel will then monitor and carry out. Given the disparity in research findings across other nations and Indonesian provinces using a range of primary and secondary data sources, a more thorough analysis of the variables influencing the choice of contraceptive methods is required, and this analysis will be carried out in this study.

2. Materials and methods

Cross-sectional analytical research was the research methodology employed in this study. The goal of this study was to determine how the choice of contraceptive methods in the Public Health Center of Johar Baru Subdistrict related to factors such as age, parity, occupation, education level, and spacing between pregnancies. All women in the working area of Public Health Center of Johar Baru Subdistrict, Central Jakarta, who were of childbearing age, are made up the study's population.

The sampling technique used in this study was simple random sampling with random population draws so that each member in the population has the same opportunity. The random technique uses computerization. The Lemeshow formula was used to calculate the sample size with a 95% confidence level, based on research done in Gorontalo in 2019 that resulting 122 respondents(5). To account for missing data, the researcher included an additional 10% of the sample in the computation, bringing the total number of participants in the study to 135. Inclusion criteria include complete data, using family planning in the study area and recorded in the cohort. Exclusion criteria were the use of the natural contraceptive methods.

The data collected was secondary data. Midwives as staff members in health facilities worked as enumerators to assisted in gathering data. Enumerators will be trained on the understanding of the questionnaire used one week before data collection. In this study, the instrument was a questionnaire used to collect secondary data. The questionnaire contains identity and characteristics as well as the choice of contraceptive method used. In the form of a master table that will be filled based on the measured items per variable. Age and parity data will be written in numerical form, while data on education level, occupation, pregnancy spacing and contraceptive methods will be written by putting a checklist mark on the selected item.

Three guiding principles of research ethics are addressed by seven standards in research ethics, which include: codifying participant data, protecting participant privacy when using data, and not discriminating in data discovery based on race. This study have an ethical clearance number 033/KEPPKSTIKSC/II/2022. Several risks are associated with this study, one of which is the possibility of restricted access to medical record data during a pandemic. There are a few strategies to reduce these risks, such as obtaining a research permit, outlining the goal of the study and requesting staff participation, and asking staff members to help fill out the master table.

3. Result

This study involved 135 respondents who used family planning and visited the Public Health Center of Johar Baru Subdistrict, Central Jakarta.

Table 1 Characteristics of Respondents

| Variables | n (N = 135) | % |
|-------------------------------|------------------------|----------|
| Contraceptions methods | | |
| Pills | 1 | 0.7 |
| Injection | 54 | 40.0 |
| Implant | 7 | 5.2 |
| IUD | 69 | 51.1 |
| Condom | 4 | 3.0 |
| Age | | |
| Risk | 42 | 31.1 |
| Un-risk | 93 | 68.9 |
| Education | | |
| Basic | 19 | 14.1 |

| Variables | n (N = 135) | % |
|-------------------------|----------------|------|
| Further | 116 | 85.9 |
| Occupation | | |
| Un-employed (housewife) | 112 | 83.0 |
| Employed | 23 | 17.0 |
| Parity | | |
| ≤2 children | 32 | 23.7 |
| >2 children | 103 | 76.3 |
| Spacing of Birth | | |
| ≤2 years | 60 | 44.4 |
| >2 years | 75 | 55.6 |

Table 1 shows that out of a total of 135 respondents who used contraceptive methods in this study, only 1 respondent (0.7%) chose to pills methods. Half of the respondents choose IUD as their contraceptive method (51.1%). Meanwhile, almost half (40%) chose injectables as a contraceptive method. The remaining 7 respondents (5.2%) choose implant and 4 respondents (3.0%) choose condom as a family planning method.

According to the findings, the majority of respondents (68.9%) fell into the age group that is not at risk. Ages 20 to 35 were determined to be in the un-risk age group. The remaining 31.1% of respondents belonged to the at-risk age group. In this case, the at-risk age group is respondents aged <20 or >35 years.

The level of education in this study is divided into two categories. The basic education level is a formal education level recognized by the Indonesian government with a minimum of nine years of education. This means that the education levels included in the basic education category are elementary school (SD) and junior high school (SMP). Meanwhile, further education is formal education taken after basic education. Senior high school (SMA) and higher education are included in the category of further education. Based on the results of the study, it was found that almost all respondents had an further level of education (85.9%). Only a small proportion still had basic education (14.1%).

Almost all of the respondents were housewives (83.0%). The remaining 17.0% of the total respondents had jobs. Almost all respondents had more than 2 children (76.3%). In relation to this, it was found that almost half of the respondents had a pregnancy interval of ≤2 years (44.4%).

Table 2 Associated Between Age, Education, Occupation, Parity, and Spacing of Birth with Contraceptive Methods

| Variables | Pills | Injection | Implant | IUD | Condom | p-value |
|-------------------------|---------|-----------|----------|-----------|---------|--------------|
| Age | | | | | | 0.326 |
| Risk | 0 (0.0) | 16 (38.1) | 2 (4.8) | 21 (50.0) | 3 (7.1) | |
| Un-risk | 1 (1.1) | 38 (40.9) | 5 (5.4) | 48 (51.6) | 1 (1.1) | |
| Education | | | | | | 0.068 |
| Basic | 0 (0.0) | 13 (68.4) | 0 (0.0) | 6 (31.6) | 0 (0.0) | |
| Further | 1 (0.9) | 41 (35.3) | 7 (6.0) | 63 (54.3) | 4 (3.4) | |
| Occupation | | | | | | 1.000 |
| Un-employed (Housewife) | 0 (0.0) | 47 (42.0) | 3 (2.7) | 58 (51.8) | 4 (3.6) | |
| Employed | 1 (4.3) | 7 (30.4) | 4 (17.4) | 11 (47.8) | 0 (0.0) | |
| Parity | | | | | | 0.029 |

| Variables | Pills | Injection | Implant | IUD | Condom | p-value |
|-------------------------|---------|-----------|---------|-----------|---------|---------|
| ≤2 child | 0 (0.0) | 9 (28.1) | 1 (3.1) | 20 (62.5) | 2 (6.3) | |
| >2 child | 1 (1.0) | 45 (43.7) | 6 (5.8) | 49 (47.6) | 2 (1.9) | |
| Spacing of Birth | | | | | | 0.043 |
| ≤2 years | 0 (0.0) | 26 (43.3) | 0 (0.0) | 33 (55.0) | 1 (1.7) | |
| >2 years | 1 (1.3) | 28 (37.3) | 7 (9.3) | 36 (48.0) | 3 (4.0) | |

Table 2 will a more detailed description of the characteristics of respondents per contraceptive method chosen. The results of the analysis in table 2 use the Kolmogorov Smirnov test as an alternative to the Chi Square test.

Respondents who chose pills as their contraceptive method fell into the age category between 20-35 years. In both age groups, the at-risk and un-risk age groups, most respondents chose IUD as their contraceptive method. Furthermore, the injectable method and the implant method, most respondents who chose these two methods were respondents who belonged to the un-risk age group. As a result, most respondents who chose condoms as a contraceptive method were respondents who had an at-risk age. The results of the bivariate analysis showed a p value of $0.326 > 0.05$. In conclusion, age does not have a significant relationship with the choice of contraceptive method.

Condoms, implant, and pills were not selected as a contraceptive methods by any of the respondents in the basic education level group. The majority of participants in the basic education group selected injections as their contraceptive methods. On the other hand, it is well known that IUDs are the method of contraception most respondents with further education choose. The remaining family planning options, in the advanced education group, are injections, IUDs, condoms, and lastly pills, arranged in descending order of choice. The study found no evidence of a significant correlation between education level and family planning method preference (p value = $0.068 > 0.05$). As a method of contraception, birth control pills were not selected by any of the housewives surveyed. Consequently, IUDs, injections, condoms, and IUDs were the family planning methods selected by the respondents in this group. Comparably, among those who were employed, 47.8% of respondents selected IUDs as their contraceptive methods. This group of respondents did not select condoms as a contraceptive methods. As per the analysis, there was no significant correlation found between the choice of contraceptive methods and occupation (p value = $1.000 > 0.05$).

This was followed by the choice of injectables, implant, condoms and pills as a method of pregnancy planning. The analysis showed that the p value was < 0.05 (0.043). Therefore, it can be concluded that pregnancy spacing has a significant relationship with the choice of family planning method.

Based on the Government of Indonesia's recommendation, which was summed up in the slogan "Two Children are Enough," the number of children for this study was divided. The majority of respondents in both groups selected IUDs as their method of contraception, according to the results. When it came to family planning methods, nearly all respondents from this type of method group had more than two children when choosing injections and IUDs. The bivariate analysis's findings revealed a p value of 0.029 (p value < 0.05), this means that there is a significant relationship between parity and the contraceptive methods. Most of the respondents who had a spacing of birth of ≤ 2 years chose IUD as a contraceptive method. In this group, there were no respondents who chose pills and IUDs as contraceptive methods. On the other hand, respondents who had a spacing birth of > 2 years, almost half of them selected IUDs as a method of contraception. This was followed by the choice of injectables, implant, condoms and pills as a method of pregnancy planning. The analysis showed that the p value was < 0.05 (0.043). Therefore, it can be concluded that pregnancy spacing has a significant relationship with the choice of family planning method.

4. Discussion

Family planning is a strategy to plan the number of children desired, and if desired is also used to space pregnancies. Contraception is a choice, in that it is part of the human right of every person to choose and use of the methods that are available to them. In fact, this matter also pertains to each person's right to sexual orientation and reproduction in order to preserve their health(1,6).

This program aims to improve the welfare of mothers and children formed through small happy and prosperous families. It also contributes to producing quality next-generation resources, breaking the chain of poverty and controlling a country's population(7).

Family planning reduces maternal and child morbidity and mortality from unintended pregnancies and unsafe abortions, while also allowing individuals to self-actualize, feel empowered, maintain and improve their health(8). In 2019, 1.1 billion women in 15–49 age range required family planning in 2019. However, only 76% of them used contraceptive methods(9).

Various contraceptive methods included IUDs, implant, injectables, pills, condoms and MAL are identified on this study. Traditional family planning methods include periodic abstinence, interrupted intercourse and other natural family planning. In 2021, it is known that Indonesia's mCPR prevalence was 57% (10). The results of the study can illustrate the prevalence of mCPR in the regions studied by referring to the categories of contraceptive method choice. The dominance of family planning techniques determined by the study's findings is different from the BKKBN report from 2022. In the study, the majority of acceptors selected IUDs as their method of family planning; however, according to the BKKBN report, injections are the most popular method among acceptors(11).

This difference may occur as a form of freedom given based on the availability of method options related to the acceptor's knowledge and needs.

Risky and un-risky age categories have an influence on a person's reproductive age. It is known that the safe age for a person to reproduce is between 20-35 years old. Based on this, acceptors understand that those who are within the productive age range that is safe to conceive require good planning in managing the number of children and the spacing of their pregnancies. However, the findings of this study also show that acceptors who have an at-risk age of <20 years or >35 years also have a high awareness to prevent pregnancy by considering the risk of complications that occur(12).

Based on the purpose of use contraceptive methods that associated with the reproductive cycle, acceptors with age <20 years are acceptors who are in the phase of delaying pregnancy, age 20-35 years are in the phase of spacing and planning pregnancy, and age >35 years are in the phase of ending pregnancy. In general, acceptors aged between 20-30 years use contraceptive methods with high reliability, while acceptors aged >30 years prefer contraceptive methods with high effectiveness and long duration of use(13).

The level of education in this study has no relationship with the choice of contraceptive methods. This contradicts research conducted by Sugiharto, which states that education has a significant influence on the type of contraceptive method used by women of fertile age. The education identified is the level of education completed by a person formally until obtaining a diploma. Based on several levels of education in Indonesia, the division starts from elementary, junior high, high school and higher education (14).

Education provides an opportunity for knowledge acquisition as well as attitude and behavior modification. Modern times bring with them breakthroughs in science and technology, but formal education is not the only way to gain more knowledge. digital literacy, which makes use of social media as a platform to disseminate health-related information. However, in relation to this, it still requires understanding to be able to interpret the various information available, and choose whether the information received is valid or not. "New Media" theory is an understanding which believes that there is a revolution related to media communication related to technology(15).

A unique phenomenon was found in this study. None of the acceptors with basic education chose the pills, implant and condom as contraceptive methods. All three methods were chosen by acceptors with further education. The choice of method is the right of the acceptor according to their needs and desires without coercion from anyone including their partner. It is quite interesting that IUD is the most selected method when calculated from both groups. Understanding obtained from the construction of knowledge can change the individual paradigm to choose a particular type of contraception by ignoring stories of other people's experiences that can have a fearful effect on acceptors(16)(17).

Occupation is related to family income which is related to the economic stability of the family in making ends meet. The results showed no relationship between occupation and the choice of contraceptive method. This is possible with the condition that in Indonesia family planning services are provided free of charge by first-level health facilities using the national health insurance system. Of course this has a big influence on acceptors to be able to receive family planning services optimally without considering family income or economic status in society.

Parity is the number of children born to a person either alive or dead, which is calculated from the first pregnancy to the last(13). The findings in the study showed that there was a significant relationship between parity and the contraceptive method used. This is in accordance with the results of research conducted by Sugiharto, that the number of children has an influence on the choice of the type of contraception used. Dominant in both groups, acceptors chose long acting contraceptive methods. The ideal number of children and recommended by the government is two, this is also socialized through campaigns with the slogan "Two Children Enough". This underlies that couples have an understanding that the use of long acting contraceptive methods is appropriate and effective for spacing pregnancies(18) (14).

The time interval between the previous and current pregnancies is known as spacing of birth. Ideally, women should delay their next pregnancy by 18-24 months. Both groups in the study mostly chose long acting contraceptive methods as their contraceptive method. The awareness to use contraceptive methods in spacing pregnancies can reduce morbidity and mortality for both mother and baby related to pregnancy complications until postpartum period. Postpartum or postabortion women can be treated with a variety of techniques depending on their comfort level, medical status, and preferences.

5. Conclusion

Knowing some of the factors associated with the choice of contraception methods can provide new facts that form the basis for further research to be able to take action related to the findings in this study. With the result that parity and spacing of birth are factors associated with the choice of contraceptive methods, increasing the use of contraceptive methods with long acting contraceptive methods can be started from pregnancy by combing based on parity and pregnancy spacing.

Compliance with ethical standards

Disclosure of conflict of interest

The authors declare that they have no conflict of interest.

Statement of ethical approval

This study has met the ethical standards of research by considering the three basic ethical values of beneficence, non-maleficence and justice in all its activities. This study also has passed ethical review with an ethical clearance letter issued by KEPPK STIK Sint Carolus number 033 / KEPPKSTIKSC / II / 2022.

Statement of informed consent

This study uses secondary data, so participants in this study were not given informed consent one by one. However, enumerators were given the opportunity to choose their involvement in this study and signed an integrity pact as part of the responsibility of carrying out their duties.

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