

Social Demographic Dimensions of Contraceptive Use in the Land of Papua: A Cross-Sectional Approach

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ABSTRACT

Background: The use of contraception is one of the efforts to prevent unwanted or mistimed pregnancies. Therefore, it has become a family planning program for motivating families to have ideal plans for pregnancies in time and with a desired number. However, although nationally, 58.7% of married women aged 15-49 years old used contraception in 2019, the percentage of contraceptive users remained the lowest in Papua, with only 13.7% of married women of the same age group using contraceptives in addition to 20% of the women having the unmet need for contraception. This study aims to analyze the determinants of the use of contraception in women of childbearing age in Papua Province.

Method: This study employed data from the 2020 National Socioeconomic Survey (Susenas) with a cross-sectional approach. Respondents were 666,866 married women aged 10-54 years. Descriptive statistics and logistic regression analysis were performed using SPSS with a 95% confidence interval ($p < 0.05$) to express statistical significance.

Results: Residence, educational status, pregnancy, employment, age at first marriage, number of children, cell phone ownership, and health insurance were significantly correlated with contraceptive use ($p < 0.001$). Residence in an urban area, junior high school education, pregnancy, marriage at less than 20 years of age, having more than two children alive, and ownership of a cell phone and health insurance were associated with an increased chance of using contraceptive methods among married women of reproductive age in Papua. The chance to use contraception was the highest for married pregnant women of reproductive age, and the women, in this case, were 35 times more likely to use contraceptives compared to unpregnant ones.

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INTRODUCTION

Contraceptive use is a preventive effort for unintended and mistimed pregnancies.^{1,2} It enables women of reproductive age to carry out ideal planning for pregnancies in time and with a desired number. Contraceptive use is also related to some measures to reduce maternal and infant mortality^{3,4} as stated in SDGs Goal 3 and Goal 5. The decreased risk of unintended and mistimed pregnancies is directly proportional to the decrease in the dependency ratio, which ultimately contributes to poverty reduction.⁵ Furthermore, population control through family planning programs aims to reduce the rapid population growth rate in Indonesia (1.25% per year). The 2020 Population Census showed that the total population of Indonesia was 270.20 million people.⁶ This number will continue to increase if no programs aim at preventing, spacing births, and planning the number of children desired in every family. For this reason, the Indonesian government has tried to control population

growth with family planning programs through contraceptive use.⁷

Several factors influence the use of contraception, including but not limited to the age and number of children. They also influence the use of contraception knowledge, information given by family planning field officers, and the husband's support.^{8,9} According to the family program performance and accountability survey in 2019, Papua was one of the provinces with the lowest contraceptive use. While the national-level prevalence of contraceptive use was 58.71%, the prevalence of modern contraceptive use in Papua was even lower with only around 13.72% of contraceptive users in 2019.¹⁰ Papua also had the highest proportion of unmet needs for contraception in Indonesia. About 21% of married women stated that they did not want to get pregnant or want to get pregnant over 2 years later but did not use any contraceptive. Moreover, around 75.3% of married women in Papua who did not use a contraceptive still had no plans

for it in the future.¹⁰ Birth control among Papuan families may contribute to the women's perception of contraceptive use. Spouses' support is deemed to have a positive effect on continuous contraception.¹¹ Papua Province was ranked second after East Nusa Tenggara (1.6%) for having 1.6% of families who disagreed with the family planning. In addition, almost 63% of family respondents in Papua stated that the ideal number of children was 3 or more.¹⁰

Insurance ownership also increases contraceptive use,¹² and thus it may enhance client satisfaction with the results of the contraception. Besides, exposure to media leads to increasing contraceptive use.¹³ However, Papua had uncommon trends in contraceptive knowledge. About 12.2% of couples of childbearing age did not know any modern contraceptive method/tool, and 87.8% of couples of childbearing age in Papua knew only one type of modern contraceptive method. Meanwhile, 99.7% of couples of childbearing age knew at least one type of modern contraceptive method at the national scale.¹⁰

Many studies on contraception conducted using data on a national or provincial scale showed relatively moderate contraceptive use.^{4,14-16} Those studies employed data from the Demographic and Health Survey (DHS), Program Performance and Accountability Survey (SKAP), and Inter-Census Population Survey (SUPAS) data. However, studies on contraception in Papua are still very limited. The latest study of Papuan perspectives on family planning, fertility, and birth control programs was conducted in 2014.¹⁷ Papua experienced an upward trend in contraception during the New Order period, but the trend could not be assessed due to the unavailable data on contraceptive prevalence since the decentralization era.¹⁸ With that said, this study aims to analyze the determinants of contraceptive use in women of childbearing age in Papua Province. It is expected to assist further exploration to increase the rate of contraception in Papua.

METHOD

Participants' characteristics and research design

This study used secondary data from the 2020 National Socioeconomic Survey (Susenas) collected through a two-tiered cluster sampling technique. The survey is a community-based cross-sectional study conducted every year. The information collected in this survey included social background, economy, demography, social protection, access to finance, and family planning.

Sample size, power, and precision

For this study, a total of 1,160,140 respondents aged 10-54 years in Papua consisted of 1,089,366 female respondents of childbearing age at 10-49 years. From the selection criteria, unmarried and divorced respondents

were excluded from the sample, and 666,866 respondents were finally included. Data analysis was performed using descriptive statistics and logistic regression using the Statistical Package for Social Science (SPSS). The significance of each variable was assessed using the 95% confidence interval ($p < 0.05$).

Data analysis

The outcome variable analyzed was contraceptive use. The question addressed partners who used family planning devices or traditional contraceptive methods to delay or prevent pregnancy. Contraception was made with a dummy variable with a code of 1 if a respondent currently used a contraceptive and 0 for others (for those who did not currently use or those who had used).

This study's variables consisted of place of residence, education, pregnancy status, age at first marriage, number of children, cell phone ownership, and health insurance. The residence variable was distinguished between those living in rural areas and urban areas. Education levels were differentiated between non-educated, elementary, junior, and senior high schools. The marriage age variable was classified as those married under 20 years of age or those over 21 years of age. The number of children was divided into having no children, having 1-2 children, and having 3 children and more. The mobile phone ownership variable was categorized as having and not having a cell phone. Finally, health insurance ownership was differentiated between those who had insurance and those who did not.

Descriptive analysis to explain the background characteristics of the respondents and bivariate analysis to examine the relationship between the dependent and independent variables were performed at a significant level of p -value < 0.05 . The relationship between various characteristics and contraceptive use was assessed using binary logistic regression.

RESULTS AND DISCUSSION

The respondents' socio-demographic characteristics and the prevalence of contraception are presented in Table 1. Overall, only around 1 in 5 women of reproductive age in Papua (21.2%) used a contraceptive. Most respondents (76.1%) lived in rural areas, and almost half never attended school (40.1%). About 88.1% of the respondents had a pregnancy, and half of the respondents married for the first time under 21 years of age (52.5%). Approximately half of the respondents had ≤ 2 children (54%); more than half (60.9%) of the respondents had cell phones; and most of the respondents already had health insurance (86.9%).

Based on the bivariate analysis, all independent variables showed significant correlations ($p < 0.05$) which indicate that place of residence, educational status, pregnancy, employment, age at first marriage, number of children, cell phone ownership, and health insurance were correlated with contraceptive use. The results supported a previous study that found that contraceptive use was affected by the socio-demographics of women. In addition, the age of users, marital status, education,⁹ and users' knowledge of contraceptive methods are several factors associated with the low prevalence of contraceptive use. Thus, the population is influenced by the determinants of contraceptive use in the community.^{8,19}

Table 2 shows that contraceptive use in urban areas doubles compared to that in rural areas (33% and

17.4 % consecutively) with a p-value of 0.00. Women who lived in urban areas were 1.4 times (95% CI; 1.389-1.436) more likely to use contraceptives than those in rural areas. Similarly, previous studies found that women in rural areas were less likely to use a contraceptive than women in urban areas of Malawi and Bangladesh.^{20,21} Women in rural areas probably had limited access to health services, including access to family planning.²² In contrast, more than half of the respondents (51%) who use contraception live in rural areas of Central Java. Furthermore, the strong family ties among communities in rural areas directly or indirectly influence the decision to use a contraceptive.²³

Table 1. Characteristics of respondents and contraceptive use in Papua

Variable	f	%
Contraceptive use		
Non-user	525,358	78.8
User	141,508	21.2
Residence		
Rural	507,192	76.1
Urban	159,674	23.9
Education		
Never schooled	267,659	40.1
Primary school	142,420	21.4
Junior high school	68,527	10.3
Senior high school or higher	188,260	28.2
Pregnancy		
Ever pregnant	587,241	88.1
Never	79,624	11.9
Occupation		
Working	460,828	69.1
Housewife	206,038	30.9
Age at first marriage		
≤ 20 years	350,140	52.5
> 21 years	316,726	47.5
Number of Children		
0 child	116,271	17.4
≤ 2 child	362,628	54.4
> 2 child	187,967	28.2
Mobile phone ownership		
Having	406,033	60.9
Not having	260,833	39.1
Health Insurance		
Yes	87,395	13.1
No	579,470	86.9

Table 2. Bivariate and multivariate logistic regression models for factors related to contraceptive use in Papua Province, 2020

Variables	Contraceptive use		COR (95 % CI)	P Value	AOR (95 % CI)	P Value
	Non-user	User				
Residence						
Rural	82.6	17.4	Reff	0.0001	Reff	0.0001
Urban	66.7	33.3	2.372 (2.342-2.402)*		1.412 (1.389-1.436)*	
Education						
Never schooled	86.2	13.8	0.357 (0.352-0.362)*	0.0001	0.640 (0.627-0.653)*	0.0001
Primary school	81.4	18.6	0.512 (0.504-0.520)*		0.675 (0.662-0.688)*	
Junior high school	71.1	28.9	0.909 (0.892-0.927)*		1.207 (1.181-1.233)*	
Senior high school or higher	69.1	30.9	Reff		Reff	
Pregnancy						
Ever pregnant	76.0	24.0	71.159 (64.079-79.020)*	0.0001	35.471 (31.884-39.463)*	0.0001
Never	99.6	0.4	Reff		Reff	
Occupation						
Housewife	73.5	26.5	1.549 (1.530-1.568)*	0.0001	1.039 (1.025-1.054)*	0.0001
Working	81.1	18.9	Reff		Reff	
Age at first marriage						
≤ 20 years	77.3	22.7	1.204 (1.190-1.219)*	0.0001	1.256 (1.240-1.272)*	0.0001
> 21 years	80.4	19.6	Reff		Reff	
Number of Children						
0 child	94.4	5.6	0.192 (0.188-0.198)*	0.0001	0.443 (0.431-0.455)*	0.0001
≤ 2 child	76.3	23.7	Reff		Reff	
> 2 child	73.8	26.2	1.144 (1.129-1.159)*		1.133 (1.118-1.148)*	
Mobile phone ownership						
Not having	85.0	15.0	Reff	0.0001	Reff	0.0001
Having	69.2	30.8	2.517 (2.487-2.547)*		1.761 (1.732-1.791)*	
Health insurance						
Yes	76.3	23.7	Reff	0.0001	Reff	0.0001
No	79.2	20.8	0.849 (0.835-0.864)*		1.164 (1.143-1.186)*	

Note: * P value < 0.001; COR: Crude Odd Ratio; AOR: Adjusted Odd Ratio

In a previous study, a greater number of children desired were associated with young marriage, low income, a large number of children alive, and limited visits from family planning field workers in urban areas.²⁴ Interpersonal factors, such as support or rejection from husbands, impact women's decisions regarding family planning in rural areas. Husband resistance is a significant barrier to contraception in women of rural areas.²⁵ Thus, the need for family planning visits positively increases the use of modern contraceptives in rural areas. Family planning participation not only facilitates access to information about modern contraceptives but also helps address the side effects.²¹

Table 2 shows a significant relationship between education and contraceptive use in women of childbearing age in Papua. Women with a higher level of education have a greater prevalence of contraceptive use. Education is the protective factor of contraceptive use. Lower education results in a lower odd of contraceptive use in high school education. Women with high school education and above had a higher chance of using contraception than those with lower education levels (30.9% of contraceptive users with high school education, 2.9% of contraceptive users with junior school education, 19% of contraceptive users with elementary school education, and 14% of those who never attended school). A significant correlation between the place of residence and education with the choice of contraception in women of childbearing age has been spotted in Indonesia.²⁶

Women's participation in contraceptive use is influenced by knowledge about family planning which will increase along with a high level of education. Education is one of the factors associated with the use of hormonal or non-hormonal contraception.²⁷ Previous research in Indonesia,²⁸ Ghana,²⁹ and Ethiopia³⁰ also indicates similar results that education level has a significant impact on modern contraceptive adoption. Married women with a higher education are more likely to use modern contraceptives. Similar results were also found in studies in Nigeria³¹ and Ghana³², which stated that an increase in education level was positively associated with an increase in modern contraceptive use. Knowledge and formal education play an important role in encouraging modern contraceptive use, and thus, it is vital to increase public awareness.³³ Better education is recognized as a contributing factor in empowering women as it enables women to have a deeper understanding of the benefits of contraceptive use²⁰ and decision-making on reproductive health.³⁴

According to pregnancy experience, almost all women who had never been pregnant in this study were non-contraceptive users. Mean while, one in four women who used contraceptive were those who have had a

pregnancy. This means that most of the women were likely to use no contraception because they intended to get pregnant. Having children also shows a significant relationship with the choice of family planning utilization.³⁵ Contraceptive use is common among couples of reproductive age who want to limit the number of their offspring.³⁶ Therefore, contraceptive use in the young population is usually targeted to prevent pregnancies among those with high fertility.¹¹ Hence, to limit the chance of pregnancy, women aged 30-45 years tend to use long-term contraception compared to women under the age of 30 years.³⁷

Housewives in this study had a higher percentage of using contraception (26%) by 1.04 times (95% CI; 1.025-1.054) than women who were employed (19%). Birth regulation and limitations of pregnancies through contraception are essential in supporting female employees in their careers.³⁵ Further studies should explore the types of contraception in the Papuan women of this study because, previously in Central Java, women who did not work usually used traditional contraceptive methods compared to those who worked.²³ In the context of modern contraceptive use, unemployed women had a 26-percent lower chance of using modern contraceptives compared to working women in Ghana.²⁹ This means that working women have special considerations about using modern contraceptives which are known more effective than traditional ones. The minimum side effects of traditional contraceptive methods play crucial roles in supporting highly educated women from wealthier families to decide which contraception will be used.³⁸ Side effects and health education are inhibiting factors of contraceptive use,³⁹ and the side effects mainly contribute to the discontinuation of contraceptive use.¹⁵

Based on the age of women getting their first marriage, women who first married at the age of 20 years or younger had a higher percentage of contraception use (22.7%) than women who first married at 21 years of age or over (19.6%). Women married under 20 years of age were 1.25 times more likely to use a contraceptive compared to those who married later. This result confirms the theory stating that a younger age for marriage will lengthen the reproductive period.¹¹ Contraception is a solution for planning healthy fertility in young married women. Apart from that, considering that women with a younger age at first marriage are more likely to switch contraceptive methods, it is crucial to pay attention to the sustainability of contraceptive use among them.⁴⁰ Based on the types of contraceptive methods, most active family planning participants choose injection and pills compared to contraceptive methods for long-term use though the contraceptives were not the best among available options.⁴¹ Both injections and pills have low effectiveness.

The pregnancy rate of women using these contraceptives is around 4% to 7% per year.⁴² Some women married at a young age do not use modern contraception generally because of the desire to have children immediately after the marriage. In addition, some of them have difficulty access to family planning services due to a lack of knowledge.²⁰ However, young women tend to avoid pregnancy because they are pursuing education or they are too young to care for a baby. On the other hand, women who get married at an older age tend to have a lower interest in contraception because they will have reached the menopause cycle, the lack of sexual activities, or even disinterest in having sex.⁴³

One in four women who had two or more children was contraceptive users. This group had a slightly higher proportion of contraceptive use compared to the women who had two children or fewer children (26% and 24%, consecutively). Furthermore, the use of contraception was 1.13 times higher in women who had > 2 children compared to women who had \leq 2 children (95% CI; 1.118-1.148). Having more children will result in higher use of contraception, especially for long-active reversible contraceptive methods.⁴⁴ Research using the Indonesia DHS data also found a significant correlation between the number of ideal children and contraceptive use.³⁶ In North Sumatra, women who had not reached the ideal number of children were more likely at risk of stopping contraception.⁴⁵ Couples of childbearing age usually limit their fertility through contraception if their plan for the ideal number of children is close,³⁵ or the desire for the children's sex composition is met.⁴⁶ This study indicated the opposite result to the study in Central Java, showing more frequent long-term contraceptive use among married women having two or fewer children alive.⁴⁷

Reproductive-age women who had cell phones had a higher proportion of contraceptive use (23.7%) compared to those who had no mobile phone (20.8%). Women who had cell phones had a chance of using contraceptives as much as 1.76 (95% CI; 1,732-1,791) times higher compared to those who did not have cell phones. Mobile phone ownership is a medium to access family planning information online. Similar to previous research, an innovative promotional approach to contraception and easier access to extensive information can affect contraceptive use among female contraceptive users.^{27, 48} Searching for reproductive health information through online platforms had a potential impact on individual decision-making on their sexual behavior.⁴⁹

Lastly, health insurance protects contraceptive use among married women in Papua. Women who had health insurance had a higher proportion of contraceptive use than those who did not have insurance (24% and 21%,

consecutively). Health insurance ownership contributes to contraceptive use.⁵⁰ Limited access to reproductive health services significantly leads to unmet needs for contraception; therefore, the availability of and access to health services are linked and contribute to contraceptive use.⁵¹ Based on the Asian or Pacific Islander studies, female participants are more knowledgeable and use contraceptives when they correspond to the health care system and have opportunities to receive information about the importance of practicing multiple contraceptive methods.⁵²

CONCLUSION

Based on the demographic and social background of the respondents and the prevalence of contraception, one in five (21.2%) currently married women had used a contraceptive. More than 76.1% of the respondents lived in rural areas, and almost half did not attend school (40.1%). About 88.1% of the respondents had experienced pregnancy, and half of them had their first marriage under the age of 21 years (52.5%). About half of the respondents had \leq 2 children (54%), and more than half of mobile phone owners (60.9%) and already had health insurance (86.9%). Overall, the independent variables including residence, educational status, pregnancy, employment, age at first marriage, the number of children, mobile phone ownership, and health insurance had correlations with contraceptive use. Based on multivariate analysis, urban residence, pregnancy status, first marriage at less than 20 years of age, having more than two children alive, and having a cell phone were all related to an increasing chance of contraceptive use. Having junior high school background and health insurance is a protective factor to contraceptive use in married women of childbearing age in Papua. The married women of reproductive age who had been pregnant were 35 times more likely to use contraceptives than those who had never been pregnant.

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Conflicts of Interest

The authors state that there is no conflict of interest in this study.

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