

TUBECTOMY TRENDS IN MATERNITY MOTHERS WITH CESAREAN SECTION AT UDAYANA II HOSPITAL DENPASAR

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ABSTRACT

Background: Tubectomy is one of the permanent contraceptive methods that plays an important role in supporting family planning and reproductive health programs. However, its use is relatively lower than other long-term contraceptive methods. The purpose of this study is to analyze the trend of tubectomy incidence in hospitals.

Methods: This study uses a quantitative descriptive design with a retrospective approach. A total of 355 mothers with tubectomy were involved in this study, which was selected using the total sampling method. Data was taken from the medical records of patients who underwent tubectomy at Udayana II Hospital Denpasar for the 2021–2025 period. The study sample included maternity mothers with cesarean section with inclusion criteria being a tubectomy and complete medical records. The variables analyzed included the number of cases per year, demographic characteristics of patients such as age, education level, occupation, place of residence and length of treatment. Tubectomy data and patient characteristics were measured based on the information stated in the patient's medical record. The analysis was carried out descriptively using the distribution of frequency and annual trends.

Results: The incidence of tubectomy in maternity mothers with cesarean section at Udayana II Hospital Denpasar showed a relatively stable trend throughout the study period. The majority of tubectomy procedures are performed on mothers with characteristics of age over 35 years old, have a secondary education, have a job, are Hindu, live in Denpasar City, have non-military status, and undergo treatment for about three days.

Conclusion: These findings make an important contribution to efforts to improve the quality and efficiency of tubectomy services in maternal mothers. Therefore, the results of the study recommend the need to strengthen the quality of services by considering sociodemographic factors, as well as ensuring the availability of access to tubectomy procedures as part of reproductive health services.

Keywords : Tubectomy. Maternity, Cesarean section, Military Hospital.

INTRODUCTION

Tubectomy is an effective permanent contraceptive method for women who do not want to have children again. Although tubal surgery for permanent contraception has been practiced since the 1800s, the pace of surgical innovation, the popularity of the procedure, and access to minimally invasive techniques increased in the second half of the 20th century. In fact, recent data from the National Survey of Family Growth (NSFG) shows that about one-third of women have had permanent tubal contraceptive surgery by age 44.(1)

Tubectomy is one of the permanent contraceptive methods that m women of reproductive age choose who have reached the ideal number of children or have certain health considerations. NSFG data for the 2015-2019 cycle show that about 24-30% of women aged 15-44 years have used tubectomy as the primary contraceptive method, with the figure reaching 33% in the age group of 35-44 years or women with 2+ children.(2)

The use of contraceptives is a vital component in efforts to improve reproductive health and fertility control. Globally, the use of modern contraceptives is increasing slowly, from 54% in 1990 to 57.4% in 2020.(3) Nevertheless, the WHO estimates that some

225 million women in developing countries still have unmet needs, mainly due to limited choice of contraceptive methods and concerns about side effects.(4)

In Indonesia, the use of modern contraceptives shows a similar trend. Based on the 2021 Indonesian Family Planning Census, around 57.0% of couples of childbearing age use modern contraceptive methods.(5) However, the distribution of contraceptive methods is still dominated by short-term methods such as injections and pills, while long-term and permanent contraceptive methods are relatively low. The 2017 Indonesian Demographic and Health Survey (IDHS) reported that only about 3–4% of women of childbearing age use the Women's Surgical Method (WSM) as a contraceptive method.(6–8) The low choice of this method is influenced by a variety of factors, including level of knowledge, education, and partner support.(9)

In clinical practice, tubectomy as a permanent contraceptive method is often performed in conjunction with obstetric procedures, especially cesarean delivery. The implementation of tubectomy during cesarean section is considered more efficient and safe because it does not require additional surgical procedures, utilizes the available intraoperative moments, and has a complication profile comparable to sterilization performed separately.(10) Studies show that women's decision to choose sterilization during SC is influenced not only by clinical indications, but also by perceptions of the benefits of the procedure, including long-term effectiveness and ease of implementation within a single time of operation.(11)

Udayana II Hospital as a referral hospital in Bali Province has a high volume of deliveries with a proportion of deliveries with dominant SC. Based on internal data from Udayana II Hospital for the 2021-2025 period, the number of SC births is always higher than normal births. In 2021, there were 410 SC cases, increasing to 440 out of 595 deliveries in 2025. The data shows that SC actions have dominated the pattern of childbirth in the last five years so that it can be a strategic moment in the implementation of postpartum contraception, especially robust contraception.

The high number of SCs has not been fully in line with the increase in tubectomy procedures performed at the same time as the procedure. Data from Tk II Udayana Hospital shows that the number of tubectomy in SC patients tends to stagnate over the past five years, namely seventy-three cases in 2021, and 70 cases in 2025. This condition suggests that certain factors may play a role in the decision to choose a steady contraceptive in the postpartum period. Some of the factors that are suspected to influence the selection of tubectomy after SC include maternal age, parity, number of live children, history of previous delivery, indications of Sectio Caesarea, obstetric complications, and comorbidity medical conditions. Research on the determinants of tubectomy selection is important to provide an overview of clinical factors related to the use of stable contraceptives after childbirth.

Based on this description, research is needed on trends and determinants of the selection of stable contraception in the form of tubectomy after SC at Udayana II Hospital. The results of this study are expected to be the basis for evaluating and improving

postpartum family planning service strategies, especially in increasing the use of steady contraceptives for women of childbearing age.

MATERIALS AND METHODS

This study uses a quantitative descriptive design with a retrospective approach. Data was taken from the medical records of patients who underwent tubectomy at Udayana II Hospital, Denpasar, Bali.

The target population of this study is all women with tubectomy in the hospital. The affordable population is all women who undergo a tubectomy at Udayana II Hospital Denpasar. The sample in this study was determined based on inclusion and exclusion criteria. The inclusion criteria are women with tubectomy who are registered at Udayana II Hospital Denpasar for the period 2021-2025, and complete medical records. The exclusion criteria are patients with complications not related to the tubectomy procedure.

This study uses secondary data sourced from the patient's medical records at Udayana II Hospital. A total of 355 women with tubectomy participated in this study, selected using the total sampling method. Data were collected using checklist sheets compiled by the researchers themselves. The variables observed consisted of tubectomy status, mother's age, education level, occupation status, residence, military family status, and length of treatment days. The dependent variables of this study are the number and trend of tubectomy patients per year measured based on tubectomy procedures listed in the patient's medical records.

The data was analyzed statistically descriptively using frequency, percentage, and annual trend distributions. The incidence of tubectomy is categorized as "Yes" if in the medical record it is tubectomy and "No" if there is no diagnosis of tubectomy. The mother's age is categorized into "< 35 years" and "≥ 35 years". The level of education is grouped into "High" if you have a diploma or bachelor's education, "medium" if you have a high school education and "low" if the level of education is junior high school or below. Employment status is grouped into "working" if the medical record states the job and "no" if working as a housewife or no have job. The number of children divided into "< 2" and "≥ 2". The results of the analysis presented by tables and graphs to visualize tubectomy trends.

This research has received ethical feasibility from the Ethics Commission of Prof. Ngoerah Sanglah Hospital Denpasar with number: 0860/UN14.2.2.VII.14/LT/2026.

RESULTS

Table 1. Describing the number of tubectomy procedures in maternity mothers with SC at Udayana II Hospital. A total of 355 tubectomy procedures performed in the 2021-2025 range. The highest proportion of tubectomy occurred in 2023, which was 21.2%.

Table 1. Distribution of the frequency of delivery, cesarean section and tubectomy section.

Year	Number of Deelivery N (%)	Number of SCs N (%)	Number of Tubectomy N (%)
2021	530 (19.7)	410 (19.5)	73 (20.6)
2022	500 (18.6)	385 (18.3)	68 (19,2)
2023	516 (19.2)	390 (18.5)	75 (21.2)
2024	548 (20.4)	480 (22.8)	69 (19,4)
2025	595 (22.1)	440 (20.9)	70 (19.7)
Total	2.689 (100)	2.105 (100)	355 (100)

The incidence rate of tubectomy in mothers giving birth with SC at Udayana II Hospital Denpasar shows a stable trend. Fluctuations in the proportion of tubectomy in maternity mothers with low cesarean section and tend to be flat. The same thing can

also be seen in the trend of cesarean sections. Meanwhile, the trend of the number of births is seen to increase slightly in 2024 and 2025. Trends in tubectomy incidence, cesarean section and number of deliveries are presented in figure 1.

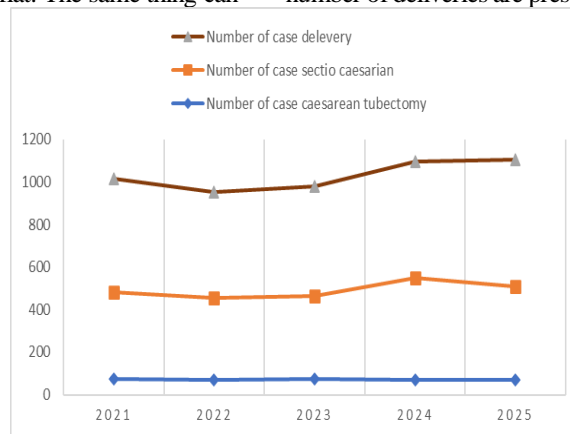


Figure 1. Trends in tubectomy incidence in maternity with cesarean section

Table 2 shows that most of the tubectomy procedures in maternity mothers with cesarean section have an age > 35 years (90.4%), secondary education level (65.5%), have a

job (66.7%), Hindu (39.1%), live in the city of Denpasar (94.1%), non-military member status (75.5%) and with a treatment period of 3 days (83.4%).

Table 2. Frequency distribution of sociodemographic factors in maternity mothers with tubectomy procedure.

Socio-demographic variables	N	%
Age (n=355)		
20-35	34	9.6
>35	321	90.4
Education		
Low	44	12.4
Intermediate	233	65.6
Height	78	22.0
Jobs (n=355)		
Work	237	66.7
Not working	118	33.3
Job Type (n=237)		
Private	171	72.1
Teacher	5	2.1

Civil servants/health workers	28	11.8
Trader	9	3.8
Self-employed	14	5.9
Police/National Army	7	2.9
Labor	3	1.4
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Religion		
Hindu	139	39.1
Islam	96	27.0
Protestan	66	18.6
Katolik	54	14.3
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Residence		
Denpasar	334	94.1
Outside Denpasar	21	5.9
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Military member status		
Members	87	24.5
Non-Members	268	75.5
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Length of treatment (days)		
3 days	296	83.4
<3 and > 3	59	16.6
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DISCUSSIONS

The incidence rate of tubectomy in maternity mothers with SC at Udayana II Hospital Denpasar was 13.2% of the number of deliveries. This figure is much higher when compared to the results of the study using the Indonesian Demographic Health Survey (IDHS) 2017, which is only 3.74%.⁽⁶⁾ This was possible due to the differences in the population used in the study. The results of this study conducted on the population of maternity patients at Udayana II Hospital, while the comparative figures used the population of women of childbearing age.

In this study, the trend of using tubectomy services was also relatively steady throughout 2021-2025. The highest proportion of tubectomy service utilization occurred in 2023, which was 21.2%. This figure is relatively small when compared to the results of a retrospective analytical study conducted at our tertiary care center from January 2010 to December 2014, in Karnataka Institute of Medical Sciences, Hubli, Karnataka with a proportion of tubectomy service utilization of 52.8%.^(12,13)

Studies conducted in Karnataka also found a stable trend in the use of tubectomy services. The stability of these utilization rates can be interpreted as a reflection of social, cultural, and individual factors that have remained unchanged over that period. In addition, the sustainability of this trend may also reflect the <http://ojs.unud.ac.id/index.php/eum>
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existence of consistent health care policies in providing access to tubectomy as one of the definitive contraceptive options. Thus, these findings confirm the importance of maintaining the quality of tubectomy services.⁽¹³⁾

Based on the characteristics of the age of maternity mothers with tubectomy, it was found that most of the mothers with the age of >35 years were 90.4%. These findings are contrary to studies conducted at UHTC, Aam Talaab, Raichur and in Makassar Indonesia. Mothers with the age of >35 years with tubectomy were only 2.6% and 41.2% respectively.^(14,15) Another study found that the higher the age, the lower the proportion of users of tubectomy services in hospitals.⁽¹³⁾ This is possible due to the perception of a low risk of pregnancy at an older age.⁽¹⁶⁾ The proportion of tubectomy users in older age groups tends to decline because most women have approached or entered menopause, so the need for permanent contraception becomes less relevant.

Based on education level, it was found that most users of tubectomy services were mothers with a moderate level of education. These findings are contrary to the results of another study that found that tubectomy service users were more in the non-school group of mothers (56.9%).^(6,14) This difference is possible due to the difference in the sample used. In the study conducted at Udayana II Hospital, tubectomy samples in

maternity mothers with cesarean section. While other studies used maternal samples with tubectomy using laparoscopy. Mothers with low education backgrounds tend to have a limited understanding of modern contraceptive methods that are reversible, so tubectomy is a simple and definite permanent solution to prevent pregnancy. In addition, socioeconomic factors also play a role, where groups with low education often have limitations in accessing more complex health services or require additional costs.(17)

Most mothers with tubectomy had private type jobs (72.1%). These results are supported by a literature study that finds that work is one of the factors that influence the mother's decision to choose a contraceptive method.(18) Meanwhile, another study found that IRT mothers who used tubectomy more than private jobs were 35.5% vs 50.0%.(19) These findings show a relationship between the type of work and the decision to choose a permanent contraceptive method. Private workers face productivity demands, long working hours, and limited time to access health services on a regular basis can drive a preference for tubectomy. In addition, factors of economic stability and family planning in the private worker group also play a role in strengthening the decision to choose a tubectomy, as this method is more efficient eventually.

In this study, it found that the users of tubectomy services varied according to religious factors. Most of the users of tubectomy services are Hindu (39.1%). This finding is supported by a study conducted at UHTC, Aam Talaab, Raichur which found that 86.1% of tubectomy service users are Hindu.(14) Studies in tertiary hospitals in India also found the same thing: 96.8% of couples were Hindu.(20) This is possible because the research location was conducted in an area that adheres to cultural values that accepts contraceptive methods. Cultural aspects and family values in Hindu society also play a role in shaping preferences for contraceptive methods. Meanwhile, values from other cultures apply sharia values where contraception is allowed only in medical emergencies with conscious consent and the absence of adequate alternatives.(21)

This study also observed the distribution of tubectomy service users based on military family membership status. The results of the study found that only a small part of the tubectomy came from maternity mothers who were members of military families. This is possible because the proportion of patients who visit Udayana II Hospital are mostly general patients, thus affecting the proportion of tubectomy utilization in this hospital. On the other hand, internal policies or medical recommendations do not emphasize specific methods of contraception. The role of the Indonesian Military in the family planning program is to mobilize and educate the community to use contraception.(22)

Length of the day to treat the mother with a tubectomy more in the 3-day group (83.4%). This is possible because the population of this study is maternity mothers with cesarean section, where the average length of treatment for patients with cesarean section is 3 days. Tubectomy is the simplest surgical method that is most effective in preventing pregnancy. Nonetheless, this method also has side effects that can appear after surgery The presence of side effects will increase the length of the treatment day.(23)

These findings contribute to the identification of key factors as indicators in assessing the quality and efficiency of tubectomy services. However, this study has limitations in the variables that are analyzed in relation to the use of secondary medical record data as a data source. So that the factors analyzed are limited too.

CONCLUSIONS AND SUGGESTIONS

The incidence of tubectomy in maternity mothers with cesarean section at Udayana II Hospital in Denpasar shows a stable trend. Most tubectomy procedures in maternity mothers with cesarean section are > 35 years old, have a secondary education level, have a job, are Hindu, live in the city of Denpasar, are non-military members, and have a length of 3 days of treatment. This study contributed to the improvement of the quality and efficiency of tubectomy services in maternal mothers. These results recommend improving the quality and efficiency of services by considering sociodemographic factors in providing tubectomy services.

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