

# Circumcision in Bali? a survey of knowledge and attitude of Balinese parents toward their son's circumcision in elementary school Denpasar, Bali



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## ABSTRACT

**Background:** Many factors were involved performing circumcision such as knowledge, religion, or culture. Circumcision was the most common surgical procedure, but considered low in Bali. This study aims to determine the general knowledge and attitudes of parents towards the decision to make circumcision in children in the city of Denpasar.

**Methods:** A study in Denpasar area involving 1655 questionnaires was filled out by one parent who had at least one son in the Denpasar elementary school.

**Results:** The response rate was 86.5% (1655); Most respondents were fathers (55.3%), Hinduism (66.8%), and educational level was high school (45%). 70.5% respondents didn't circumcise their sons. 51% respondents believe that circumcision was necessary. Most reason to circumcision was better hygiene (52.3%). The best age for circumcision was Elementary School (76.4%). Most reason for not being circumcised was didn't know medical benefits (30.6%). It was found that most respondents had good knowledge (71.9%). Parents with a high level of education were more positive in responding to circumcision in their sons ( $P < 0.05$ ). Mothers were more positive in responding to circumcision ( $P < 0.05$ ). no significant differences were found in the respondents of father and mother to level of knowledge about circumcision.

**Conclusion:** This study concluded that most respondents had well knowledge about circumcision but majority didn't circumcise their son. More future research is needed to describe the condition of circumcision in some regions in Indonesia and it's important to both children and parents know about advantage and disadvantage of circumcision.

**Keywords:** *Circumcision, Children, Knowledge, Attitude, Denpasar, Bali.*

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## INTRODUCTION

A Circumcision is an act of cutting the foreskin of the penis by leaving the mucosa of the inner skin layer from the coronary sulcus towards the head of the penis is often done in Indonesia and its guideline in the Muslim religion that must be done. Circumcision aims to prevent the accumulation of smegma in the penis, which can increase the risk of disease. They carried circumcision out either for social, religious or cultural reasons in an area. Indonesia is a country with most of the population embracing the Muslim religion, so circumcision is often carried out routinely.<sup>1</sup> The practice of circumcision has significant ethical, medical, economic and psychological values for children. All decisions in taking circumcision in children are determined

by parents, therefore every parent has a general belief in making these decisions. Until now, very little is known about the decisions of parents in taking circumcision of children.<sup>1,2</sup>

In Bali itself has a population with the majority being Hindu with a total population in 2010 according to the Central Statistics Agency for the province of Bali, namely 83.4%.<sup>3</sup> Balinese society is under the powerful influence of Hinduism, so the practice of circumcision is not required by Hinduism. Until now, data related to circumcision in Bali, especially in the Denpasar area, is still very minimal to determine the decision-making factors of parents in boys in performing circumcision in Denpasar. They usually carry circumcision in Indonesia itself out on children who are in elementary school, circumcision decisions are made by

parents where the level of knowledge is the background in making these decisions.<sup>4</sup> We know very little about the attitude and level of knowledge of parents, especially in Bali for child circumcision. The aim of this study is to evaluate the general knowledge of Balinese parents against circumcision.

## METHODS

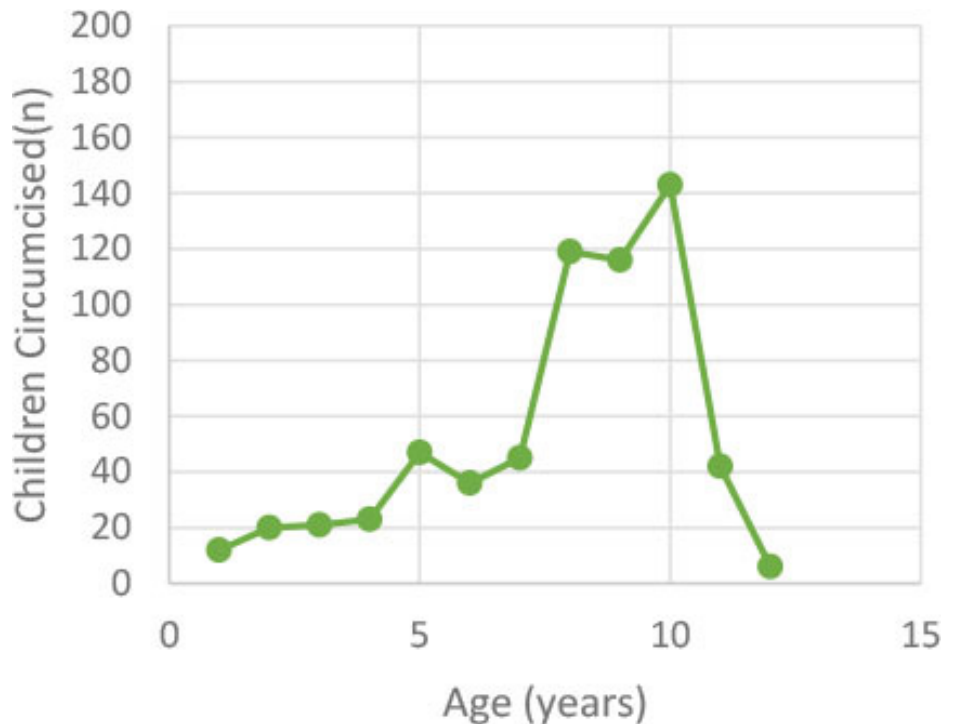
This study was conducted by dividing 4 teams to take samples in the district of Denpasar. Each team would visit elementary schools and distribute questionnaires. Sampling was done by cluster technique. There were 4 districts (geographical regions) in the city of Denpasar, which were divided into West, East, North, and South Denpasar. Each of our districts distributed both to schools in urban areas or schools in rural areas, each district was distributed 400 questionnaires,

which we had counted from the total existing primary schools. Based on the number of schools, there were 55 schools in the West Denpasar, 52 schools in East Denpasar, 57 schools in North Denpasar, and 66 schools in South Denpasar. The questionnaires were distributed through schools' teachers, especially in grades 3 to 6. Each questionnaire given to male students was then delivered to the parents to fill out the questionnaire. The questionnaire was filled anonymously, when the questionnaire had been answered, the researcher collected the data. This survey was distributed during August 2019 and the last questionnaire response was obtained in January 2020. This research has received ethical approval from the Faculty of Medicine, Udayana University.

This questionnaire used a multiple-choice format, namely yes/no format for both the questionnaires of knowledge level and the parents' attitude towards circumcision decision-making. Other variables such as age, gender, education level of the respondents, number of children owned, age of sons, parents occupation, monthly income and religion by filling in the blank option. The analysis was carried out descriptively. The relationship between each variable was assessed using the chi-square test and the Pearson correlation coefficient with  $p < 0.05$  as an indication of statistically significant.

## RESULTS

Questionnaire responses were collected from 4 districts totaling 1,912 samples. The data included 257 samples, comprising 205 respondents who did not fill out the questionnaire completely and 52 people, including invalid respondents. So that the number of responses collected and filled in completely is 1,655 (n) analyzed (see Table 1). The father was found as a parent respondent with 916 (55.3%) and the mother 739 (44.7%). Responses we obtained a sample of 2,699 boys, including the male relatives of the respondent students. Interesting data found that 2,069 (69.5%) boys did not do circumcision, while in boys who were circumcised on the side came back 630 (30.5%). The mean



**Figure 1.** Distribution of boys respondents circumcised by age.

**Table 1.** The demographic details of 1655 responders.

Characteristic	% of responders
<b>Respondents</b>	
Father	55.3
Mother	44.7
<b>Religion</b>	
Hindu	66.8
Islam	30.2
Catholic	2.0
Protestant	0.8
Buddhism	0.3
<b>Education</b>	
No school	0.8
Elementary School	10.3
Junior High School	7.6
Senior High School	45.0
University Graduate	36.3
<b>Family Income (IDR, Monthly)</b>	
< 2,553,000 (US \$180)	50.5
> 2,553,000	49.5
<b>Number of Boys Circumcised</b>	
Yes	30.5
No	69.5
<b>Age of Circumcised Child (years)</b>	
Mean $\pm$ SD	7.8 $\pm$ 2.5
Age Range	1 – 12
<b>Occupation</b>	
Private Employees	45.4
Housewives	23.7
Self-employed	22.2
Civil servants	5.9
Others	2.8

**Table 2. Respondent religion to history of circumcision in boys.**

Responders Religion	History of Circumcision in Children %	
	Circumcised	Not Circumcised
Hindu	8.5	91.5
Islam	77.8	22.2
Protestant	9.1	90.9
Catholic	30.8	69.2
Buddhism	0	100.0

**Table 3. The reasons given for circumcision among parents who responded that circumcision of their son(s) is necessary or unnecessary, best age for circumcision, who performs circumcision and reasons for not do circumcision.**

Questionnaire items	%
<b>Have you ever thought about doing circumcision on your child?</b>	
Yes	48.9
No	51.1
<b>Do you think circumcision is necessary for your child?</b>	
Yes	51.0
No	49.0
<b>Reasons for Circumcising</b>	
Better penile hygiene	52.3
Religious reasons	34.6
Prevent for infection	11.2
Better appearance (cosmetic)	1.3
Other reasons	0.6
<b>Best age for childhood circumcision</b>	
Neonatus	9.2
Early elementary school	12.0
Elementary school	76.4
Junior High school	2.4
<b>Who performs Circumcision on your child ?</b>	
Doctor	91.8
Nurse	5.1
Shaman	3.0
Others	0.1
<b>Reasons for not circumcising</b>	30.6
Penis spontaneously retracts with age	22.8
Not taught by religion	21.8
Do not know exact medical benefits	15.7
Afraid of postoperative complication	8.6
Other	

age of boys who underwent circumcision was  $7.9 \pm 2.5$  (Figure 1).

The religion of the most respondents is Hinduism and followed by Islam can be seen in Table 2 with the highest number doing circumcision from Islam 77.8% (388) while the highest number not doing circumcision in Hinduism 91.5% (1.011). Of the 1,655 parents we asked, 51.1% (845) had never thought of doing circumcision on boys, but 51% (844) agreed that circumcision was necessary for boys.

Of all parents who agreed that boys were circumcised that the main reason for circumcision was to maintain better genital hygiene 52.3% (443) and followed by religious reasons 34.6% (293). Parents' expectations of the benefit of circumcision and the best time to have circumcision are presented in Table 3. Furthermore, there were 30.6% (248 samples) of parents don't do circumcision on their children, because they believe that one day the penis will spontaneously retract by itself as age

progresses. This is followed by religious reasons of not requiring circumcision (22.8% or 185 samples).

Elementary school (SD) was the best time to perform circumcision in children 76.4% (657). With doctors as medical personnel who mostly perform circumcision on male respondents. The highest level of education for parents is Senior highschool 45% (745) and followed by university education 36.3% (600) with the occupation of the parent respondents as shown in Table 1. The respondent's level of knowledge is described in Table 4. Highest number of correct answers was got in Q1, parents believed that male circumcision was a surgical procedure that removed the tip of the foreskin, and the lowest correct answer was in the Q6 questionnaire, half of the respondents were parents. Do not believe that circumcision can reduce the risk of HIV/AIDS. The level of knowledge of the respondents is sufficient, with the number of respondents being 71.9% (1190) with an average of  $5.42 \pm 2.49$ .

When asked to parents about ever thinking doing circumcision to boys on the level of parental education and high socioeconomic status, there was a significant relationship ( $P < 0.05$ ). Respondents said that mothers thought more about doing circumcision than fathers ( $P < 0.05$ ). The most common reason for doing circumcision was that better penile hygiene in respondents whose parents had a high level of education or high socioeconomic status was significant ( $P < 0.05$ ). There was a significant difference in the religious factor when parents thought of doing circumcision on their children ( $P < 0.05$ ).

A significant relationship was also found in parents with a high level of education and a high socioeconomic level believing that circumcision could prevent the occurrence of penile cancer ( $P < 0.05$ ) and parents believed that circumcision could improve hygiene in the male genital tract ( $P < 0.05$ ). However, there was no significant difference in the level of knowledge about circumcision in the respondents' parents, either father or mother ( $P > 0.05$ ). However, parental gender was not a significant factor in circumcision that could reduce the risk of HIV/AIDS ( $P > 0.05$ ).

**Table 4. Knowledge level score.**

Knowledge level Questionere	Correct Answer (%)
Q1 Circumcision is surgical procedure by removing the tip of the penis skin	84.6
Q2 The white material under the skin of the penis (prepuce) is unhealthy and infected with microorganisms	72.7
Q3 Circumcision can prevent penile cancer	70.7
Q4 Circumcision can help prevent urinary tract infections	66.3
Q5 Circumcision can help prevent cervical cancer in sexual partners	67.0
Q6 Circumcision can reduce the risk of HIV/AIDS	52.5
Q7 Circumcision can improve the hygiene of the penis	71.0
Q8 Circumcision can reduce the risk of spreading sexually transmitted infections	61.9
<b>Knowledge level</b>	(%)
<b>Score Category</b>	
Good Knowledge (Score $\geq 5$ )	71.9
Lack Knowledge (Score $<5$ )	28.1
Knowledge score (Mean $\pm$ SD)	5,42 $\pm$ 2,49

## DISCUSSION

Circumcision is routinely carried out in Indonesia, but in Bali, especially Denpasar City, we found that respondents (69.5%) did not perform circumcision on boys. Religiously and culturally, the influence of Hinduism in Bali is strong enough that it does not require male circumcision to be carried out.<sup>5</sup> Balinese people's understanding of the health benefits of circumcision is still low, due to lack of information about the benefits of circumcision, acceptance of the act of circumcision in Balinese society is grouped into two, namely the view that circumcision is an Islamic culture, not a Balinese cultural tradition and the view that circumcision is not only an Islamic culture but from a medical perspective. So that respondents (30.5%) performed circumcision of boys with the highest reason being better penis hygiene. However, the data collected from the Balinese perspective on circumcision is still lacking.<sup>4,6</sup> The population of boys who underwent circumcision was mostly done at elementary school (SD) with a mean age range of  $7.8 \pm 2.5$  years.

In the study by Kim, the same results got that the respondents of parents in Korea mostly performed circumcision of their sons in their early teens 10-13 years.<sup>7</sup> However, a study by Morris, differences in the age of circumcision of boys by parents in America, the highest was carried out at the age of neonates and they compared

circumcision in infancy with circumcision in early adolescence that the benefits of circumcision carried out as early as possible will get more medical benefits.<sup>8</sup> The unique culture in Indonesia in the attitude of parents not to take action on circumcision in boys in neonates is the fear of post-circumcision bleeding because of the size of the penis being too small for circumcision. So waiting for the child to be of sufficient age in elementary school to do circumcision.<sup>4,9</sup>

The level of knowledge of circumcision we found that the respondent's knowledge was sufficient (71.9%) There was confidence in the respondents that the highest reason for the need for circumcision was better penis hygiene, followed by religious belief in performing circumcision. Most parents (72.7%) believe that the white material under the skin of the penis or called smegma is unhealthy material and has been infected with microorganisms which in the future can cause an infectious disease in the genital organs of their son and partner in the future. In a study by Adler, the increase in the incidence of HIV/AIDS and penile cancer was found to be higher in men with uncircumcised penises than in men who had circumcision.<sup>10</sup> This study was supported by Zuhirman, that the characteristics of 35 patients with penile cancer at Arifin Achmad Hospital, Riau, were similar, namely that circumcision was not performed in these patients.<sup>11</sup> As a result, the respondent's parents believed

that the act of removing the tip of the penile skin could prevent the accumulation of smegma fluid. The incidence of penile cancer is the highest in Bali compared to other regions in Indonesia. This increase in the incidence of penile cancer in 10 years from 2004 - 2013, with a total of 69 cases at Sanglah Hospital.<sup>5,9</sup>

Respondents' negative attitude that circumcision was not needed was mostly because parents believed the penis would spontaneously retract as they get older (30,6%). So that almost half of the respondents' parents believe that circumcision is not necessary. Parents may believe spontaneous retraction is a procedure known as "natural circumcision" with an indication that the phallus is similar in size and shape to the phallus of a circumcised penis. Study by Hiroyuki, the penis is divided into 4 types but not all types of penis can be retracted so that circumcision still needs to be done.<sup>12</sup> In addition, several non-medical factors that influence the rejection of circumcision are due to religious reasons (22.8%). This is obtained because Bali is an area where the majority are Hindus so that only Muslim respondents choose circumcision because of religious teachings. Further analysis was carried out that parents who had a sufficient level of knowledge and high socioeconomic status significantly preferred to perform circumcision on boys so that the smegma fluid could be cleaned and promote better penile hygiene.<sup>1,7</sup>

The education level of respondents over 80% is higher education (45% Senior high school and 36.3% University graduated) showing that the literacy level is high. Fact that the respondent's education level is high is a favorable situation and a Health Education campaign can be carried out to promote the benefits of circumcision in boys. The attitude of parents doing circumcision in boys is influenced by several factors, including the level of education and gender of the parents. We found mothers were significantly more positive about the need for male circumcision than fathers. The attitude of parents in taking circumcision was significant. The higher the level of education and socioeconomic status, the more likely they were to think about and take circumcision against boys.<sup>7,13,14</sup>

From the respondents, we analyzed that the religious factor showed a significant difference in the attitude of parents to perform circumcision in boys.

## CONCLUSION

In this study, most of the parents had a sufficient level of knowledge about circumcision, but most parents did not perform circumcision on boys. The beliefs that have been trusted by parents to the attitude of circumcision decision-making are significantly influenced by the level of education, socioeconomic status and religion. More future research is needed to describe the condition of circumcision in some regions and it's important to both children and parents to know about advantage and disadvantage of circumcision.

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## AUTHORS CONTRIBUTION

I Wayan Jorden Junior was involved in the writing of results and discussion, Rizky Darmawan contributed to the data analysis, Dhanu Aryawangsa, Adi Satrya Palguna, Nindya Prahasari collected

the data and A.A.Gde Oka acted as the supervisor of the research.

## CONFLICT OF INTEREST

No conflict of interest in the publication of this article.

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