Original Article

Parental Perspectives Regarding Circumcision during the Coronavirus Disease 2019 Pandemic in Indonesia

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Abstract

Background: Coronavirus disease 2019 (COVID-19) pandemic has rapidly spread worldwide and affected the healthcare system, including the deferral of surgical practice. There are various reactions regarding delayed surgeries, but parental viewpoints towards circumcision remain scarce. In light of the pandemic, this study aimed to evaluate how parents feel about circumcision and the probable determining variables. **Materials and Methods:** This study is a cross-sectional study based on an online questionnaire available from March to April 2022. The factors affecting the decision were analysed using logistic regression. **Results:** Of 1,218 (26.28%) parents who completed the survey, 879 (18.96%) met the inclusion criteria and were included in this study. Among them, 615 (70.00%) parents agreed to delay circumcision during the COVID-19 pandemic. These respondents were more likely to be non-Muslim ($P = 0.01$), have no relatives whose work is related to medicine or paramedicine ($P = 0.02$) and have monthly income equal to or below the regional minimum wage ($P = 0.03$). After adjusting the potential confounder, non-Muslim religion (odds ratios, 2.87; 95% confidence interval, 1.27–6.49; $P = 0.012$) was found to be the only independent predictor for agreeing to the deferral of circumcision amid the pandemic. **Conclusion:** Most parents agreed to postpone circumcision due to the fear of COVID-19 exposure. In order to help them feel less apprehensive about this matter, it is important to educate them about the medical benefits of circumcision and the safety of this procedure.

Keywords: Circumcision, coronavirus disease 2019 pandemic, Indonesia, parents, perspective

Introduction

Coronavirus disease 2019 (COVID-19) pandemic has destroyed numerous nations and overloaded many healthcare systems.[1] To date, despite the fact that the spread is far less severe than the previous years, the end of pandemic in Indonesia remains unknown as new variants of the virus continue to emerge. As a result, many elective surgical procedures are suspended.[2,3] A study by Howard *et al*. revealed that there are various responses to the deferral of non-emergency surgery. Some patients understood and consented to follow the recommendations from the guidelines to postpone non-emergency procedures; nevertheless, others suffered mental distress as a consequence of the wait.[4]

Circumcision, one of the earliest and most common male elective surgical procedures, is greatly prevalent in Indonesia, the largest Muslim population nation in the world.[5,6] Attempts to resume circumcision have recently been made, and parents play a crucial role in deciding whether to have their children circumcised.[7] However, limited data are known whether circumcision in Indonesia is profoundly affected with the current heightened anxiety, fright and panic among people as well as the altered medical practice during this unprecedented time.[8,9] Therefore, the main purpose of this study was to evaluate the parental perspectives toward circumcision amidst the COVID-19 pandemic and the factors which take a role in the determination.

Materials and Methods

A cross-sectional descriptive questionnaire available online from March 1 to April 1, 2022, was distributed to parents of uncircumcised boys in Magelang, Indonesia, using a stratified convenient sampling technique. The Google form link was sent to one of the teachers at every elementary school in the city via WhatsApp and then forwarded to every parent of the students. A brief overview of the ethical issues, data collection

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and study procedure were provided in the text. Informed consent was obtained from all the participants through the online questionnaire. All personal information will be kept confidential. The inclusion criteria were all parents with at least one uncircumcised boy. Participants with duplicate response were excluded from the study. A minimum of 383 samples were needed as an effective sample size calculated using RaoSoft® (Raosoft, Inc., Seattle, Washington, USA), an online calculator, with a 95% confidence interval (CI), a 5% margin of error, and the response distribution of 50%.

The questionnaire was divided into three sections. The first section was the informed consent form, the second section included sociodemographic characteristics (age, gender, level of education, religion, occupation, monthly income, presence of healthcare worker in the family and the circumcision status of the father) and the last section included questions about their decision to delay circumcision, why they agreed or disagreed to delay circumcision, and their opinion regarding the mass circumcision.

Analysis was done using the IBM SPSS software version 26 (IBM SPSS Statistics for Windows, IBM Corporation, Armonk, NY, USA). All variables were presented as categorical data reported in numbers and percentages. Bivariate analysis was done using a Pearson's Chi-squared test or Fisher's exact test when necessary to identify each variable that may be associated with the decision of delaying circumcision during the pandemic. To explore which factors were independently related with the decision to defer circumcision during this unprecedented time, binary logistic regression was utilized for each variable with $P < 0.050$. The level of significance was $P < 0.050$.

Results

A mean response rate of 26.3% was obtained from the 1,218 parents who completed the survey and 879 of them were included in the study. The majority of the participants (70.0%) agreed to delay circumcision during the COVID-19 pandemic. The decision was significantly associated with non-Muslim religion ($P = 0.007$), the absence of a healthcare worker in the family ($P = 0.025$) and monthly income equal to or below the regional minimum wage ($P = 0.036$). Notably, there was no association between the parental choice to defer circumcision and age ($P = 0.058$), gender ($P = 0.053$), level of education ($P = 0.164$), occupation ($P = 0.403$) or circumcision status of the father ($P = 0.167$). Detailed information regarding participant characteristics and its association with the decision to defer circumcision amid the pandemic are demonstrated in Table 1.

A binary logistic regression analysis was done to adjust the potential confounder. Non-Muslim religion (odds ratio, 2.87; 95% CI, 1.27–6.49; $P = 0.012$) was found to be the only independent predictors for agreeing the deferral of circumcision amid the pandemic [Figure 1].

Among those who preferred to delay circumcision, the most common reason was to reduce the risk of COVID-19 exposure (78.0%). Financial problem was presented as one of the reasons for deferring circumcision from 86 participants [14.0%; Figure 2a]. Religion (56.0%) and a request from the sons (28.0%),

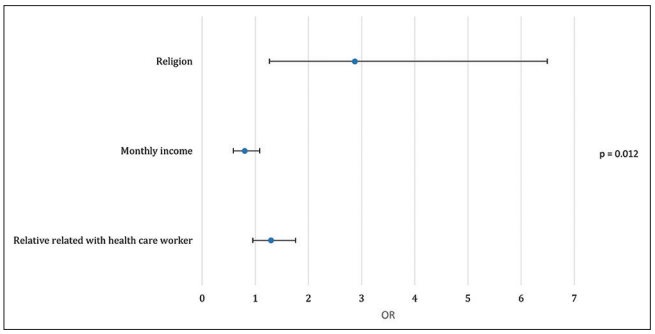


Figure 1: Binary logistic regression of the decision to delay circumcision during the COVID-19 pandemic. OR: Odds ratios

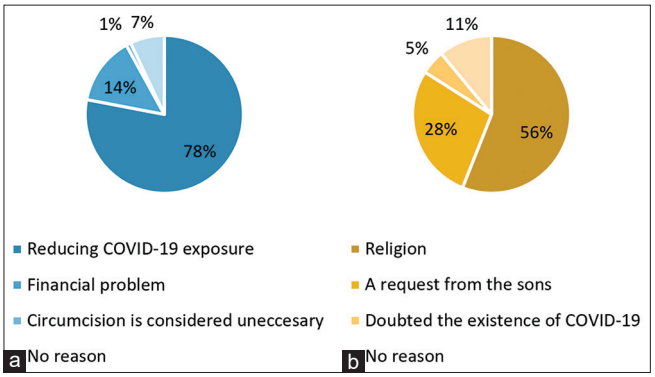


Figure 2: Reasons why the participants (a) agree or (b) disagree to delay circumcision amid the COVID-19 pandemic

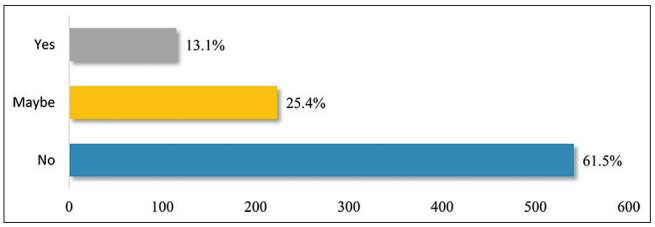


Figure 3: Stances of participants on letting their sons participate in a mass circumcision event during the COVID 19 pandemic

on the other hand, were the most frequent reasons among participants who disagreed to delay circumcision (30.0%). Thirteen participants (4.9%) who did not choose to delay circumcision still doubted the existence of COVID-19 [Figure 2b].

In addition, in a question on whether participants will let their sons engage in a mass circumcision event amid the COVID-19 pandemic, many of them (61.5%) answered no. However, 115 participants (13.1%) would undoubtedly allow their sons to join the event. Almost a quarter of participants (25.4%) were still uncertain with the decision [Figure 3].

Discussion

COVID-19 pandemic affected nearly all the aspects of the healthcare delivery, including suspension of elective surgery.[10] Seventy percent of the participants chose to delay the circumcision during the COVID-19 pandemic. It reflected the

Table 1: Participant characteristics and the decision to delay circumcision during the coronavirus disease 2019 pandemic

Participant characteristics	*n* (%)	Agree to delay circumcision		*P*
		Yes (%)	No (%)	
Total	879 (100.0)	615 (70.0)	264 (30.0)	
Age (years)				
<30	82 (9.3)	64 (78.0)	18 (22.0)	0.058
30-39	509 (57.9)	362 (71.1)	147 (28.9)	
40-49	251 (28.6)	161 (64.1)	90 (35.9)	
>49	37 (4.2)	28 (75.7)	9 (24.3)	
Gender				
Male	210 (23.9)	137 (65.2)	73 (34.8)	0.053
Female	669 (76.1)	478 (71.4)	191 (28.6)	
Level of education				
Non-tertiary degree	536 (61.0)	382 (71.3)	154 (28.7)	0.164
Tertiary degree	343 (39.0)	233 (67.9)	110 (32.1)	
Religion				
Muslim	830 (94.4)	573 (69.0)	257 (31.0)	0.007
Non-Muslim	49 (5.6)	42 (85.7)	7 (14.3)	
Occupation				
Health care worker	46 (5.2)	31 (67.4)	15 (32.6)	0.403
Non-health care worker	833 (94.8)	584 (70.1)	249 (29.9)	
Monthly income				
≤ Regional minimum wage	508 (57.8)	368 (72.4)	140 (27.6)	0.036
> Regional minimum wage	371 (42.2)	247 (66.6)	124 (33.4)	
Presence of health care worker in the family				
Yes	387 (44.0)	257 (66.4)	130 (33.6)	0.025
No	492 (56.0)	358 (72.8)	134 (27.2)	
Circumcision status of the father				
Yes	874 (99.4)	610 (69.8)	264 (30.2)	0.167
No	5 (0.6)	5 (100.0)	0	

pandemic's impact in Indonesia and would undoubtedly affect the number of circumcisions performed on Indonesian boys, just as it did in Greater Chicago.[11] Although the association was not statistically significant, all participants, whose heads of family had not undergone circumcision, agreed to delay circumcision. It was in accordance with several studies which established that the circumcision status of the father was the most significant factor associated with the decision.[12,13] It seemed that some of them still thought that circumcision is an unsafe procedure.[13]

This study revealed that non-Muslim religion was significantly associated with the decision to suspend circumcision ($P = 0.007$). Around 85.7% of non-Muslim parents agreed to delay circumcision compared to 69.0% of Muslim parents [Table 1]. According to the logistic regression [Figure 1], non-Muslim participants were 2.9 times more likely to postpone circumcision during a pandemic than Muslim participants ($P = 0.012$). This could illustrate that how religion was the most prevalent reason parents refused to postpone circumcision in this study. A study conducted in Eastern and Southern African Countries showed that male circumcision is significantly more common among Muslims than among other religious groups.[14] In Indonesia, Muslims are required to undergo this procedure as a symbol of adulthood (*Akhil Balikh*). Bangun and Berutu reported that non-Muslims had other various reasons to undergo circumcision, including medical indications.[15] However, a small percentage of parents who prefer to delay this procedure considered that circumcision is unnecessary. It concluded that, while circumcision is prevalent in Indonesia, understanding of the value of circumcision remains low among certain Indonesian parents, making it necessary for all healthcare providers to address this issue, particularly raising awareness about the importance of circumcision.

The decision to delay the circumcision procedure is not without reasons. The most frequent explanation given by participants for delaying circumcision was to lessen their risk of exposure to COVID-19. It is undeniable that parents will prioritize the safety and health of their children to follow the stay-at-home protocol to avoid the spread of COVID-19.[16] This might be why the presence of healthcare worker in the family is significantly associated with the decision. However, the survey revealed that some participants still did not believe COVID-19 even exists. Given the stigmatization of COVID-19, a relatively new disease with minimal public understanding of its origins and significant suspicion about the virus's presence, this argument seemed unavoidable.[17] It is difficult to overcome this stigma, hence the spreading of scientific knowledge as well as up-to-date information regarding COVID-19 to all members of Indonesian society should be enhanced as soon as possible.

Second, some parents had financial difficulties to undertake circumcision. This finding was parallel to a recent systematic review stating that the second most frequent patient-related reason of surgical deferment during the pandemic was financial issues.[18] Moreover, monthly income was also found to be associated with parental judgment. This might explain why COVID-19-induced financial constraints mainly impact lower-middle income countries.[19]

To increase the coverage of circumcision for all children, the government has implemented mass circumcision. Mass circumcision is a routine activity carried out in various regions in Indonesia. Besides Indonesia, other nations such as the Philippines also practice mass circumcision.[20] This study revealed that most parents believed that activity involving lots of people are still unsafe and could potentially spread the COVID-19 infection, as evidenced by the majority of parents forbidding their sons from engaging in mass circumcision while the COVID-19 pandemic is ongoing. However, by applying health protocols, screening and rapid circumcision techniques, free mass circumcision was successfully carried out in several areas of Indonesia without any local transmission. The fact that no one contracted the COVID-19 virus after the activity is heartening.[21] Parents who delay circumcision for their kids should be aware of this so that they are less concerned.

This study has several strengths. Research on parental perspectives regarding circumcision during the COVID-19 pandemic in Indonesia has not been found, so this is the first one. Besides, the data collection procedure was efficient, with no risk of COVID-19 transmission during the pandemic. This study was able to attain effective sample size at the lowest feasible cost. Furthermore, potential confounding factors were controlled by doing binary logistic regression. As the majority of the participants in this study are Muslims, the findings of this study can be applied to Indonesia's entire population.

The use of online questionnaires to gather data from the population also represents a limitation of this study. The online surveys were only completed by those who were literate, had internet access and were predisposed to be interested in the subject. As a result, non-response bias may arise. By obtaining a large sample size, this study attempted to limit the likelihood of bias. Finally, because this was a cross-sectional research, causality cannot be inferred. Thus, a larger study was required to be done in the future.

Conclusion

The majority of the participants decided to delay circumcision during the COVID-19 pandemic, citing fear about COVID-19 exposure as the primary reason. To mitigate the consequences of this pandemic, it is recommended that education regarding the benefits of circumcision and the safety of the procedures be widely disseminated as soon as possible.

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Conflicts of interest

There are no conflicts of interest.

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