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Why Do Parents Choose or Reject Circumcision at Birth?

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Abstract

Background: Male newborn circumcision is a common practice in the U.S.

Objective: To elucidate which factors affect the parental decision to request or decline newborn circumcision in our institution. We decided to evaluate parental knowledge of the benefits and disadvantages of the procedure.

Design/Methods: Prospective, questionnaire-based study. A questionnaire was filled out by all consented parents of male newborns in the first week of life. Included: All male infants admitted to NICU and nursery from April 2020 to February 2021. Excluded: Infants with major congenital malformations, chromosomal aberrations, and infants with contraindications to the procedure. Demographics, cultural information, medical history, and questions about the benefits and disadvantages of the procedure were included. Local IRB approval 19-197. Statistical analysis: T-test for continuous and Chi-square, or Fisher exact test for categorical variables. Logistic regression for demographic variables.

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Results: Of 97 responders, 73 supported circumcision, while 24 opposed it.

More African American parents desired circumcision than Hispanic parents, who often rejected the procedure (P≤0.0001). The most frequent reasons for pursuing circumcision were hygiene (71.2%), the father being circumcised (42.5%), and the penis looking better after circumcision (31.5%). The reasons most often reported for rejecting circumcision were uncircumcised father (41.7%), it is not medically necessary (37.5%), other sons were uncircumcised (29.2%), and baby does not have input in the decision (20.8%). Parents that supported circumcision knew more about the advantages and disadvantages of the procedure than parents that declined circumcision (P≤0.001).

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Conclusion: Parental decision on neonatal circumcision was influenced by ethnicity, cultural background, the father being circumcised, and hygiene rather than medical reasons.

Keywords:

Male newborn, circumcision, parental knowledge, benefits and complications, decision making

Introduction:

Neonatal male circumcision is an elective procedure involving removing the prepuce covering the glans penis. This common procedure is performed on male newborns in many countries, including the United States. Circumcision during the neonatal period is usual, and it is often performed on male newborns prior to their discharge from the hospital.

Male circumcision has remained a subject of discussion and controversy over time. In the 1960s, circumcision was performed in approximately 95% of male newborns in the U.S., but the high rate of complications prevented healthcare providers and parents from supporting it (1). In 2011 the Centers for Disease Control and Prevention (CDC) reported that the national rate of newborn circumcision had declined from 63.5% in 1999 to 54.7% in 2010 (2,3). Changes in the American Academy of Pediatrics (AAP) policies may have also influenced the perception of the procedure. In the 1970s, AAP did not support the procedure. In 1999, AAP took a neutral position. However, the policy was revised, and in 2012 AAP supported the procedure for parents who chose it. AAP has concluded that circumcision in the neonatal period has health benefits, parents are entitled to receive nonbiased information on the benefits and risks of the procedure, and neonates should have access to the procedure under adequate sterile technique

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and analgesia, with a third-party reimbursement of the procedure costs when parents request circumcision (4, 5).

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Historically, ritual circumcision was performed on Jewish and Muslim males as a religious tradition. Over time this procedure gained medical connotation. Lately, factors such as geographical area, socioeconomic status, insurance coverage, hospital type, race, ethnicity, culture, family history of circumcision, hygiene, the impression that circumcision affects sexual satisfaction, or that the penis looks better after circumcision have been recognized as factors which affect a parent's decision regarding selection of this procedure for their newborn (5,6,7). Recent reports describe that some parents prefer to wait until their child can make an informed decision to avoid ethical controversies (7). It is also recognized that healthcare providers' recommendations during pregnancy would influence expecting parents' decision-making process (7).

Studies published over the last decade have demonstrated that circumcision during the neonatal period decreases the incidence of urinary tract infections and their complications and that later in life, circumcised males will have decreased incidence of sexually transmitted diseases (STD) (8), including Human Immune Deficiency Virus (HIV). Some authors even consider circumcision in the neonatal period a public health strategy to decrease STD and HIV transmission, especially in African countries (5,9,10,11). These findings may play a role in the current rate of newborn circumcision.

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We conducted this study to elucidate the factors that influence a parent's decision to circumcise their male newborn in our institution and to evaluate the parents' knowledge about the advantages and risks of neonatal male circumcision.

Materials and Methods:

This study was conducted at John H. Stroger Jr. Hospital of Cook County, Chicago, IL. The study lasted from April 20th, 2020, to February 15th, 2021. Parents of male newborns in the mother-baby unit and NICU were contacted close to the discharge date and before circumcision was performed. They were asked if circumcision for their male infant was desired. Independent of their answer, they were invited to participate in a questionnaire survey. The parents signed informed consent before participation.

Parents of infants with major malformations, chromosomal abnormalities, and contraindications for circumcision, such as hypospadias, epispadias, penial anomalies, family history of bleeding disorder, and maternal active herpes simplex infection, were excluded. Study approval was obtained from the Institutional review board (IRB) of the Cook County Health and Hospitals system. The study was performed at John Stroger, Jr. Hospital of Cook County, Chicago, Illinois.

Expectant parents followed at Stroger Hospital and its affiliated clinics received written information about circumcision on a general basis. If the expected infant is known to be male, parents were asked if they desire circumcision for their infant in the newborn period. The parents also received an educational brochure after the birth of their child based on AAP recommendations on circumcision.

Questionnaire designs:

Two questionnaires were created for this study. These questionnaires were designed based on previous studies which evaluated factors affecting circumcision (12,13).

Questionnaire A was for parents who pursued circumcision and included nine reasons to elect circumcision (Table 2) and one open-ended question to write down other reasons. Questionnaire B was for parents who rejected circumcision and included ten reasons for rejection (Table 3). All participants were advised to select one or more reasons for their decision.

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The questionnaires contained participant demographic questions (mother's and father's age, ethnicity, race, country of birth, religion, education level, and occupation), the father's circumcision status, and personal reasons to elect or reject circumcision. (Tables 4 and 5).

Statistical analysis:

SPSS 26 was used for data analysis. We used a t-test for continuous variables and Chi-square and Fisher exact test for the categorical variables. Logistic regression was used for interaction between parent demographic country of origin, ethnicity, race, religion, occupation, and level of education.

Results:

One hundred and twenty parents were invited to participate in the study. Twenty-three parents declined to participate in the study. No contraindications to the procedure were found in our study population. Ninety-seven parents completed the questionnaire (response rate of 80.8%). Seventy-three parents desired circumcision for their newborn child. There was no statistical difference between the two groups in gestational age, birth weight, maternal age, paternal age, religion, level of education, and occupation (Table 1).

More African American parents accepted their newborn's circumcision (74%), and more Hispanic parents refused it (87.5%). 13.7% of Hispanic mothers preferred circumcision versus 87.5% who declined it (P =0.001) (Table 1). All African-born parents requested circumcision.

Seventy-five percent of fathers in the circumcision group were born in the U.S., while 33.3% of fathers in the non-circumcision group were born in the U.S. (P = 0.0001). Similarly, mothers born in the U.S. had a higher preference for circumcision. Seventy-five percent of mothers in the circumcision group were born in the U.S., while 20.8% of mothers in the non-circumcision group were born in the U.S. (P = 0.0001).

In the non-circumcision group, 70.8% of mothers and 54.2% of fathers were born in Mexico, Central or South America, or the Caribbean.

Seventy-one percent of the fathers who desired their newborn to be circumcised were circumcised, and none of the fathers in the non-circumcision group were circumcised (Table 1).

The most frequent reasons for pursuing circumcision were hygiene (71.2%), health reasons (64.3%), the father being circumcised (42.5%), the penis looking better after circumcision (31.5%), and the belief that the baby was going to have a better sexual life in the future (26%, Table 2).

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The reasons most often reported for rejecting circumcision were father was uncircumcised (41.7%), parents stated that the procedure was not medically necessary (37.5%), other sons uncircumcised (29.2%), the baby did not have input in the decision (20.8%), and other reasons such as side effects of the procedure (12.5%, Table 3).

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When asked about the benefits of circumcision, more parents in the circumcision group knew about the decreased incidence of urinary tract infections (UTI), balanitis, and male genital cancer in patients who have been circumcised (Table 4). Regarding adverse effects, more parents in the circumcision group knew about the possibility of pain and bleeding (Table 5).

Logistic regression was performed for the effects of the interaction of parents' characteristics. The father's ethnicity (P=0.003), the father's race as non-Hispanic black (P=0.034), and maternal ethnicity (P=0.002) were all found to be statistically significant. Maternal country of birth was not significant (P=0.069).

Discussion:

The study's results suggest that ethnicity, race, and to some extent, the father's country of origin are key factors in the circumcision decision-making process. Hispanic parents did not request the procedure, while non-Hispanic black fathers frequently requested circumcision in our institution.

Regarding religious beliefs, only 20.5% of parents listed their religion as a reason to elect circumcision for their sons. Islam and Judaism historically support circumcision after birth (1). Our population did not include Jewish parents and included only six Muslim mothers and eight Muslim fathers. All of them requested circumcision. Among the parents that requested circumcision, 54.8% of mothers and 45.2% of fathers were Christian. Interestingly, in our population, 24% of the families that requested circumcision were atheists.

The parents' ages, education levels, and occupations were similar, suggesting they may not strongly correlate with the decision-making process. According to the literature, circumcised fathers prefer to have their sons circumcised, and uncircumcised fathers do not request circumcision for their sons (6,8).

Compatible with our results, two studies by Rediger et al. (6) and Jeffrey D. Tiemstra (13) found that the most common reasons for circumcision include hygiene, health reasons, the fact that the procedure is easier to do at a younger age, and the father of the baby being circumcised.

Interestingly, in our population, the fifth most frequent reason to

Table 1. Parental Demographics

	Mother		Father	
POPULATION n=97	**Circumcision** n=73	**No Circumcision** n=24	**Circumcision** n=73	**No Circumcision** n=24
Age (median/SD)	28.3 / 6.8	28.9 / 6.6	31.7 / 9.5	31.8 / 8.3
Ethnicity (n / %)				
Hispanic	10 / 13.7	21 / 87.5**	6 / 8.2	18 / 75**
Non-Hispanic	63 / 86.3	3 / 12.5	65 / 89	5 / 20.8
Missing data	0	0	2 / 2.7	1 / 4.2
Race (n / %)				
Caucasian	7 / 9.6	11 / 45.8**	7 / 9.6	10 / 41.7†
Black	54 / 74.0	1 / 4.2**	53 / 72.6	2 / 8.3**
Asian	6 / 8.2	1 / 4.2	7 / 9.6	1 / 4.2
other	6 / 8.2	11 / 45.8	5 / 6.8	10 / 41.7*
Missing data	0	0	1 / 1.4	1 / 4.2
Place of birth (n / %)				
USA	55 / 75.3	5 / 20.8**	55 / 75.3	8 / 33.3**
Africa	7 / 9.6	0	9 / 12.3	0
India, Pakistan, Middle East	3 / 4.1	1 / 4.2	3 / 4.1	1 / 4.2
China and Thailand	3 / 4.1	0	1 / 1.4	0
Mexico, South America, and Carribean	4 / 5.5	17 / 70.8**	4 / 5.5	13 / 54.2**
Europe	0	1 / 4.2	0	1 / 4.2
Missing data	0	0	1 / 1.4	1 / 4.2
Religion (n / %)				
Atheist	18 / 24.7	0	18 / 24.7	2 / 8.3
Catholic	5 / 6.8	16 / 66.7	6 / 8.2	10 / 41.7
Christian	40 / 54.8	7 / 29.2	33 / 45.2	7 / 29.2
Muslim	6 / 8.2	0	8 / 11	0
Other	2 / 2.8	1 / 4.2	4 / 5.5	2 / 8.3
Missing	2 / 2.7	0	4 / 5.5	3 / 12.5
Education (n / %)				
<HS	8 / 11	4 / 16.7	9 / 12.3	9 / 37.5
≥HS	63 / 89	20 / 83.3	66 / 85	12 / 50
missing data	0	0	2 / 2.7	3 / 12.5
Occupation (n / %)				
Employee	39 / 53.4	12 / 50	50 / 68.5	23 / 95.8*
Unemployed	30 / 41.1	11 / 45.8	13 / 17.8	1 / 4.2
Missing data	4 / 5.5	1 / 4.2	10 / 13.7	0
Father Circumcised				
Yes			52 / 71.2**	0
No			15 / 20.5	22 / 91.7**
Unknown			6 / 8.3	2 / 4.3

* significant P value ≤ 0.05 , ** P≤0.0001, † P≤0.0003. H.S.: High School.

Table 2. Reasons to elect circumcision

	N	(%)
Hygiene reasons	52	71.2
Health reasons	47	64.3
Father was circumcised	31	42.5
Looks better after circumcision	23	31.5
Better sexual life in the future	19	26
The previous son was circumcised	17	23.3
To look like other boys in the family	16	21.9
Religious belief	15	20.5
Encouraged by health care provider	12	16.4
Other reason	6	8.2

request circumcision was the belief that the baby would have a better sexual life. This factor caused no rejection of circumcision. This finding opposes previous studies that suggest that circumcision may modify sexual satisfaction (14,15).

Our results showed that many parents from both the circumcision and non-circumcision groups are unaware that circumcision can decrease the incidence of STDs and HIV among teenagers and adults, genital cancer, and female cervical cancer. According to the literature (11), the most common complications of male circumcision are infection in the surgical area and excessive bleeding, followed by unsatisfactory cosmetic results or surgical injury. Only 12.5% (3 families) in our population rejected circumcision due to procedure complications.

The American Academy of Pediatrics (4), as well as the American College of Obstetricians and Gynecologists (ACOG), supports circumcision for those parents that choose the procedure for their sons. Since parents may need time to understand and evaluate the risks and benefits of the procedure, we believe that education on the circumcision procedure should start early during prenatal care, when the families find out that they are expecting a boy during their first or second-trimester ultrasound.

In this study, we administered the questionnaires before performing the procedure. This allowed us to evaluate parental knowledge of the benefits and risks of the procedure. Our results suggest that current public knowledge concerning the risk and benefits of circumcision is unsatisfactory and educational efforts are needed.

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None of the previous studies have compared parents who requested circumcision with parents who did not request circumcision. Interestingly, our results suggest that parents who

Table 3. Reasons to decline circumcision

	N	(%)
Not medically necessary	9	37.5
FOB not circumcised	10	41.7
Other sons are not circumcised	7	29.2
Baby has no input in the decision	5	20.8
Discouraged by health care provider	2	8.3
To look like other boys in the family	1	4.2
Looks better without circumcision	0	
Better sexual life in the future	0	
Cost of procedure	0	
Other reasons, other complications	3	12.5

FOB: father of the baby

Table 4. Parental knowledge on benefits of circumcision

BENEFITS OF CIRCUMCISION	Circumcision N (%)	No Circumcision N (%)	P Value
Prevention of UTI	46 (63)	12 (50)	0.003*
Prevention of STD	35 (47.9)	7 (29.2)	0.107
Prevention of Phimosis	33 (45.2)	7 (29.2)	0.166
Prevention of Balanitis	21 (28.8)	3 (12.5)	0.05*
Prevention of Paraphimosis	19 (26)	3 (12.5)	0.09
Prevention of Male cervical cancer	17 (23.3)	0	0.03*
Prevention of Female cervical cancer	7 (9.6)	0	0.188
Do not know any	14 (19.2)	7 (29.2)	0.3

* significant P value ≤ 0.05. UTI: urinary tract infection; STD: Sexually transmitted disease.

"The American Academy of Pediatrics, as well as the American College of Obstetricians and Gynecologists (ACOG), supports circumcision for those parents that choose the procedure for their sons. Since parents may need time to understand and evaluate the risks and benefits of the procedure, we believe that education on the circumcision procedure should start early during prenatal care, when the families find out that they are expecting a boy during their first or second-trimester ultrasound. ."

did not request circumcision knew less about the advantages and side effects of the procedure when compared with those who requested the procedure.

A limitation of the study is that it was performed in a single center. Additionally, our patient population has a larger proportion of African American people who generally have higher rates of circumcision.

We believe that patient education programs are essential in any medical field. In the case of circumcision, parents should be familiar with this procedure's health benefits and risks before making a decision.

Conclusions:

Our findings confirm that hygiene, the father of the baby being circumcised, an opinion that the penis looks better circumcised, personal preferences and racial and ethnic background are key factors in electing circumcision in our population.

In our population, African American parents are more likely to choose circumcision, and Hispanic parents are more likely to reject it.

Table 5. Parental knowledge of adverse effects of circumcision

ADVERSE EFFECTS	Circumcision N (%)	No Circumcision N (%)	P Value
Pain	62 (84.9)	15 (62.5)	0.018*
Bleeding	57 (78.1)	13 (54.2)	0.023*
Infection	43 (58.9)	14 (58.3)	0.683
Irritation of glans penis	32 (43.8)	6 (25)	0.1
Injury/disfiguring of penis	31 (42.5)	8 (33.3)	0.42
Increased risk of meatitis	15 (20.5)	7 (29.2)	0.35
Do not know any	6 (8.2)	6 (25)	0.08

* significant P value ≤ 0.05

Parental knowledge concerning short- and long-term benefits and complications of circumcision is limited. The decision to choose or reject neonatal circumcision was influenced by cultural background, ethnicity, race, and the father of the baby being circumcised.

"Our findings confirm that hygiene, the father of the baby being circumcised, an opinion that the penis looks better circumcised, personal preferences and racial and ethnic background are key factors in electing circumcision in our population."

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