

Early Adolescent Knowledge and Attitudes About Circumcision: Methods and Implications for Research

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The psychosocial effects of circumcision status on the adolescent male are unclear. This study explored methods for assessing attitudes toward circumcision of early adolescents and differences in satisfaction between circumcised and uncircumcised males that would warrant further investigation. Seventy-three boys, aged 11 through 14 years completed the Petersen Body Image Scale and a questionnaire concerning their own circumcision status, satisfaction with that status, and perceptions about the status of other family members and peers. To assess knowledge, subjects identified diagrams depicting differing circumcision states during a personal interview. Physical examination confirmed reported circumcision status. Of the study group, 19% ($n = 14$) were uncircumcised. Use of visual aids to report circumcision status was more accurate (92%) than self-report (68%). Circumcised boys scored higher on satisfaction items than did uncircumcised boys, ($t_{(15,65)} = -3.96, p < 0.001$). No differences in general body image were found between groups. Further research that examines psychosocial outcomes of circumcision status is necessary.

KEY WORDS:

Circumcision
Psychosocial effects
Early adolescence

The provision of information about the medical risks of circumcision has little impact on the parental decision to circumcise their newborn. In fact, it may have a deleterious effect, as some parents become angry with the physician for providing lengthy and confusing information (1). The father's circumcision status (2) and other "social concerns such as perceived future ridicule by siblings and schoolmates" are more influential than knowledge of medical risks in parents' decision to circumcise their child (3,4). Yet, uncircumcised boys' attitudes toward their own circumcision status is unknown. This study was conducted to elucidate methods for exploring attitudes toward circumcision in early adolescence. In addition, we wished to determine possible differences in satisfaction between circumcised and uncircumcised males that would warrant further investigation. Within this context, it was necessary to assess general body image. A poor body image could influence feelings about circumcision status or, conversely, dissatisfaction with circumcision status could generalize to poor body image as a whole.

Methods

Seventy-three males, aged 11-14 years, (mean 12.5 years), were given a complete physical examination as an optional component of a pubertal and health education program in an urban, public middle school. Approval was obtained from the Committee on Human Research at our institution, and parental informed consent was obtained. Prior to the examination, subjects completed two self-report ques-

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tionnaires and were subsequently interviewed by one of two male physicians.

Circumcision Questionnaire

This questionnaire was developed for use in this study. After initial sociodemographic items, subjects were asked to report their own circumcision status, as well as their opinion of the status of most other boys their own age. In addition, subjects indicated on a Likert-type scale how happy they were with their own status (1 = very happy to 6 = not happy at all), the degree to which they wished their status were different (1 = wish very much to 6 = don't wish at all), and how strongly they believed it a good idea for all boys to be circumcised or uncircumcised (1 = believe very strongly to 6 = don't believe strongly at all). These three items served as indicators of satisfaction. Finally, subjects indicated how similar they were to other male members of their family with respect to circumcision status (1 = very similar to 6 = not similar at all). Only responses of those subjects who accurately reported their circumcision status were included in the analyses of these "satisfaction" and "family similarity" items.

Petersen Body Image Questionnaire

The Body Image subscale of the Self-Image Questionnaire for Young Adolescents was utilized (5). The questionnaire consisted of 11 items, to which the subject could respond with one of six choices, ranging from "describes me very well" to "does not describe me at all." Sample items included, "I am proud of my body" and "I frequently feel ugly and unattractive." The scale is scored with a possible range of 11–66; a high score represents a more positive body image. The reported internal consistency for this instrument is 0.82 (5).

Personal Interview

The physician presented subjects with drawn representations of a flaccid circumcised and uncircumcised penis and asked them to identify the circumcision status of each drawing as well as to choose the one they most closely resembled. Circumcision status was determined during a physical examination by one of two male physicians.

Summary

In summary, there were three indicators of circumcision status: the subjects' self-report on the ques-

Table 1. Demographic Characteristics of Study Group

| | Total | | Circumcised ^a | | Uncircumcised ^a | |
|--------------------|-------------|----|--------------------------|----|----------------------------|----|
| | n | % | n | % | n | % |
| Mean age ± SD (yr) | 12.5 ± 0.88 | | 12.6 ± 0.89 | | 12.4 ± 0.89 | |
| Race/Ethnicity | | | | | | |
| Non-Hispanic | | | | | | |
| White | 36 | 49 | 31 | 52 | 4 | 29 |
| Black | 13 | 18 | 11 | 19 | 2 | 14 |
| Asian | 11 | 15 | 10 | 17 | 2 | 14 |
| Hispanic | 7 | 10 | 3 | 5 | 4 | 29 |
| Other | 6 | 8 | 4 | 7 | 2 | 14 |
| Religion | | | | | | |
| Protestant | 22 | 30 | 17 | 29 | 4 | 29 |
| Catholic | 20 | 27 | 17 | 29 | 3 | 21 |
| Jewish | 5 | 7 | 5 | 9 | 0 | — |
| None/Other | 12 | 16 | 9 | 16 | 3 | 21 |
| Missing | 14 | 20 | 10 | 17 | 4 | 29 |

^aAs determined by physical examination.

tionnaire, the subjects' self-identification by choice of drawing, and the physicians' determination.

Statistical Analysis

χ^2 analyses and Student's t-tests were used to examine differences between the circumcised and uncircumcised subjects. Dependent variables included general knowledge about circumcision, knowledge of subjects' own circumcision status, perceptions about similarity to family members, and satisfaction with circumcision status and general body image.

Results

Sample Description

The group was ethnically diverse (see Table 1). Non-Hispanic white students were over represented (school percentage is 19%), whereas Hispanic students were under represented (school percentage of students with Hispanic surnames is 28%). Of the Asian boys 7 were Filipino (an ethnic group that traditionally circumcises their sons at puberty), all of whom were circumcised. Few subjects belonged to a religious group which requires ritual circumcision (i.e., fewer than 7% were Jewish, and none was Moslem). The ethnic and religious composition of the circumcised and uncircumcised males were similar, although Hispanic males made up a larger percentage of the uncircumcised group.

Circumcision Status

The circumcision status of the subjects is included in Table 2. When asked whether or not they were

Table 2. Circumcision Status

| | <i>n</i> | % |
|----------------------|----------|----|
| Self-report | | |
| Circumcised | 40 | 55 |
| Uncircumcised | 15 | 20 |
| Not sure | 18 | 25 |
| Choice of drawing | | |
| Circumcised | 56 | 77 |
| Uncircumcised | 14 | 19 |
| Refused to answer | 1 | 1 |
| Don't Know | 2 | 3 |
| Physical examination | | |
| Circumcised | 58 | 80 |
| Uncircumcised | 14 | 19 |
| Not Determined | 1 | 1 |

circumcised, 25% were not sure. Determination of circumcision status by choice of drawing involved less uncertainty, with only two subjects not able to choose. This method produced a distribution similar to that of physical examination. According to physical examination, 80% ($n = 58$) of the subjects were circumcised and 19% ($n = 14$) were uncircumcised. The circumcision status could not be determined by the physician for one subject. Therefore, the subjects are representative, as the national neonatal circumcision rate for boys born in the late 1970s was approximately 80% (National Center for Health Statistics National Hospital Discharge Survey, unpublished data, 1990).

General Knowledge

All of the uncircumcised boys correctly identified a circumcised penis, compared with 78% of the circumcised boys, ($\chi^2_4 = 8.3361$, $p < 0.08$). All of the uncircumcised boys were able to correctly identify the picture of an uncircumcised penis, and 76% of the circumcised boys made the correct identification, ($\chi^2_4 = 8.300$, $p < 0.08$).

Knowledge of Own Circumcision Status

Circumcision status by self-report and by picture were compared with the physical examination. The two self-report methods were recorded as accurate when they agreed with status as determined by physical examination. Self-report was 68% accurate for the entire study population (Figure 1). Uncircumcised boys accurately reported their status more

often than did circumcised boys (79% versus 66%), and circumcised boys were unsure of their status more often than were uncircumcised boys (28% versus 8%). However, these differences were not statistically significant.

Circumcision status by choice of drawing was 89% accurate for the overall study group (Figure 2). A much higher percentage of the circumcised subjects were able to accurately report their circumcision status by this method (93%), and no one in this group was unsure about which picture most closely resembled themselves. Among the uncircumcised subjects, the same 11 boys who accurately reported they were not circumcised also chose the appropriate picture to depict their circumcision status. Again, these differences were not statistically significant.

Perceptions of Similarity to Others

Of the subjects, 62% perceived that most other boys are circumcised. Circumcised and uncircumcised boys did not differ significantly in their responses to this question, (62% versus 69%, respectively).

Most of the study participants (80%) perceived being similar to family members with respect to circumcision status, (i.e., indicated they felt "fairly strongly," "strongly," or "very strongly" that they were similar to family members). The mean score on this item among the circumcised boys was 1.684 (SD = 1.435) whereas the mean score among the uncircumcised boys was 3.889 (SD = 1.764). A lower score indicates feeling more similar to family members, and this difference was statistically significant, ($t_{(10.65)} = -3.49$, $p < 0.005$).

Satisfaction with Circumcision Status

As expected, the three satisfaction items were moderately to highly correlated, ($r = 0.38-0.62$, $p < 0.007$). Therefore, we combined the scores into an overall satisfaction measure. A lower score is indicative of higher satisfaction. The mean score for the circumcised group was 9.421 (SD = 1.7) and 11.600 (SD = 1.5) in the uncircumcised group. This difference was statistically significant ($t_{(15.65)} = -3.96$, $p < 0.001$).

Body Image

The mean sum score on the Petersen Body Image Scale was high for both groups. The mean sum was 50.6 for the circumcised group and 49.0 for the uncircumcised group ($t_{(19.74)} = 0.62$, $p < 0.54$).

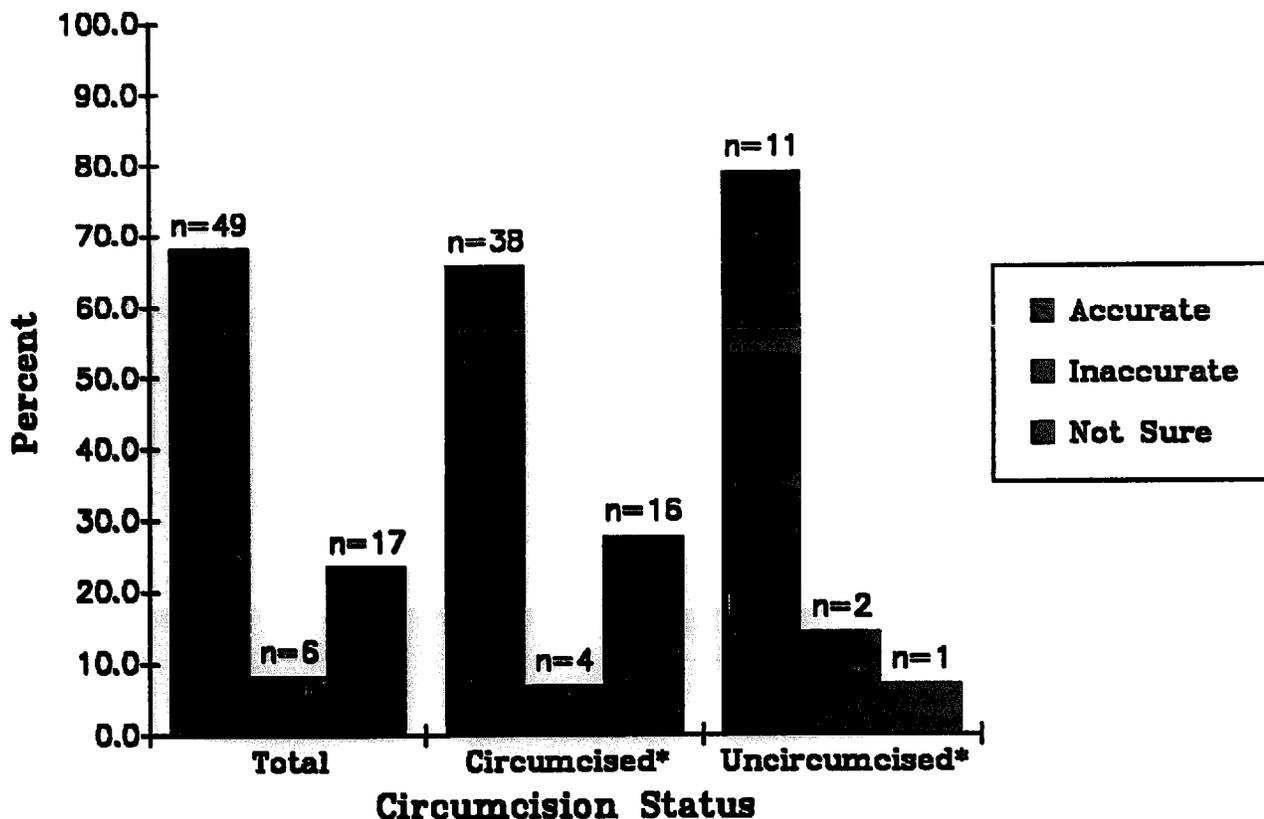


Figure 1. Percent accuracy of self-report of circumcision status ($\chi^2 = 3.02$; $p < 0.22$; *as determined by physical examination).

Discussion

This study provides methods for investigating psychosocial outcomes of circumcision status among young adolescent males. Of the young adolescents in this study 33% were in error or uncertain about their circumcision status. Report of circumcision status by means of choosing a self-descriptive picture produced more reliable and valid responses. The use of visual aids rather than questionnaires may glean more accurate information about circumcision status if it is not feasible to have a clinician do a genital examination in a research situation. There was a trend for uncircumcised boys to be more knowledgeable about circumcision, with a greater (although not statistically significant) accuracy in self-report and ability to differentiate between drawings of a circumcised and uncircumcised penis. However, both groups had an equal ability to self-select anatomic drawings. The uncircumcised boys appeared to have

more prior knowledge about circumcision in general and greater awareness of their own status than did circumcised boys. Future research should examine possible explanations for this observation including education concerning circumcision issues previously received by early adolescents.

The uncircumcised boys demonstrated less satisfaction with their status, although this did not extend to body image as a whole. No conclusions or recommendations can be based on a sample size of 14 uncircumcised subjects, but the need for further investigation into this area is clear. The factors affecting satisfaction with circumcision status are currently not known and need to be examined. Future research will need to explore differences in education and life experiences (including incidents of ridicule surrounding circumcision status) experienced by both groups of boys, as well as effects of ethnicity and religion on satisfaction. The uncircumcised boys in our study perceived themselves as being in the minority. Since the desire to be similar to peers typically fades during progression into later adolescence and adulthood, the effect of increasing age on satisfaction also needs to be examined.

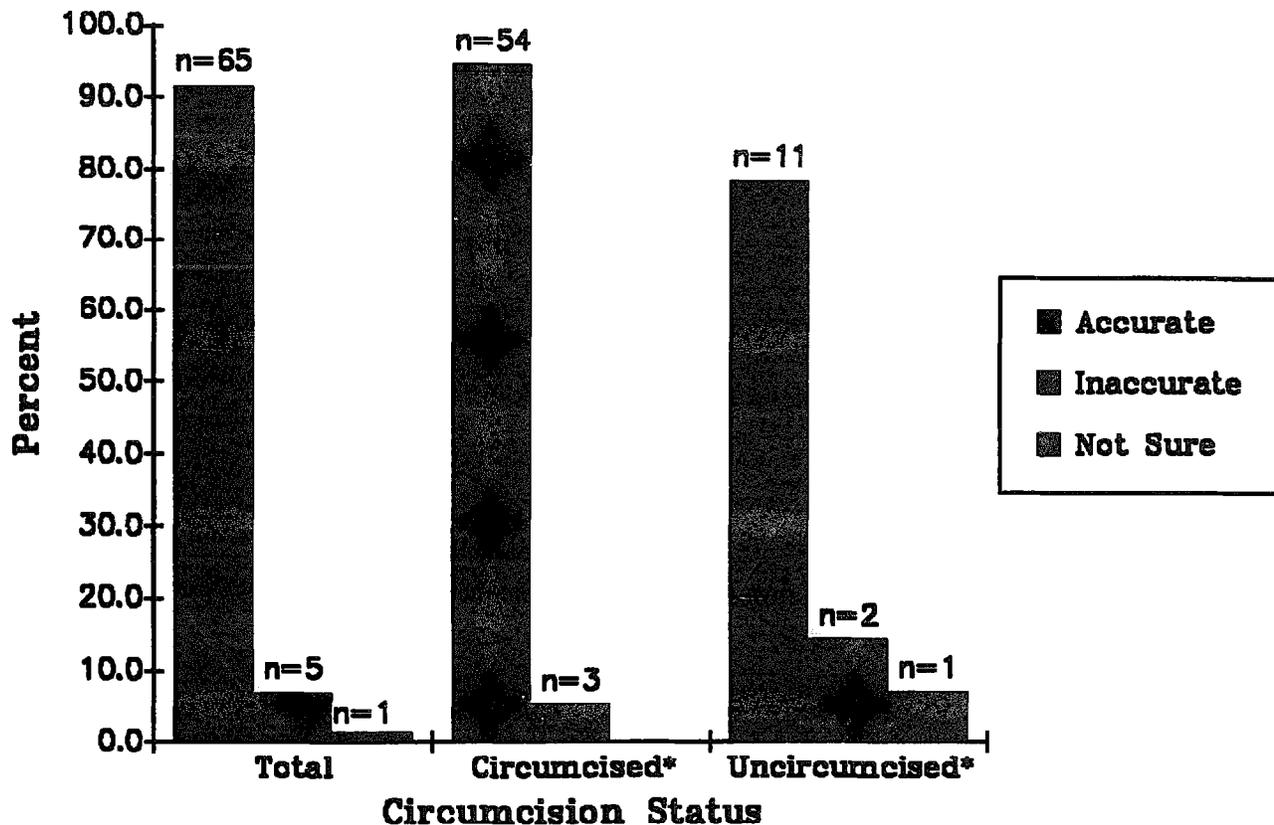


Figure 2. Accuracy of visual aid report of circumcision status ($\chi^2 = 5.69$; $p < 0.06$; *as determined by physical examination).

To definitively answer these questions, a much larger cohort of uncircumcised boys will need to be obtained, requiring a multiinstitutional approach. The need for research to address questions about psychosocial outcomes related to circumcision status is apparent. An approach that utilizes physical examination or visual aids to validate circumcision status will be necessary. A structured qualitative interview may be required to elicit the factors affecting satisfaction with circumcision status.

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