Self-Assessment of Circumcision Status by Adolescents

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In epidemiologic studies of the relation between circumcision and sexually transmitted infections, it is necessary to rely on self-report of circumcision status. The purpose of this 2002 study in Houston, Texas, was to determine whether adolescent males could make correct self-reports. During physical examinations, adolescents were asked whether they were circumcised. The authors then examined the adolescents’ genitalia. Circumcision status was recorded as complete (glans penis fully exposed), partial (glans partly covered), or uncircumcised (glans completely covered). The mean age of the 1,508 subjects was 15.0 (standard deviation, 1.63) years; 64% were Black, 29% Hispanic, and 7% White. Forty-nine percent had full, 1% partial, and 50% no circumcision. Of the 738 fully circumcised subjects, 512 (69%) considered themselves circumcised, 54 (7%) considered themselves uncircumcised, and 172 (23%) did not know. Of the 751 uncircumcised youth, 491 (65%) described themselves as uncircumcised, 27 (4%) reported being circumcised, and 233 (31%) did not know. The sensitivity of self-report among those who thought they knew their status was 90.5%, and the specificity was 94.8%; 27% did not know their status. In this population, self-report of circumcision status did not result in accurate information mainly because many adolescents were unsure of their status.

The relation between male circumcision and the risk of various sexually transmitted infections in both males and females has been the subject of research for decades (1–7). In large epidemiologic studies, it may not be possible or practical to examine male genitalia, so self-report of circumcision status becomes important. However, women are not very accurate in classifying the circumcision status of their sexual partners, men are not always accurate in classifying themselves, and physicians do not always agree (1–3).

The purpose of this study was to determine whether adolescent males could make correct self-reports of their circumcision status.

MATERIALS AND METHODS

Between May 1 and September 30, 2002, we evaluated adolescents in three settings in Houston, Texas: the Community Partners Adolescent Health Center, a school-based clinic; the Incarnation Health Center, a school-linked clinic; and the Harris County Juvenile Detention Center. All sites serve primarily indigent youth. In the first two settings, the assessments were made during preparticipation sports examinations; at the third site, circumcision status was assessed during health maintenance evaluations.

Subjects were evaluated by four adolescent medicine faculty (two board-certified adolescent medicine physicians, one third-year adolescent medicine fellow, and one nurse practitioner trained in adolescent medicine) and six second-year pediatric resident physicians. All clinicians used standardized procedures for asking questions about circumcision status and for examining the penis; the physician who asked about circumcision status also performed the examination. Before the examination, subjects were asked whether they were or were not circumcised or if they did not know. During the examination, the clinicians recorded circumcision status as follows: fully circumcised, if the corona of the glans penis was completely visible; uncircumcised, if the glans was completely covered; and partially circumcised, if the glans was partially covered. In the latter group, it was unclear whether circumcision had failed to remove the entire fore-
skin or if the uncircumcised foreskin was short. Information was entered onto a data form that included the age and race/ethnicity of the subject.

Agreement between the subject’s and the clinician’s assessment was evaluated for all subjects, for subjects by age and race/ethnicity, and for subjects by examination site. In a subset of 85 adolescents unsure of their status, we evaluated their ability to correctly identify their status from a picture. Sensitivity and specificity were calculated by using the physician examination as the “gold standard.” Agreement between physician and subject was assessed by using the probability-corrected kappa statistic.

This study was approved by the Committee for the Protection of Human Subjects of the University of Texas-Houston Health Sciences Center and by the administration of the clinical sites where the study was conducted. No subject refused to participate.

RESULTS

The mean age of the 1,508 subjects was 15.0 (standard deviation, 1.63) years; 64 percent were Black, 29 percent Hispanic, and 7 percent White. The circumcision status of the subjects is presented in table 1. Comparison of self-reported circumcision status and physical examination is shown in table 2. For those who thought they knew their status, the sensitivity of self-report was 90.5 percent (95 percent confidence interval: 87.7 percent, 92.8 percent) and the specificity was 94.8 percent (95 percent confidence interval: 92.5 percent, 96.5 percent). When those who did not know their status were excluded, agreement between clinician and subject was assessed by using the probability-corrected kappa statistic.

This study was approved by the Committee for the Protection of Human Subjects of the University of Texas-Houston Health Sciences Center and by the administration of the clinical sites where the study was conducted. No subject refused to participate.

Agreement did not differ much according to site. Self-report did not agree with clinical assessment for 57/741 (7.7 percent) subjects at the Community Partners Adolescent Health Center, 9/95 (9.5 percent) at the Incarnation Health Center, and 15/248 (6.0 percent) at the Harris County Juvenile Detention Center. Agreement also did not differ much by race/ethnicity. Self-report did not agree with clinical examination for 58/766 (7.6 percent) Blacks, 19/228 (8.3 percent) Hispanics, and 4/79 (5.1 percent) Whites. Partially circumcised subjects and those who were unsure of their status were excluded from these analyses.

Of the 85 subjects who did not know their status and were asked to identify this status from a picture of a circumcised and uncircumcised penis, 28/34 (82 percent) of fully circumcised youth were able to do so, as were 22/51 (43 percent) of uncircumcised youth.

DISCUSSION

The adolescents in this study who thought they knew their circumcision status were correct more than 90 percent of the time. However, 23 percent of fully circumcised and 31 percent of uncircumcised youth did not know their status. These findings are similar to previous findings: for example, in a 1958 study (1), 33 percent of circumcised men did not know their status. A previous study of adolescents found that circumcised youth are more uncertain of their status than are the uncircumcised (8), which our study did not support. In a limited analysis, many of the youth who did not know their status could not correctly identify it from a picture.

Our results indicated that, in this group of mostly indigent, primarily Black and Hispanic youth, self-report of circumcision status was considered not to agree with the clinician, agreement was 67 percent (kappa = 0.35, p < 0.001).

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TABLE 1. Circumcision status of adolescent males seeking preparticipation sports examinations or health maintenance evaluations, Houston, Texas, May–September 2002

<table>
<thead>
<tr>
<th></th>
<th>Blasts (n = 961)</th>
<th>Hispanics (n = 431)</th>
<th>Whites (n = 98)</th>
<th>All subjects (n = 1,508)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. %</td>
<td>No. %</td>
<td>No. %</td>
<td>No. %</td>
</tr>
<tr>
<td>Fully circumcised</td>
<td>560 58</td>
<td>93 22</td>
<td>80 82</td>
<td>738 49</td>
</tr>
<tr>
<td>Uncircumcised</td>
<td>390 41</td>
<td>332 77</td>
<td>17 17</td>
<td>752 50</td>
</tr>
<tr>
<td>Partially circumcised</td>
<td>11 1</td>
<td>6 1</td>
<td>1 1</td>
<td>18 1</td>
</tr>
</tbody>
</table>

TABLE 2. Agreement between adolescent males and clinicians on subjects’ circumcision status, Houston, Texas, May–September 2002

<table>
<thead>
<tr>
<th>Subject</th>
<th>Clinician</th>
<th>Yes</th>
<th>No</th>
<th>Partially circumcised</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>Yes</td>
<td>512</td>
<td>69</td>
<td>27</td>
<td>4</td>
<td>28</td>
</tr>
<tr>
<td>No</td>
<td>54</td>
<td>7</td>
<td>491</td>
<td>65</td>
<td>9</td>
</tr>
<tr>
<td>Don’t know</td>
<td>172</td>
<td>23</td>
<td>233</td>
<td>31</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>738</td>
<td>100</td>
<td>751</td>
<td>100</td>
<td>18</td>
</tr>
</tbody>
</table>

* Percentages do not total 100 because of rounding.
Self-Assessment of Circumcision Status