Poster # 1065

Perceptions of and Motivations for VMMC Among Adolescents: A Multicountry Study

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BACKGROUND

The World Health Organization and the Joint United Nations Programmme on HIV/AIDS have set a Fast-Track goal to achieve 90% coverage of voluntary medical male circumcision (VMMC) among boys and men aged 10-21 years in priority settings by 2021. This study primarily aimed to characterize age-specific facilitators of VMMC uptake among adolescent boys (10-14 y) and older adolescents males (15-19 y).

METHODS

STUDY DESIGN

From 01/2016 to 09/2016, structured face-to-face interviews were conducted with adolescents (ages 10-19 y) seeking VMMC at 14 sites across South Africa, Tanzania, and Zimbabwe. Sites were selected using a purposive cluster sampling design. A quota sampling procedure was employed within each country, and a convenience sample was obtained at each site. Interviews were conducted in the local language prior to VMMC pre-procedure counseling session(s). Informed consent/assent was obtained for all participants. Parental informed consent was obtained for minors (<18 y).

STUDY MEASURES (OUTCOMES)

- **Level of Desire to Undergo VMMC.** The level of desire to undergo VMMC [today] was measured on a scale from 0-10, with 10 meaning the adolescent definitely wanted to be circumcised. This variable was dichotomized as 10 vs. ≤9 due to skewed responses.
- **Perceived Motivators to Undergo VMMC.** Adolescents were asked: "Why are you here to get circumcised today?" Multiple unprompted responses were allowed.
- **Concerns About Undergoing VMMC.** Adolescents were asked, "Is there anything that worries you about having the circumcision procedure today?" Multiple unprompted responses were allowed.
- **Perceived Descriptive Norms to Undergo VMMC.** Perceived descriptive norms refer to the perceived prevalence of a behavior. Perceived descriptive norms to undergo VMMC were measured by the item: "What percentage of your friends do you think are circumcised?" Responses were dichotomized as high (>50%) and low (≤50%).
- **Perceived Injunctive Norms to Undergo VMMC.** Perceived injunctive norms involve perceptions of whether a behavior is approved or disapproved. Perceived injunctive norms to undergo VMMC were evaluated by three 4-point items on a likert-scale. Items were summed to form a composite score (α=0.67), which was standardized and then dichotomized as high (+) and low (-).
- **Anticipated Stigma for Being Uncircumcised.** Anticipated stigma refers to one's expectations of negative treatment once a concealed identity is revealed. Anticipated stigma from peers (including females) for being uncircumcised was measured by two 4-point items on a likert scale. Items were summed to form a composite score (α=0.67), which was standardized and then dichotomized as high (+) and low (-).
- **Perceived Level of HIV Protection from VMMC.** Adolescents were asked, "Does circumcision protect a male from HIV?" and "Is a circumcised male's female sex partner protected from HIV?" If the adolescent said "yes" to either question, they were subsequently prompted to quantify "how much is [a male/his partner] protected?"

STATISTICAL ANALYSIS

The primary independent variable of interest was age group (10-14 y vs. 15-19 y). Adjusted prevalence ratios (aPR) were estimated by multivariable Poisson regression with GEE and robust variance estimation to account for site-level clustering; models were consistently adjusted for country and setting type (i.e., urban/periurban/rural).

RESULTS

FIGURE 1. Map of study sites.

TABLE 1. Characteristics of the study population.

Characteristic	10-14 y (n = 967)	15-19 y (n = 559)
Country		
South Africa	276 (28.5)	170 (30.4)
Tanzania	441 (45.6)	99 (17.7)
Zimbabwe	250 (25.9)	290 (51.9)
Setting		
Urban	488 (50.5)	318 (56.9)
Periurban	178 (18.4)	73 (13.1)
Rural	301 (31.1)	168 (30.1)
Religion		
Christian	916 (94.7)	535 (95.7)
Muslim	19 (2.0)	2 (0.4)
Traditional	6 (0.6)	9 (1.6)
Agnostic/other	19 (2.0)	13 (2.3)
Primary VMMC Info. Source		
Parent	79 (8.2)	18 (3.3)
Other Family	77 (8.0)	23 (4.2)
Peers	150 (15.6)	71 (12.9)
School	337 (35.1)	203 (36.9)
Health Worker [e]	278 (28.8)	190 (34.0)
Media	25 (2.6)	39 (7.1)
Other	13 (1.4)	7 (1.3)

Data are no. (%). Percentages may not add up to 100% due to missing data.

- **The majority of young adolescent boys (72.6%) and older adolescents (72.1%) reported a 10/10 desire for VMMC (aPR = 1.01 [95% CI, 0.97-1.06]).**
- **The most common reason adolescents sought VMMC was for protection from HIV/STIs, but young adolescent boys were less likely to report this as a reason for seeking VMMC in comparison to older adolescents (aPR = 0.77 [95% CI, 0.66-0.91]). Adolescents also sought VMMC for other reasons, many of which varied by age (Table 2).**
- **The most common concern adolescents had about undergoing VMMC was pain from the procedure/injection. Both young adolescent boys (44.5%) and older adolescents (66.4%) were concerned about pain (aPR = 0.95 [95% CI, 0.87-1.04]). In a seperate analysis, this fear of pain was negatively associated with a high level of desire for the procedure (aPR = 0.89 [95% CI, 0.83-0.96]) among young adolescent boys. This association between fear of pain and desire for VMMC was not observed among older adolescents (aPR = 1.00 [95% CI, 0.95-1.05]).**
- **Normative perceptions of VMMC varied by age and country (Figure 2). Young adolescent boys were less likely to report high descriptive VMMC norms (aPR = 0.79 [95% CI, 0.71-0.89]), high injunctive VMMC norms (aPR = 0.86 [95% CI, 0.73-1.00]), and high anticipated stigma for being uncircumcised (aPR = 0.79 [95% CI, 0.68-0.90]).**

TABLE 2. Perceived motivators to undergo VMMC.

Perceived motivators	10-14 y (n = 967)	15-19 y [ref] (n = 559)	aPR (95% CI)
To protect myself from HIV/STIs	569 (58.8)	469 (83.9)	0.77 (0.66-0.91)*
To improve hygiene/easier to clean	152 (15.7)	158 (28.3)	0.53 (0.37-0.74)*
Friends were doing/did it	95 (9.8)	43 (7.7)	0.86 (0.66-1.14)
To protect myself/partner from cancer	12 (1.2)	30 (5.4)	0.55 (0.41-0.76)*
Make my penis more attractive	25 (2.6)	17 (3.0)	0.66 (0.28-1.52)
Heard sex will be better	4 (0.4)	20 (3.6)	0.10 (0.05-0.22)*
To avoid stigma, shame, or ridicule	18 (1.9)	10 (1.8)	0.53 (0.17-1.68)
To become a man/adult	2 (0.2)	7 (1.3)	0.17 (0.06-0.54)*
Someone advised it (e.g., parent)	279 (28.9)	55 (9.8)	1.88 (1.54-2.29)*
Suggested by school	59 (6.1)	9 (1.6)	1.74 (1.07-2.85)*

*Data are no. (%) unless specified otherwise. The multivariable model included adjustment for country and setting type. * indicates P<0.05.*

TABLE 3. Perceived concerns about undergoing VMMC.

Perceived concern	10-14 y (n = 967)	15-19 y [ref] (n = 559)	aPR (95% CI)
Pain from procedure/injection	430 (44.5)	371 (66.4)	0.95 (0.87-1.04)
Duration of healing time	22 (2.3)	25 (4.5)	0.71 (0.28-1.78)
Sexual abstinence during wound healing	5 (0.5)	13 (2.3)	0.22 (0.09-0.62)*
Potential damage to penis	11 (1.1)	13 (2.3)	0.67 (0.30-1.51)

*Data are no. (%) unless specified otherwise. The multivariable model included adjustment for country and setting type. * indicates P<0.05.*

FIGURE 2. Normative perceptions of VMMC by age group and country.

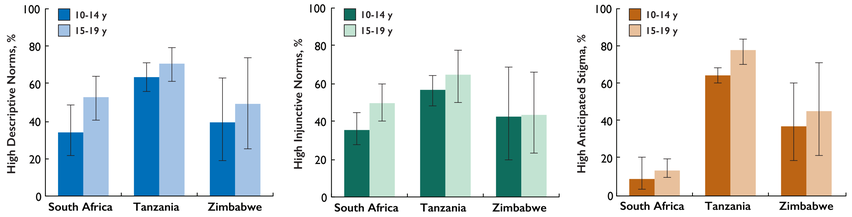
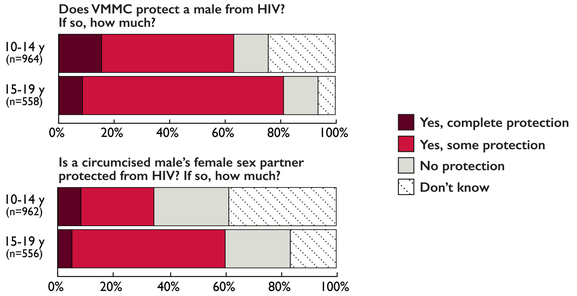


FIGURE 3. Perceived level of HIV protection from VMMC.



- **Young adolescent boys (47.8%) were less likely than older adolescents (72.6%) to correctly cite that VMMC only offers males partial protection from HIV (aPR = 0.73 [95% CI, 0.65-0.82]).**
- **Only 27.0% of young adolescent boys and 23.4% of older adolescents correctly cited that VMMC does not directly provide female partners HIV protection (aPR = 1.04 [95% CI, 0.86-1.26]).**

CONCLUSIONS

- **Building on social norms surrounding VMMC while alleviating concerns about pain may be key to increasing and/or sustaining adolescent demand for VMMC in South Africa, Tanzania, and Zimbabwe.**
- **Compared to older adolescents, young adolescent boys were less likely to seek VMMC for HIV/STI protection or hygiene reasons. On the other hand, young adolescent boys were more likely to report seeking VMMC because of external cues from others. Age differences in motivation for VMMC should be considered in the design and implementation of programmatic efforts for demand generation.**
- **There is an urgent need to implement educational initiatives to dispel misperceptions of VMMC in the community and appropriately counsel adolescents and their parent(s)/guardian(s) prior to the the procedure.**

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