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Who chooses vasectomy in Rwanda? Survey data from couples who chose vasectomy, 2010-2012

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Abstract

Background: Vasectomy is safe and highly effective; however, it remains an underused method of family planning (FP) in Africa. In view of this, three Rwandan physicians were trained in no-scalpel vasectomy with thermal cautery and fascial interposition on the prostatic end as vasectomy trainers in 2010, and this initiative has resulted in over 2900 vasectomy clients from February 2010 to December 2012.
Study design: This cross-sectional descriptive study describes vasectomy clients (n=316) and their wives (n=300) from 15 randomly selected hospitals in Rwanda.
Results: The vasectomy clients were mainly over age 40, had young children (age <3) and were married and cohabiting. Limited financial resources, satisfaction with existing family size and avoiding side effects from hormonal methods (wives′) were key motivators for vasectomy uptake. High rates of previous FP use and high degree of interspousal communication are known correlates of higher FP use.
Conclusions: Future and current Rwandan FP programs and other interested parties will benefit from understanding which couples elect vasectomy, their motivations for doing so and their service utilization experiences. Better integration of vasectomy counseling and postvasectomy procedures will benefit the program.
Implications: Until this project, vasectomy projects in sub-Saharan Africa were viewed as unrealistic. This study confirms factors influencing vasectomy uptake identified in earlier research, but does so within a robust sample of vasectomy users and their wives and provides a strong understanding of who likely vasectomy users are in this context. Promotion of vasectomy services should be considered as an essential element of a healthy contraceptive method mix.

Keywords: Vasectomy; Surgical sterilization; Africa; Rwanda; Male involvement

1. Introduction

Vasectomy is an underused contraceptive method in the developing world, despite being safe, effective and the least expensive long-acting or permanent contraceptive method (LA/PM) [1]. Vasectomy is also quicker to perform and safer than female sterilization [2,3]. Yet, vasectomy is half as prevalent as female sterilization in the developed world and even less common in many developing countries [4].

Worldwide, less than 2.4% of men of reproductive age have had a vasectomy [5]. In Africa, the prevalence of vasectomy is negligible, with the exception of South Africa and Namibia — with a vasectomy prevalence of 0.7% and 0.4% [5], respectively; in other parts of the world (Republic of Korea, Bhutan, United Kingdom, United States, Canada, New Zealand, and Australia), vasectomy prevalence is greater than 12% [5] (Table 1). Generally, the adoption of policy and programs to include vasectomy is influenced by sociocultural factors [6].

In 2003, the Permanent Smile campaign, one of the premier vasectomy projects in sub-Saharan Africa, was initiated by the Ghana Health Service and EngenderHealth to introduce and expand vasectomy services in Ghana. This program trained nurses and physicians in nonsurgical vasectomy (NSV), generated lessons learned from intensive marketing campaigns and led to approximately 400 men receiving vasectomies over the course of 10 years [7]. More

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Table 1
Vasectomy prevalence by continent, region and country

Continent	Vasectomy prevalence[a]	Regions with lowest prevalence	Countries with highest prevalence
Africa	0.0%	East, Middle, North & West Africa (0.0%)	South Africa (0.7%) Namibia (0.4%)
Asia	2.2%	Western Asia (Middle East) (0.1%)	Republic of Korea (16.8%) Bhutan (13.6%)
Europe	2.5%	Eastern Europe (0.2%)	UK (21.0%) Switzerland (8.3%) Netherlands (7.0%) Spain (7.0%)
Latin America & Caribbean	2.3%	Caribbean (0.4%)	Puerto Rico (5.3%) Brazil (5.1%)
North America	13.7%	US (12.7%)	Canada (21.0%)
Oceania	9.8%	Micronesia/Polynesia (0.3%)	New Zealand (19.5%) Australia (13.7%)

Source: United Nations, 2011.
[a] Percentage using contraception among women who are married or in union.

recently, studies on vasectomy acceptability in Africa have found that limited knowledge and societal misconceptions about the method hinder its uptake [8]. For example, in Nigeria, general knowledge of vasectomy is very low: 20.5% [9]. Only 6.8% of Nigerian men accept vasectomy as a viable option, and 67.7% believe that receiving a vasectomy is the equivalent of castration [10].

In Kenya, vasectomy clients were in mid–late 30s, were well educated (49% secondary or university), had large families (mean 5.5 children) and were in stable relationships (mean 14 years of marriage) [11]. Research on vasectomy in Africa has shown that increasing vasectomy uptake requires orienting family planning (FP) services toward men, increasing men's knowledge of the method through various media outlets and targeting spouses in tandem with potential clients. Regardless, vasectomy is still rarely considered an acceptable contraceptive option in this region of the world [6,12]. Rumors and misconceptions [6,12] and the lack of vasectomy promotion during FP counseling for either sex restrict vasectomy uptake [6,13].

In 2010, the Rwanda Ministry of Health, with technical assistance from FHI 360, took initial steps to reverse this trend by training three Rwandan physicians to become master vasectomy trainers in NSV with thermal cautery (TC) and fascial interposition (FI) on the prostatic end [14]. This method is now considered the most effective technique for vasectomy [15,16]. These master trainers, in turn, trained 64 physicians and 103 nurses in every district of Rwanda during the period of November 2010 to January 2012 [14]. In view of this, three Rwandan physicians were trained in NSV with TC & FI as vasectomy trainers in 2010, and this initiative has resulted in over 2900 vasectomies since the initial training (as communicated by the Rwanda Ministry of Health to J. Wesson, FHI 360, May 2013). Until now, there has been limited information about the Rwandan couples who decided to have a vasectomy, the reasons they chose vasectomy and the details of their vasectomy experience. Hence, this study used a representative sample of vasectomy clients from Rwanda and their wives to (a) provide a demographic profile of vasectomy clients and their wives, (b) list their motivations for choosing vasectomy and (c) describe their experiences accessing vasectomy services.

2. Research methods

2.1. Study setting

Rwanda is a mountainous country situated in the central highlands of Africa with a total population of approximately 10 million [17]. Over the last decade, the government of Rwanda has implemented several health-related initiatives that have greatly impacted the reproductive health statistics. For example, the overall fertility rate has fallen from 6.1 in 2005 to 4.6 in 2010 [17]. As a result of the health reforms across the country, the country has a strong health infrastructure, and top–down dissemination of information happens more rapidly than other African countries.

2.2. Sample selection

2.2.1. Sample size determination

We defined vasectomy clients as men who received a vasectomy after February 1, 2010, the date when NSV w/ cautery and FI training in Rwanda was implemented. To calculate our sample size, we used the occurrence of vasectomy-related complications as our primary outcome. We estimated that 10% of clients would have complications and adjusted the sample size to account for clustering effects among clients within the same facility (up to 5% intraclass correlation). Our target sample of 300 participants allows us to estimate the percentage of vasectomy clients experiencing complications after vasectomy with 5% precision and with a 95% confidence interval.

$$n = \frac{\rho(1-\rho)z\alpha 2/_2}{d^2} \times D$$

$$D = 1 + \rho(k-1)$$

Vasectomies in Rwanda are provided at hospitals and also at health centers during outreach visits, but vasectomy records