



## False beliefs predict increased circumcision satisfaction in a sample of US American men

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### ABSTRACT

Critics of non-therapeutic male and female childhood genital cutting claim that such cutting is harmful. It is therefore puzzling that ‘circumcised’ women and men do not typically regard themselves as having been harmed by the cutting, notwithstanding the loss of sensitive, *prima facie* valuable tissue. For female genital cutting (FGC), a commonly proposed solution to this puzzle is that women who had part(s) of their vulvae removed before sexual debut ‘do not know what they are missing’ and may ‘justify’ their genitally-altered state by adopting false beliefs about the benefits of FGC, while simultaneously stigmatising unmodified genitalia as unattractive or unclean. Might a similar phenomenon apply to neonatally circumcised men? In this survey of 999 US American men, greater endorsement of false beliefs concerning circumcision and penile anatomy predicted greater satisfaction with being circumcised, while among genitally intact men, the opposite trend occurred: greater endorsement of false beliefs predicted less satisfaction with being genitally intact. These findings provide tentative support for the hypothesis that the lack-of-harm reported by many circumcised men, like the lack-of-harm reported by their female counterparts in societies that practice FGC, may be related to holding inaccurate beliefs concerning unaltered genitalia and the consequences of childhood genital modification.

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## Introduction

Male circumcision is the surgical removal of part, or all, of the penile prepuce (foreskin; see Box 1) (Taylor, Lockwood, and Taylor 1996). Circumcision is by far the most common paediatric surgery performed in the USA (Witt, Weiss, and Elixhauser 2014), while it is much less common in other industrialised nations (Morris et al. 2016; UNAIDS 2010; Wallerstein 1985). Although this surgery is in rare instances indicated as a medical treatment for a specific foreskin-related problem (chiefly for recurrent, pathologic phimosis due to balanitis xerotica obliterans), it is overwhelmingly performed on healthy infants or young children for

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perceived prophylactic, cultural/cosmetic, or ethno-religious reasons (Rickwood 1999; Sneppen and Thorup 2016; UNAIDS 2010).

**Box 1.** A brief overview of the penile prepuce (foreskin).

According to Cold and Taylor (1999) the prepuce 'is an integral, normal part of the external [male] genitalia that forms the anatomical covering of the glans penis' (34). In this respect, it is similar to the clitoral prepuce in females, which similarly covers and protects the glans clitoris. One of its functions is to internalise the head of the penis including the urethral meatus, 'thus decreasing external irritation or contamination' (*Ibid.*) This feature may help to explain why meatal stenosis and other urethral stricture diseases, thought to be caused by abrasion of the exposed meatus, are far less common in genitally intact boys compared to circumcised boys (Frisch and Simonsen 2016). Similar to the eyelids, lips, anus, and female genital labia, the penile prepuce is a 'specialized, junctional mucocutaneous tissue which marks the boundary between mucosa and skin ... The unique innervation of the prepuce establishes its function as an erogenous tissue' (Cold and Taylor 1999, 34).

In the adult organ, the foreskin has an average surface area of approximately 30–50 square centimetres (Kigozi et al. 2009; Werker, Terng, and Kon 1998), constituting roughly half of the moveable skin system of the penis (Taylor, Lockwood, and Taylor 1996). Recent research using objective measures suggests that the foreskin is the most sensitive part of the penis to light touch, while also being significantly more sensitive than the head of the penis to sensations of warmth (Bossio, Pukall, and Steele 2016; Earp 2016c). As it is an elastic, retractable sleeve of tissue, the foreskin can be manipulated during sex and foreplay, whether manually or orally, thus providing specific subjective sensations that some men regard as being highly pleasurable (Ball 2006). Although 'the amount of genital tissue removed is variable ... the penile prepuce is removed in nearly all male circumcisions' (Cold and Taylor 1999, 34), thereby precluding such particular sensations.

When circumcision is performed in the absence of a strict medical indication, and on babies and young children who cannot provide their own consent, it raises a number of complex ethical issues (see, e.g., Benatar and Benatar 2003; Darby 2015, 2016; Foddy 2013; Hellsten 2004). Such non-therapeutic childhood male circumcision (NTC) has come under increased scrutiny in recent years, with some authors claiming it is a harmful practice, or even a violation of a child's right to bodily integrity (e.g., Fox and Thomson 2005; Frisch et al. 2013; Myers 2015; Svoboda 2013; Svoboda and Van Howe 2013; Ungar-Sargon 2015; for further discussion, see Earp 2015a; Earp 2017; Earp and Darby *Forthcoming*; Sardi 2011). Against this view, supporters of NTC often argue that the majority of men who were circumcised in infancy or early childhood do not regard themselves as having been harmed by the procedure – setting aside surgical mishaps – but rather see it as a neutral issue or even an improvement compared to the natural state (e.g., Jacobs and Arora 2015; Mazor 2013; Shweder 2013, 2016). Since most circumcised men do not regard circumcision as a harm, according to this view, there is little reason to attempt to curtail the practice.

Critics of NTC typically concede that most circumcised men do not regard themselves as having been harmed by circumcision. But they qualify this concession in one of two ways. First, they draw attention to the minority of circumcised men who do regard themselves as having been harmed – regardless of the occurrence of surgical complications – and suggest that the proportion of such men,<sup>1</sup> plus the magnitude of discontent expressed by some of them (despite barriers to reporting caused by social stigma, community pressure, fear of not being taken seriously, and so on), is great enough that reform is in fact needed (e.g., Boyle et al. 2002; Goldman 1999; Hammond 1999; Hammond and Carmack 2017; Watson 2014; see also Bossio and Pukall 2017). The second way they qualify their concession is to note that similar claims of feeling unharmed are expressed by the majority of 'circumcised' women (see Shell-Duncan and Hernlund 2000 for a discussion of this terminology) in

societies where non-therapeutic female genital cutting (FGC) is culturally normative, including its most invasive forms (e.g., Darby and Svoboda 2007, 305; Hammond and Carmack 2017, 196).

In other words, despite the fact that FGC is generally understood – at least by Western observers and by local dissenters<sup>2</sup> – to be extremely harmful, most women who have actually undergone FGC do not regard themselves as having been harmed on balance by the intervention, much less ‘mutilated’; to use the terminology of the World Health Organization (WHO 2008; see, e.g., Ahmadu 2000, 2007; Davis 2001; Obiora 1996; Public Policy Advisory Network on Female Genital Surgeries in Africa 2012). Instead, similar to many circumcised men in the USA, Israel, some Muslim-majority countries, and very often in their own communities, these women tend to perceive their modified vulvae as improved or enhanced compared to the natural state (e.g., ‘cleaner,’ more ‘feminine,’ more aesthetically appealing; see, e.g., Ahmadu and Shweder 2009; Earp 2016a; Manderson 2004; Shweder 2000).

One possible explanation for this discrepancy, i.e., between the harm judgements of critics and supporters of FGC, is that the latter may be on average or in certain respects less knowledgeable about the anatomy, functions, and sensory implications of surgically unmodified female genitalia (see, e.g., Abu-Sahlieh 1993; Ekwueme, Ezegwui, and Ezeoke 2010; Rahlenbeck and Mekonnen 2009; Sagna 2014). This hypothesised asymmetry in knowledge could be due, at least in part, to a lack of personal experience with the relevant tissue among ‘circumcised’ women (especially post sexual debut; see Box 2): in other words, if they were ‘circumcised’ early enough, they cannot truly ‘know what they are missing’. The hypothesised asymmetry could also be due to certain false and stigmatising beliefs among such women about the dangers of leaving a girl ‘uncircumcised’ (see Box 3), for example, the belief that girls with intact genitalia will be stubborn, promiscuous, or unable to control their sexual desires; that genital cutting is necessary for good hygiene or to prove virginity; or that babies will be harmed if they come into contact with their mother’s external clitoris during childbirth (Ekwueme, Ezegwui, and Ezeoke 2010; Gruenbaum 2005; Johansen 2017; Merli 2010).

**Box 2.** Genital cutting before vs. after sexual debut: implications for sexual experience.

It is important to emphasise that FGC takes place at many different ages depending on the community, including sometimes after the girl or woman has been sexually active and thus would have a basis for comparing ‘before’ versus ‘after’. There is evidence that, while many women regard their sexual experience as diminished after some types of cutting, others regard it as either ‘no different’ or even improved (Ahmadu 2000; Obermeyer 2005). Similar mixed findings apply to males who have been circumcised after sexual debut. For example, in one study of 255 circumcised men of whom 138 had been sexually active before circumcision,

*masturbatory pleasure decreased after circumcision in 48% of the respondents, while 8% reported increased pleasure. Masturbatory difficulty increased after circumcision in 63% of the respondents but was easier in 37%. About 6% answered that their sex lives improved, while 20% reported a worse sex life after circumcision. (Kim and Pang 2007, 619)*

What these inconsistent findings show is that genital cutting affects different individuals differently: depending on one’s mind-set and prior experiences going into the cutting, one’s preferences regarding modified versus unmodified genitalia, and other factors, the implications of the cutting for subjective sexual satisfaction may vary considerably (Earp 2016b, 2016c; Johnsdotter 2013). It is important to note, however, that adults who regard their sexual experience as improved after cutting are not randomly sampled from the population: insofar as they elected the cutting for themselves, they will have done so precisely because they were unsatisfied in some way with their genitals in an unmodified form; and insofar as the genital cutting offered relief from this dissatisfaction (whatever its source), one should expect subjective feelings of improvement along certain dimensions. Thus, the attitudes and experiences of adults who elected genital cutting cannot and should not be extrapolated to individuals whose genitals were cut in infancy or early childhood (Frisch and Earp 2016b).

In like manner, critics of NTC suggest that its supporters may also possess, either on average or with respect to certain issues, less knowledge about the anatomy, functions, and sensory implications of surgically unmodified male genitalia, while simultaneously being more likely to adopt false beliefs that appear to 'justify' the irreversible bodily alteration that has already taken place (Goldman 1997; Taylor, Lockwood, and Taylor 1996). For example, they may falsely believe (see Sneppen and Thorup 2016) that failure to undergo circumcision in infancy or early childhood will result in a high likelihood that the individual will need a circumcision 'anyway' for medical reasons later on (see, for example, Haaf 2006).

Consistent with these predictions, Goldman (1997) reported that only about 50% of the circumcised men in his survey who either did not mind, or had positive attitudes about, being circumcised were aware that the foreskin had any purpose (see Box 1). By contrast, of the circumcised men in his sample who wished that they had not been circumcised, 100% reported awareness that the foreskin had a purpose. In addition, Goldman found that those men who were glad to be circumcised were more likely than the others to underestimate the surface area of the adult foreskin. As Goldman (1997) notes:

These results suggest that the more awareness a man had of the impact of circumcision (i.e., that it involves the loss of a significant amount of tissue that has a purpose), the more likely he would be dissatisfied with being circumcised. Conversely, those who knew less about the impact of circumcision were more likely to be glad (or not care) that they were circumcised. (104)

Why might circumcised men know relatively little about the impact of circumcision, in terms of the genital structure it is designed to remove (i.e., the foreskin)? There are several possible explanations. One stems from the 'cognitive dissonance' hypothesis proposed in Box 3, which predicts less motivation to learn, believe, or recall positive information about the foreskin if one has been circumcised. Moreover, in addition to a lack of personal experience with the relevant tissue, there may also be a paucity of reliable information about the foreskin in general in circumcision-majority societies, including among medical professionals (e.g., Goldman 2004). Consistent with this view, a study of US medical textbooks found that the majority of those sampled failed to provide complete and accurate information about the penis in its natural state (Harryman 2004). For example, some textbooks depicted the human penis only in a post-surgical condition (i.e., circumcised), with no description of the tissue that must first be removed for the penis to appear that way. In such circumstances, it would be easy to form the impression that the foreskin is an expendable body part without significant value, a view that appears to be relatively uncommon outside of circumcising societies (see Androus 2013; Dekkers 2009; for further discussion, see Frisch and Earp 2016a).

To test these ideas, we conducted a survey of circumcised and non-circumcised men in the USA. We assessed the degree of satisfaction they felt toward their circumcision status (i.e., circumcised vs. not circumcised) as well as their endorsement of various beliefs, both true and false, pertaining to circumcision and intact male genitalia. Following Goldman (1997), we hypothesised that, among circumcised men, greater endorsement of false beliefs would predict greater satisfaction with their circumcision status. Since such beliefs tend to normalise circumcised penises and/or stigmatise intact male genitalia – at least in majority (male) circumcised societies such as the USA – we predicted that the opposite relationship would hold for genitally intact men. That is, the greater number of false beliefs they endorsed, the less satisfied we expected them to be with not being circumcised.

While building on Goldman's (1997) preliminary research, our study differs from his in several important ways. First, Goldman's study used a non-representative convenience

**Box 3. Epistemic asymmetries and cognitive dissonance: male and female genital cutting.**

Like US American men who were circumcised in infancy, women who have undergone childhood FGC in societies where male and female genital cutting are culturally normative do not typically feel harmed by their genital modifications, although a vocal minority in each group does (Silverman 2004). Rather, these women tend to feel 'normal' or even enhanced (Public Policy Advisory Network on Female Genital Surgeries in Africa 2012; Shweder 2016). To explain this phenomenon, it is sometimes argued that the women must not 'know what they are missing' or otherwise lack relevant information that might alter their assessment (see main text; see also Dickerson 2007). Against this view, however, it has been noted that a similar epistemic asymmetry exists in the opposite direction that must also be taken into account (e.g., Nnaemeka 2001). Specifically, Western women with 'uncut' genitalia cannot know, subjectively, what it is like to have vulvae that were surgically modified in childhood. They may therefore make certain assumptions about the subjective experiences of women who have undergone such modification that do not consistently reflect the full reality (see, e.g., Ahmadu 2007). For example, among other myths and misperceptions (see, e.g., James and Robertson 2002; Obiora 1996), these Westerners may erroneously believe that excision of the external clitoral glans or other sensitive tissues necessarily eliminates the capacity for orgasm, failing to realise that most of the clitoris is underneath the skin and that orgasm and other forms of sexual pleasure are in fact common in 'circumcised' women (e.g., Abdulcadir et al. 2016; Catania et al. 2007; Obermeyer 2005; Shweder 2013).

That pleasure and orgasm are possible despite FGC does not, of course, entail that a woman's sexual experience would be no different had her genitals been left intact (Earp 2016b). The same is true for men who have undergone infant circumcision. In both cases, at minimum, any sensation that would have been experienced 'in' the excised tissue itself is necessarily eliminated; and the *risk* of adverse sexual consequences due to the cutting is bound to increase by some amount (Earp 2016b). Moreover, there is an important asymmetry between 'cut' and 'uncut' individuals in terms of the likely need to engage in motivated reasoning to (re)construe their genital status as superior to the alternative (e.g., through the adoption of inaccurate beliefs that stigmatise 'uncircumcised' individuals or exaggerate the benefits of genital modification). Specifically, a person who has not had his/her genitalia altered, but would like them to be, can undertake such a change at an age of maturity, leaving an option open to rectify an undesired situation. By contrast, one whose genitalia were altered in childhood but who might resent this cannot typically 'reverse' the alteration (Earp and Darby 2017; Earp and Shaw 2017). This lack of an option for (physical) rectification in the latter case predicts a greater likelihood of experiencing cognitive dissonance if confronted with the possibility that one's current genital status may be undesirable; this dissonance would then need to be resolved in some way (see generally, Harmon-Jones and Harmon-Jones 2007). One plausible way to resolve it would be through a process of motivated reasoning of the sort just described, i.e., by adopting a 'sour grapes' attitude toward the excised tissue (Earp and Shaw 2017). However, careful empirical research is needed to test this hypothesis directly; such research is currently lacking.

sample of persons attending a men's conference. As he notes, 'Attendees to a men's conference are likely to be more sensitive to men's issues and to have had exposure to men's publications that might have discussed circumcision' (Goldman 1997, 104). By contrast, we framed our study in a general way to avoid such biased sampling, and drew from a more demographically diverse population of Amazon Mechanical Turk (MTurk) workers (see Buhrmester, Kwang, and Gosling 2011).<sup>3</sup> Second, Goldman's sample size was relatively small ( $N = 56$ ), while ours was relatively large ( $N = 999$ ). Finally, Goldman used just two questions to assess men's knowledge about foreskin size and function, whereas we worked with experts to develop a more robust, 10-item measure assessing men's knowledge of foreskin anatomy as well as circumcision-related issues more generally.

## Method

### Participants

There are no effect size estimates in the literature for studies employing these materials and methods. Moreover, our hypotheses concerned the existence and direction of the predicted effects rather than their magnitude. Therefore, initial power analyses to establish desired sample size were not performed. Sample size was instead determined by available funding.<sup>4</sup>

A total of 999 US participants completed the entire survey. To take the survey, participants had to agree that they were a man of at least 18 years of age. Participants were excluded if they did not know, or preferred not to report, their circumcision status; if their circumcision took place after the infant period (up to 1 year old); if they failed at least one of two embedded attention checks; or if they chose not to answer one of the main outcome variables.

This left 902 male participants, ranging in age from 18–75 ( $M = 34.0$ ,  $SD = 10.0$ ). Of those 902 participants, 732 identified as circumcised and 170 as non-circumcised. Additional demographic information can be found in the Appendix (see Supplementary Material).

## **Measures**

### ***Circumcision status***

To assess circumcision status, participants were asked ‘To your knowledge, are you circumcised?’ They were given the option of answering ‘Yes’, ‘No’, ‘I don’t know’, and ‘Prefer not to answer’. Participants who responded ‘Yes’ were asked to report, if they knew, when their circumcision occurred and whether there were any complications. Additional items asking about the reasons why participants were circumcised or not circumcised, where they were circumcised, etc., were also administered, but these data were not analysed for the present report. Only participants who answered ‘Yes’ or ‘No’ were included in subsequent analyses.<sup>5</sup>

### ***False beliefs***

This measure consisted of 10 items, and was presented to participants as a ‘Penile Anatomy and Circumcision Quiz’. In designing this measure, the present researchers were sensitive to several issues. First, we needed to include items for which there was an objectively correct answer, or at least an answer about which there is very little disagreement among qualified experts. This was deemed to be important because many common assertions about circumcision, including claims about its effects on sexual function, the likelihood and magnitude of various benefits and risks that are associated with it, and so on, are hotly contested even among scholarly authorities (Collier 2012); indeed, the literature in this area is polarised (see Earp 2015b; see also Earp and Darby 2017). Second, we needed to make sure that there was a reasonable mix of ‘positive’ and ‘negative’ claims about circumcision (and the foreskin), so that participants would not feel that there was a bias to the questions one way or the other, which might raise suspicions or possible experimenter demand issues. Third, we needed to make sure that the assessed beliefs covered a range of areas – from facts about anatomy, to medical consequences, to prevalence estimates, to cultural norms – so that results would not be confounded by having been drawn from too narrow a domain of interest. Finally, we needed to make sure that the quiz was not too long, such that participants would be more likely to complete the entire survey.

To aid with these issues, we recruited two outside experts – one who is well-known for arguing in favour of the permissibility of NTC, and one who is well-known for arguing against its permissibility – to provide feedback on our initial list of items. We asked the experts to assess the degree to which there was one, and only one, correct answer for each question (on which both critics and proponents of NTC would agree), and to suggest any necessary changes to wording in cases where there was ambiguity. We also asked for feedback on any wording that might suggest a ‘bias’ either in favour of, or against, NTC, and we modified items accordingly. Items included statements such as, ‘Most medical associations around

the world that have issued statements on routine new-born male circumcision recommend the procedure' (False); 'After birth, a boy who has *not* been circumcised should have his foreskin "retracted" or pulled back as soon as possible to facilitate cleaning' (False); and 'According to the American Academy of Pediatrics, there is good evidence that being circumcised is associated with a lower incidence of urinary tract infections (UTIs) in boys under the age of 2' (True). Participants were asked to mark 'True' or 'False' in response to each item; incorrect answers were summed to produce a False Belief Score. The complete list of final items may be found in the Appendix.

### ***Circumcision satisfaction***

Participants were asked three questions<sup>6</sup> to assess their degree of satisfaction with their circumcision status: 'How satisfied/dissatisfied are you with your circumcision status?' (1 = very dissatisfied, 2 = dissatisfied, 3 = neither satisfied nor dissatisfied, 4 = satisfied, 5 = very satisfied); 'How much is your circumcision status a positive/negative issue for you in your everyday life?' (1 = a very negative issue, 2 = a negative issue, 3 = neither a negative nor a positive issue, 4 = a positive issue, 5 = a very positive issue); 'How positively/negatively does your circumcision status affect your sexual experience (if you are sexually active)?' (1 = very negatively, 2 = negatively, 3 = neither negatively nor positively, 4 = positively, 5 = very positively). These three items showed good internal consistency (Cronbach's  $\alpha = .79$ ) and were moderately positively intercorrelated ( $r_s = .50-.66$ ;  $p_s < .001$ ). They were therefore averaged to form a Circumcision Satisfaction Score.

### ***Procedure***

Study procedures were approved by the Institutional Review Board (IRB) where funding was granted (Quinnipiac University). The study was conducted with workers from Amazon's Mechanical Turk (MTurk) marketplace, who were paid \$1.00 for their time. For purposes of recruitment, the study was described as a 'Men's Sexual and Reproductive Behavior and Knowledge Questionnaire', so that prospective participants would not know in advance that they would be asked questions about circumcision specifically. This was in order to avoid any possible selection biases, for example, overrepresentation of men with especially strong feelings about circumcision. After providing informed consent, participants were given a 'Men's Sexual and Reproductive Health Knowledge Quiz', consisting of various filler questions designed to make the cover story more credible. These questions purported to assess their knowledge of general men's sexual health and reproductive issues unrelated to circumcision, such as the prevalence of prostate cancer, what a vasectomy entails, and so on. They were then told, 'In the next part of the survey, we are going to focus on additional male reproductive and sexual health issues. In this section, the questions will relate to the topic of male circumcision, a common men's health issue.' This wording was chosen to imply that questions relating to circumcision were just a part of the overarching survey, and not the specific focus of the study.

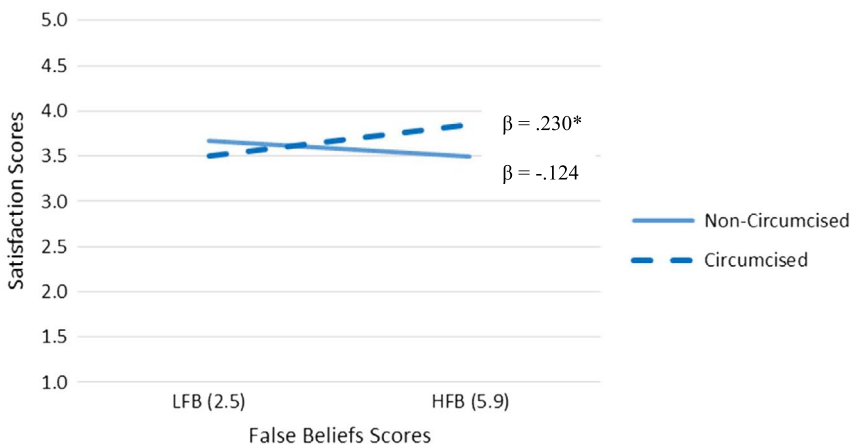
Next, participants were administered the *Circumcision Status* and *Circumcision Satisfaction* items described above, followed by the *False Beliefs* measure. Then, demographic information was collected, and participants were fully debriefed (online).

## Results

A linear regression was conducted with Circumcision Status and False Belief Score predicting Circumcision Satisfaction. Consistent with Aiken and West (1991), to ensure that the interaction term was orthogonal to its constituent variables, Circumcision Status was coded (0 = not circumcised, 1 = circumcised) and False Belief Scores were centred (with an overall mean of 0). The interaction term for each participant was then created by multiplying Circumcision Status by the centred False Belief Score. A statistically significant Circumcision Status by False Belief Score interaction was observed:  $B = .160, SE = .039, p < .001 (\beta = .326)$ . Simple slopes analyses demonstrated that, as hypothesised, for circumcised men, as the proportion of false beliefs increased, so did their degree of satisfaction with their circumcised state ( $B = .102, SE = .016, p < .001; \beta = .230$ ). For non-circumcised men, although not statistically significant, the opposite pattern was observed: as the proportion of false beliefs increased, their degree of satisfaction tended to decrease ( $B = -.058, SE = .036, p = .106; \beta = -.124$ ); see Figure 1. *Post hoc* power analyses revealed that roughly three times as many non-circumcised participants would have been needed for this latter effect to be statistically significant by conventional standards (see Lakens et al. 2017). For additional results and related exploratory analyses, see the Appendix.

## Discussion

This study found that, in a large sample of US American men, greater endorsement of false beliefs concerning circumcision and the foreskin predicted greater satisfaction with circumcision status among circumcised participants; while, among non-circumcised participants, the opposite pattern was seen (albeit not statistically significant). These data are consistent with, and build on, research conducted by Goldman (1997). In his informal study with a small, non-representative sample, Goldman (1997) provided preliminary evidence that circumcised men with positive attitudes about their circumcision status may know less about the anatomy and functions of the foreskin compared to such men who have negative attitudes about their circumcision status.



**Figure 1.** Linear regression analyses predicting Circumcision Satisfaction from Circumcision Status and False Belief Score. As False Belief Scores move from Lower (LFB =  $-1$  SD) to Higher (HFB =  $+1$  SD), circumcised men show greater satisfaction, while non-circumcised men show lesser satisfaction. \*  $p < .001$ .



Goldman speculated that the more awareness a man had of basic issues regarding the inherent (as opposed to contested or probabilistic) effects of circumcision – namely, that it involves the removal of a substantial amount of functional tissue – the more he would be dissatisfied with being circumcised. The present study, involving a much larger, more demographically diverse sample and employing robust measures of circumcision-related beliefs and satisfaction, provides additional, albeit still tentative, support for the hypothesis advanced by Goldman (1997).

Why might many circumcised men, like their female counterparts in societies where female ‘circumcision’ is the norm, fail to regard the loss of sensitive genital tissue in infancy or early childhood as a harm? The answer explored here is that they may lack sufficient or accurate information regarding the anatomy and functions of the intact penis (or vulva), and about the consequences, both positive and negative, that have been reliably associated with their genital surgeries. Consistent with this perspective, in the present study, 49% of circumcised men ( $n = 359$ ) reported that they are not confident that they would be able to identify if there were complications from their circumcision, while only 26% ( $n = 193$ ) reported that they knew the reason why they were circumcised. Such men may also harbour false beliefs, as seen in the current sample, that reflect and reinforce wider cultural stigmatisation of surgically unmodified genitalia (see Waldeck 2003, for a theoretical analysis).

Cultural expectations, in the form of scripts or norms for example, undoubtedly play a large role in shaping individuals’ attitudes toward their own (and their children’s) genital status, whether modified or unmodified. To illustrate just how strong such cultural forces may be, consider that many ‘circumcised’ women do not want to ‘burden (their) daughter with excess clitoral and labial tissue that is unhygienic, unsightly, and interferes with sexual penetration’ (Ahmadu and Shweder 2009, 17); these women report having the same desire for ‘healthy and aesthetically pleasing genitalia’ in their daughters as they would want for their sons, leading them to endorse genital cutting of both boys and girls – an attitude that many Western mothers would presumably find shocking.

This is not to say that ‘cultural’ beliefs are necessarily false. Culturally influenced aesthetic preferences, in particular, come down to a matter of opinion, and reasonable people can disagree about what should be considered beautiful or normal. But it is precisely the subjectivity of such beliefs that introduces uncertainty into the system: when attitudes and expectations are not rooted in cross-cultural universals, but are rather variant or unstable across time and space, they may be susceptible to being questioned as individuals learn new information or begin to see things in a different light (see Earp and Darby 2017).

For example, after hearing about societies that do not routinely modify children’s genitalia, engaging in a sexual encounter with someone who has not undergone such a modification, or learning about the properties or functions of the excised genital tissue (i.e., properties that one might reasonably regard as having value), some adults of all genders experience a ‘perspective shift’. They begin to reconsider their feelings about their own genital status or about the practice of genital modification generally, sometimes resulting in very negative attitudes and emotions (Earp and Steinfeld 2017; Johansen 2017; Johnsdotter and Essén 2016; for further discussion, see Earp and Darby *forthcoming*). Thus, while the majority of circumcised men and women in societies where nontherapeutic childhood genital cutting is culturally entrenched appear to regard their modified genitalia as ‘normal’, a minority of both sexes,<sup>7</sup> upon reflection, come to express anger and resentment at not having been able to provide their own informed consent for the procedure when they were old enough to understand what was at stake (Bossio and Pukall 2017; Earp and Darby 2017; Earp and Steinfeld 2017; Hammond and Carmack 2017).

In this study, we have provided preliminary evidence that male circumcision satisfaction may be positively associated with holding false beliefs about circumcision and the foreskin, with inaccurate judgments tending to be biased in a way that (1) supports the prevailing cultural norm and (2) reinforces stigmatisation of surgically unaltered male genitalia. A strength of the study is that the statistical analyses were confirmatory, based upon a single, a priori hypothesis, rather than exploratory in nature or based on HARKing (hypothesising after the results are known; see Kerr 1998). In addition, apart from a small pilot study to gather feedback on the wording of items, there is no 'file drawer' to potentially skew the findings (see Earp and Trafimow 2015; Rosenthal 1979). A further notable characteristic, especially compared to the earlier research by Goldman (1997), is the relatively large and demographically diverse sample – although we do not claim that our findings can be extrapolated beyond this group. Weaknesses include the correlational rather than experimental design of the study, and the use of non-validated measures as the primary outcome variables.

Future studies should explore the role of demographic factors in influencing the extent to which men are exposed to, process, believe, and recall positive and negative information regarding the foreskin and circumcision, and the effects of these factors on satisfaction. Do race, religion, or sexual orientation<sup>8</sup> affect satisfaction, the endorsement of false beliefs, or interactions among these variables? The theory of motivated reasoning (Kunda 1990) predicts that circumcised men will seek out information that supports circumcision and discount or ignore information that weighs against it. Future research should explore this hypothesis directly. Finally, similar research questions apply to nontherapeutic female genital cutting (FGC), and a replication of the present study in an FGC-practising society with female participants would be most welcome. We hope to address these and other questions in forthcoming work.

## Notes

1. Reliable figures are hard to come by, but a recent YouGov poll concluded that 10% of circumcised US American men wish that they had not been circumcised (Moore 2015); in the present sample, this figure was 13.6% (see Earp and Darby 2017 for further discussion).
2. There is a growing body of scholarship disputing the Western near-consensus that the risk of sexual and health-related harms associated with FGC is as great as is commonly portrayed in that discourse (see, e.g., Ahmadu and Shweder 2009; Catania et al. 2007; Johnsdotter 2013; Obermeyer 1999, 2003, 2005). Scholars in this camp note that FGC falls on a spectrum, with some forms being comparatively minor (such as a 'prick' to the clitoral hood that does not remove tissue); that it can be carried out in more or less hygienic conditions, and is, in fact, increasingly being carried out by trained medical professionals in sterile settings; and that even the most invasive forms of FGC remove only a small portion of the (external) clitoris since most of the structure is subcutaneous (Abdulcadir et al. 2016), thus leaving sufficient tissue for sexual pleasure and orgasm in many if not most cases (Catania et al. 2007). For a critical discussion of some of these points, see Earp (2016b), especially the Appendix.
3. According to Hauser and Schwarz (2016), MTurk workers have been found to be more attentive to instructions than collegiate samples. Moreover, according to Silberman et al. (2015), MTurk workers lean heavily toward being US-based, which was the population of interest for this study. For more information on the demographic characteristics of our sample, please see the Appendix to this article, which can be found in the Supplementary Materials.
4. For a *post hoc* power analysis (Faul et al. 2007, 2009) and related discussion, see the Appendix.
5. Previous research has shown that many men do not know whether they are circumcised, or incorrectly identify their circumcision status (Risser et al. 2004). To address this issue, an

additional measure of circumcision status adapted from Bossio (2015) was administered: see Appendix. Re-running analyses using the second measure resulted in similar findings to those reported in the main text.

6. A fourth question was initially included in the survey, namely, 'How happy or unhappy are you with being circumcised?' However, due to a programming error, some participants did not see this question. Therefore, we were not able to include it in the final scale. Dropping versus including this question does not substantially affect the main findings in the study.
7. We note that many intersex individuals come to express similar negative feelings upon learning of the medically unnecessary genital surgeries to which they were subjected in early childhood in an effort to conform their ambiguous genitals to a perceived gender binary. See the references collected in Earp and Steinfeld (2017).
8. Among gay men and other men who have sex with men, one question worth exploring is whether the extent and quality of one's experience with sexual partners of the same/different circumcision status affect one's satisfaction with one's own status. Moreover, investigation of the attitudes and experiences of the sexual partners of circumcised and non-circumcised men (in terms of their sexual satisfaction and its relationship to their endorsement of false beliefs) should also be undertaken. We thank an anonymous reviewer for suggesting these ideas as possible avenues of further investigation.

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## Disclosure statement

The first author has published articles in the bioethics literature that raise normative concerns about nontherapeutic surgeries performed on minors, including surgeries for hypospadias (Carmack, Notini, and Earp 2016) and routine male and female circumcision (Earp 2015c). To protect against any possible bias, outside experts were recruited to review study materials in advance of data collection (as described above), and all data analysis was conducted by the third author, who has no prior engagement with this subject matter. The data were then subsequently provided to the journal and the peer reviewers, one of whom conducted an independent analysis to reproduce the findings. No financial or other conflict of interest is reported by any of the authors.

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## References

- Abdulcadir, J., D. Botsikas, M. Bolmont, A. Bilancioni, D. A. Djema, F. B. Demicheli, M. Yaron, and P. Petignat. 2016. "Sexual Anatomy and Function in Women with and without Genital Mutilation: A Cross-sectional Study." *Journal of Sexual Medicine* 13 (2): 226–237.

- Abu-Sahlieh, S. A. A. 1993. "To Mutilate in the Name of Jehovah or Allah: Legitimization of Male and Female Circumcision." *Medicine and Law* 13 (7–8): 575–622.
- Ahmadu, F. S. 2000. "Rites and Wrongs: An Insider/outside Reflects on Power and Excision." In *Female 'Circumcision' in Africa: Culture, Controversy, and Change*, edited by B. Shell-Duncan and Y. Hernlund, 283–315. Boulder: Lynne Rienner.
- Ahmadu, F. S. 2007. "Ain't I a Woman Too? Challenging Myths of Sexual Dysfunction in Circumcised Women." In *Transcultural Bodies*, edited by Y. Hernlund and B. Shell-Duncan, 278–310. New Brunswick: Rutgers University.
- Ahmadu, F. S., and R. A. Shweder. 2009. "Disputing the Myth of the Sexual Dysfunction of Circumcised Women." *Anthropology Today* 25 (6): 14–17.
- Aiken, L. S., and S. G. West. 1991. *Multiple Regression: Testing and Interpreting Interactions*. Newbury Park, CA: SAGE.
- Androus, Z. T. 2013. "Critiquing Circumcision. In Search of a New Paradigm for Conceptualizing Genital Modification." *Global Discourse* 3 (2): 266–280.
- Ball, P. J. 2006. "A Survey of Subjective Foreskin Sensation in 600 Intact Men." In *Bodily Integrity and the Politics of Circumcision*, edited by G. C. Denniston, P. G. Gallo, F. M. Hodges, M. F. Milos, and F. Vivani, 177–188. New York, NY: Springer.
- Benatar, M., and D. Benatar. 2003. "Between Prophylaxis and Child Abuse: The Ethics of Neonatal Male Circumcision." *American Journal of Bioethics* 3 (2): 35–48.
- Bossio, J. A. 2015. "Examining Sexual Correlates of Neonatal Circumcision in Adult Men." PhD Dissertation, Queen's University. [https://qspace.library.queensu.ca/bitstream/handle/1974/13627/Bossio\\_Jennifer\\_A\\_201509\\_PhD.pdf;jsessionid=C5ECA44D6FD4936D91574C7B7A7CCE74?sequence=1](https://qspace.library.queensu.ca/bitstream/handle/1974/13627/Bossio_Jennifer_A_201509_PhD.pdf;jsessionid=C5ECA44D6FD4936D91574C7B7A7CCE74?sequence=1)
- Bossio, J. A., and C. F. Pukall. 2017. "Attitude Toward One's Circumcision Status Is More Important than Actual Circumcision Status for Men's Body Image and Sexual Functioning." *Archives of Sexual Behavior*. Advance online publication. <https://link.springer.com/article/10.1007%2Fs10508-017-1064-8>
- Bossio, J. A., C. F. Pukall, and S. S. Steele. 2016. "Examining Penile Sensitivity in Neonatally Circumcised and Intact Men using Quantitative Sensory Testing." *Journal of Urology* 195 (6): 1848–1853.
- Boyle, G. J., R. Goldman, J. S. Svoboda, and E. Fernandez. 2002. "Male Circumcision: Pain, Trauma and Psychosexual Sequelae." *Journal of Health Psychology* 7 (3): 329–343.
- Buhrmester, M., T. Kwang, and S. D. Gosling. 2011. "Amazon's Mechanical Turk: A New Source of Inexpensive, yet High-quality, Data?" *Perspectives on Psychological Science* 6 (1): 3–5.
- Carmack, A., L. Notini, and B. D. Earp. 2016. "Should Surgery for Hypospadias be Performed Before an Age of Consent?" *Journal of Sex Research* 53 (8): 1047–1058.
- Catania, L., O. Abdulcadir, V. Puppo, J. B. Verde, J. Abdulcadir, and D. Abdulcadir. 2007. "Pleasure and Orgasm in Women with Female Genital Mutilation/Cutting (FGM/C)." *Journal of Sexual Medicine* 4 (6): 1666–1678.
- Cold, C. J., and J. R. Taylor. 1999. "The Prepuce." *BJU International* 83 (S1): 34–44.
- Collier, R. 2012. "Ugly, Messy and Nasty Debate Surrounds Circumcision." *Canadian Medical Association Journal* 184 (1): E25–E26.
- Darby, R. 2015. "Risks, Benefits, Complications and Harms: Neglected Factors in the Current Debate on Non-Therapeutic Circumcision." *Kennedy Institute of Ethics Journal* 25 (1): 1–34.
- Darby, R. 2016. "Targeting Patients Who Cannot Object? Re-examining the Case for Non-therapeutic Infant Circumcision." *SAGE Open* 6 (2): 2158244016649219.
- Darby, R., and J. S. Svoboda. 2007. "A Rose by any other Name? Rethinking the Similarities and Differences between Male and Female Genital Cutting." *Medical Anthropology Quarterly* 21 (3): 301–323.
- Davis, D. S. 2001. "Male and Female Genital Alteration: A Collision Course with the Law?" *Health Matrix* 11 (2): 487–570.
- Dekkers, W. 2009. "Routine (Non-religious) Neonatal Circumcision and Bodily Integrity: A Transatlantic Dialogue." *Kennedy Institute of Ethics Journal* 19 (2): 125–146.
- Dickerson, D. J. 2007. "Crazy as They Need to Be: Circumcised Women Who Support the Practice." *Mother Jones*, December 3. Accessed October 26, 2017. <http://www.motherjones.com/politics/2007/12/crazy-they-need-be-circumcised-women-who-support-practice/>
- Earp, B. D. 2015a. "Sex and Circumcision." *American Journal of Bioethics* 15 (2): 43–45.
- Earp, B. D. 2015b. "Addressing Polarisation in Science." *Journal of Medical Ethics* 41 (9): 782–784.

- Earp, B. D. 2015c. "Female Genital Mutilation and Male Circumcision: Toward an Autonomy-based Ethical Framework." *Medicolegal and Bioethics* 5 (1): 89–104.
- Earp, B. D. 2016a. "Between Moral Relativism and Moral Hypocrisy: Reframing the Debate on 'FGM.'" *Kennedy Institute of Ethics Journal* 26 (2): 105–144 and E1–E28.
- Earp, B. D. 2016b. "In Defence of Genital Autonomy for Children." *Journal of Medical Ethics* 41 (3): 158–163.
- Earp, B. D. 2016c. "Infant Circumcision and Adult Penile Sensitivity: Implications for Sexual Experience." *Trends in Urology & Men's Health* 7 (4): 17–21.
- Earp, B. D. 2017. "The Right to Bodily Integrity and the Concept of Sexual Harm." *Journal of Sexual Medicine* 14 (5 - Supp. 4): e239.
- Earp, B. D., and R. Darby. 2017. "Circumcision, Sexual Experience, and Harm." *University of Pennsylvania Journal of International Law* 37 (2 online): 1–57.
- Earp, B. D., and R. Darby. Forthcoming. "Circumcision, Autonomy, and Public Health." *Public Health Ethics*.
- Earp, B. D., and D. Shaw. 2017. "Cultural Bias in American Medicine: The Case of Infant Male Circumcision." *Journal of Pediatric Ethics* 1 (1): 9–26.
- Earp, B. D., and R. Steinfeld. 2017. "Gender and Genital Cutting: A New Paradigm." In *Gifted Women, Fragile Men*, edited by T. G. Barbat. Brussels: ALDE Group-EU Parliament. <http://euromind.global/en/brian-d-earp-and-rebecca-steinfeld/>
- Earp, B. D., and D. Trafimow. 2015. "Replication, Falsification, and the Crisis of Confidence in Social Psychology." *Frontiers in Psychology* 6 (621): 1–11.
- Ekwueme, O. C., H. U. Ezegwui, and U. Ezeoke. 2010. "Dispelling the Myths and Beliefs toward Female Genital Cutting of Woman: Assessing General Outpatient Services at a Tertiary Health Institution in Enugu state, Nigeria." *East African Journal of Public Health* 7 (1): 64–67.
- Faul, F., E. Erdfelder, A.-G. Lang, and A. Buchner. 2007. "G\*Power 3: A Flexible Statistical Power Analysis Program for the Social, Behavioral, and Biomedical Sciences." *Behavior Research Methods* 39: 175–191.
- Faul, F., E. Erdfelder, A. Buchner, and A.-G. Lang. 2009. "Statistical Power Analyses using G\*Power 3.1: Tests for Correlation and Regression Analyses." *Behavior Research Methods* 41: 1149–1160.
- Foddy, B. 2013. "Medical, Religious and Social Reasons for and against an Ancient Rite." *Journal of Medical Ethics* 39 (7): 415.
- Fox, M., and M. Thomson. 2005. "A Covenant with the Status Quo? Male Circumcision and the new BMA Guidance to Doctors." *Journal of Medical Ethics* 31 (8): 463–469.
- Frisch, M., and B. D. Earp. 2016a. "Circumcision of Male Infants and Children as a Public Health Measure in Developed Countries: A Critical Assessment of Recent Evidence." *Global Public Health*. Advance online publication. <http://www.tandfonline.com/doi/full/10.1080/17441692.2016.1184292>
- Frisch, M., and B. D. Earp. 2016b. "Problems in the Qualitative Synthesis Paper on Sexual Outcomes Following Non-Medical Male Circumcision by Shabanzadeh et al." *Danish Medical Journal* 63 (7): A5245.
- Frisch, M., and J. Simonsen. 2016. "Cultural Background, Non-therapeutic Circumcision and the Risk of Meatal Stenosis and other Urethral Stricture Disease: Two Nationwide Register-based Cohort Studies in Denmark 1977–2013." *The Surgeon*. Advance online publication. <http://www.sciencedirect.com/science/article/pii/S1479666X16301792>
- Frisch, M., Y. Aigrain, V. Barauskas, R. Bjarnason, S. A. Boddy, P. Czauderna, M. Gahr, et al. 2013. "Cultural Bias in the AAP's 2012 Technical Report and Policy Statement on Male Circumcision." *Pediatrics* 131 (4): 796–800.
- Goldman, R. 1997. *Circumcision: The Hidden Trauma*. Boston, MA: Vanguard Publications.
- Goldman, R. 1999. "The Psychological Impact of Circumcision." *BJU International* 83 (S1): 93–102.
- Goldman, R. 2004. "Circumcision Policy: A Psychosocial Perspective." *Paediatrics & Child Health* 9 (9): 630–633.
- Gruenbaum, E. 2005. "Socio-Cultural Dynamics of Female Genital Cutting: Research Findings, Gaps, and Directions." *Culture, Health & Sexuality* 7 (5): 429–441.
- Haaf, W. 2006. "Circumcision Decision." *Today's Parent*. Accessed October 26, 2017. <https://www.todayparent.com/baby/baby-health/circumcision-decision/>
- Hammond, T. 1999. "A Preliminary Poll of Men Circumcised in Infancy or Childhood." *BJU International* 83 (S1): 85–92.

- Hammond, T., and A. Carmack. 2017. "Long-Term Adverse Outcomes from Neonatal Circumcision Reported in a Survey of 1,008 Men: An Overview of Health and Human Rights Implications." *The International Journal of Human Rights* 21 (2): 189–218.
- Harmon-Jones, E., and C. Harmon-Jones. 2007. "Cognitive Dissonance Theory after 50 Years of Development." *Zeitschrift für Sozialpsychologie* 38 (1): 7–16.
- Harryman, G. L. 2004. "An Analysis of the Accuracy of the Presentation of the Human Penis in Anatomical Source Materials." In *Flesh and Blood*, edited by G. C. Denniston, F. M. Hodges and M. F. Milos, 17–26. New York: Springer.
- Hauser, D. J., and N. Schwarz. 2016. "Attentive Turkers: MTurk Participants Perform Better on Online Attention Checks than do Subject Pool Participants." *Behavior Research Methods* 48 (1): 400–407.
- Hellsten, S. K. 2004. "Rationalising Circumcision: From Tradition to Fashion, from Public Health to Individual Freedom." *Journal of Medical Ethics* 30 (3): 248–253.
- Jacobs, A. J., and K. S. Arora. 2015. "Ritual Male Infant Circumcision and Human Rights." *The American Journal of Bioethics* 15 (2): 30–39.
- James, S. M., and C. C. Robertson. 2002. *Genital Cutting and Transnational Sisterhood: Disputing US Polemics*. Chicago, IL: University of Illinois Press.
- Johansen, R. E. B. 2017. "Undoing Female Genital Cutting: Perceptions and Experiences of Infibulation, Defibulation and Virginity among Somali and Sudanese Migrants in Norway." *Culture, Health & Sexuality* 19 (4): 528–542.
- Johnsdotter, S. 2013. "Discourses on Sexual Pleasure after Genital Modifications: The Fallacy of Genital Determinism (a Response to J. Steven Svoboda)." *Global Discourse* 3 (2): 256–265.
- Johnsdotter, S., and B. Essén. 2016. "Cultural Change after Migration: Circumcision of Girls in Western Migrant Communities." *Best Practice & Research Clinical Obstetrics & Gynaecology* 32: 15–25.
- Kerr, N. L. 1998. "HARKing: Hypothesizing after the Results are Known." *Personality and Social Psychology Review* 2 (3): 196–217.
- Kigozi, G., M. Wawer, A. Ssettuba, J. Kagaayi, F. Nalugoda, S. Watya, F. W. Mangen, et al. 2009. "Foreskin Surface Area and HIV Acquisition in Rakai, Uganda (Size Matters)." *AIDS* 23 (16): 2209–2213.
- Kim, D. S., and M.-G. Pang. 2007. "The Effect of Male Circumcision on Sexuality." *BJU International* 99 (3): 619–622.
- Kunda, Z. 1990. "The Case for Motivated Reasoning." *Psychological Bulletin* 108 (3): 480–498.
- Lakens, D., F. G. Adolphi, C. Albers, F. Anvari, M. A. J. Apps, S. E. Argamon, and M. A. L. M. van Assen et al. 2017. "Justify Your Alpha. A Response to 'Redefine Statistical Significance.'" *PsyArXiv*. Accessed 30 November 2017. <https://psyarxiv.com/9s3y6>
- Manderson, L. 2004. "Local Rites and Body Politics: Tensions between Cultural Diversity and Human Rights." *International Feminist Journal of Politics* 6 (2): 285–307.
- Mazor, J. 2013. "The Child's Interests and the Case for the Permissibility of Male Infant Circumcision." *Journal of Medical Ethics* 39 (7): 421–428.
- Merli, C. 2010. "Male and Female Genital Cutting among Southern Thailand's Muslims: Rituals, Biomedical Practice and Local Discourses." *Culture, Health & Sexuality* 12 (7): 725–738.
- Moore, P. 2015. "Young Americans Less Supportive of Circumcision at Birth." *YouGov*. Accessed October 26, 2017. <https://today.yougov.com/news/2015/02/03/younger-americans-circumcision/>
- Morris, B. J., R. Wamai, E. Henebeng, A. Tobian, J. Klausner, J. Banerjee, and C. Hankins. 2016. "Estimation of Country-specific and Global Prevalence of Male Circumcision." *Population Health Metrics* 14 (4): 1–13.
- Myers, A. 2015. "Neonatal Male Circumcision, if Not Already Commonplace, Would Be Plainly Unacceptable by Modern Ethical Standards." *American Journal of Bioethics* 15 (2): 54–55.
- Nnaemeka, O. 2001. "If Female Circumcision Did Not Exist, Western Feminism Would Invent It." In *Eye to Eye: Women Practicing Development across Cultures*, edited by S. Perry and C. Schenk, 171–189. London: Zed Books.
- Obermeyer, C. M. 1999. "Female Genital Surgeries: The Known, the Unknown, and the Unknowable." *Medical Anthropology Quarterly* 13 (1): 79–106.
- Obermeyer, C. M. 2003. "The Health Consequences of Female Circumcision: Science, Advocacy, and Standards of Evidence." *Medical Anthropology Quarterly* 17 (3): 394–412.
- Obermeyer, C. M. 2005. "The Consequences of Female Circumcision for Health and Sexuality: An Update on the Evidence." *Culture, Health & Sexuality* 7 (5): 443–461.

- Obiora, L. A. 1996. "Bridges and Barricades: Rethinking Polemics and Intransigence in the Campaign against Female Circumcision." *Case Western Reserve Law Review* 47: 275–378.
- Public Policy Advisory Network on Female Genital Surgeries in Africa. 2012. "Seven Things to Know about Female Genital Surgeries in Africa." *The Hastings Center Report* 42 (6): 19–27.
- Rahlenbeck, S. I., and W. Mekonnen. 2009. "Growing Rejection of Female Genital Cutting among Women of Reproductive Age in Amhara, Ethiopia." *Culture, Health & Sexuality* 11 (4): 443–452.
- Rickwood, A. M. K. 1999. "Medical Indications for Circumcision." *BJU International* 83 (S1): 45–51.
- Risser, J. M., W. L. Risser, M. A. Eissa, P. F. Cromwell, M. S. Barratt, and A. Bortot. 2004. "Self-assessment of Circumcision Status by Adolescents." *American Journal of Epidemiology* 159 (11): 1095–1097.
- Rosenthal, R. 1979. "The 'File Drawer Problem' and Tolerance for Null Results." *Psychological Bulletin* 86 (3): 638–641.
- Sagna, M. L. 2014. "Gender Differences in Support for the Discontinuation of Female Genital Cutting in Sierra Leone." *Culture, Health & Sexuality* 16 (6): 603–619.
- Sardi, L. M. 2011. "The Male Neonatal Circumcision Debate: Social Movements, Sexual Citizenship, and Human Rights." *Societies Without Borders* 6 (3): 304–329.
- Shell-Duncan, B., and Y. Hernlund, eds. 2000. *Female 'Circumcision' in Africa: Culture, Controversy, and Change*. Boulder, CO: Lynne Rienner.
- Shweder, R. A. 2000. "What about 'Female Genital Mutilation'? And why Understanding Culture Matters in the First Place." *Daedalus* 129 (4): 209–232.
- Shweder, R. A. 2013. "The Goose and the Gander: The Genital Wars." *Global Discourse* 3 (2): 348–366.
- Shweder, R. A. 2016. "Equality Now in Genital Reshaping: Brian Earp's Search for Moral Consistency." *Kennedy Institute of Ethics Journal* 26 (2): 145–154.
- Silberman, M. S., K. Milland, R. LaPlante, J. Ross, and L. Irani. 2015. "Stop Citing Ross et al. 2010, 'Who are the Crowdworkers?'" *Medium*. Accessed October 26, 2017. <https://medium.com/@silberman/stop-citing-ross-et-al-2010-who-are-the-crowdworkers-b3b9b1e8d300>
- Silverman, E. K. 2004. "Anthropology and Circumcision." *Annual Review of Anthropology* 33: 419–445.
- Sneppen, I., and J. Thorup. 2016. "Foreskin Morbidity in Uncircumcised Males." *Pediatrics* 137 (5): e20154340.
- Svoboda, J. S. 2013. "Circumcision of Male Infants as a Human Rights Violation." *Journal of Medical Ethics* 39 (7): 469–474.
- Svoboda, J. S., and R. S. Van Howe. 2013. "Out of Step: Fatal Flaws in the Latest AAP Policy Report on Neonatal Circumcision." *Journal of Medical Ethics* 39 (7): 434–441.
- Taylor, J. R., A. P. Lockwood, and A. J. Taylor. 1996. "The Prepuce: Specialized Mucosa of the Penis and its Loss to Circumcision." *British Journal of Urology* 77 (2): 291–295.
- UNAIDS. 2010. "Neonatal and Child Male Circumcision: A Global Review." *UNAIDS Report*. Accessed October 26, 2017. [http://www.who.int/hiv/pub/malecircumcision/neonatal\\_child\\_MC\\_UNAIDS.pdf?ua=1](http://www.who.int/hiv/pub/malecircumcision/neonatal_child_MC_UNAIDS.pdf?ua=1)
- Ungar-Sargon, E. 2015. "On the Impermissibility of Infant Male Circumcision: A Response to Mazor (2013)." *Journal of Medical Ethics* 41 (2): 186–190.
- Waldeck, S. E. 2003. "Using Male Circumcision to Understand Social Norms as Multipliers." *University of Cincinnati Law Review* 72 (3): 455–526.
- Wallerstein, E. 1985. "Circumcision: The Uniquely American Medical Enigma." *Urologic Clinics of North America* 12 (1): 123–132.
- Watson, L. 2014. *Unspeakable Mutilations: Circumcised Men Speak Out*. Ashburton, NZ: CreateSpace.
- Werker, P., A. S. Terng, and M. Kon. 1998. "The Prepuce Free Flap: Dissection Feasibility Study and Clinical Application of a Super-Thin New Flap." *Plastic and Reconstructive Surgery* 102 (4): 1075–1082.
- WHO. 2008. "Eliminating Female Genital Mutilation: An Interagency Statement." *World Health Organization*. Accessed October 26, 2017. <http://www.unfpa.org/publications/eliminating-female-genital-mutilation-interagency-statement>
- Witt, W. P., A. J. Weiss, and A. Elixhauser. 2014. "Overview of Hospital Stays for Children in the United States, 2012." *Healthcare Cost and Utilization Project, Statistical Brief* 187: 1–17. Accessed October 26, 2017. <http://www.hcup-us.ahrq.gov/reports/statbriefs/sb187-Hospital-Stays-Children-2012.pdf>