



Published in final edited form as:

Soc Sci Med. 2020 April ; 251: 112910. doi:10.1016/j.socscimed.2020.112910.

Individual and community-level impact of infertility-related stigma in Malawi

Marta Bornstein^{a,b,*}, Jessica D. Gipson^{a,b}, Gates Failing^c, Venson Banda^d, Alison Norris^e

^aDepartment of Community Health Sciences, Jonathan and Karin Fielding School of Public Health, University of California – Los Angeles, Los Angeles, CA, USA

^bCalifornia Center for Population Research, University of California – Los Angeles, Los Angeles, CA, USA

^cCollege of Medicine, The Ohio State University, Columbus, OH, USA

^dChild Legacy Hospital, Umoyo Wa Thanzi Research Program, Lilongwe, Malawi

^eCollege of Public Health and College of Medicine, The Ohio State University, Columbus, OH, USA

Abstract

Infertility, a common experience among women and men worldwide, remains on the margins of public health and medicine in low-resource settings. Previous studies identified associations between individual experiences of infertility and negative outcomes, particularly in contexts where childbearing is imperative, but few have examined broader implications of infertility and infertility-related stigma on communities. To understand the production and impact of infertility-related stigma, this study analyzes 12 focus group discussions (FGDs) conducted with 104 women and men in rural Malawi. FGDs, conducted July-September 2018, were used to elicit the range of community norms around family formation, pregnancy, fertility, and infertility. Data were analyzed through memo-ing during and after data collection and collaborative, thematic coding. We found that stigma manifested within existing systems of gender and power. Aligning with Link and Phelan's stigma framework (2001) there were three primary mechanisms by which infertility-related stigma was produced and reinforced: labeling of a person perceived to be infertile (i.e., establishing 'other'), perpetuating negative stereotypes associated with suspected causes of infertility (e.g., abortion, multiple sexual partners, weak sperm), and consequences of infertility that reinforced stigma (e.g., social ridicule and distancing, divorce). Labels, presumed causes, and consequences of infertility were entrenched within gender and sexuality norms. Women perceived as infertile were unable to follow a normative path to achieving adult status, presumed to be sexually transgressive, and considered "useless." Men's masculinity was questioned. Both women's and men's identities, as well as social positions within relationships and communities, were threatened by perceptions of infertility. Ultimately, the manifestation of infertility-related

*Corresponding author. Department of Community Health Sciences, Jonathan and Karin Fielding School of Public Health, University of California – Los Angeles, Los Angeles, CA, USA. Mbornstein@ucla.edu (M. Bornstein).
CRediT authorship contribution statement

Marta Bornstein: Methodology, Formal analysis, Writing - review & editing. **Jessica D. Gipson:** Methodology, Formal analysis, Writing -review & editing. **Gates Failing:** Formal analysis. **Venson Banda:** Formal analysis, Data curation. **Alison Norris:** Methodology, Writing -review & editing.

stigma contributed to an environment wherein the risk of being perceived as infertile was highly consequential and unrelenting. Pervasive stigma, at the community-level, impacts decisions around contraceptive use and timing of childbearing, as women and men not only wanted to avoid infertility, but also the appearance of infertility.

Keywords

Fertility; Infertility; Stigma; Gender; Malawi

1. Introduction

Globally, more than 180 million people experience infertility, the condition of being unable to conceive a pregnancy within 1–2 years of attempting to do so (Inhom and Patrizio, 2015). Although estimates vary, sub-Saharan Africa is consistently cited as having one of the highest rates of both primary infertility (the inability to conceive a first pregnancy) and secondary infertility (the inability to conceive a second or higher-order pregnancy) worldwide (Boivin et al., 2007; Inhom and Patrizio, 2015). Two studies in different regions of Malawi found that approximately 20% of women self-reported experiencing infertility (primary or secondary) (Barden-O’Fallon, 2005a; Rao et al., 2018). Consequences associated with infertility, including depression, intimate partner violence, and social exclusion, have been documented by previous studies (Starrs et al., 2018).

The Programme of Action from the 1994 International Conference on Population and Development (ICPD) underscored the importance of addressing infertility to achieve optimal health and human rights (United Nations Population Fund, 1994); however, infertility has not been prioritized in public health. Increasingly, however, integrating fertility and infertility research is recognized as critical to understanding both issues and to the fulfillment of individuals’ reproductive desires and well-being (Johnson et al., 2018). Recently, the Lancet-Guttman Commission on Sexual and Reproductive Health and Rights emphasized the continuing need to focus on infertility as a public health issue (Starrs et al., 2018).

Developing greater understanding and ways to manage infertility across global settings is increasingly viewed as an integral part of successfully achieving global development and public health goals as it holistically addresses the reproductive desires of women and couples. These integrated efforts are particularly important given the nuanced meaning of childbearing across contexts, and the persistence of erroneous perceptions linking contraceptive use to infertility that continue to thwart investments in family planning programs (Inhom, 2009; Sedlander et al., 2018).

On the public health agenda, infertility is commonly overlooked amidst efforts to prevent unintended pregnancies and associated consequences (Inhom and Patrizio, 2015). There are also many definitions of infertility, which contribute to inconsistent measurement and lack of comparability across studies (Mascarenhas et al., 2012; Polis et al., 2017). Another challenge is that much of the data on infertility come from infertility treatment settings (Greil et al., 2010). This challenge is particularly acute in low-resource settings where

clinical diagnoses of infertility and treatment are largely inaccessible (Greil et al., 2010; Starrs et al., 2018).

While several studies have examined stigma and social consequences for women experiencing infertility in low-resource contexts (Barden-O’Fallon, 2005a; de Kok et al., 2008; Inhom, 1994; Naab et al., 2013; Okonofua et al., 1997; Rao et al., 2018; Rouchou, 2013), such studies largely focus on individuals with the stigmatized attribute (i.e., women with infertility). Existing studies do not capture how stigma operates at a community-level, impacting everyone – those who are perceived to be infertile and those who are not. Within the sociological literature, there has been some attention to the stigma of childlessness, particularly within the U.S. (Greil, 1991; Miall, 1985, 1986). These studies focus on women’s/couples’ experiences of childlessness and how people manage a stigmatized identity. Notably, only one study included men, who were interviewed separately from their female partner (Greil, 1991). In fact, nearly all existing studies of infertility-related stigma focus on women’s experiences, leaving a critical gap in our understanding of how infertility and possible stigma impacts men in their own right, and not only as a member of a couple (Fledderjohann and Roberts, 2018). The present study includes men, allowing us to capture men’s perspectives as well as gendered aspects of infertility-related stigma.

We hypothesize that consequences of infertility (experienced, perceived, and witnessed) not only impact those who are perceived as infertile or who experience infertility, but anyone who may feel potentially at risk for infertility. Infertility-related stigma may also affect women and men differently. By investigating the full range of consequences of infertility-related stigma on both individuals who are perceived as infertile and those who are not, we can better understand how stigma influences reproductive decisions generally.

Understanding the relationship between infertility-related stigma and reproductive decision making is particularly important in sub-Saharan Africa, where childbearing is expected and highly valued (Dyer, 2007; Inhom and Patrizio, 2015), knowledge around factors that affect fertility is low, and contraception is considered a possible source of infertility (Chipeta et al., 2010; Schwarz et al., 2019; Sedlander et al., 2018).

In this study, we focus on perceptions of infertility for two main reasons. Pragmatically, access to a medical diagnosis of infertility in Malawi is rare. Infertility is not highly medicalized in Malawi, as it is in some other contexts, meaning that it is not necessarily perceived or experienced as a medical condition (Brown, 1995; Greil et al., 2011) and it is common to seek treatment outside of the formal health system (Barden-O’Fallon, 2005a). Second, we examine perceptions of infertility in Malawi as a social phenomenon because one needs only to be perceived as infertile to bear the interpersonal and social consequences of the label. Regardless of actual fertility status, perceiving one’s self, or being perceived by others as infertile, may together or independently play meaningful roles in the production of infertility-related stigma and reproductive decisions.

Examining infertility as a social phenomenon also provides an opportunity to apply existing frameworks to understand how infertility-related stigma manifests. Goffman (1963), in his seminal work, describes stigma as “an attribute that is deeply discrediting” (Goffman, 1963) (p.3). Such an attribute, when visible to (or perceived by) others, inhibits individuals from

progressing through normative development and life-course milestones, marking them as fundamentally abnormal or deviant. In 2001, Link and Phelan furthered the work of Goffman by offering a modified definition of stigma centering on how stigma operates, wherein “elements of labeling, stereotyping, separation, status loss, and discrimination co-occur in a power situation” (Link and Phelan, 2001) (p. 377) and signify the presence of stigma.

When applying this definition to infertility, the emphasis on a *power situation* requires examining how components of stigma (labeling, stereotyping, separation, status loss, and discrimination) may differentially impact some individuals with a specific attribute given the broader structure of power, status, and prestige within the society. Studies that investigate how stigma is experienced by individuals often do not capture how stigma is created and reinforced within existing power structures, such as gender. To that end, we use FGD data from women and men to examine how infertility-related stigma is enacted and experienced within community ecosystems. Specifically, we apply elements of Link and Phelan’s (2001) definition of stigma as an analytic framework to situate our findings on how and why infertility-related stigma and stigmatized identities develop and to inform the development of successful interventions to reduce stigma.

1.1. Study site

This study took place in Malawi, a small country in southeastern Africa, with a total population of nearly 18 million people. The median age in Malawi is 17 – meaning that a large proportion of the population is of reproductive age or will be in the next decade (National Statistics Office (NSO) [Malawi] and ICF 2017). In Malawi, the average age of first marriage is age 18 for women and 23 for men, with the average age of first birth following closely thereafter (age 19 for women; unreported for men) (NSO [Malawi] and ICF, 2017). The total fertility rate in Malawi, at 4.4 children per woman, exceeds women’s desired fertility, which is reported to be 3.4 children per woman (NSO [Malawi] and ICF, 2017). Approximately 30% of pregnancies in Malawi are mistimed and an additional 11% are considered unwanted (NSO [Malawi] and ICF, 2017). Simultaneous with evidence of unintended pregnancy, self-reported infertility in Malawi is estimated to be quite high, at approximately 20% (Barden-O’Fallon, 2005a; Rao et al., 2018). Importantly, voluntary childlessness is rare in this context (Barden-O’Fallon, 2005b; Chimbiri, 2007) and biological childbearing is highly valued. Infertility treatment is unavailable through the formal health-care system in Malawi, as in many low-resource settings. Although limited, existing studies on infertility find that most people rely on traditional interventions to treat infertility (Barden-O’Fallon, 2005a).

Data for this study come from a rural area located in the Central Region of Malawi. Specifically, the study took place as part of *Umoyo Wa Thanzi* research program, a cohort study focused on the catchment area of a hospital. The study site mirrors the larger population of rural Malawi, in that most residents are subsistence farmers with low levels of education (90% had not completed primary education) (Esber et al., 2016). The population is primarily of the Chewa ethnic group and follows both matrilineal and patrilineal traditions (Reniers, 2003).

2. Methods

2.1. Development of field guide

We chose FGDs as the method of data collection to learn about community perceptions and experiences around infertility as a social phenomenon. In conjunction with the goals of this study, FGDs worked well to elicit the range of social norms and expectations for women and men. FGDs allowed us to note agreement and disagreement around the breadth of issues related to infertility.

We developed the FGD guides, which differed slightly for women and men, based on the study aims. Guides went through multiple rounds of review and revision by the research team and experts in the field. They were also piloted among reproductive-aged women and men in two villages. FGD guides were translated collaboratively by the research team in an iterative process to accurately capture the meaning of each topic (Colina et al., 2016). The guides intentionally started out broadly, asking participants to describe the meaning of childbearing in their community. This led to discussions about what it meant to have or not have children when expected. Although the FGD guides did not explicitly focus on stigma, elements of stigma consistently emerged. The guides were flexible, allowing us to make adjustments based on feedback from facilitators and emerging findings. This prompted the use of a stigma framework for analysis.

2.2. Sampling

FGDs took place in villages within the hospital catchment area, but not included in the cohort sample to lessen the burden on cohort participants and mitigate potential bias in the data from cohort effects. FGD villages were selected purposively based on proximity to the hospital (both near and far from the hospital as a proxy for ease of accessing healthcare; see Table 1). Individuals were eligible to participate if they were not pregnant (women) and were ages of 15–49. Additionally, FGDs were stratified by age group and sex. Before conducting the FGDs, the research team met with village chiefs for permission to conduct FGDs in the village and assistance recruiting eligible participants.

2.3. Data collection

Data were collected from July–September 2018. All FGDs took place in private spaces (e.g., empty churches, school houses, or private residences). Participants were assigned numbers to assist with matching narratives to participants and to avoid recording participant names. The majority of FGDs were facilitated by a researcher of the same sex as the participants. All FGDs were conducted by trained, bilingual Malawian research assistants who spoke Chichewa as their native language. Research assistants participated in a four-day training covering the study aims and FGD guides, facilitation strategies, data confidentiality, participant privacy, and facilitation practice. At least two secondary facilitators/note-takers were present in each group. All FGDs were digitally recorded, translated into English, and transcribed by a researcher present during data collection. Approximately half of the FGDs were also transcribed by independent consultants to further enhance the quality of the translations. Additionally, after every FGD, the team held debrief meetings and noted new or

emerging findings. This process helped us revise the FGD guides throughout data collection and determine when we reached sufficient saturation.

Following each FGD, participants answered a brief demographic questionnaire with the assistance of a research team member. Data from this demographic questionnaire were entered into Microsoft Excel (2016, version 1908) to describe the overall characteristics of participants (Table 1).

We conducted 12 FGDs (6 male; 6 female) in 11 villages. Each had 8–10 participants and lasted for 90–150 min. In total, 104 people participated (n = 53 women; n = 51 men). Groups were homogenous by sex to help ensure that participants were among peers and would feel comfortable speaking openly. Half of female and male FGDs were with older participants (approximately ages 30–39 for women and 35–48 for men) and half were with younger participants (under age 30 for women and under age 35 for men). However, because participants often did not know their exact age, the age groupings were approximate and three groups are considered mixed ages.

This study was approved by the University of California, Los Angeles, The Ohio State University, and the Malawi College of Medicine Institutional Review Boards. All participants gave verbal and written consent after being provided information about the study and were given the opportunity to ask questions. One person declined to participate after being given information. Participants were compensated for their time with MK1500 (equivalent to \$2.00 USD), an amount decided upon with the input of local collaborators.

2.4. Analysis

We analyzed the data using a holistic approach that started during data collection. During team debrief meetings, we began the process of organizing and interpreting new findings. Notes from these meetings were included as part of the dataset. Additionally, research assistants who collected, translated, and transcribed the data provided insights and context during data collection and analysis (e.g., providing insight into non-literal translations, interpreting findings). Their role as collaborators and cultural translators helped ensure that our interpretations are firmly grounded in the data.

We also developed topic-based memos synthesizing emerging themes within the data throughout data collection and analysis. We used the memos and FGD guides as an initial codebook framework (Saldana 2015). Two researchers independently coded two transcripts and met to develop a structured codebook with comprehensive code definitions. This coding scheme was then applied to the remaining transcripts. All codes were reviewed constantly during coding to ensure consistency and structural logic. We used a mix of thematic, in vivo, and pattern codes (Hennink et al., 2011; Saldaña 2015). Data were managed and coded using Dedoose version 8.0.35.

In a final step of analysis, we employed a stigma framework to analyze and organize findings around different types and manifestations of stigma.

3. Findings

Of the 104 participants, 51% were female (49% male) (Table 1). In the demographic questionnaire, nearly one-fifth (17%) reported difficulty becoming pregnant/impregnating their partner sometime in the past. In line with national statistics, the average age of first marriage was 19 for women and 21 for men, and age at (partner's) first birth was approximately 20 for women and 22 for men.

Topics discussed in FGDs did not differ substantially by age, but there were differences in how forthcoming participants were. FGDs with younger participants required more probes and participants often deferred to a relatively older or more experienced member of the group. Women were generally more vocal than men. Men often said that they did not know about certain topics, as childbearing is thought to be a woman's responsibility. However, both women and men brought up many of the same topics.

Participants discussed infertility as a condition that could be temporary and potentially curable. Although participants identified myriad causes of infertility, none were necessary causes (e.g., participants reported that contraception did not always lead to infertility, but it sometimes did). Similarly, participants discussed potential treatments and cures for infertility, but none were considered effective for all people. In general, causes and treatment/cures for infertility were closely tied. Additionally, while participants drew a distinction between primary and secondary infertility – particularly in terms of causes – they largely discussed primary and secondary infertility together.

Several themes emerged from the data around the stigma women and men face if they experience or are perceived by others to experience infertility. We identified three major factors in producing stigma: labeling of a person perceived to be infertile, negative stereotypes embedded within explanations for infertility, and consequences of infertility. Findings are structured according to Link and Phelan's (2001) stigma framework.

3.1. Distinguishing differences through labeling

Participants described infertility as highly visible within their communities. Because couples were expected to become pregnant soon after marriage (1–3 months following marriage), not adhering to this expectation drew speculation from others about infertility. People perceived as infertile were often subjects of community gossip. The labeling and social consequences of not having a pregnancy intensified over time. The following sentiment was expressed in several FGDs:

“When three months [of marriage] are over, if they even reach five months [without pregnancy], we should judge completely, there is a problem in the family.”

-Young men (FGD #3)

Women perceived to be infertile were primarily called *chumba*. Men were called *gocho*. Both are derogatory names in Chichewa, and translate to “barrenness.” Labels were used to mark those associated with infertility as ‘other’ or socially deviant, rather than to describe a medical condition or a choice to delay or not have a pregnancy. Except in rare circumstances where individuals resigned themselves to their status and repeated the ridicule coming from

others, neither name was used by individuals to describe themselves. The names were also reported to be rarely used in face-to-face conversation with a person perceived to be experiencing infertility, as they were considered insulting. In response to what a woman might call herself if she experienced infertility, male and female participants both indicated that a woman might lack the language to describe herself in a positive light:

“No, [she won’t call herself *chumba*] the word is discriminatory and humiliating. Mainly it is others who may call her *chumba*. She can’t call herself, but she knows [that she is] because of her situation.”

-Mixed ages, men (FGD #8)

“She can’t describe herself. She is always feeling sorry for herself.”

-Young women (FGD #7)

“‘I do not impregnate a woman’... it is rare to hear a man speaking these words. If you hear one saying so [...] it’s by grace that you have heard one confessing in that manner. He knows himself.” [Another participant]: “No man can say so publicly.”

-Older men (FGD #6)

In addition to *chumba*, participants shared other names and descriptions for women without children. Participants did not share positive or neutral words for a woman experiencing infertility. Names for women connoted a range of negative states, from sadness to being something other than human. For example:

Chumba chalira- A woman who is very sad because she can’t get pregnant (*chalira* means cry).

Alibe nsalu ya lekaleka- A woman who does not have a child to parent and cannot carry out her role as a mother (i.e., she does not have a child she can tell ‘leave that, don’t touch that’).

Mzidzi- A pig who cannot reproduce.

Women with one child and who were expected to have more (due to age, the age of their first child, or after entering into a new relationship) were also labeled:

Chimodzi- Meaning ‘one.’

Chimanga cha lokolo- The name for local maize, which is known to produce a single cob (as opposed to other varieties that produce more than one).

Men were described disparagingly, as well. Names for men who were perceived to be infertile were loosely biological, but also highly stigmatizing and emasculating.

Sadya- Translates as a person who is not eating/does not eat. Eating was used as a metaphor for sex; a man who is called a *sadya* may have a weak penis/erectile dysfunction and be unable to have sex.

Chain yagwera ku kalanka- This term translates as ‘bicycle without a chain,’ meaning that a bicycle chain has fallen off the wheel, and therefore the bicycle does not move forward. A man who cannot impregnate a woman may be called this,

implying that something in him is not working (this was often explained as the man not knowing how to have sex).

Unagwa m'papaya- One who has fallen from a papaya tree (broken; unable to have sex).

Chimbwira or Chizizi- This term refers to an egg that has failed to hatch during an incubation period of a chicken.

Chiwaya- Directly translated as 'a useless iron sheet,' i.e., man who cannot have an erection or is afraid of women.

Othena- A man who is castrated.

Labeling aided in distinguishing “us” (people who are fertile) versus “them” (people perceived to be infertile), a key component of how stigma is enacted. The impact of labeling was cyclical: those who were fertile (“normal”) used labels to distance themselves from those perceived as infertile, and negative labels reinforced apparent differences between those who were “normal” and those who were perceived to be infertile.

3.2. Explanations for infertility – negative stereotypes

Common explanations for why women and men might experience infertility fell into four categories: spiritual, relational, natural/biological, and consequence of behavior (including sexually transmitted infections (STIs)).

Spiritual and relational explanations for infertility (Table 2) were similar or intrinsically connected for women and men. However, like labels, other possible causes of infertility were gendered. Most explanations for women’s infertility had to do with consequences of sexual behavior, including contraceptive use, multiple sexual partners, and abortions. In contrast, male infertility was commonly attributed to natural/biological impairments, which limited men’s ability to demonstrate masculinity and virility through having children. As Table 3 demonstrates, the volume of behavioral reasons for women’s infertility far exceeds men, demonstrating that women are often blamed for infertility.

Some reasons for infertility (Tables 2 and 3) might resolve naturally over time (e.g., the woman is not yet old enough to become pregnant), some require an intervention (e.g., reversing a curse), while others could be solved through relationship changes (e.g., divorce and remarriage). Few explanations for infertility were thought to be universally irreversible, although each could be permanent if a solution was not sought or if the solution, for whatever reason, failed to work (e.g., clearing contraception from the body). Reasons for irreversible infertility included female sterilization or being “born that way” (biologically or by God’s will). In general, whether or not infertility was permanent depended on the individual, not the cause. Two women could have a similar history with contraception, abortion, or multiple sex partners, but infertility may afflict only one of them. For example:

“When some [women] use injections, even two [injections] only, they do not easily get pregnant afterwards. They may take 3 or 4 years without getting pregnant. As for me, when I skip using family planning for one month, then the next month I become pregnant. It depends on the blood.”

-Older women (FGD #9)

While participants recognized that they might not know the specific reason that a couple did not become pregnant when they were expected to, Tables 2 and 3 include common assumptions people made, including relationship problems, witch craft, and unacceptable sexual behavior. Notably, ‘unacceptable behaviors’ were almost exclusively attributed to women (e.g., prolonged contraceptive use, past abortions). A few participants also said that it was possible that a couple perceived to be experiencing infertility could be practicing family planning, thereby delaying or preventing pregnancy on purpose, but that would not be known to the community.

Participants indicated that the causes of infertility were unpredictable, meaning that anyone could be at risk at any time. Causes were also sometimes contradictory. For example, sex that was both frequent and infrequent were perceived to be causes of infertility. The use of herbs for fertility or sexual pleasure were considered to enhance fertility, but were also described as having the potential to cause infertility. This reflected the overall ‘unknownness’ of infertility in this context; such uncertainty was inherent to the experience of infertility and perpetuates infertility-related stigma.

When a woman or couple determined that the woman was *not* the infertile partner, participants discussed ways that a woman or couple might seek a “cure” for infertility through extramarital relationships. A woman may suspect her partner is infertile and seek out an extramarital partner in secret, either to test her theory or as an act of altruism to her partner, sparing him from knowing his fertility status. Alternatively, an extramarital partner could be arranged by the couple. When known by the male partner, the extramarital partner is called a *fisi* (meaning hyena). This was usually considered a last resort. The *fisi* was generally chosen because he had fathered many children and was known to be fertile. Couples and the *fisi* kept the arrangement a secret, thereby creating the illusion of successfully achieving a pregnancy within the marital relationship. However, an extramarital partner, even when arranged by the couple, was seen as risky for women. One woman described her experience refusing a *fisi* to conceive her first pregnancy due to fear of sexually transmitted infections. This quotation also illustrates the process of arranging a *fisi* and how men view the children fathered by this arrangement.

“I got married to a certain man and we were not having children, then he told me that I have to use another way [...] He told me that he is impotent and he said that he will find a man that [I can have] sex with and he will pay that man. He told me that he will use a white stick on the door, so when the man comes in the house [to sleep with me] the stick will be on the door and when the stick is removed, then he [can come back] to sleep [in the house], for he will know that the hired man is gone. I asked him if he will regard the child to be born as his or the *fisi*’s and he said that he will regard the child as his. [He] will buy everything, like a baby blanket. I refused [the *fisi*] because, firstly, that would be the way for me to get diseases, and secondly, the *fisi* is someone’s husband. [Instead] I came back to my mother’s place and I got married to another man and now we have three children.”

-Young women (FGD #11)

The experience of infertility has interdigitation with parity and gender. If a woman could not become pregnant with her first child, she was usually considered to be the infertile partner. If she failed to become pregnant with a second child, this was usually considered a reflection of male infertility, as she had already ‘proven’ her ability to become pregnant. However, secondary infertility could also implicate the woman as unfaithful because the assumption could be made that the first child was not fathered by her partner.

“[People] will be suspicious about him saying he managed to have the first one and now he is failing to have the second one. [They may say,] ‘maybe he is not fertile and the wife conceived with another man for her to have the first born.’ [People] will be suspicious about him. It is said that after having the first child, you should not tarry to have the second one, so that [others] should know that you are capable.”

-Older men (FGD #6)

In another FGD, a participant explained how the community might speculate about the use of a *fisi* for the first child when a couple was perceived to experience secondary infertility:

“Maybe the first child they used a fisi [another man to impregnate the wife], that’s why they are failing now ... the man has a problem and the woman is okay.”

-Older women (FGD #9)

If a woman was unable to have additional children, it was assumed that it was a consequence of contraceptive use rather than a natural or biological problem.

“[A woman] without a child didn’t plan that she should be barren, it’s just how it is [...] the one who is failing to get pregnant for the second time, it’s her own fault. Maybe because of the contraceptives she used that has made her not to become pregnant.”

-Young women (FGD #4)

3.3. Consequences

Participants discussed a range of consequences of infertility or being perceived as infertile. Most were consequences of not having children, but some were consequences of the suspected cause, such as abortion. The primary consequences of being labeled infertile were often psychological/mental health related or related to one’s social location, manifesting as exclusion, separation, discrimination, and relationship instability.

3.4. Exclusion and separation

One of the most socially damaging consequences of infertility was exclusion from the normative social transition to adulthood. Even if an individual did not personally experience social exclusion from friends or family, the pervasive practice of referring to adults by the first name of their first child necessarily excluded those without children from being publicly marked as an adult. Once someone has a child, they would be called by their title and the name of their first child (e.g., Mama Charity /*Mai a Charity*). In contrast to the derogatory labels discussed earlier, which were mostly used privately, women and men who did not have children would be publicly identified as socially deviant by being called by their first name. Calling a person by their first name is considered disrespectful, as it is a marker of

being a child. Therefore, women and men who did not have children could be, by their naming alone, regarded as children themselves.

“[People] will not respect [a man who does not have a child]. They will call him by his first name. If you have children, they call you father of so and so [first child’s name]. They just call him his first name.”

-Young women (FGD #11)

“People will not respect you. They call you by your first name because they feel like you’re still a child.”

-Young women (FGD #4)

Women were particularly ostracized and excluded when they were perceived to be infertile. They could be stereotyped and treated as desperate, incompetent, or lazy. Participants suggested that women without children could also be a threat to those with children,

“[Women without children may] think of bad acts like stealing a newborn baby from the hospital.”

- Mixed ages, men (FGD #1)

“[If] children are quarreling and that woman [without children] tries to go there to stop them [...] people will start insulting her by calling her sorts of names. Because she is childless, she doesn’t know the importance of having children [and cannot manage/control them]”

-Mixed ages, men (FGD #8)

Participants not only viewed the act of not having children as unacceptable, but women themselves were considered unacceptable if they did not have children. People with children (“normals”) would distance themselves from those who were unacceptable.

“[Women without children are] discriminated against. If women are talking about issues to do with child bearing, once [a woman without children] comes, they change the subject since she doesn’t have a child.”

-Older women (FGD #9)

Participants often shared that those perceived as infertile would be excluded (externalized stigma). In addition, they may exclude themselves to alleviate their own feelings of otherness (internalized stigma). For example,

“The end result is that she is worried most of the time and her friends mock her to say ‘she has no child.’ This is so painful to her.” Another participant: “It is torture to her.”

-Older men (FGD #6)

“She will always feel attacked. When she sees people laughing, she will be thinking that they are laughing at her.”

Another participant: “They are always worried, thinking they are not privileged to have a child like other women.”

-Young women (FGD #4)

In a few cases, participants identified discrimination beyond social exclusion, such as discrimination in employment or leadership roles. Some of this discrimination was de-facto – if one did not have children, they lacked the status to become a leader. In one group, participants discussed how exclusion might manifest in the public domain:

“When we want to choose people to work for public works [government], definitely he can’t be given any chance to be chosen. Because of his infertility ... young people can’t accept to work with him. Instead, they look for other [men] who have children. This person [infertile man] is the last person to be considered in public works because of his situation.”

-Young men (FGD #8)

3.5. Relational consequences

Infertility was perceived as almost universally detrimental to relationship/marriage stability. Women in particular could be treated poorly by their partners if they were perceived to be infertile. A young woman discussed how men would treat their wives if they were having difficulty becoming pregnant:

“[He will be] insulting her, calling her names like ‘you dog’ or ‘you are very stupid.’ There is no need for him to keep her, and she has to leave.”

-Young women (FGD #11)

In nearly all FGDs, participants indicated that it would be difficult for a couple to continue in a relationship without children. Children were key to stable relationships, such that one participant shared,

“[When] a wife and husband quarrel, children are the ones who help to unite these two people.”

-Mixed ages, men (FGD #8)

Instability, infidelity, or divorce were described as inevitable consequences of infertility:

“In the marriage, they will doubt each other because they are not sure of who is the problem. So, the man may start having other sexual partners. Same with the woman, she may start having other sexual partners.”

-Young women (FGD #7)

“There is no good relationship between man and woman in the family for the man is there wanting a kid and the woman can’t conceive and then it means there is always disagreements in the family.”

-Young women (FGD #4)

Women also faced limited prospects for remarriage, as divorcing without having children would be suspected to be because of infertility. Some thought that men would face comparatively fewer challenges after divorce:

“[A woman’s] chances of remarrying again [after experiencing infertility] are very slim because many people know her problem.”

-Young men (FGD #3).

“He just says ‘I am going to work somewhere’ then that’s it. His [reputation] ends there.”

-Older women (FGD #5)

When a couple had fewer children than expected of them by extended family or their community, they also could face relationship instability due to pressure from family or community members. For example,

“Relatives can ask ... look now you are growing old and yet you have one child only. Do you want to die like that? You have to go and marry another wife. We want more grandchildren in this family.”

-Young women (FGD #11)

There were some notable exceptions where participants described a relationship between a couple who could not get pregnant as loving and strong. A male participant gave an example,

“We try so many ways but it couldn’t work, and we reach the point that now we should accept our situation. When everything has failed, we kneel down and say we have accepted whatever [God] planned for us, let your will be done.”

-Mixed ages, men (FGD #8)

4. Discussion

In rural Malawi, we found pervasive, consequential stigma around infertility. The impact of infertility-related stigma was not limited to those who experienced or were perceived to experience infertility. The imperative of childbearing and the social connotations and consequences of infertility created an environment wherein even the perception of infertility was enough for a person to develop a stigmatized identity. Our findings suggest that while infertility itself was unpredictable, the social consequences and stigma associated with infertility were predictable. Infertility-related stigma, and the importance of avoiding being perceived as infertile, was consequential for sexual behaviors and decisions thought to be related to the risk of infertility (e.g., sexual frequency, timing, contraceptive use) even of people who may themselves have had no experience with infertility. These sexual behaviors in turn may reinforce norms around the expected timing and frequency of childbearing. The social meaning and expectations of fertility and childbearing in the context of Malawi were central elements of how and why stigma was produced and perpetuated.

The presumed causes and consequences of infertility were tied, and these causes/consequences may serve as mediators between (perceived) infertility and stigma. The presumed causes of infertility were personal, negative, and themselves associated with stigma (e.g., prolonged contraceptive use, abortion, and witchcraft inflicted due to these or other transgressions). Therefore, the negative consequences of infertility (e.g., social

exclusion, divorce) stemmed, at least partially, from the unacceptability of the presumed causes. This was particularly poignant for women, as the most stigmatized presumed causes, such as abortion, were only attributed to women.

While many participants recognized that true infertility may not be identifiable by an outsider, not having children when one was expected to was considered socially deviant. The labels, perceived causes, and consequences of infertility we identified fit within Link and Phelan's (2001) stigma framework. We found that women and men who are perceived to be infertile were identified and labeled, associated with negative attributes, excluded and marked as 'other,' were considered to be of lower status, and were more likely to experience discrimination because of their perceived status as infertile. Link and Phelan also state that for stigma to manifest, there must be an established system of power in place. We found such a system of power clearly in our data. Women and men without children had reduced power in their communities and families, experienced social isolation, and were marked as other by being called by their childhood names. Gender, as another system of power, exacerbated these consequences for women in particular.

Infertility was deeply discrediting to the identities and social roles of both women and men (Goffman, 1963), and the meaning and experience of infertility was highly gendered. This was evident by the differential meanings of the labels women and men were given, as well as by how participants discussed possible causes of infertility. Women's infertility was often attributed to behaviors, which were frequently viewed as related to morality. In contrast, men's infertility tended to be explained through biological mechanisms that were innate or outside of their immediate control. The sheer volume of reasons a woman might be infertile, in comparison to the relatively few reasons for men, indicate that women are often blamed for infertility (Table 3). Even weak sperm, a commonly discussed cause of male infertility, was often considered the result of women's contraceptive use.

In this study, participants shared that womanhood was achieved primarily through motherhood. Similarly, an acceptable display of masculinity was achieved through virility, as demonstrated by having biological children. While we found evidence that while men may more easily escape a reputation of infertility than women, being labeled as infertile was deeply discrediting to both women's and men's identities. Women's identities were more closely tied to parenthood, however, and not only were women more frequently blamed for infertility, they also may be disproportionately affected by the stigma of childlessness. In contrast, when a man was perceived as infertile, his masculinity was questioned. Indeed, male infertility is commonly perceived to be linked to impotence, even though the two do not necessarily occur together (Gannon et al., 2004). For both women and men, infertility was a threat to their core identities and social positions.

Both women and men could face stigma even after having a first child. The inability to have a second pregnancy (secondary infertility), while not generally viewed as the woman's responsibility, often indicated to others that she may have had sex outside of her relationship to achieve the first pregnancy. Men also faced stigma if their partner did not have a second child, as he was typically seen as the ultimate cause, despite the fact that secondary infertility for women is relatively common (17% of women may experience secondary

infertility in Malawi) (de Kok et al., 2008). These sanctions underscore the necessity of avoiding being perceived as infertile by having a pregnancy soon after marriage and a second pregnancy soon after the first.

By using a stigma framework to understand our findings, we highlighted the social and structural mechanisms through which communities collectively produce and are impacted by infertility-related stigma. In doing so, we see *how* stigma operates and, critically, how interventions might be implemented to lessen stigma and its consequences. Importantly, this study includes perspectives from men, which have generally been left out of studies on infertility (Fledderjohann and Roberts, 2018). Based on this omission in the literature, some may erroneously presume that men do not experience nor have a role in producing and reinforcing stigma. In fact, we found that both women and men have roles in producing and reinforcing stigma and, along with women, men may be profoundly impacted. Including men also allowed us to understand how infertility-related stigma interacted with gender norms and expectations. We found that stigma was distinct between women and men based on expected family and community roles. The distinctions reflected existing gender dynamics, whereby women operate mainly in the private domain and men are more public.

Our findings suggest that addressing infertility-related stigma should be a priority for both women and men, and interventions may need to be differentiated to be successful. Future studies should continue to capture both women's and men's perspectives to investigate further how gender interacts with infertility-related stigma.

This study fills another gap in existing literature by focusing on community rather than individual perspectives. Indeed, many existing studies are conducted among only those who identify as infertile and are seeking treatment (Johnson et al., 2018). To capture how and why stigma is produced, and its broad impact, studies must include not only on those who experience infertility, but also those who may feel at risk. Indeed, we found that stigma fundamentally alters the context in which women and men make sexual and reproductive decisions in order to avoid being perceived as infertile or experiencing infertility. Thus, our findings suggest that addressing consequences of infertility at the individual-level is insufficient to ameliorate stigma and the consequences of stigma. Future studies should integrate individual experiences of stigma, the production and reinforcement of stigma at the community-level, and how stigma impacts sexual and reproductive decisions. Such studies should not be restricted to only those who identify as infertile.

Qualitative methods allowed us to gain a deeper understanding of the interpersonal and social experiences/consequences of infertility in a way that other methods could not. While other studies have focused on the consequences of infertility for individuals, our choice to conduct FGDs with women and men who did not necessarily experience infertility allowed us to understand how the manifestation of stigma impacted everyone, not just those who were perceived to experience infertility. Given that our study site was relatively homogenous in terms of sociodemographic and cultural characteristics, future studies should investigate how stigma manifests in communities that differ sociodemographically. Other studies have observed differences in individuals' experiences of stigma based on such characteristics

(Reissman, 2000; Remennick, 2000) and it is worth exploring how such differences may manifest at the community-level.

Pervasive stigma, and its severe social consequences, appeared to increase people's perception of being at risk for infertility. Future research and interventions should explore the relationship between heightened perceived risk of infertility and behavior thought to preserve fertility or prevent infertility. Indeed, our findings suggest that stigma and fear around infertility influenced a collective desire to carefully manage and preserve fertility to avoid community-imposed sanctions (e.g., lower status, social exclusion).

While the causes of *unintended* pregnancy in this setting are multi-faceted (Dasgupta et al., 2015), it is important to consider the role that infertility stigma may have in shaping proximal causes of unintended pregnancy, such as decisions to not use contraception, even when a pregnancy is not desired. This is particularly relevant because of the widespread belief that contraception can cause infertility, found in this study and others (Starrs et al., 2018). While the research around consequences of infertility is still emerging, the harmful consequences of unintended pregnancy, including maternal mortality and unsafe abortion, have been well-established (Eggleston et al., 2001; Tsui, McDonald-Mosley and Burke, 2010).

In alignment with the agenda put forth by the recent Lancet-Guttmacher Commission on Sexual and Reproductive Health and Rights, the association between infertility, stigma, and reproductive, social, and health outcomes must be further explored to advance the evidence around infertility as a public health issue and to meet reproductive needs more holistically.

One way to address infertility-related stigma and its consequences may be to introduce lower-cost diagnostic tools and assisted reproductive technologies for couples who experience infertility in low-resource settings. Indeed, others have suggested that this may be feasible (Inhorn, 2009; Ombelet, 2009). Such interventions could shift beliefs about the causes of infertility and alleviate some of the stigma associated with it (Starrs et al., 2018). We know that the availability of diagnostic and treatment options for a disease/condition often precedes the normalization and acceptance of a condition as a medical, rather than a moral, problem (Brown, 1995). Unfortunately, without treatment options, it is likely that people will continue to explain infertility –and people who experience or are perceived to experience infertility –in a way that distances and separates people, resulting in harmful consequences for individuals and communities.

Acknowledgements

Support for this project was provided by The Ohio State University Institute for Population Research through a grant from the Eunice Kennedy Shriver National Institute for Child Health and Human Development (NICHD) of the National Institutes of Health, P2CHD058484. This project was also supported by the California Center for Population Research at UCLA (CCPR), which receives core support (P2C- HD041022) and training support (T32-HD007545) from NICHD.

References

Barden-O'Fallon J, 2005a Associates of self-reported fertility status and infertility treatment-seeking in a rural district of Malawi. *Hum. Reprod* 20 (8), 2229–2236. [PubMed: 15802313]

- Barden-O'Fallon J, 2005b Unmet fertility expectations and the perception of fertility problems in a Malawian village. *Afr. J. Reprod. Health* 9 (2), 14–25.
- Boivin J, Bunting L, Collins JA, Nygren KG, 2007 International estimates of infertility prevalence and treatment-seeking: potential need and demand for infertility medical care. *Hum. Reprod* 22 (6), 1506–1512. [PubMed: 17376819]
- Brown P, 1995 Naming and framing: the social construction of diagnosis and illness. *J Health Soc Behav Spec* 34–52.
- Chimbiri Agnes M., 2007 The condom is an 'intruder' in marriage: evidence from rural Malawi. *Soc. Sri. Med* 64 (5), 1102–1115.
- Chipeta EK, Chimwaza W, Kalilani-Phiri L, 2010 Contraceptive knowledge, beliefs and attitudes in rural Malawi: misinformation, misbeliefs and misperceptions. *Malawi Med. J* 22 (2).
- Colina S, Marrone N, Ingram M, Sánchez D, 2016 Translation quality assessment in health research: a functionalist alternative to back-translation. *Eval. Health Prof* 40 (3), 267–293. [PubMed: 27207929]
- Dasgupta ANZ, Zaba B, Crampin AC, 2015 Contraceptive dynamics in rural Northern Malawi: a prospective longitudinal study. *Int. Perspect. Sex. Reprod. Health* 41 (3), 145–154. [PubMed: 26600568]
- de Kok Christina, Bregje Widdicombe, Sue, 2008 'I really tried': management of normative issues in accounts of responses to infertility. *Soc. Sri. Med* 67 (7), 1083–1093.
- Dyer SJ, 2007 The value of children in African countries: insights from studies on infertility. *J. Psychosom. Obstet Gynaecol* 28 (2), 69–77. [PubMed: 17538814]
- Eggleston E, Tsui AO, Kotelchuck M, 2001 Unintended pregnancy and low birth-weight in Ecuador. *Am. J. Publ. Health* 91 (5), 808–810.
- Esber A, Turner NA, Mopiwa G, Norris A, 2016 Intravaginal practices among a cohort of rural Malawian women. *Sex. Health* 10.1071/SH15139.
- Fleddeijohann J, Roberts C, 2018 Missing men, missing infertility: the enactment of sex/gender in surveys in low- and middle-income countries. *Popul. Horizons* 15 (1), 15–36.
- Gannon K, Glover L, Abel P, 2004 Masculinity, infertility, stigma and media reports. *Soc. Sci. Med* 59 (6), 1169–1175. [PubMed: 15210089]
- Goffman Erving, 1963 *Stigma; Notes on the Management of Spoiled Identity*. Prentice- Hall, Englewood Cliffs N.J.,.
- Greil A, 1991 A secret stigma: the analogy between infertility and chronic illness and disability. *Adv. Med. Sociol* 2, 17–38.
- Greil A, McQuillan J, Slauson-Blevins K, 2011 The Social Construction of Infertility. *SocioL Compass* 5 (8), 736–746.
- Greil A, Slauson-Blevins K, McQuillan J, 2010 The experience of infertility: a review of recent literature. *Sociol. Health Illness* 32 (1), 140–162.
- Hennink Monique M., Hutter Inge, Bailey Ajay, 2011 *Qualitative Research methods*. SAGE, London; Thousand Oaks, Calif.
- Inhorn MC, 1994 Interpreting infertility: medical anthropological perspectives. *Introduction. Soc. Sci. Med* 39 (4), 459–461. [PubMed: 7973846]
- Inhorn MC, 2009 Right to assisted reproductive technology: overcoming infertility in low-resource countries. *Int J. Gynaecol. Obstet* 106 (2), 172–174. [PubMed: 19539927]
- Inhorn MC, Patrizio P, 2015 Infertility around the globe: new thinking on gender, reproductive technologies and global movements in the 21st century. *Hum. Reprod. Update* 21 (4), 411–426. [PubMed: 25801630]
- Johnson KM., Greil A, Shreffler KM, McQuillan J, 2018 Fertility and infertility: toward an integrative research agenda. *Popul. Res. Pol. Rev* 37 (5), 641–666.
- Link Bruce G., Phelan Jo C., 2001 Conceptualizing stigma. *Annu. Rev. Sociol* 27, 363–385.
- Mascarenhas MN, Cheung H, Mathers CD, Stevens GA, 2012 Measuring infertility in populations: constructing a standard definition for use with demographic and reproductive health surveys. *Popul. Health Metrics* 10 (1), 17.

- Miall CE, 1985 Perceptions of informal sanctioning and the stigma of involuntary childlessness. *Deviant Behav.* 6 (4), 383–403.
- Miall CE, 1986 The stigma of involuntary childlessness. *Soc. Probl* 33 (4), 268–282.
- Naab F, Brown F, Heidrich S, 2013 Psychosocial health of infertile Ghanaian women and their infertility beliefs. *J. Nurs. Scholarsh* 45 (2), 132–140. [PubMed: 23731032]
- National Statistical Office (NSO) [Malawi] and ICF, 2017 Malawi Demographic and Health Survey Key Findings, pp. 2015–2016 (Zomba, Malawi, and Rockville, Maryland, USA).
- Okonofua FE, Harris D, Obediya A, Kane T, Snow RC, 1997 The social meaning of infertility in southwest Nigeria. *Health Transit. Rev* 7 (2), 205–220.
- Ombelet W, 2009 Reproductive healthcare systems should include accessible infertility diagnosis and treatment: an important challenge for resource-poor countries. *Int. J. Gynaecol. Obstet* 106 (2), 168–171. [PubMed: 19535067]
- Polis CB, Cox CM, Tuncalp O, McLain AC, Thoma ME, 2017 Estimating infertility prevalence in low-to-middle-income countries: an application of a current duration approach to Demographic and Health Survey data. *Hum. Reprod* 32 (5), 1064–1074. [PubMed: 28204493]
- Rao N, Esber A, Turner AN, Mopiwa G, Banda J, Norris A, 2018 Infertility and self-rated health among Malawian women. *Women Health* 58 (10), 1081–1093. 10.1080/03630242.2017.1414098. [PubMed: 29240537]
- Reissman CK, 2000 Stigma and everyday resistance practices: childless women in south India. *Gen. Soc* 14 (1), 111–135.
- Remennick L, 2000 Childless in the land of imperative motherhood: stigma and coping among infertile Israeli women. *Sex. Roles* 43 (11), 821–841.
- Reniers Georges, 2003 Divorce and remarriage in rural Malawi. *Demogr. Res. Spec* 1, 175–206.
- Rouchou Brittany, 2013 Consequences of infertility in developing countries. *Perspectives in Public Health* 133 (3), 174–179. [PubMed: 23327901]
- Saldaña Johnny, 2015 *Thinking Qualitatively: Methods of Mind*. SAGE, Thousand Oaks, California.
- Schwarz J, Dumbaugh M, Bapolisi W, Ndorere MS, Mwamini MC, Bisimwa G, Merten S, 2019 “So that’s why I’m scared of these methods”: locating contraceptive side effects in embodied life circumstances in Burundi and eastern Democratic Republic of the Congo. *Soc. Sci. Med* 220, 264–272. [PubMed: 30472519]
- Sedlander E, Bingenheimer JB, Thiongo M, Gichangi P, Rimal RN, Edberg M, Munar W, 2018 “They destroy the reproductive system”: exploring the belief that modern contraceptive use causes infertility. *Stud. Fam. Plann* 49 (4), 345–365. [PubMed: 30411794]
- Starrs Ann M., Ezeh Alex C., Barker Gary, Basu Alaka, Bertrand Jane T., Blum Robert, Coll-Seck Awa M., Grover Anand, Laski Laura, Roa Monica, Sathar Zeba A., Say Lale, Serour Gamal I., Singh Susheela, Stenberg Karin, Temmerman Marleen, Biddlecom Ann, Popinchalk Anna, Summers Cynthia, Ashford Lori S., 2018 Accelerate progress—sexual and reproductive health and rights for all: report of the Guttmacher–Lancet Commission. *Lancet* 391, 2642–2692. [PubMed: 29753597]
- Tsui Amy O., McDonald-Mosley Raegan, Burke Anne E., 2010 Family planning and the burden of unintended pregnancies. *Epidemiol. Rev* 32 (1), 152–174. [PubMed: 20570955]
- United Nations Population Fund (UNFPA), 9 1994 Report of the international conference on population and development, cairo, 5–13. A/CONF.171/13/Rev.1, available at. <https://www.refworld.org/docid/4a54bc080.html>1995.

Table 1

Characteristics of participants (n = 104).

	Total N = 104	Women N = 53	Men N = 51
Sex	-	51%	49%
Fertility status			
<i>Have fewer children than desired</i>	66%	60%	75%
<i>Have more children than desired</i>	15%	21%	10%
<i>Have desired number of children</i>	18%	19%	16%
Ever used contraception	89%	91%	88%
Experienced difficulty conceiving	17%	17%	18%
Tried unsuccessfully to become pregnant for > 2 years	12%	17%	6%
Mean (range)			
Age	28 (18–48)	27 (18–39)	29 (20–48)
Age at first sex	18 (10–27)	18 (13–24)	19 (10–27)
Age at first marriage	20 (15–28)	19 (15–28)	21 (15–28)
Age at first pregnancy/partner's first pregnancy	21 (16–28)	20 (16–26)	22 (16–28)
Number of living children	2.8 (0–8)	3.2 (1–8)	2.4 (0–8)
Desired family size	3.8 (2–8)	3.7 (2–8)	3.9 (2–8)
Years of education	5.4 (0–13)	5.0 (0–11)	5.8 (1–13)

Table 2

Spiritual and relational causes of infertility.

Possible causes of infertility for women and men	
Spiritual	<p>Bewitchment/curse- cast on the woman/couple from parents or relatives (anyone who wants them to be unhappy) so the woman/couple do not have children. Sacrifice- The woman or couple may "sacrifice" having children in order to become rich (this sacrifice would be facilitated by a witch doctor). They have chosen wealth over family. God- They were "made" by God to not have children; God has not made them pregnant yet, but may in the future; God is punishing them for a behavior, such as having multiple sexual partners or past abortion(s).</p> <p>Odier belief- <i>Satalungosole ka pumchombo Nchori</i>- This means that the woman or man's parents did not take care of her/his umbilical cord after birth. It is thought that if the remains of the umbilical cord (<i>nchombo</i>) fall on the genitals, it can cause infertility.</p>
Relational	<p>The couple has not been together long enough for their 'blood to become one.' The couple must wait for <i>magazi sanagwiranzu</i>, a time when the couple has been together long enough that they are now compatible and capable of having a child, i.e., if they were unable to have a child when they first got married, it could be that they had different blood.</p> <p>"The blood of both of them have not been united, so when the blood unites ... She gets pregnant." ... It may take long. Maybe the problem was the woman or the man, so it happens that the blood has united, but they were not uniting before, despite that they had been having sex." -Older men (FGD #10) The couple are the same age (if the male partner is older, his sperm are stronger than the woman's vaginal fluids and can more easily impregnate her).</p> <p>"There has to be difference in age between the man and woman. A man should be a higher age than a woman. But when a man has a less age than a woman, it prevents pregnancy." -Young men (FGD #12) The woman did <i>not</i> have sex before marriage, and a certain (undefined) amount of sex is needed for her to be capable of becoming pregnant.</p> <p>"Other women, they don't get pregnant because when she was a girl, she was not having sex with many men. That woman is supposed to have sex with her man regularly so that she can get used to it and get pregnant." -Young men (FGD #3) The couple does not have sex or they have sex too infrequently to conceive a pregnancy.</p> <p>"Others, they have sex only once at night then the next day they do it once. With that, you can't get pregnant. You have to do sex morning, afternoon, and then in the evening." -Young women (FGD #11) The couple has sex too frequently, causing the man to produce weak sperm that cannot impregnate his partner.</p> <p>"Having sex everyday can delay pregnancy. [To achieve pregnancy] don't sleep with her frequently to preserve energy." -Mixed ages, men (FGD #1)</p> <p>"When you are doing [sex] frequently you cant get pregnant. It's one way of doing family planning." -Young women (FGD #7) One or both (usually the woman) do not experience pleasure during sex.</p> <p>"Other women just sleep as if they are corpses during sex. How can the man feel die pleasure? Others try to help the man during sex, hence when the gametes unite, pregnancy comes." -Older women (FGD #9) "[When] women have sexual desire, when you are sleeping with them, your sexual desire and her desire unite [and] as a result pregnancy comes quickly." -Older men (FGD #10)</p> <p>"If the woman doesn't feel anything from the sex, she may not get pregnant... because if she is not feeling anything, it means the sperms the man is releasing are not strong enough to make her pregnant." -Young women (FGD #4) There is no peace in the house (the couple does not get along well).</p> <p>"There should not be physical violence in the family. Instead there should be love, then pregnancy may take place." -Mixed ages, women (FGD #2) One or both have multiple sexual partners.</p>

Table 3

Natural/biological and behavioral causes of infertility.

	Women	Men
Natural/biological	<p>She was born with low fertility/infertility (she is not made to have children or more than one child). "People are born differently, because others who are young, maybe 13 years of age become pregnant, while others are marrying, maybe at the age of twenty something or thirty something years old, but pregnancy is not coming. We were created differently." - Older women (FGD #9) Her uterus is in the wrong position (described as having a deep back or spine). "It happens because of nature. It depends with [her] back. Others they respond [get pregnant] very fast. This is because their ovaries move fast, while others have a long lime to go. That's why they took time to get pregnant. They call it <i>mszana wozama</i> [unable to get pregnant easily] or <i>mszanawaputipi</i> [easily become pregnant]." -Mixed ages, men (FGD #8) The woman is not mature enough to become pregnant; her eggs are not mature enough to be fertilized; or her bones are not strong enough for her to become pregnant (all meaning that she is too young to become pregnant). "The woman's ova are not mature, but when they are matured, she can get pregnant." - Young women (FGD #4) Sex during die wrong time of the menstrual cycle. "When the woman is close to her menstruation, her body becomes weak, so when you sleep with her, pregnancy comes. But when she has finished her menstruation, she does not have a strong sexual desire." - Older men (FGD #10) She has been sterilized. She had a traumatic first birth, which made her infertile.</p>	<p>Erectile dysfunction Ejaculation takes too long. "When a man takes time to release the sperms, he can't impregnate a woman. The [man] who doesn't take time to release his sperm, he can impregnate a woman." -Young women (FGD #11) Ejaculation comes too early (sperm ejaculated later during sex were considered by some to be more potent). Sperm Sperm are not strong. Ejaculate is water/looks like water- meaning that sperm are nonexistent or weak. "Sperms that are strong to impregnate looks like a whitish color, while the other one looks like very watery. You can easily see it, after sex with a woman, so this means that he has weak sperms." -Mixed ages, men (FGD #8) Born with low fertility (he was not made to have children). Women's contraceptive use have made the man's sperm or body weak.</p>
Behavioral cause - contraceptive use	<p>Contraceptive use <i>Nsana unazama</i>- Meaning that the uterus has moved (from its normal position). If a woman uses contraception for a long time and/or does not become pregnant for a long time, it might cause the uterus to move, which will cause a woman to be unable to become pregnant. She used contraception in the past and it remains in the body (meaning that she will become pregnant when the contraception has been cleared from her body). "It seems that the woman, maybe she was using injection before she got married. So, after getting married, that injection was still working in her body so it was very difficult for her to get pregnant, but [when the] injection has lost power, she is able to get pregnant." -Mixed ages, men (FGD #8) She used contraception before marriage, before first pregnancy, or between pregnancies (particularly between the first and second pregnancy). "Sometimes it happens that when a woman was a girl, she was using contraceptives. When doing this, she might never know that she has destroyed other things which helps <i>n</i> woman to get pregnant." -Young men (FGD #3) She used contraception for too long, which made her infertile through an unknown mechanism. Length of time considered "too long", was thought to be different for everyone. "It's better to have not more than 5 injections. ... when you go for injection, it dries up all the eggs so when its too much you stay with no eggs, hence no pregnancy." -Young women (FGD #4) She is not becoming pregnant because she is using contraception without her partner's knowledge. "Sometimes the woman can be using a family planning method like injection without telling the man." Another participant: "Maybe there is no love from the man so the woman [prevents pregnancy by using contraception] deliberately to punish the man." -Young women (FGD #4)</p>	<p>Multiple sexual partners Men who have sex with multiple partners may become too weak to impregnate his wife/primary female partner. STIs- Acquired due to multiple sexual partners or partner having multiple sexual partners.</p>
Behavioral cause - other sexual/reproductive behaviors	<p>Abortion The reproductive organs are damaged due to past abortions, such that she fails to carry more pregnancies. "Sometimes it may happen, you deliberately abort for so many times, then you get barren. ... your ovaries gets frustrated fund do not] produce any more eggs." -Young women (FGD #4) A punishment from God for having (an) abortion(s). "God is angry with her [for having an abortion] and he has decided to make her barren." -Young women (FGD #7) Vaginal practices A woman used herbs inside of her vagina to enhance her partner's sexual pleasure, and die herbs later caused infertility. Disease She has a disease of the vagina and/or uterus (<i>Masungu</i>) that causes rashes and prevents sperm from entering the vagina.</p>	<p>Multiple sexual partners Men who have sex with multiple partners may become too weak to impregnate his wife/primary female partner. STIs- Acquired due to multiple sexual partners or partner having multiple sexual partners.</p>

Men	Women
	<p>Another reason which can make a woman not get pregnant is a disease called <i>masungu</i>. These are small sores which develop at a woman's private part so she can have sex, but she can't get pregnant ... these sores are curable, they have special treatment [sol later on a woman can conceive.]-Mixed ages, men (FGD #8)</p> <p>Multiple sexual partners</p> <p>STIs - Acquired due to multiple sexual partners or partner having multiple sexual partners.</p>