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Measuring family planning norms in Zambia: A mixed methods vignette study

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Abstract

Vignettes have increasingly been used in social norms research, but it is unknown whether vignettes are a valid, culturally appropriate, and effective approach for measuring family planning norms in Zambia. In this mixed methods, cross-sectional study, surveys (*n* = 438) and focus groups (*n* = 135) were conducted with married women in two, purposively selected districts in the Central Province, the rural district of Mkushi and the urban district of Kabwe. Social norms constructs measured included: reference groups, descriptive norms, injunctive norms, collective norms, and outcome expectations. Vignettes covered reaching desired family size, using modern contraception for birth spacing, and seeking family planning services. The results complemented each other suggesting vignettes may indeed be a valid approach for measuring family planning norms in this setting, although further research is needed. Successful vignette administration requires translating and back-translating, pretesting in the local language, adapting to the local context, and training. The findings hold implications for future family planning norms measurement, both in Zambia and across global settings. *(Afr J Reprod Health 2021; 25[5]: 37-48).*

Keywords: Social norms; family planning; mixed methods; vignettes; Zambia

Résumé

Les anecdotes sont de plus en plus utilisées dans la recherche sur les normes sociales, mais on ne sait pas si elles sont une valides, culturellement appropriées et efficaces pour mesurer les normes de planification familiale en Zambie. Dans cette étude transversale à méthodes mixtes, des enquêtes (n = 438) et des groupes de discussion (n = 135) ont été menés auprès de femmes mariées dans deux districts spécifiquement sélectionnés de la Province Centrale; le district rural de Mkushi et le district urbain de Kabwe. Les normes sociales mesurées comprenaient: les groupes de référence, les normes descriptives, les normes injonctives, les normes collectives et les attentes en matière de résultats. Les anecdotes portaient sur: l'atteinte de la taille de famille souhaitée, l'utilisation de la contraception moderne pour l'espacement des naissances et la recherche de services de planification familiale. Les résultats se sont avérés complémentaires, suggérant que les anecdotes peuvent effectivement être une approche valide pour mesurer les normes de planification familiale dans ce contexte, bien que des recherches supplémentaires soient nécessaires. La gestion réussie des anecdotes nécessite une traduction puis une traduction inversée, un test préliminaire dans la langue locale, une adaptation au contexte local et une formation. Les résultats dévoilent un impact sur mesure future des normes de planification familiale, tant en Zambie que dans d'autres pays. *(Afr J Reprod Health 2021; 25[5]: 37-48).*

Mots-clés: Normes sociales; planning familial; méthodes mixtes; anecdotes; Zambie

Introduction

Zambia has one of the highest global fertility rates, with 4.7 births per woman[1]. Global behavioral indicators related to fertility, such as achieving ideal family size, utilizing modern contraception for birth spacing, and using family planning to delay pregnancy, are driven in large part by social norms[2]. The most recent Zambia Demographic and Health Survey (ZDHS) found the ideal number of children is 4.6, the average time between births is 38 months, and 48% of women utilize modern contraception[3]. While many tools have been used to measure social norms across global family planning[4], only a handful have been tested in Zambia[5-7], and few have specified constructs measured. Furthermore, while several recent, practice-focused publications have suggested vignettes may be appropriate tools for

measuring social norms[8,9,10], it is largely unknown whether mixed-methods vignettes are indeed valid, culturally appropriate, and effective for individuals and communities in Zambia.

A social norm is a pattern of collective behavior that is reinforced, propagated, and sustained by unwritten social rules[11]. Social norms play a monumental role in family planning, with social and community-level factors creating expectations women feel compelled to follow[12]. Social norms act as unspoken guidelines, resulting in women modifying behaviors to match those of their social networks[13]. Family planning norms are closely related to economic, social, cultural, religious, and geopolitical factors. In Zambia, women from rural areas are significantly more likely to marry younger, give birth earlier, and have more children than their urban counterparts[3].

A literature review reveals five social norms constructs. First, social norms require a reference group: a group of people a person feels a connection or identity with[14]. This group defines norms by influencing whether an individual's behavior is considered normative. Second, descriptive norms are behaviors followed because an individual believes people behave this way[15]. Third, injunctive norms, encompass an individual's beliefs about the beliefs, thoughts, and approval of others[15]. Fourth, collective norms describe the actual prevalence of behavior[16,17]. Finally, outcome expectations are beliefs about the benefits and sanctions[18] related to a behavior. This is the notion that descriptive and injunctive norms are prescribed by weighing the pros and cons of adhering or not adhering to a behavior[19]. These rewards and sanctions create an informal network of motivations that perpetuate a behavior to earn social rewards and avoid social sanctions. A recent conceptual framework synthesizes social norms theorizing for adolescent reproductive health[20].

Previous family planning research has measured social norms constructs both quantitatively and qualitatively—though rarely concurrently[21]. A literature review on social norms measurement for contraceptive use found questionnaires are most common[4]. But there are limitations to surveys that ask direct questions about family planning. Women may be hesitant to answer honestly, and these approaches may not always be culturally appropriate. Several recent articles have called for more qualitative research to capture the nuance of social norms and their relationships to behavior[22,23].

Vignettes are mixed-methods measurement tools that have shown promise in the grey literature on topics including child marriage and violence against women[8,9,10], but have not yet been widely validated for measuring family planning norms. Vignettes are narratives that depict a hypothetical scenario[24-26]. Participants respond to closed-ended survey questions or open-ended prompts. Theoretically, it is thought the imaginary nature of vignettes allows participants to divulge beliefs about sensitive topics, including health-related sexual behaviors and family planning, when direct questioning is not culturally appropriate and/or limits the candor of participant's responses[27].

Previous research has explored the use of vignettes across family planning in other countries[28-30]. In Zambia, vignettes have been used in qualitative studies to understand experiences surrounding HIV[31], as well as social norms around reproductive empowerment[32]. This study was designed as a field validation to understand whether mixed methods vignettes are a valid methodological approach for measuring family planning norms in Zambia.

Methods

This study was part of a wider effort by Population Media Center (PMC) that aimed to enhance the organization's capacity to affect social norms change across their social and behavior change communication (SBCC) programs. Decades of research have illustrated the positive impact of SBCC on family planning knowledge and behavior, including several examples from Zambia[33,34]. At the time of this research, PMC was airing a Bemba-language SBCC radio program with family planning themes in the Central Province. The characters and stories used in this research originated from that program, but otherwise this research was conducted separately from the program's monitoring and evaluation activities.

Partnership and validation process

This study was conducted together with Pragma, a Zambian research agency that conducted the

fieldwork and was crucial in ensuring necessary local adaptations. The agency translated, back translated, and pretested study tools. Next, all field team members participated in a three-day training in Lusaka. The training began with a presentation by PMC to help the team understand characters and stories from the SBCC program that were used to develop the vignette tools. The training also included an ethics module and practice administering the tools. Data were collected in August 2019 after receiving all required ethical approvals, including university approval, local approval from ERES Converge IRB in Lusaka, and appropriate permissions from provincial authorities, district commissioners, health officers, and applicable local officials.

Recruitment

Survey recruitment began in four health centers in two, purposively selected districts in the Central Province where the SBCC program was airing at the time but were not part of ongoing program monitoring and evaluation activities: the rural district of Mkushi and the urban district of Kabwe. This is a commonly practiced local sampling approach, as district-level research approvals take place at the health centers. Team members walked in one of the four cardinal directions from the health centers for three minutes and then took the first house on their left. If that house was eligible, they enrolled eligible participants (married, Bemba-speaking women, age 19-34 who had ever listened to at least one episode of PMC's SBCC program but had not participated in any other PMC-related research) and conducted the survey. Individual informed consent was obtained, and spousal/parental consent was obtained where appropriate. Random sampling was employed, where every other house was potentially eligible until the desired sample size was reached.

Focus group discussion (FGD) recruitment also began at the local health centers. Through purposive sampling, women who met the same inclusion criteria, but had not participated in the survey, were recruited. Eight FGDs were held at each health center, and of those, half were held with 19-24-year-old women and half with 25-34-year-old women. Women gave consent in an identical process and received a study incentive of 20 Kwacha (approximately $2).

Measures

The survey and FGD instruments were designed separately but with PMC's audience in mind with a range of questions and prompts that originated and were adapted from the academic literature for the local context. Both instruments utilized questions designed to measure reference groups, descriptive norms, injunctive norms, collective norms, and outcome expectations in vignettes on three family planning topics (reaching desired family size, using modern contraception for birth spacing, and seeking family planning services). PMC's head scriptwriter developed the study vignettes using existing characters and storylines from one of PMC's SBCC programs.

Reference groups

Reference group items originated from Costenbader *et al*[4]. Survey respondents were read survey vignette 1 (Table 1) and asked to answer the question, "Who would Sampa talk to in this situation?" by listing who would be important to this person if they were from their community. Survey enumerators did not read the response items. Respondents were asked "anyone else?" until no further people were named.

The FGD prompts followed focus group vignette 1 that was read to participants (Table 1). This first vignette centered around a woman named Nachilindi and who participants thought she would go to for advice about managing her family size. Participants were probed on specific people Nachilindi would turn to and asked open-ended questions regarding who would be the most important to her and why[8,10].

Descriptive norms

For descriptive norms, survey respondents were read survey vignette 2 and asked to determine what most married women ages 19-34 years in their communities would do in the character's situation[24,35-38]. Enumerators did not read the response items. Respondents were asked "anything else?" until no further actions were named. The FGD prompts for this construct were asked following

Table 1: Text of survey and focus group discussion vignettes

Survey Vignette 1 (measured reference group)
Next, I'm going to read you a short story and ask you to explain what would happen next. Imagine this story takes place in this community. Sampa has been married for 7 years. Sampa has two children, a boy aged 4 and an infant baby girl turning 1 year. One day her husband comes home and says he wants another child. Sampa understands that a woman should always submit to her husband, but she also sees that her husband is struggling. Who would Sampa talk to in this situation?
Survey Vignette 2 (measured descriptive norms)
Next, I'm going to read you a short story and ask you to explain what would happen next. Imagine this story takes place in this community. Let's imagine Sampa, the woman from the story earlier. What would most married women age 19-34 do in Sampa's situation?
Survey Vignette 3 (measured injunctive norms)
Thinking one last time about the story of Sampa. Imagine Sampa decides to stop having children as she has reached her ideal family size of two children. Would most married women in this community approve of Sampa's decision?
Focus Group Vignette 1 (measured reference group)
Nachilindi means "Something to throw away." This name was given to her for two reasons, to start with, she was born a girl yet her father the headman wanted a boy and secondly, she was born with a large birthmark on the right side of her face. Nachilindi is the first born in a very large family of 13 children. While an early teen, she was faced with a lot of home responsibilities, and she was never taken to school as her father believed that a girl child was only good for house chores and marriage. At 13, Nachilindi's father, the headman of the village, secretly took her to the bush. It was dark and scary, Nachilindi did not know what was going on until she found out that her father wanted to marry her off to the village witchdoctor. She ran away. While away, Nachilindi somehow managed to get educated and completed a course as a school teacher. During that time, she found a good man and got married. Now they have 2 children. Nachilindi is now faced with the choice of having another child or launching her career.
Focus Group Vignette 2 (measured descriptive norms, injunctive norms, collective norms, and outcome expectations)
Now we're going to move onto the second story. Next, I will tell you a story of a woman named Sampa. Let's pretend she is from this village. I don't want you to think about a real Sampa who lives here. Instead, I would like you to listen to the story carefully and discuss the questions that follow. We want to know about what people in your community would do if they were in a similar situation to this story. Sampa has just given birth to a lovely baby girl. Labor was made even harder by the fact that her husband is struggling with finances. This is their second child. The first is a boy aged 3. Sampa is a 25-year-old woman who was born in a traditional household. She has only ever been with one man and that is her husband. A marriage born out of Sampa getting pregnant at an early age. The news of a newborn baby girl is greeted with a lot of joy in the village. Sampa's first visitor after birth is Nachilindi, her husband's elder sister. Upon hearing about Sampa and the husband are struggling, Nachilindi suggests that Sampa start using modern contraception immediately in order to space her next child and to avoid having another child due to the financial state of the family. By modern contraception, I mean products that prevent or delay pregnancy such as intrauterine devices, implants, condoms, or birth control.
Focus Group Vignette 3 (measured descriptive norms, injunctive norms, collective norms, and outcome expectations)
Now we're going to move onto the third story. Again, we want to know about what people in your community would do if they were in a similar situation to this story. Sampa was only 19 when she got pregnant, she did not even choose to marry. Circumstances happened. She did not complete school, but she knows enough to read and write. Sampa is married to the pompous headman's son Chomba (referred to as CBC Danger by the locals) they have been married for 7 years. Sampa has two children, a boy aged 4 and an infant baby girl turning 1 year. At this point, her home is struggling. CBC is not working, the little money he earns from small businesses ends up being used up at the local shabeen. One day her husband CBC comes home and says he wants another child. Sampa understands that a woman should always submit to her husband, but she also sees that her husband is struggling.
Focus Group Vignette 4 (measured descriptive norms, injunctive norms, collective norms, and outcome expectations)
Now we're going to move onto the final story. Once again, want to know about what people in your community would do if they were in a similar situation to this story. Nachilindi is a 30-year-old woman working as a school teacher. She has two healthy children. Her husband is Jomwa an equally successful 38-year-old man running a grocery store and planning to expand his business. They are doing fine. Nachilindi is looking to focus on her career and go for further studies while Jomwa is looking to expand his business. However, family and friends think it is time that Nachilindi and Jomwa had another child seeing as they are doing fine. Nachilindi is considering to stop having children.

focus group vignettes 2, 3, and 4 that were read to participants. Each vignette had two parallel prompts designed to measure descriptive norms, e.g., "What would most married women age 19-34 in your community do in this situation?"[8,10].

Injunctive norms

Injunctive norms were measured by reading survey vignette 3 and asking survey respondents to think about the vignette character and whether married

women in the community would approve of her decision to have only two children in a yes/no/don't know format[24,35,36,37,38]. In the FGDs, focus group vignettes 2, 3, and 4 each contained nine parallel prompts designed to elicit responses related to injunctive norms surrounding participants' beliefs of the beliefs of various members of her community, e.g., "Would most married women in your community approve of this decision?"[8,10].

Collective norms

Five survey questions and three FGD prompts measured collective norms. Survey, respondents were asked: 1) if they had ever given birth, 2) the number of times they had given birth, 3) if they had had the number of children she desired, more children than she desired, or less children than desired, 4) how many more children the respondent would like to have, and 5) how many total children she would like to have[39,16,17]. In the FGDs, prompts following focus group vignettes 2, 3 and 4 probed whether participants had performed similar behaviors and made similar decisions as the vignette characters[8,10].

Outcome expectations

Finally, outcome expectations were measured in the survey with close-ended questions which asked about the benefits of having the number of children desired and sanctions for having fewer children or more children than desired[40]. Responses were derived during pretesting. In the FGDs, vignettes 2, 3, and 4 each had two prompts (one for benefits and one for sanctions) to probe participants on the outcome expectations for the three topics[8,10].

Analysis

IBM SPSS Statistics for Windows, version 24 (IBM Corp., Armonk, N.Y., USA) was used to analyze the quantitative data. Demographics and responses between the rural and urban districts were compared. The FGDs were audio-recorded and transcribed in English and back translated into their respective languages. The analysis was led by directed content analysis using NVivo version 11 (QSR International, Burlington, M.A., USA) software. All 16 transcripts were double coded by two independent coders. Intercoder reliability was calculated to assess coding accuracy and agreement, resulting in a mean kappa coefficient of .96 (range .88-1.00), indicating exceptional intercoder reliability. This was further supported by a mean percent agreement on all codes of 99.93% (range 99.76-100%).

Results

Sample

The surveys lasted approximately 20 minutes. The 438 survey respondents were evenly split between rural and urban settings (50.7% vs. 49.3%; Table 2). They reported a mean age of 26.3 ± 4.6 years, and a majority (82.4%) were Protestant. Access to family planning services and modern contraception was high. Most reported less than 30 minutes to walk to the nearest family planning center (82.6%) and greater than 90% reported access to family planning services and modern contraception, and the ability to obtain modern contraception on her own. The majority reported they would obtain contraception at a health clinic (96.1%), with some reporting they could obtain contraception from a local shop (21.7%) or a community health worker (15.8%). Respondents' ability to afford commodities and/or services was the most common factor noted in their use of family planning (84.9%). In sum, 135 different women participated in the FGDs, with a range of 8-11 participants and an average of 8.4 participants per group. The shortest FGD lasted 61 minutes, and the longest 1 hour and 51 minutes. On average, the discussions lasted 88.5 minutes.

Reference groups

Among the survey respondents, the five most common persons named as important to the vignette character included her mother (65.1%), a local marriage counselor (59.4%), a health worker (37.9%), her grandmother (33.6%), and her mother-in-law (33.3%). The character's husband was named by 28.8% of respondents.

Among the FGD participants, there was reference to specific family members, especially female family members, such as her aunt and grandmother. Participants also mentioned community leaders, such as religious figures, who could be asked to provide her with an unbiased opinion.

Table 2: Survey sample characteristics

Area of Residence	Number of Respondents or Mean (% of total or ±SD)
Rural	222 (50.7%)
Urban	216 (49.3%)
Religion	
Protestant	361 (82.4%)
Catholic	62 (14.2%)
Muslim	2 (0.5%)
No response	13 (3.0%)
Age	26.3±4.6 years
Time to walk to nearest health center	
Less than 30 mins	362 (82.6%)
Between 30-60 mins	58 (13.2%)
Between 1-2 hours	17 (3.9%)
No response	1 (0.2%)
Most important consideration in use of family planning	
My economic status	372 (84.9%)
Status of my marriage	109 (24.9%)
My age	100 (22.8%)
My current number of children	98 (22.4%)
My personal beliefs	91 (20.8%)
My relationship with in-laws	22 (5.0%)
My religion	20 (4.6%)
My children's education	13 (3.0%)
Respondents reporting access to	
Family planning services	417 (95.2%)
Modern contraception	412 (94.1%)
Ability to purchase contraception for themselves	409 (93.4%)
Where they would obtain modern contraception	
At a health clinic	421 (96.1%)
From a local shop	95 (21.7%)
From a community health worker	69 (15.8%)

n=438

Participants emphasized the importance of talking to marriage counselors, as they were perceived as sources of sound advice.

"The reason why she should go to marriage counselors is because they are ever ready and possess enough wisdom to sit her down and teach her about how she must look after her home." [25-34-year-old woman; urban district]

For additional sources of sensible advice, participants listed friends. There was an even divide of whether unmarried friends would be helpful, considering that they would not be aware of the demands of marriage.

"She can talk to her married [friends] so that they can share ideas because they have been through the same thing as well." [25-34-year-old woman; rural district]

There were varying responses regarding whose advice would be considered the most important in deciding whether to have another child, but there was a heavy emphasis on the advice of the character's husband.

Descriptive norms

The most common survey responses included suggestions that Sampa talk to a marriage counselor (46.3%) or health worker (37.9%), start using a family planning method without her husband knowing (36.8%), and talk to her husband (34.2%). Among the FGDs, there was no apparent consensus on the correct plan of action for reaching desired family size. The participants were split between whether Nachilindi should have more than two children or focus on her career. In contrasting opinions, they believed:

"She must add some more children because the children she has are too few." [25-34-year-old woman; urban district]

"Most women would continue with their studies." [25-34-year-old woman; urban district]

On the FGD topic of using modern contraception for birth spacing, participants seemed to agree more, with almost all of the focus groups believing utilizing modern contraception to space out her children would be in Sampa's best interest. Nearly all of the focus groups agreed that women Sampa's age, relatives, and other married women would start using family planning to avoid immediately having another child in times of financial hardship. Participants most frequently mentioned oral contraceptives, injectable contraceptives, and "the closing of the womb" (i.e., tubal ligation) as modern contraceptive methods.

Table 3: Descriptive norms results (survey)

Vignette Response	*Number of Respondents (% of total)*
Talk to a marriage counselor	203 (46.3%)
Talk to a health worker	166 (37.9%)
Start using family planning method without husband knowing	161 (36.8%)
Talk to her husband	150 (34.2%)
Talk to a relative	92 (21.0%)
Talk to a friend	86 (19.6%)
Hold a family meeting	83 (18.9%)
Have another baby	70 (16.0%)
Talk to pastor/spiritual leader	48 (11.0%)
Divorce Husband	26 (5.9%)
Pray	26 (5.9%)

n=438

Table 4: Collective norms results (survey)

Have you ever given birth? (N=438)	**Number of Respondents or Mean (% of total or ±SD)**
Yes	408 (93.2%)
No	22 (5.0%)
How many times have you given birth? (N=408)	
1 time	118 (26.9%)
2 times	114 (26.0%)
3 times	76 (17.4%)
4 or more times	123 (28.1%)
Mean number of births	2.7±1.5
Would you say you have had the number of children you desired, more children than you desired, or less children than you desired?	
The number of desired children	103 (23.5%)
More children than desired	16 (3.7%)
Less children than desired	275 (62.8%)
How many more children would you like to have in your lifetime?	
No more children	106 (24.2%)
1 more child	79 (18.0%)
2 more children	100 (22.8%)
3 more children	83 (18.9%)
4 or more children	40 (9.1%)
How many total children would you like to have in your lifetime?	
1 child	44 (10.0%)
2 children	26 (5.9%)
3 children	63 (14.4%)
4 or more children	220 (50.2%)

n=438

Injunctive norms

Of the survey respondents, 50.9% said most women would approve of Sampa's decision to only have two children, while 40.6% said most women would not approve. FGD participants had similarly mixed viewpoints. Occasionally some women in the group said that Nachilindi made the right decision by deciding not to have more children and continuing her education; however, the majority of FGD participants agreed women would expect Nachilindi to have more children, with two children being too few. In reference to what most married women would expect Nachilindi to do:

"She must have some more children. She must have about three more children." [25-34-year-old woman; urban district]

The responses from one of the rural district discussions were interesting regarding what others would say if Nachilindi decided to stop having children:

"Other women may say that her decision is meant to sacrifice her womb for rituals in order to boost her husband's business." [19-24-year-old woman; rural district]

"They may think that she is into Satanism." [19-24-year-old woman; rural district]

When asked about others' beliefs regarding using modern contraception for birth spacing, the responses mirrored the descriptive norm responses. Many FGD participants mentioned others would not have a problem with Sampa using modern contraception and, in fact, would expect her to space out her children to avoid financial hardships. There was consensus that others would approve of her decision to start using family planning, with only a handful of participants mentioning otherwise.

Lastly, when asked about injunctive beliefs regarding seeking family planning services, participants had the fewest number of responses, which was similar to the descriptive norms finding.

Table 5: Outcome expectations results (survey)

Benefits	Number of Respondents (% of total)
Children can get education	311 (71%)
Parents can provide for their children	213 (48.6%)
Parents can have exactly the number of children they want to care for	163 (37.2%)
Being content with a happy, healthy family	142 (32.4%)
Receives praise	119 (27.2%)
Receives respect	114 (26.0%)
Having enough children is a sign of prestige	79 (18.0%)
Not worrying about having more children	61 (13.9%)
Security in her marriage	61 (13.9%)
Has a sense of empowerment	59 (13.5%)
Sanctions (Fewer Children)	
Some children die before adulthood	211 (48.2%)
Feel depressed	151 (34.5%)
The household will be too small	137 (31.3%)
There will be no children to take care of me when I am old	123 (28.1%)
Fights with husband	62 (14.2%)
Not good for the future of Zambia	52 (11.9%)
Having more children will strengthen the marriage	49 (11.2%)
Mocked by her community	48 (11.0%)
Not enough children to carry on family traditions	48 (11.0%)
People will think you are selfish	47 (10.7%)
Sanctions (More children)	
Economic burden	304 (69.4%)
Health issues of children	217 (49.5%)
Hard to educate all of the children	169 (38.6%)
Can strain the relationship	89 (20.3%)
She could die in childbirth	86 (19.6%)
Mocked by husband	80 (18.3%)
She could have health issues	76 (17.4%)
Her children may not feel loved	70 (16.0%)
Mocked by community	61 (13.9%)
She'll have no energy/always be tired	44 (10.0%)

n=438

For the most part, participants believed that others would support Sampa's decision to seek family planning services and would encourage her to use contraception. There was an overlap with seeking family planning services and using modern contraception topics, with participants seemingly unclear about the difference between the two topics.

Collective norms

Nearly all survey respondents had previously given birth (93.2%), with an average of 2.7 ± 1.5 number of births per woman. Most respondents reported having fewer children than desired (62.8%). Regarding the total number of children that women would like in their lifetime, half identified four or more children (50.2%).

Compared to the rest of the constructs, the collective norms prompts in the FGDs warranted the fewest responses. Typically, participants would either confirm or deny the existence of women in the community who had made similar decisions to the vignette character without any further elaboration. Multiple comments, however, suggested families in each geographical area tended to be large.

"In this area, there is nothing like having only two children." [25-34-year-old woman; urban district]

The participants knew plenty of women who had stopped having children after reaching their desired family size, and some noted having smaller families was beginning to become more common in their communities. Regarding collective norms on the use of modern contraception for birth spacing, participants had more stories of the prevalence of this behavior in their community, referring to anecdotes about friends and themselves. Based on their responses, it appears the concept of birth spacing is normative and people use contraceptive methods to achieve it. One participant stated:

"We should give children space of 5 years, that's when you can have another one." [19-24-year-old woman; rural district]

Responses to items about collective norms on seeking family planning services yielded the fewest responses. Women did not have any stories or anecdotes about other women in their community who sought family planning services; they merely explained there were women in their communities doing this.

Outcome expectations

Regarding the benefits of having the exact number of children as desired, survey respondents most

commonly reported children being able to get an education (71%), parents being able to provide for their children (48.6%), parents having exactly the number they want to care for (37.2%), and being content with a happy, healthy family (32.4%). Marriage security for the woman (13.9%) and having a sense of empowerment (13.5%) were less commonly reported responses. In identifying sanctions that might arise from having fewer children than desired, respondents most frequently reported that some children die before adulthood (48.2%), feelings of depression (34.5%), and that the household would be too small (31.3%). The most commonly reported sanctions from having more children than desired reflected similar concerns of health and economic capability as most important, including economic burden (69.4%), health issues of children (49.5%), and difficulty educating all the children (38.6%).

In the FGDs, most women noted benefits of having a smaller family included a better quality of life and better financial standing. In contrast, only a few reported sanctions related to reaching a desired family size that does not conform to larger family norms, noting it may warrant a reaction from the in-laws and their husbands, who may be unfaithful if a woman stops having children:

"Men are going to find girlfriends when you stop having children. They go and have children somewhere else." [25-34-year-old woman; urban district]

When questioned about the benefits and sanctions of using modern contraception for birth spacing, women were forthcoming with their opinions. Most FGD participants identified multiple benefits and sanctions, with one not outweighing the other. In general, the benefits revolved around modern contraception improving the mother's quality of life and creating economic feasibility.

"It is very strenuous to be returning to the health centre for every now and then for antenatal care and to be buying baby requirements always. Family planning helps us to take a rest." [25-34-year-old woman; rural district]

On the other hand, sanctions for modern contraceptives primarily focused on adverse health effects, either those participants had personally experienced after using modern contraception or their perceived notions of what could happen. Once again, the responses for the benefits and sanctions of seeking family planning services heavily overlapped responses from the other vignettes. It seemed as if the participants viewed the three study topics to be synonymous, resulting in nearly the same answers from previous vignettes.

Discussion

Implementing programs designed to role model new norms requires applying valid and appropriate measurement strategies to understand how, when, and why norms operate. This study aimed to validate the use of mixed-methods vignettes as a methodological approach for measuring family planning norms in Zambia. Applying mixed methods allows researchers to triangulate results and either confirm (and validate) responses derived from both methods or produce new questions when results diverge[41]. Overall, the results from the two methods used in this study appeared to complement each other.

For reference groups, the quantitative vignette yielded similar responses to the FGDs. FGD participants named community leaders and marriage counselors alongside family members, similar to the persons named in the survey. Local marriage counselors, called Bana Chimbusa or Alangizi, are traditional counselors across Zambia. These counselors meet with women prior to marriage to discuss family matters or to later assist with marital disputes. Interestingly, survey respondents did not commonly mention the character's husband, while the FGD participants did mention the husband, but only after being asked who would be the most important. While analyzing the results from this construct, this study found translation and back translation were critical, particularly when interpreting the cultural nuance related to people named and their role (e.g., the specific role of Zambian marriage counselors).

Pretesting in the local language was essential for obtaining the item responses to the survey questions designed to measure descriptive norms, and the results provided an array of responses as to what the character would do in her situation.

The FGD responses provided a more comprehensive understanding of how the three family planning topics are viewed by Zambian women. By the last vignette, however, FGD responses became increasingly infrequent and repetitive. This suggests participant fatigue and a need for clear distinctions between overlapping topics. Future studies may benefit by having participants assist with creating and editing the instruments.

The injunctive norms findings revealed a divide on potential solutions from both sets of participants. The FGD responses revealed unique opinions from rural participants that could not have been uncovered with a close-ended response. This suggests open-ended questions may be necessary for understanding family planning norms and, in turn, adapting norms-focused programming locally. Research indicates injunctive norms can exhibit a strong influence on family planning behavior[42] and, thus, understanding and measuring these beliefs could lead directly into program content. An SBCC program could, for instance, create characters and storylines using quotes from formative research.

Both the collective norms and outcome expectation findings suggest the need for adequate training of study personnel. While the responses for both constructs were straightforward, there were fewer responses from FGD participants. While both data sets appeared to confirm larger families were normative, study personnel need to be trained to distinguish between constructs and to effectively probe for additional detail. Future studies may consider cultural adaptations and wording of these questions closely. The word 'sanctions' for instance may not translate well, and it is critical to find a local word or phrase to clearly explain this concept.

The vignettes in this study were designed using existing characters and stories from an SBCC program and were written by a scriptwriter, as opposed to researchers. In terms of SBCC, it seems a natural fit to utilize creative teams (who have an existing cast of characters and carefully planned storylines) in evaluation and research efforts. Future vignette research may be strengthened by partnering with local storytellers. For example, local storytellers could design, and actors could record, vignettes played or shown during surveys or focus groups. This would not only make the stories more entertaining for participants, but also increase validity as each instrument is administered universally.

This study has several limitations. First, conclusions about changes in social norms over time cannot be made with a cross-sectional study design. Future studies should repeat vignettes longitudinally. Men should be included in future studies. Additional studies could evaluate if the five constructs included in this study are indeed what need to be measured when assessing family planning norms. Sampling took place at the local health centers and such methods should be expanded in future studies to include women who live farther away and have less access to family planning services. Finally, while this study took steps to translate, back translate, and pre-test all items, future studies may benefit from cognitive interviewing.

Conclusion

This study is one of the first to validate mixed-methods vignettes for measuring family planning norms in Zambia. Using constructs from across theorizing, this analysis adds to the evidence on measuring family planning norms with vignettes. Findings indicate mixed-methods vignettes may yield rich responses related to the nuance of norms, with keys to successful administration including translating and back-translating, pretesting in the local language, adapting to the local context, and adequate training of study personnel. Family planning norms across Zambia and in other settings are complex, and measurement solutions should be tailored to the local setting and take into account collectivist culture where appropriate. Created using entertaining stories and characters, vignettes can be adapted for any community and may be a promising approach for measuring family planning norms.

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Contributions of authors

Amy Henderson Riley conceived, designed, and oversaw the study. Joseph J. Bish provided project management. Sarah Stevens conducted the training in Lusaka. Maurice Pengele, Shadrick Chembe, and Douglas Hampande oversaw data collection. Patrick Moeller analysed the data. Shivani Ramolia served as a research assistant. All authors contributed to writing and approved the manuscript.

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