

Introduction

Across sub-Saharan Africa, adolescent girls and young women (AGYW) are at disproportionate risk of HIV infection as compared to their male counterparts. Transactional sex has been identified as an important proximate determinant of their HIV risk, alongside age-disparate sex, intimate partner violence, and multiple sexual partnerships (STRIVE & UNAIDS, 2018). A recent systematic review showed that transactional sex nearly doubles women's risk of HIV infection and requires addressing in efforts to reduce HIV incidence for AGYW across the region (Wamoyi, Stoebeanau, Bobrova, Abramsky, & Watts, 2016).

The epidemiological evidence-base on the contribution of transactional sex to HIV could be much stronger were the definition and measurement of transactional sex more accurate and consistent. Indeed, transactional sex is at times conflated with 'sex work' or 'prostitution' in its conceptualisation and measurement meaning that studies of 'transactional sex' are not always measuring the same behaviour. Indeed, transactional sex relationships often fall outside both local and Western definitions of 'prostitution' and in conceptualisation and practice are a distinct relationship type (Hunter, 2002). The conflation of transactional sex with sex work further confounds efforts to understand the role that it plays in HIV risk, and frustrates the development and delivery of effective interventions to reduce risks associated with transactional sex (Stoebenau, Heise, Wamoyi, & Bobrova, 2016). Stoebenau and colleagues recently published a review of the social science literature identifying the core characteristics of the practice, resulting in a definition of transactional sex relationships as "non-commercial, non-marital sexual relationships based primarily on the implicit assumption that sex will be exchanged for material goods or other benefits" (Stoebenau et al., 2016). This definition has served as a foundation to improve how the practice has been described and operationalised in large-scale surveys including the Demographic and Health Surveys and the Violence Against Children Surveys. Improved measures can, in turn, improve understanding of the mechanisms through which transactional sex increases HIV risk, as well as document changes in the levels and trends in the practice over time, within, and across settings.

In a recent paper, Wamoyi and colleagues describe the development of definition-grounded prevalence measures of transactional sex (Wamoyi, Ranganathan, Kyegombe, & Stoebenau, 2019). They began with a measure developed in South Africa (Dunkle et al., 2004) that was

consistent with the definition of transactional sex described above, and then conducted two rounds of cognitive interviews in rural and urban settings in Uganda (n=80) and Tanzania (n=80) to refine this measure and assess feasibility of measure standardisation across contexts.

The resulting questions were nearly identical, and a composite question was recommended for use in large-scale surveys with the caveat that the question should be pre-tested and adapted for other countries. The process also produced five principles to guide the development or assessment of an internally valid and reliable measure of transactional sex.

Questions must:

- 1) Clearly differentiate transactional sex from sex work to be certain that the measurement reflects non-commercial relationships.
- 2) Include a clear statement of the motivation for the sexual relationship.
- 3) Ensure wording is non-judgemental to minimise response bias, and resultant under-reporting.
- 4) Exclude marital relationships (but may include married individuals' extramarital relationships).
- 5) Account for the gendered roles expected of women and men in transactional sex relationships (Wamoyi et al., 2019).

Participants in Uganda and Tanzania responded positively to the refined questions: they did not find them to be particularly judgemental, the questions were effective in distinguishing transactional sex from sex work, and the majority appreciated the questions referred to relationships that were economically (or other benefit)-motivated for women, and sexually-motivated for men. Among the participants included in the cognitive interviewing, in both contexts, nearly 50% of the sexually-active young women (aged between 14-24) and men (aged between 25-47) sampled from a general population sample reported having had transactional sex in the past 12 months.

In this paper we describe and discuss the results of cognitive interviews in rural KwaZulu-Natal South Africa, presenting the findings within the rubric developed by Wamoyi et al.

Methods

Study Context

The study was conducted at the Africa Health Research Institute (AHRI) in Hlabisa sub-district in uMkhanyakude district, northern KwaZulu-Natal, which is a long standing demographic surveillance site (Herbst et al., 2015). The study area is predominately rural, poor, has high levels of unemployment (over 85% youth (20-24) unemployment) (Chimbindi et al., 2018), high HIV prevalence (41% antenatal HIV prevalence), and HIV incidence of 5% per annum in 15-19- year-old girls, and 8% per annum in 20-24-year-old women (Chimbindi et al., 2018). This area was selected for the Determined Resilient Empowered AIDS-free Mentored and Safe (DREAMS) partnership to implement combination HIV prevention interventions for adolescent girls and young women from 2016. Such interventions are designed to empower women, increase social capital and economic literacy, and reduce transactional sex (UNAIDS, 2015).

Sampling and data collection

Cognitive interviewing is a research methodology through which volunteer “subjects” are recruited and interviewed in a “laboratory environment” to “test” their understanding of survey questions, and detect covert problems or misinterpretations with the understandability or answerability of survey items (Willis, 2005). Samples for cognitive interviewing are typically small as the ambition of the interviews is not statistical estimation, but instead the inclusion of a variety of individuals (Ryan, Gannon-Slater, & Culbertson, 2012). Furthermore, cognitive interviews are qualitative, not quantitative in nature. As such, researchers do not evaluate problems with survey questions simply by counting the number of interviews in which problems occur. Indeed, a single participant, with the characteristic or condition of interest being unable to answer a question, would be sufficient to signal that the question needs to be addressed (Willis, 2005).

Data were collected with 10 female and 10 male participants between May to June 2017 from a general population sample of sexually-active young women and men. Female participants (n=10) aged between 14-24 were sampled from an observational cohort of

n=2184 adolescent girls and young women aged 13-22 randomly selected from the AHRI's demographic surveillance survey area. Amongst those recruited who self-reported pregnancy or contraception use (approximately 20% of 15-19-year olds) in the 2017 round of data collection (Chimbindi et al., 2018) we sampled young women (n=4 14-year-olds [2 in-school, 2 out-of-school], n=4 15-19-year-olds [2 in-school, 2 out-of-school] and n=2 20-24-year-olds). Male participants (n=5) aged 20-25 and (n=5) aged 35+ were purposively sampled from places where men usually frequent in the community (taverns, bars, shops). As in Uganda and Tanzania, we included a rural and an urban area to reflect the 'general population' of men by age group and by area and included men of an age at which men typically take on provider roles. No individuals declined to participate and no parents denied consent for their children to participate. Two female participants aged 14-16 years who were known to have been sexually active, declined ever having had sex and could not therefore be included in the study.

All interviews were conducted in isiZulu using a structured tool which also included space to record open free-text responses. Two interview techniques were used – *think-aloud* and *verbal probing*. In think-aloud interviewing, participants were asked to 'think-aloud' as they answered the survey question to enable the interviewer to record the process that the participant went through to arrive at the question. If asked, for example, how many times over the past 12 months they had visited a doctor, participants might attempt to recall each and every visit, or they might instead estimate how many visits there had been. Through observing this process, the interviewer is able to assess the answerability of the question and the participant's interpretation of what the question is seeking to assess. It would also help to identify problems with the question for example whether the 12 month recall period was appropriate or who was interpreted by the participant to be a 'doctor' (Ryan et al., 2012) (Willis, 2005). In verbal probing, after the interviewer asks the question and the participant answers it, the interviewer follows-up by probing for other, specific information relevant to the question, or to the answer that the participant gave. For the example above, this might involve probing "who did you think about when I said 'doctor'" or asking them to paraphrase the question (Willis, 2005). Interviews were conducted by experienced social science research assistants who had received intensive training in cognitive interviewing,

and were involved in refining and translating the tool into isiZulu. Interviews were audio recorded.

Building on the work in Uganda and Tanzania (Wamoyi et al., 2019), two types of survey questions were tested. The first was designed to be included in a 'relationship module' in which participants are asked about relationships with up to three sexual partners in the 12 months prior to the interview, in order to explore partner and sexual behaviour characteristics with each partner. Female participants were asked *"Did you enter into a sexual relationship with (INITIALS) in order to receive money, gifts, for help with your expenses, or in order to receive things that are important to you"*. The equivalent question for male participants was *"Did you provide (INITIALS) with money or help her with her expenses mainly to become sexually involved with her or to be able to keep having sex with her?"*

The second type of question is designed to 'stand alone' in surveys that include a short sexual behaviour module (e.g. demographic surveillance sites) (Wamoyi et al., 2019). Female participants were asked *"In the past 12 months have you entered into a sexual relationship with a man mainly in order to get things that you need, money, gifts, or other things that are important to you?"* By including the terms 'entered' and 'mainly' we sought to emphasise the instrumentality that motivated the entry into the relationship which in both our East African and Kwa-Zulu Natal samples served to distinguish this relationship from a long-term committed (though technically not marriage) relationship. In addition, we focused on new relationships, or those that women have "entered into" in the past 12 months as another mechanism by which to direct attention away from long-term committed relationships (that may be marriage-like) toward newer relationships that were entered into in order to receive economic or other benefits. Male participants were asked *"In the past 12 months have you given a woman who is not your wife or main partner and is also not a sex worker, any money, gifts or helped her to pay for things mainly so you could start or continue a sexual relationship with her?"* We included the term 'main partner' in order to acknowledge that many individuals may be in long term, stable, committed marriage-type relationships but may not be formally married or living with their partner. For both types of questions and to both women and men, extensive probes were used to explore participants' understanding and comfort with answering each question. These

probes included asking participants to repeat the question in their own words, indicate what they thought the question was about and indicate how they would ask the question to a peer. They were also asked whether they felt any anxiety, discomfort or concern in answering the question and whether they thought others would answer the question truthfully.

Data analysis

Responses to open-ended questions were transcribed verbatim. Data were reduced for analysis using matrices in Microsoft Excel. Each participant was assigned the same row across all questions. In each column the question, and each of the standard probes that were used to explore participants' understanding of the question were individually entered into a separate column. The data were then summarised across each participant. To illustrate for example, participants' response to the question "In the past 12 months have you entered into a sexual relationship with a man mainly in order to get things that you need, money, gifts, or other things that are important to you?" was recorded, as was whether they needed the question to be repeated or clarified before being able to answer it. Similarly, participants' responses when asked to repeat the question or suggest how they would ask the question to a friend were recorded in the appropriate column for the probe, and in the row for the participant. Using constant comparative techniques (Glaser & Strauss, 1967), participants' responses were compared in attempts to detect any problems in the comprehensibility or answerability of the questions. We also examined whether this varied across individual characteristics.

Ethics

Ethical approval was obtained from the Biomedical Research Ethics Committee of the University of KwaZulu-Natal (BFC339/16). All adult participants aged 18 years and older provided written informed consent. Those aged 14-17 provided written informed assent after parental consent for them to participate had been obtained. The study adhered to WHO guidelines for safe and ethical data collection on violence against women (World Health Organization, 2001) and UNICEF's guidelines on ethical research with children (Graham, Powell, Taylor, Anderson, & Fitzgerald, 2013). This included having a referral

system in place should any participants be identified to require assistance following their participation in the study.

Results

Description of the sample

Female participants were 17-24 years-of-age, (mean 20.7). The majority resided in rural areas. Six female participants had completed grade 12, the remainder had less education and, being aged between 17-24, may have still been in school. All but one reported one sexual partner in the past 12 months, and none were living with their partners. Male participants were aged 20 to 46 years (mean 31.9). Most (7) resided in a rural area. Four male participants had completed grade 12 with the remainder having a lower level of education. In the past 12 months, male participants reported having had between one and three sexual partners. Most male participants did not live with these partners.

Performance of the questions

Below we evaluate the performance of the questions, set out above, against Wamoyi et al. (Wamoyi et al., 2019) principles for the development or assessment of internally valid and reliable measures of transactional sex.

Measures must clearly differentiate transactional sex from sex work to be certain that they reflect non-commercial relationships

All participants were asked to identify the type of relationship they had with their sexual partners in the last 12 months. Options included 'sex worker client' and 'sex worker'. No participants selected these options to identify their most recent sexual partners. In exploring their understanding of the questions, female participants were also asked "how they would describe a woman who said "yes" to this question?" None of the participants indicated that they thought the question was asking about sex workers; rather participants indicated that they perceived the woman to be an 'ordinary' woman. Male participants were asked whether they had "provided someone who is not a sex worker with money or to help pay for her expenses...?" as a means of excluding commercial relationships. This appeared to be well understood by men:

“it’s just a person whom we are playing a game with. How can I explain this...we are just helping each other? Jah that’s how I can explain this” (29-year-old male)

Questions must include a clear statement of the motivation for the sexual relationship

The findings indicate that for female participants, both types of questions that were tested--the first as part of a relationship module, and the second as a standalone question--were well understood. This was evidenced by the fact that upon hearing the question, no participants requested clarification or for the question to be repeated before being able to answer it. When asked to repeat the question, most participants were also able to appropriately paraphrase it:

“[you are asking] whether I got involved with S because I wanted to benefit something [from him]” (21-year-old female).

In paraphrasing the question in this way, this participant captured the implied instrumentality at the core of the definition of transactional sex: the particular *motivation* for entering into a transactional sex relationship.

When asked how they would ask the same question of a peer, many female participants’ framing also focused on eliciting the motivation for entering a sexual relationship:

“I can ask them through saying, ‘did you enter into a sexual relationship with your partner in order to get money and what you need’” (19-year-old female).

Both types of questions also performed well in terms of comprehension with male participants with most needing neither clarification nor for the question to be repeated before being able to answer it. In their own words, male participants’ repetition of the question again captured the instrumentality at the heart of the motivation to provide resources to be able to access sex using the definition of transactional sex:

“[you are asking] did I provide money to Z to be able to have sex with her?” (36-year-old male).

Most male participants’ paraphrasing of the question when asked how they would pose it to a friend also reflected their broad understanding of the question.

Measures must ensure the wording is non-judgemental to minimise response bias

Views on whether others who were asked the module-type question would answer it truthfully were mixed, with some female participants suggesting that others would be 'secretive' and would not answer honestly. The majority of female participants did report, however, that they felt comfortable answering the question:

"I felt comfortable because those [reasons – in order to access resources] were not my reasons [for getting into my relationship] (21-year-old female).

A few female participants (three) expressed some concern about the questions. There was greater variation in participants' comfort with answering the question as a standalone question and fewer believed other women would answer the question truthfully.

Most male participants also felt comfortable with answering the question. However, four had concerns about the question related to whether they would give the 'correct' answers, what the interviewer would think of their answers, or whether the interviewer would disclose their responses to others:

"The only concern was that maybe you are going to share my answers with other people" (21-year-old male)

While both questions appeared to be well understood by participants, no female participants and only one male participant answered either question in the affirmative. This may also help to explain why some participants did not believe others would answer the question truthfully:

"...some won't. There are people who hide things. Like with the question that asks how many people have you slept with in 12 months, others will not say if they have [slept] with many people, they will be scared" (24-year-old female).

Measures should not include marital relationships

As noted above, all participants were asked to identify the type of relationship that they had with sexual partners over the past 12 months. 'Wife/husband', 'live in partner', 'partner not living with', and 'girlfriend/boyfriend' were included as response options. All female participants identified their most recent sexual partners as partners that they were not

living with. Male participants' relationships were more varied with some describing them as partners they were living with, some that they were not living with and others as girlfriends. No participants however designated their relationship to be with a husband or wife, whether formal or informal and only two older males aged 46 years and 39 years old reported live-in partners.

Measures should account for the gendered roles expected of women and men in transactional sexual relationships

A few male participants noted that while they had answered 'no' to the question *"In the past 12 months have you given a woman who is not your wife or partner [...] money, gifts or helped her to pay for things mainly so you could start or continue a sexual relationship with her"*, this was because the sexual partner to whom they were referring was the mother of their children and they thus felt obliged to provide for her for reasons other than accessing sex.

"I only give money to four women, 3 of them are mothers of my children whom I am no longer dating and my current partner I am living with" (46-year-old male).

The findings of study suggest therefore that while both questions were well understood by both women and men, most participants were not willing to answer the question in the affirmative.

Discussion

We conducted two iterations of cognitive interviewing with a larger sample in Uganda and Tanzania and a single round with a smaller sample in KwaZulu-Natal because we wanted to test how well the already refined question from our East African samples performed in this context. Overall, we found that the measures developed and tested in Uganda and Tanzania were very well comprehended by participants in rural northern KwaZulu-Natal. However, in sharp contrast with our work in East Africa, only one of our sexually active participants reported that they had engaged in the practice. In this study, we found that participants captured the instrumental nature of the transactional sex relationships clearly, and understood our questions to be about relationships that are primarily motivated by benefit. This is in contrast with our findings in Uganda and Tanzania where some

participants' responses suggested that they interpreted the question to be assessing whether their partner had provided for them, or if they had provided for their partner, as they would have expected. These differences might reflect contextual differences in how transactional sex is viewed/understood in the different settings.

A possible explanation for these differences is contextually distinct ideologies concerning the relationship between love and money. In many contexts across sub-Saharan Africa, men's provision of material support to an intimate partner is intrinsically tied to love and commitment (Cole & Thomas, 2009; Mojola, 2014). In contexts where love and money are intertwined, exchange is considered a defining feature of a relationship such that a relationship without male provision (and therefore access to female sexuality), is not considered a 'real' relationship (Wamoyi J, Fenwick A, Urassa M, Zaba B, & Stones W, 2011). The results from our cognitive interview work in Tanzania and Uganda suggest this may be the dominant understanding of the relationship between love and money in these settings where some participants struggled to 'hear' the motivation for engaging in transactional sex in the questions, and instead heard statements about expected provision. In contrast, in KwaZulu-Natal, our results suggest that dominant ideologies in this setting may separate love from money. Historical studies from South Africa, in fact, describe a suspicion of 'modern' women who corrupted 'true love' by pretending to love men with money as early as the 1930s (Thomas, 2009). This also implies a moral judgement placed on those relationships that are deemed as having been motivated entirely by economic gain/sex and this, perhaps, compels people to under-report such relationships (Mojola, 2014; Stoebenau et al., 2016). We also recognise that the categories that we used to describe relationships ie 'wife/husband', 'live in partner', 'partner not living with', 'girlfriend/boyfriend' etc may not have been sufficient to capture the nuances in relationships. While the specific category was selected by the research in response to the participant's response to the question 'what was your relationship to [INITIALS]?' these categories are certainly vague, and point to additional considerations for future research to understand how intimate relationships, and their social construction, transform over time though this is beyond the scope of this study. Our interviews were conducted face-to-face in a context of high HIV prevalence. The tool

therefore may have worked to draw out the complexity of a 'named behaviour' which due to HIV prevention work and visible campaigns cautioning against multiple sexual partnerships, may have made 'transactional sex' a socially censured behaviour, which people did not wish to report. Effort was however made to overcome this by emphasising to participants that the primary focus of the interview was not to collect data on them, but rather to test their understanding of the questions and their ability to answer them (Willis, 2005).

While the focus of our sampling was on identifying the right participants (individuals of the age-range of interest) recruiting them from places that are representative of where they would typically be found (in the community and in bars, shops and taverns (for men)), and including a range of individuals (different ages, females and males, those from urban and rural contexts) (Ryan et al., 2012; Willis, 2005) it is possible that our smaller sample in KwaZulu-Natal by chance did not include people who engage in this behaviour. It is also possible that that transactional sex is not prevalent in this context, particularly when compared to our more extensive sampling in Uganda and Tanzania. There may also be some 'othering' of a behaviour that is considered socially deviant in face-to-face interviews. This may be exacerbated in the context of social norms and health promotion messaging that reinforce conservative sexual norms, making it harder for people to disclose behaviour that they have internalised as proscribed. Our findings, therefore, should be grounded in context inclusive of emerging emic understandings of transactional sex through media portrayals of 'blesser/blessee' relationships (which, analogous to "sugar-daddy" relationships, are relationships where older men give younger women money and gifts in return for sex and companionship) (Garsd, 2017; Mampane, 2018); the influence of intervention activities that work to reduce transactional sex including those connected to the DREAMS initiative, billboards and edudramas (for example MTV Shuga (MTV Foundation, 2019); and the potential for stigmatisation of transactional sex.

Therefore, while participants may not have interpreted the questions as judgemental, they might have felt that the behaviour would be judged by the interviewer as deviant, thus leading to potential non-response bias. Indeed a survey in the same setting in 2017 using computed assisted self-filled instrument asking the question "*In the past 12 months have you entered into a sexual relationship with a man mainly in order to get things that you*

need, money, gifts, or other things that are important to you?” amongst a representative sample of sexually active 13-22-year-olds, 13.4% (129/965) answered “yes” (Chimbindi et al., 2019). This may suggest that although participants in this study understood the question, they were unwilling to indicate that they had been involved in transactional sex in a face-to-face interview. This may also explain challenges the study experienced in recruiting adolescent girls and young women. As such, using computer assisted self-filled instruments may also offer an important avenue for improving measurement tools to more accurately study transactional sex in contexts of social stigma against the practice.

While based on the sampling framework all those included in the framework were known to be sexually active, when approached, some said that they were not, perhaps due to this taboo and stigma around sex in young people in general, and transactional sex in particular. It will therefore be necessary to cognitively test the questions in another context in South Africa where health promotion messaging and absence of the DREAMS initiative may result in different views of transactional sex. This may affect the extent to which individuals who do participate in transactional sex relationships are willing to answer these questions in the affirmative.

Limitations

As recognised more broadly (Willis, 2005), this study has a number of limitations. Cognitive interviewing is a technique that was new to both the interviewers and the participants which meant that some opportunities to explore participants’ understanding of the questions may not have been fully exploited by lack of experience on both sides. Similarly, the methods used – particularly think-aloud – would likely have been unfamiliar to participants meaning that they may not have been proficient with the technique with this preventing interviewers from fully observing their thought processes when attempting to answer the questions. The use of verbal probing might also have influenced participants’ response to the extent that the probes e.g. ‘how comfortable did you feel answering that question?’ might have piqued participants feelings of discomfort (Willis, 2005). Furthermore, while sample sizes used in cognitive interviewing are typically small and the objective of this qualitative technique is not statistical estimation, but instead the inclusion of a variety of individuals, it is possible that additional problems with the questions might have been detected had a larger sample size been used (Blair & Conrad, 2011).

Conclusion

Our findings suggest that the tool was well understood in KwaZulu-Natal. However, the contrasting results from those from our study in East Africa, point to the importance of understanding research context and the possible social and historical influences which may shape the way in which survey questions are answered. This carries implications for measurement development, highlighting the need for measures that can be responsive to contextual differences to ensure that we can improve our understanding of how transactional sex contributes to young women's HIV risk. There is a need for further in-depth research to examine the role of the different factors which may have influenced our findings and their implication for further refinements to measurement and data collection approaches in this and other settings.

Conflict of interest statement

The authors declare that they have no competing interests

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