

“I feel like it is asking if he is a stalker... But I also feel like it is asking if he cares”: Exploring South African Youth’s Perceptions of the Sexual Relationship Power Scale

Kalysha Closson (✉ clossonk@student.ubc.ca)

University of British Columbia

Campion Zharima

University of the Witwatersrand

Michelle Kuchena

Perinatal HIV Research Unit

Janan J. Dietrich

Perinatal HIV Research Unit

Anne Gademann

University of British Columbia

Gina Ogilvie

University of British Columbia

Mags Beksinska

MatCH Research Unit (MRU), University of the Witwatersrand

Angela Kaida

Simon Fraser University

Research Article

Keywords: south, youth, item, srps, african, coding

Posted Date: November 19th, 2021

DOI: <https://doi.org/10.21203/rs.3.rs-1041143/v1>

License: © ⓘ This work is licensed under a Creative Commons Attribution 4.0 International License. [Read Full License](#)

Abstract

Background: Gender inequity and the subsequent health impacts disproportionately affect communities in the Global South. However, most gender equity measures, such as Pulerwitz' (2000) Sexual Relationship Power Scale (SRPS), are developed and validated in the Global North and then applied in Global South settings without investigation of context applicability or validity. This study examines the SRPS' validity evidence, comprehensiveness and contemporary relevance for young South African women and men.

Methods: Between 2019-2021, 38 cognitive interviews (CIs) were conducted among previous participants of a South African youth cohort study 'AYAZAZI' (2015-2017) to explore youth's perceptions of the SRPS. The SRPS measures women's perceptions of their partner's controlling behaviours, and men's perceptions of their own controlling behaviours. Using CIs, participants responded to a 13-item South African youth SRPS (Strongly Agree-Strongly Disagree), and then were asked to think-aloud their reasoning for responses, their understanding and perceived relevance of each item, and made overall suggestions for scale adaptations. An item appraisal coding process was applied, whereby Cognitive Coding assessed the types of cognitive problems youth had with understanding the items, and Question Feature Coding assessed which item features caused problems for participant understandings. Finally, youth recommendations for scale adaptations were summarized.

Results: Overall, 21 women and 17 men aged 21-30 participated in CIs in Durban and Soweto, South Africa. Cognitive Coding revealed 1. Comprehension issues, and 2. judgements related to items' applicability to lived experiences and identities (e.g., being unmarried). Question Feature Coding revealed items' 1. Lack of clarity or vagueness in wording and 2. logical problems in assumptions leading to multiple interpretations (e.g., item 'does your partner always need to know where you are' interpreted as both controlling and caring behaviour). Multiple, overlapping issues revealed how many items failed to "fit" within the present-day living realities of South African youth. Youth recommended several item adaptations and additions, including strength-based items, to existing measures of gender equity and power.

Conclusion: Given identified issues, several adaptations including revising items to be more inclusive, contemporary, context specific, and strength-based are needed to validly measure gender equity and power dynamics within the relationships of South African youth.

Introduction

Growing attention has focused on the importance of advancing gender equity to improve global health and development. In 2015, the Sustainable Development Goals (SDGs) were established and focused on 17 key areas for enhancing global peace, prosperity, and global development, including goal 5: gender equality and empowerment of all women and girls. Achieving and accurately monitoring progress towards SDG 5 requires contemporary and contextual measures that accurately reflect the living realities of girls and women in all their diversity (1, 2). While these global targets aim for gender equality, there is a need to first acknowledge and address women's social disadvantage through efforts aimed at advancing gender equity. Only with gender equity can gender equality be achieved. While gender inequity and the subsequent health impacts (e.g., experiences of violence, including intimate partner violence (IPV), and poor sexual and reproductive health [SRH] outcomes) disproportionately affect communities in the Global South, most measures of gender equity are developed and validated among samples in the Global North and used and applied in diverse global contexts, without continued investigation into their contextual applicability and validity (3–5). Thus, in order for acceptable and standardised measures to be used for global monitoring of SDG 5 and other markers of health and wellbeing for girls and young women across their life course, data are needed to explore population and context-specific issues that are grounded in current understandings of gender equity (2).

A driving force being gender inequity and subsequent experiences of violence and negative SRH outcomes, is the unequal division of power held by women in society and intimate heterosexual relationships (6, 7). Given the importance of power, one widely used measure of gender inequity is the Sexual Relationship Power Scale (SRPS)(5). The SRPS aims to measure the level of control a male partner has in the relationship, and was originally developed using two sub-scales assessing controlling behaviours and decision-making dominance within intimate relationships (3). Theory and previous research have postulated that power inequities in relationships influence the level of agency women have in decisions around safer sex practices, reproductive choice, and the likelihood of experiencing IPV (6–8). The SRPS was originally developed in 2000 among 388 women with a mean age of 27 in the United States, the majority of whom were married (3). While the original scale had two sub-scales, the relationship control sub-scale has sound psychometric properties on its own (4), and many studies focused on youth have used adapted versions that include items assessing male dominance and controlling behaviours in a single scale (5). Since its original development, the SRPS and several modified versions of the scale, have been used in numerous global settings, as well as with men to measure controlling behaviours towards female partners in relationships. However, there is little published evidence detailing the contextual and contemporary considerations and relevance of the scale among younger unmarried groups in settings outside North America (4, 5). There exists vast cultural and contextual differences in relationship power dynamics and gender relations between North American and other global settings (9), thus researchers need to be more critical of the Western conceptualized scales they use in their global studies. This is particularly true when using scales that measure constructs, such as sexual relationship power, that are ever evolving.

While numerous quantitative studies have used different adaptations of the SRPS to examine sexual behaviour, and SRH health outcomes among young women and men in sub-Saharan African settings (5), limited validity evidence exists surrounding youth's perceptions of the scale items, as well as the cognitive processes involved in responding to the scale items. In South Africa, researchers have used the SRPS among youth to highlight associations between SRP inequity and poor mental health (10–13), experiences and perpetration of violence in relationships (14–18), and sexual health behaviours and outcomes (5, 19–25). Notably, one seminal study found that SRP inequity was associated with increased risk of HIV incidence among young South African women aged 15-24 (26), who face rates of HIV up to 4x higher than their male counterparts, accounting for approximately

2,000 new HIV infections every week (27). Given the seemingly important role that SRP inequity plays in the health and well-being of young women in South Africa, researchers need to ensure measures used to quantify, monitor, and evaluate the impact of SRP inequity continue to have ongoing validity evidence among young women and men in diverse global contexts. This includes a continual examination of the contemporary relevance of items that were developed over 20 years. Also, as the scale was originally developed among women, additional research is needed to assess the validity evidence of the SRPS among young men. Validation is an ongoing process. As such, this study begins to fill a gap in the literature by providing rich descriptions of the cognitive processes that young women and men engage in while responding to SRPS items that have been frequently used in studies among South African youth (5).

The objectives of this study are to; 1) explore cognitive (e.g., comprehension and judgement) and question feature (e.g., clarity in wording and logical problems in assumptions) issues of the SRPS among participants, and 2) make recommendations for any identified improvements, modifications, and additions to the current SRPS. Results from this study can be used to present construct validity evidence of the SRPS and can help to inform the development of an adapted scale or scales that reliably and validly measures gender equity and relationship control. Improved scales can then be used to inform future studies, programs and global targets aimed at improving gender relations and power dynamics in the relationships of young people disproportionately affected by the global HIV epidemic.

Methods

Study overview

Validity is a principal aspect of research and essential to the development of scales used in quantitative questionnaires (28, 29). This is particularly vital in health research and program evaluations aiming to understand or alter a construct or behaviour associated with a health outcome of interest (30). In health and other areas of research, including education and psychology, researchers often claim that scales used within their studies have been “previously validated”, however the process of developing and validating a scale is ongoing, and requires multiple forms of validity evidence (31, 32). In measurement science, a fundamental aspect of validity, is construct validity, which assesses the degree to which inferences can be made from the scale regarding the theoretical construct on which the scale is based (30).

This study uses cognitive interviews (CIs), a common method in assessing construct validity in measurement science, to examine the ways participants mentally process and respond to survey items, as well as to identify potential measurement error (33). While often used as a means to pretest survey items, cognitive interviewing can also be used to enhance understanding of how participants answer items in a survey (34).

Between October 2019 and March 2021 CIs were conducted to explore youth's perceptions of items in the SRPS that have been commonly used within SRH studies among South African youth (35). Participants were recruited from a cohort of young people who had previously been enrolled in an interdisciplinary youth-engaged cohort study “AYAZAZI”, details of the study have been published elsewhere (14). In brief, AYAZAZI (‘Zazi’ meaning knowing themselves in Zulu, and AYA standing for adolescents and young adults) enrolled 425 HIV-negative or unknown young women and men aged 16-24 at baseline from Durban and Soweto, South Africa. Participants were followed up to 12 months in Durban, and 18 months in Soweto between November 2014 and April 2017. At each visit, participants completed a youth interviewer-administered socio-demographic questionnaire examining SRH, experiences of violence, mental health, substance use, and technology use. AYAZAZI's youth engagement approach prioritized youth-friendly spaces and the meaningful inclusion of youth at all stages of the research process, as well as training in best practices for youth-adult allyship for non-youth study team members.

Description of the SRPS instrument

At the 6- and 12-month follow-up visits, AYAZAZI participants completed a modified 13-item South African youth SRPS, that has been used by other studies among youth in South Africa (35–37). The SRPS was modified for South African youth in 2002 as part of the evaluation of a gender transformative intervention ‘Stepping Stones’ (37, 38). Although details of the modification have not been published, 7 of the items in the modified scale appear to be adapted from the original relationship control sub-scale, while the remaining 6 seem to have been added based on piloting from the Stepping Stones team (35). We previously examined the psychometric properties of the modified scale in the AYAZAZI study and found low scale reliability, with many of the items having low factor loading (14). Moreover, associations with known outcomes of IPV were only significant among young women, and condom use was not significant among young women and men (14). Like the original, the modified SRPS uses a 4-point Likert-type scale (Strongly Agree-Strongly Disagree) to assess young women's perceptions of their partner's controlling behaviours and perceptions of decision-making dominance in their relationship (e.g., “My partner has more to say about important decision that affect us both”), and was modified to ask young men about their own controlling behaviours and decision-making dominance (e.g., “I have more to say than my partner about important decisions that affect us both”). Standardized mean scores were created by summing scores and dividing by number of items, range=1-4, with higher scores indicating greater SRP equity. Items for both young women and men are listed in Table 3 & 4, respectively.

Cognitive Interview Study

Purpose and theoretical framework

Using cognitive interviewing techniques conducted by youth and adult-allies, this study centres, prioritizes, and incorporates youth voices to broaden understanding and critiques of gender equity measures in line with AYAZAZI's youth engagement framework.

Participant sample and recruitment

During the AYAZAZI study (2014-2017), participants agreed and gave informed consent to be recontacted up to 6 years following the completion of data collection. Throughout the AYAZAZI study, a detailed list of contact information was maintained for retention purposes. From this contact information, CI participants were enrolled at both sites telephonically by trained study staff in Durban and Soweto. Contacted participants explained the study protocol and inquired if they were willing to participate in a follow-up qualitative CIs where they would provide their perceptions of some of the questions asked during the AYAZAZI study. Interviewers guided interested participants through the informed consent procedure, detailing the purpose of the study, providing participants with opportunities to ask questions about the procedure, and ensuring that participants were aware that they could withdraw at any time. Participants then provided informed consent either in person (prior to the COVID-19 pandemic in March 2020) or orally/verbally over the phone (starting in September 2020, due to the COVID-19 pandemic). Participants were eligible if they had previously participated in the AYAZAZI study, if they were able to provide written or oral consent, and for the interviews conducted after COVID-19 became a global pandemic, if they had access to a phone in which they could conduct an interview lasting 30-60 minutes.

The recruitment strategy for the CIs used questionnaire data from the 12-month AYAZAZI questionnaire, participants who responded to the SRPS during the AYAZAZI study to purposively select participants to get a diversity of perspectives. Interviewers at both sites were provided a call log listing the order at which to call participants. Purposive sampling criteria was based on previous analyses using questionnaire data that explored factors associated with the SRPS including age, age of primary partner, type of relationship (e.g., casual vs. regular, long term)(14), and increases or decreases in SRPS scores between 6- and 12-month study visits. Interviewers called all numbers available for participants by order of the call log, and if there was no answer or the call went to voicemail, interviews recalled participants up to three times. After attempting to contact all participants listed on the call log, a random number generator was assigned to the remaining participants to achieve the desired number of interviews. Thus, despite our extensive efforts to achieve a purposive sample, due to challenges in recontacting participants 3-5 years after the completion of the AYAZAZI study, and further complicated by COVID-19 restrictions, participants were mainly enrolled through convenience sampling. Participant enrollment took place between October 2019 and December 2020 in Durban and December 2020 to March 2021 in Soweto. The recruitment period spanned a wide range of time in Durban due to the global COVID-19 pandemic, in which participant recruitment and interviews were paused for several months, and new telephonic protocols had to be approved by ethics boards in Canada and South Africa.

Ethical approval

for the AYAZAZI study, and the Cognitive Interview sub-study, including the COVID-19 protocol amendments, were approved by the harmonized research ethics boards of Simon Fraser University and the University of British Columbia (H19-00762) as well as the University of the Witwatersrand (Ref 140707).

Interviewer training

Two interviewers in Durban were trained in person. Training involved reviewing the AYAZAZI study files, practicing participant calling, reviewing the study interview guide, and conducting mock interviews. All study documents were reviewed and piloted with the study staff, and Durban staff supported the translation and back translation of all interview consent forms and interview guides into isiZulu. This allowed for an iterative revision to the study documents.

Soweto training began near the end of the data collection procedure in Durban and was done virtually (due to COVID-19 travel restrictions) with lessons learned from the Durban team. The training consisted of five virtual meetings with two interviewers:

1. Informal meeting to introduce team members and overview of the project.
2. Formal presentation detailing the study background, purpose of the study, overview of cognitive interviewing and validity broadly, practicing think aloud procedure and probing, discussing taking notes and detailing body language and providing interview summaries.
3. Training from local expert in qualitative research Mamakiri Mulaudzi, PhD Candidate and Senior Researcher at the Perinatal HIV Research Unit. Qualitative research training provided an overview of why and how qualitative data is collected including different types of interviewing, how to choose a sample size, how to create an interview guide, dos and don'ts of interviewing, and multiple role-plays to practice managing difficult situations during the interview. Interviewers were also provided a checklist for conducting in-depth interviews (See **Supplementary Material**).
4. Online workshop on cognitive interviewing hosted by the University of Cape Town School of Public Health which introduced participants to cognitive interviewing and provided an overview of methodological considerations (39).
5. Second training presentation and discussing script for contacting participants, call log, and interview tips from one of the interviewers who conducted interviews in Durban

In between training meetings, interviewers met to practice mock interviews with one another. Interviewers were trained to use flexible interview techniques and probing to further inquire about areas of interest as they emerged. Interviewers were trained to specifically ask the survey item word-for word and to avoid explaining if the respondent was uncertain what the question was asking.

Data Collection

After consenting to the study procedure and the audio recording of the interview, a think-aloud procedure in English or isiZulu (participant preference) was used for the interviews (40, 41). This was followed by a series of probes, which were developed at the start of the study and as they emerged in ongoing discussion with the interviewers. The think-aloud procedure used SRPS items to facilitate a semi-structured interview centred on participants' responses to the survey items and ranged from 20-90 minutes in length.

The semi-structured interview guide was developed in collaboration with KC's supervisory committee (GO, AK, AG), the interview team which consisted of four South African-based interviewers, South African colleagues (JD, MB), and informed by existing literature on cognitive interviewing and sexual relationship power (See Appendix). Two of the interviewers working with the Perinatal HIV Research Unit in Soweto were young African scholars who were instrumental to the data collection, analysis, and interpretation, and are co-authors on this work (CZ- age 27 and MK- age 23). In both sites interviewers were matched with participants of the same gender.

For each of the 13 scale items, interviewers read the item out loud and then asked the participant to indicate how much they agreed or disagreed with the item. If a participant indicated they were not currently in a relationship, they were asked to think about their most recent relationship. The interviewer then asked the participants to think-aloud regarding their reasoning behind their responses, their understanding of each item, and whether participants felt items were relevant to their relationship. The think-aloud technique encourages participants to verbalize their thoughts while answering questions (40). The interviewers used several probes to facilitate participants to discuss their cognitive processes when answering items to the scale including paraphrasing of the participant's understanding of the item and probing to reveal response strategies (33, 42). After going through each of the 13 items, interviewers also asked participants if any items were missing from the scale and how they would ask their peers about power dynamics in relationships and/or gender equality.

After each interview, summaries regarding any general impressions of the interview, including participants' non-verbal reactions to questions, body language (where applicable), and interactions were created by the interviewers. Each interview was audio-recorded to accurately capture the descriptions provided by the participant. All identifying features were removed from the interview transcripts to ensure confidentiality and interview recordings were stored in locked cabinet at each of the study sites for the duration of the study and will be kept there for 6 years following the study before they are destroyed. Participants were provided 120ZAR (~\$10CAD) for their time and a list of resources were sent to participants who were activated during the interview. For participants who indicated they would like to speak to a counselor, a social worker at the each of the sites re-contacted participants to check-in and referred them to a local resource.

The interview team met with the principal investigator (KC), a white PhD candidate from Canada, on a bi-weekly or weekly basis to discuss emerging codes and themes, and iteratively revise the interview guide, where required. For example, it became clear that one of the probes relating to whether participants felt that power dynamics impacted their sexual-decision making was confusing to participants, so the study brainstormed ways that interviewers could further probe about participants' thoughts on how to accurately measure gender equality in relationships. Also, in some of the early interviews it became apparent that some of the questions seemed repetitive, therefore the interviewers were continuously encouraged to use the interview guide at their discretion, not as a script. Interviews were translated (as needed) and transcribed verbatim either by the interviewers themselves (in Durban) or by an external consultant (in Soweto), then were reviewed by members of the study team. Each transcript was received by the study team and uploaded into NVivo for data analysis.

Data Analysis

Basic demographics and mean and median SRPS scores of all participants regardless of their current relationship status are presented overall and by gender in Table 1. Participants' responses were combined into strongly agree/agree and strongly disagree/disagree and are described in Tables 3 (women) and 4 (men) below.

In order to incorporate perspectives from all team members, and considering a cross-cultural approach to cognitive interviewing, a constant comparative analysis was undertaken, which allowed for the CI data to be analyzed collaboratively as it was collected (43). Index coding began by reading all transcripts and creating codes for all elements of the interview protocol including coding responses to each item in the SRPS. This procedure was done to ensure there was no undue weight on certain participant's accounts that were particularly vivid, moving, engaging or that fix our pre-existing beliefs and biases.

Following index coding, a cognitive interviewing coding procedure was created. This consisted of Cognitive Coding, which examined the behaviours and responses of the participants, and Question Feature Coding, which focused on the behaviour of the survey items (42). Both coding procedures assess similar trends and issues in survey items using Tourangeau's four-stage cognitive model of survey response (1. Comprehension 2. Retrieval 3. Judgement and 4 Response) (44). While retrieval and recall are often examined within cognitive coding schemes, we did not find this to be a concern in the interviews, thus codes related to retrieval were not included. Cognitive Coding asks the question "What type of cognitive problem do people have with this question?" (42) (pg. 76). Question Feature Coding shifts the focus from the participant's cognitive problems to issues that the item itself produces (e.g., wording, whether the question is vague) and logical problems in assumptions (e.g., inappropriate assumptions, assumptions of constant behaviour, and double-barreled questions) (42). Question Feature Coding asks the question "What features of this question cause people to have problems?" (42) (pg. 76). Transcripts were further summarized to describe participants' suggestions for adaptations or additions to the scale.

Index and cognitive interviewing coding procedures were completed initially by KC with data summaries of findings being presented to the youth research staff (CZ & MK) in weekly meetings. Overall findings were then summarized and co-presented by KC, CZ, and MK for several diverse

audiences. During presentations, audience members gave feedback which served as a means to check results and further explore issues with the scale items beyond the perspectives of the study team (45). Data were shared and discussed with students and academics in the field of gender equity and health in Canada and South Africa (46, 47). The collaborative and cross-cultural presentation development and dissemination of the data with CZ and MK helped to ensure a diversity of perspectives and meaningful youth engagement at each step of the research process. Priorities to ensure meaningful youth engagement were further incorporated in data analysis and interpretation through a workshop that was developed and disseminated by CZ, MK, and KC to a group of youth members of the PHRU's adolescent community advisory board (ACAB) in Soweto. The workshop used interactive games, worksheets, and facilitated discussions to create opportunities for ACAB members to provide feedback on the results and allowed the study team to compare the ACAB's perceptions of the SRPS with data from the AYAZAZI CI participants. Both activities to present the data provided opportunity for audience members to discuss their thoughts about the items, including the importance of exploring these issues within measures of gender equity, and provided further insight into reasoning behind emerging issues with the scale items.

Results

Characteristics of the study sample

Of the total 425 youth included in the baseline AYAZAZI survey, 164/253 young women and 87/172 young men completed the SRPS at 6-month follow-up when the scale was added to the questionnaire, and 163/239 young women and 73/153 young men responded to the scale at 12-month follow-up. We were able to recruit 21 young women and 17 young men who had previously participated in AYAZAZI (aged 21-30) to participate in follow-up qualitative CIs. In Durban, approximately 32% of the 173 participants called (83% of Durban cohort followed up at 12 months) were reached however, this differed by gender. Only 14% of young men were reached vs. 48% of young women. Of the participants reached 42% of young men and 23% of young women completed the CIs, 12% of young women relocated (prior to telephonic interviews), 15% of young women and 17% of young men were unavailable, and 7% of young women scheduled an appointment to be interviewed but then never answered the interviewers calls at the time of interview. In Soweto, 102 participants were called (55% of Soweto cohort followed up at 12 months) and 31% of called participants were reached. Of the 32 participants reached, 100% of young women and 33.3% of young men participated in the CIs. Of the 14 young men who were contacted who did not participate, 57% agreed to participate, but then did not answer when the interviewer called to conduct the interview, 7% refused to participate, and 36% were unavailable to participate.

Table 1 describes basic demographics of CI participants by gender. Overall, median age of participants was 24 (quartile 1, quartile 3 [Q1, Q3] = 23-26), 7.9% Lesbian, gay or bisexual, and 60.5% isiZulu speaking). Of the 38 interviews we have information on the relationship length of 31 participants, of which 12.9% (n=4) were not in a relationship at the time of interview, 29.0% (n=9) had been in their relationship <2 years, and 58.1% for ≥2 years. All participants who were not in a relationship at the time of interview were young women, 21.1% of women were in a relationship for less than 2 years vs. 41.7% of men, and a similar proportion of women and men were in a relationship for 2 or more years (57.9% vs. 58.3%, respectively). Of the participants who discussed the age of their partner (n=26), 57.7% (n=15) were in an age similar relationship (within 5 years of each other), 26.9% (n=7) were in a relationship with someone ≥5 years older than them, and 15.4% (n=4) were not in a relationship. All young men were in age similar relationships (n=10) vs. 31.3% of women. A quarter of women were not in a relationship (n=4), and 43.7% were in a relationship with someone ≥5 years older than them (n=7). Mean (SD) and median (q1, q3) SRPS scores among women were higher than men (women mean = 3.03 (0.55) and median=3.15 (2.92, 3.38); men mean= 2.62(3.7) and median= 2.50(2.38,2.92)) with higher scores indicating higher relationship power equity.

Table 1
Demographic Characteristics of Participants in Qualitative SRP overall and by gender (n=38)

	Overall N (%)	Women (n=21) N (%)	Men (n=17) N (%)
Site			
Durban	18 (47.4)	10 (47.6)	10 (58.8)
Soweto	20 (52.6)	11 (52.4)	7 (41.2)
Sexual Orientation			
Heterosexual	35 (92.1)	18 (85.7)	17 (100.0)
Lesbian, gay, or bisexual	3 (7.9)	3 (14.3)	0 (0.0)
Language			
IsiZulu	23 (60.5)	13 (61.9)	10 (58.8)
Other	15 (39.5)	8 (38.1)	7 (41.2)
Relationship Length			
Not in a relationship	4 (12.9)	4 (21.0)	0
<2 years	9 (29.0)	4 (21.1)	5 (41.7)
≥2 years	18 (58.1)	11 (57.9)	7 (58.3)
Missing	7	2	5
Partner age difference			
Not in a relationship	4 (15.4)	4 (25.0)	0 (0.0)
Age similar (within 5 years of age from each other)	15 (57.7)	5 (31.3)	10 (100.0)
≥5 years older	7 (26.9)	7 (43.7)	0 (0.0)
Missing	12	5	7
SRPS mean (SD)	-	3.03(0.55)	2.62(0.37)
SRPS median, Q1, Q3	-	3.15(2.92, 3.38)	2.50(2.38, 2.92)

Table 2 compares differences between the SRPS scores during the cognitive interviews and at the 12-month AYAZAZI follow-up by gender. Women had SRPS scores higher ($p=0.04$), while men had scores lower ($p=0.08$), than those measured during the 12-month AYAZAZI questionnaire (14). SRPS scores from this study were similar to other studies investigating SRP among youth in South Africa (48, 49), and scores among women in our study were higher than a study done among young women in Kenya (50).

Table 2
Comparing SRPS scores from cognitive interviews with scores from the 12-month AYAZAZI questionnaire

Females	Cognitive Interview Participant (n=21)	All AYAZAZI females with 12-month SRPS scores (n=163)	P-value
SRPS mean score, SD, 95%CI	3.03(0.55): 2.78-3.28	2.77(0.24): 2.74-2.81	0.04
Males	Cognitive Interview Participant (n=17)	All AYAZAZI males with 12-month SRPS scores (n=73)	
SRPS mean score, SD, 95%CI	2.62(0.37): 2.43-2.81	2.80(0.33): 2.72-2.88	0.08
Females	Cognitive Interview Participant (n=21)	All Cognitive Interview females with 12-month SRPS scores (n=18)	P-value
SRPS mean score, SD, 95%CI	3.03(0.55): 2.78-3.28	2.71(0.22): 2.60-2.81	0.02
Males	Cognitive Interview Participant (n=17)	All Cognitive Interview males with 12-month SRPS scores (n=7)	
SRPS mean score, SD, 95%CI	2.62(0.37): 2.43-2.81	2.92(0.31): 2.64-3.21	0.06
*Note: Cognitive Interviews took place from October 2019 to March 2021 and 12-month survey took place from October 2015-March 2017			

p-value calculated using two-sample t test with unequal variances

Item Appraisal Results

While most young women and men understood the items in the scale and felt that they accurately capture power dynamics in relationships, several important issues regarding the scale were identified. Issues for each item are presented for women and men respectively in Tables 3 and 4. Below we highlight some examples of issues with items in the SRPS, noting that for many items there were both cognitive and question feature problems.

Table 3

Item appraisal among females who participated in the cognitive interviews and recommendations for adaptations for the use of the SRPS among South African young women (n=21)

SRPS Scale Item	Response breakdown	Cognitive Process Coding			Question Feature Coding		Recommendations for adaptation
		Comprehension	Response Process	Judgements related to items	Clarity of items (wording, vague)	Logical problems in assumptions (inappropriate assumptions, double-barreled questions)	
1. My partner is quite comfortable when I greet men I know	70% Strongly agreed/Agreed 30% Strongly Disagreed/Disagreed					Item assumes heterosexuality and that it would be only an issue if participant was greeting men on the street	Revise wording in order to be more gender neutral so as to allow for the inclusion of gender diverse individuals and participants in non-heterosexual relationships
2. My partner expects me to be at home when he comes to check on me	50% Strongly agreed/Agreed 50% Strongly Disagreed/Disagreed	At times was interpreted as if the participant and her partner made plans first			Unclear whether the to interpret based on whether participants made plans, called in advance, or if their partner was just showing up unannounced		Clarify whether plans have been made in advance, or consider revising to be more contemporary understanding that young people are more connected than when the scale was originally developed
3. My partner becomes jealous when I wear things that make me look too beautiful	50% Strongly agreed/Agreed 50% Strongly Disagreed/Disagreed		Participants at times responded 'sometimes' to this item	The term beautiful was left up for interpretation	This item was also a bit unclear what "too beautiful" meant	Often interpreted both as beauty in whichever way the participant interpreted beauty to mean, but also interpreted as wearing revealing clothing	Revise item so that there is less ambiguity to what the item is asking. Could be revised to ask about whether partner ever gets jealous when you dress in certain clothing
4. My partner has more to say than I do about important decisions that affect us	35% Strongly agreed/Agreed 65% Strongly Disagreed/Disagreed		Participants at times indicated "it depends" and seemingly wanted an option to acknowledge equal decision-making				The response options for this item could be revised so that they can reflect and allow participants to distinguish between partner having more control, them having more control, or having equal control
5. My partner never tells me who I can spend time with	90% Strongly agreed/Agreed 10% Strongly Disagreed/Disagreed	At times the word never was not considered in the participants' responses		Some participants spoke of how they felt the item was not applicable to them as they chose not to have friends			Negatively worded items should be removed as they tend to confuse participants

SRPS Scale Item	Response breakdown	Cognitive Process Coding			Question Feature Coding		Recommendations for adaptation
		Comprehension	Response Process	Judgements related to items	Clarity of items (wording, vague)	Logical problems in assumptions (inappropriate assumptions, double-barreled questions)	
6. I could leave our relationship any time I wanted to.	80% Strongly agreed/Agreed 20% Strongly Disagreed/Disagreed						
7. My partner does what he wants, even if I don't want him to	35% Strongly agreed/Agreed 65% Strongly Disagreed/Disagreed			Participants thought this item could have been worded in a simpler manner		Potentially two interpretations about one's partner going out and doing things you don't want as well as doing things to you (e.g. sexually) that are unwanted	Revising item so that it is more specific
8. When my partner and I disagree, he gets his way most of the time	25% Strongly agreed/Agreed 75% Strongly Disagreed/Disagreed		Some participants wanted to respond "it depends" and often highlighted how they both get their way				Some items could potentially have different response options that allow for a wider range in responses. For example having response options of Always, frequently, sometimes, rarely, and never
9. My partner always wants to know where I am	65% Strongly agreed/Agreed 35% Strongly Disagreed/Disagreed		Item was often interpreted as a sign of caring and that this was quite common and desired in the context of high rates of violence against women			Measuring both the level of care partner has for safety and heightened surveillance of whereabouts	Revising item to be more specific in order to capture an unhealthy level of surveillance versus general concern for safety
10. My partner expects me to do everything for him	21% Strongly agreed/Agreed 79% Strongly Disagreed/Disagreed			Some judgements about this item being for married people	"everything" was vague and many young women asked what was meant by this		Revise item to be more specific. Consider modifying item so that it reflects the common ways in which young women and men in South Africa have relationships
11. Because my partner buys me things, he expects me to please him	5% Strongly agreed/Agreed 95% Strongly Disagreed/Disagreed				Lack of clarity in what was meant by "please him"		Revise item to be more specific Given the lack of agreement to this item, future scales may want to revise this item so it is not interpreted as participating in transactional sex or sex work as

SRPS Scale Item	Response breakdown	Cognitive Process Coding			Question Feature Coding		Recommendations for adaptation
		Comprehension	Response Process	Judgements related to items	Clarity of items (wording, vague)	Logical problems in assumptions (inappropriate assumptions, double-barreled questions)	
12. My partner lets me know that I am not his only girlfriend	15% Strongly agreed/Agreed 85% Strongly Disagreed/Disagreed	This item was often interpreted as 'does your partner cheat on you' and participants spoke of finding out their partner cheated through seeing messages on his phone				This item assumes monogamy, and some participants talked about being in an open relationship	Consider removing or modifying in order to ensure the item is more understandable and inclusive of different types of relationships
13. My partner expects me to sleep over whenever he chooses	30% Strongly agreed/Agreed 70% Strongly Disagreed/Disagreed					Item assumes that participants have started sleeping together and are able to have sleep overs	Consider adding some clarity regarding whether participants are able to have sleep overs

Table 4
Item appraisal among young men participating in Cognitive interviews (n=17)

Response breakdown	Cognitive Process Coding			Question Feature Coding		Recommendations for adaptations
	Comprehension	Response Process	Judgements related to items	Clarity of items (wording, vague)	Logical problems in assumptions (inappropriate assumptions, double-barreled questions)	
1. I am quite comfortable when my partner greets men, she knows	81% Strongly agreed/Agreed 19% Strongly Disagreed/Disagreed	Why would she only ever be greeting men?	Participants expressed being comfortable with partner greeting men as long as she is not flirting	Lacking clarity in what "greet" was referring to. Not specific enough about which men she is greeting		Include more specific language so as to avoid confusion
2. I like my partner to be at home when I come to check her, it bothers me if she is not there	69% Strongly agreed/Agreed 31% Strongly Disagreed/Disagreed	Often item was interpreted as participants had already made plans in advance	At times participants responded "it depends" to this question	Young men often assumed this was in the context of them having had made plans with their partner and feeling that they would be upset based on wasting time, thus more context was needed		Include more specific language so as to avoid confusion
3. I become jealous when my partner wears things that make her look too beautiful	31% Strongly agreed/Agreed 69% Strongly Disagreed/Disagreed	Some young men were unable to comprehend how someone could get jealous if their partner looked beautiful	Some participants responded "somewhat agree"		Young men sometimes felt that the item was asking both about beauty and how this beauty represented them, which they appreciated but also that wearing revealing clothes was different and would make them jealous	Include more specific language so as to avoid confusion. For example specify whether participant is jealous of partner wearing revealing clothes versus the broad concept of beauty
4. I have more to say than my partner does about important decisions that affect us.	60% Strongly agreed/Agreed 40% Strongly Disagreed/Disagreed		"No, she has more." "I am"			Responses for this item should consider whether it would be better to understand who in the relationship makes most of the decisions and then providing response options of you, your partner, or both equally
5. I never tell my partner who she can see or spend time with.	69% Strongly agreed/Agreed 31% Strongly Disagreed/Disagreed	"never" was often overlooked in the comprehension of this item				Avoid using negatively worded items that create complicated double negative cognitive processes

	Response breakdown	Cognitive Process Coding		Question Feature Coding	Recommendations for adaptations
6. It might make me sad but my partner is free to leave our relationship any time she wants to	79% Strongly agreed/Agreed 21% Strongly Disagreed/Disagreed	Interpretation was often based on young men's desire to not breakup more than forcing partner to stay in relationship	Some participants responded they weren't sure not because they wanted to force their partner to stay in the relationship but because they have tried to breakup and it hasn't worked		Make item more specific to ensure the scale is capturing control and being forced to stay Future scales may want to consider adding items related to love and building healthy relationships
7. I like to do what I want, even if my partner doesn't want me to.	31% Strongly agreed/Agreed 69% Strongly Disagreed/Disagreed				
8. When my partner and I disagree, I get my way most of the time.	31% Strongly agreed/Agreed 69% Strongly Disagreed/Disagreed		Participants often wanted to answer items with yes or no		
9. I like to know where my partner is most of the time	87% Strongly agreed/Agreed 13% Strongly Disagreed/Disagreed	This item was often interpreted as showing care in the context of high rates of violence against women		Both about safety and making sure partner wasn't with other men	Revising item to be more specific in order to capture an unhealthy level of surveillance versus general concern for safety
10. I expect my partner to do things for me like my ironing and cooking	62% Strongly agreed/Agreed 38% Strongly Disagreed/Disagreed		Participants often wanted to answer items with yes or no	This item was often stated by participants as not applicable because the participant was not married or hadn't paid lobolo	Specifying whether asking about current situation in young men's relationship or expectations in the future if they get married
11. Because I buy my partner things, I expect her to please me	25% Strongly agreed/Agreed 75% Strongly Disagreed/ Disagreed	Some young men interpreted this item as whether they are able to provide for their partners			Future scales may want to consider adding items about young men's perceived obligation to provide for their partners
12. I let my partner know that she is not the only girlfriend I have or could have	19% Strongly agreed/Agreed 81% Strongly Disagreed/ Disagreed	For some this item seemed implausible (because it would surely end the relationship) Item was interpreted as being honest or that by not telling their partner they have "side chicks" they are protecting her		Assumes that participant is in a monogamous relationship and does not consider potential for open relationships	Item should be revised to better capture whether or not young men are using threats of relationships with other woman as a means to cont

	Response breakdown	Cognitive Process Coding	Question Feature Coding	Recommendations for adaptations
13. When I want my partner to sleep over, I expect her to agree	40% Strongly agreed/Agreed 60% Strongly Disagreed/Disagreed	Some young men interpreted this item as wanting to spend quality bonding time with their partner and thus having the expectation	Item assumes that participants have started sleeping together and are able to have sleep overs	Future scales should consider adding items about expectations for quality time as well as sex with their partners

Cognitive processes coding

Comprehension

Many participants lacked comprehension regarding scale item 5. This was particularly prevalent among young men who seemed to overlook the word 'never' in the phrase 'I never tell my partner who she can spend time with'.

This item was the only item in the scale that was negatively worded. Agreeing to this item would have resulted in greater SRPS scores, as the scale was coded so that higher scores reflected greater SRP equity. While negative items are often placed in scales in order to avoid automatic processing (51), critics of this approach have raised concern about whether or not positively and negatively worded items are measuring the same construct (52). In our prior work with the SRPS (14), factor analyses among young men found that this item loaded negatively on the factor. At the time this seemed counter intuitive, however cognitive interview results highlight how this was likely due to confusion and oversight of the negative wording of this item, especially for young men.

Some items were seen as so implausible in young people's relationships that participants felt they could not even answer the question. For example, in relation to item; "I let my partner know are not the only partner I have or could have" one young man from Durban stated:

"Eeh, it is the one that you asked me that if I cheat on her, will I tell her that. It does not make any sense at all. That is why I couldn't answer that one."
– **Participant 41**

Some items were not interpreted as originally intended. For example, although most young men agreed to item 6 "Although it might make me sad, my partner is free to leave the relationship anytime she wants" – those that disagreed described wanting to figure out why their partner wants to leave instead of just letting the relationship fall apart. For example, one young man in Soweto stated:

"No, I have not come across that, that one of breaking up, to break up, [no] it would just be conflicts and we would solve them solve, you see? [...] I will not just let her, I need to ask why she is leaving, what happened to [us]."
-**Participant 48**

These differences in interpretation by young people highlight the lack of research, particularly in contexts where HIV and gender-based violence is high, focused on how young people perceive and enact love and problem solving within their relationships (53).

Judgements Related to the items

One common judgement towards scale items raised by young women and young men was regarding how some items were not applicable to their current relationships as they seemed to be for married couples. For example, when responding to item 10 "My partner expects me to do everything for him", one young woman from Durban stated

"We are not married people, married people do that. He has not even paid for lobolo, so no. [...] No, he must not expect me to...Yo! I have a lot of things to do and now I must leave them and attend to his needs? [...] No, ha, never. He is not my husband. I do all of that if I want to."
- **Participant 165**

Even among the 38% who disagreed to this item, discussions of future expectations after paying lobola (bride price) were common.

Finally, several young women discussed how they felt item 7 "my partner never tells me who I can spend time with" was not applicable to their lives because they chose to not have friends and thus their partner telling them who to spend time with was not an issue. Future research should explore the implications and potential consequences of young women having few to no connections with peers outside of their relationship with their partner.

Question feature coding

Clarity of the items (e.g., wording, whether the question is vague)

Numerous items lacked clarity. For example, item one "I am quite comfortable when my partner greets me she knows" raised discussion among some young men regarding the interpretability of the word "comfortable", with some young men suggesting the item could be worded as "ok" instead of comfortable. For example, one young man in Durban described some of the issues he found with this item

“Ahhh, okay, it is not that clear because it just mentions “greet”, it does not mention uhm, “talking to”, because greeting and talking to someone is two different things. When she greets someone and does not talk to them, it makes me a bit suspicious. So, it is better if you phrase this question like this rather than saying “talking to” someone because if she talked to someone, she would have an explanation for talking to them, expect for just greeting them, she could make just any excuse and just be like “No, it is a friend”, when it is actually a side person or someone else.” – **Participant 13**

Issues with this item highlight the subtle differences that are important to understand as they could have different interpretations.

Item 2 which for young men stated “I like my partner to be home when I come to check her, it bothers me if she is not there” lacked clarity, which is well explained by one young man from Durban who stated:

“Eeh, this one I, my understanding with it is that, It want to know how I feel when I alerted my partner that I will meet her at her place, and then when I do come and then she is not there, uhhhm then my thought about the question is, yes I agree with the question because I will like my partner to be at her place when I come to check her, because if, because I only come to visit her when I have informed her that on a particular day and time I will come and check you at your place, and then when o eventually do come and then she is not there, then it became problematic for me, because now she is wasting my time, wasted money to travel from my place to her place, only for me not to find her at her place, so that become problematic.” – **Participant 67**

Young women also were confused by this question and would at times ask the interviewer for more context. Thus, while 69% of young men and 50% of young women agreed to this item, the majority agreed because they felt their partner would be upset if they had made plans and then they were not at home when they came to follow through with prior plans. The lack of clarity in this item raises important consideration regarding the ways in which young people communicate through social media and using smart phones and location sharing. This should be considered in more contemporary versions of this scale for use among young people.

For women, item 10 stated; “my partner expects me to do everything for him”, which led to a lack of clarity for example one young woman from Soweto questioned:

“When you say everything, you mean like house chores eh, laundry, financially?”- **Participant 135**

Another item which lacked clarity for some young women was item 11; “because your partner buys you things, he expects you to please him”. Participants were at times unclear what was meant by “pleasing him”. Suggesting that this and many other items in the SRPS could be revised to be more specific to avoid confusion and improve comprehensiveness.

Logical problems in assumptions (e.g., inappropriate assumptions, assumptions of constant behaviour, and double-barreled questions)

Inappropriate Assumptions And Assumptions Of Constant Behaviour:

Most of the items in the scale were heteronormative, asking young women about their male partners and young men about their female partners. While only one participant described how this raised some issues in responding to the scale, being that she was in a same-sex relationship, future research is needed to understand how power and control functions in non-heterosexual relationships, and how the SRPS could be adapted to better capture diversity in the relationships of young people.

Item 13 which for young woman stated, “my partner expects me to sleep over whenever he chooses”, assumes that young people can have sleep overs, or that they have started having sex. Some of the young women discussed how they hadn't started having sleepovers or that they aren't able to have sleep overs because of family dynamics whereby at least one person in the relationship may still be living with their parents, thus making sleepovers challenging to navigate. For example, one young woman in Durban stated:

“No, I cannot be, I live with my parents and I cannot sleep over. [...] He knows that my parents are very strict parents and so, he knows that I cannot sleep over whenever he wants me to.” – **Participant 195**

Future studies may want to consider adapting this item to reflect differing family dynamics, abilities for young people to navigate sleepovers while staying at home with their parents, and for sexually active and inactive youth.

Double-barreled Questions:

A few of the items seemed to be capturing multiple important elements in young people's relationships and thus were left to interpretation. For example, item 3 which for young men stated “I get jealous if my partner wears clothes that make her look too beautiful” was at times understood to be that the men's partners dressed nice and represented them which they appreciated, while some young men interpreted this item to mean that their partner wore revealing clothing and this brought attention from other men, which led to jealousy. One young man from Durban expressed:

“So, in my understanding, if she wears something that make her look beautiful, I am okay with it, but if she wears something that exposes her. I am not quite happy with that. So, I answered this question based on my understanding of beautiful rather than the society's.” -**Participant 13**

Discussions raised from this item, brought insight into different interpretations of beauty and the role and importance of female beauty, and how young women must navigate the fine line between being beautiful and attractive to their partners while at the same time ensuring they aren't dressing too provocatively as to upset their male partners. For example, one young woman from Soweto describes her interpretations of what beautiful means to her in the context of the scale and what the item is trying to measure:

"Not really, ehm, I guess it's something it's an issue that I always had like from growing up, I never liked short things [revealing clothes], so I feel like they are uncomfortable, so that's why I always avoid wearing them, like if you appear wearing short things it can mean a lot of things, like putting a lot of makeup, your weaves on like, from being simple, from having like a natural hair to relaxing your hair which will make you maybe more beautiful or wearing wigs, so ja, no, but in this question mostly, I would say maybe it's wearing short, for me, it's wearing short [clothing] 'cause I don't apply as well a lot of make-up." – **Participant 11**

For this young woman, even though the issue of her partner being jealous if she looks "too beautiful" was not relevant in her relationship, it clearly shows how there are multiple societal pressures for young Black women in South Africa to look and dress a certain way to be perceived as beautiful. The importance of beauty and attractiveness has not been widely investigated within the relationships of young people, thus future research is needed to explore the role of beauty and beauty standards in the relationships of young South African.

Young women also raised concerns around multiple interpretations of item 7 "My partner does what he wants even if I don't want him to". For example, one young woman from Soweto stated:

"Are you saying that's what he wants, in which sense, like him maybe going out to watch soccer or is it when I say, I don't want you to touch me when he touches me or do you mean?" – **Participant 116**

This highlights the potential dual interpretation of this item that could be about one's partner going out and doing things that you don't want them to do or that they are doing sexual things to you that you don't want them to do. These are two distinct and important relationship issues, that future scales may wish to measure both concepts as separate items.

Finally, as highlighted in the title of this paper, both young men and women felt that item 9 which for young women stated, "My partner always wants to know where I am", captured both elements of caring and over-surveilling or controlling behaviour. One young woman from Durban captured this issue with double-barreled interpretations when she stated:

"Uhm...Jah, I feel like there is a twist somewhere, somehow [...] I feel like it is asking if he is a stalker... [...] But I also feel like it is asking if he cares."- **Participant 129**

Young men from both sites also discussed how in the context of South Africa where there are high rates of violence this item could be interpreted as caring and trying to protect partner from violence. For example, one young man from Soweto stated:

"If I know where she is and I am not with her, I become so free to say, okay, my partner is at a certain place, she is doing 1, 2, 3, even though I don't see her [...] but I have peace that I mustn't worry too much about her. If she does not tell me where she went, I will be worried, worse, if I call and she does not take my call, then I will think that eish since these days, there is human trafficking." -**Participant 49**

In South Africa, a woman is killed every 3 hours, and femicide rates are 5 times higher than the global average (54). Under this backdrop, it is no surprise that 65% of young women and 87% of young men agreed to this item, which although originally aimed to capture surveillance and controlling behaviour by male partners in relationships, was interpreted by many young women and men, not as sign of control, but one of care, concern, and protection.

Suggestions For Revisions And Adaptions

Young women and men had lots of suggestions for how to improve the scale, including advice on being more specific, rewording items, adding additional questions about power and control, including questions that were more general about relationship dynamics and questions about health, sexual behaviour and violence and abuse.

To address some of the issues raised by participants about items in the SRPS, participants brought up suggestions for making items more specific. For example, one young woman from Soweto stated:

"Maybe if we can just..., when you ask the question, maybe add more details so that I know that when I respond I will give you the answer that is appropriate 'cause now it's open-ended you know I can say yes, I agree with just everything but then you find that another person perceives it differently, so ja" – **Participant 11**

One specific example from another young woman in Soweto regarding item 1 "My partner is comfortable when I greet men I know":

"I think that's how it should be, like more specific whether in public or in private space."-**Participant 111**

Also, given that the scale was asked about young women's partner's behaviour, some young women suggested that items be added to also assess their own behaviours.

Both young women and men brought up several suggestions for items that they felt would be important to include to measure power and control in relationships. This included asking participants if they believe in gender equality, if you go out with friends, and if you allow your partner to have a say about decisions in the relationship. For example, one young man from Durban stated:

"I will speak in a manner we usually speak with the guys here in Durban, I will say hey my brother how do you feel about the 50/50 thing?"- **Participant 41**

This also highlights how some of the items could be reworded to better reflect the ways in which young people talk about gender equality and relationships in South Africa.

Specific questions about relationship dynamics were of interest to participants including whether your partner takes you on dates, questions about intimacy, and plans to have children together in the future, as well as emotional wellbeing in your relationship, for example one young woman from Durban stated,

"The emotional wellbeing of a person in that relationship. How are you fitting in emotionally? Because some people can be like. Yes, he understands me but there is that emotional part of them where they are breaking. Where they are not happy emotionally. But in other things they can defend their partner and say yesss he is a good person but emotionally the soul is the important thing," – **Participant 123**

These suggestions call for increased attention to strength-based measures of gender equity that focus on positive assets of relationships and deeper connections that young people have with each other in relationships.

This desire to explore in greater detail the intricacies of young people's relationships came up through suggestions to ask more about the details of young people's sexual relationships as a marker for relationship satisfactions. For example, one young man from Durban stated:

"Like how, how often do you have sex with your partner or how much sex should one have with her partner per month or per week or, ya, those kinds of questions. [...] Well, it also depends on how active, how sexually active you are. If you are very sexually active and your partner is not around, the chances are high that you will find sexual pleasure from someone else, other than your partner." – **Participant 67**

Several suggestions came up around sexual health and sexual violence and abuse such as whether you would ever force your partner to have sex with you, if your partner was abusing you, and asking about who in the relationship might have more physical power. Concerns about cheating and the consequences of cheating were important for understanding power dynamics in young people's relationships. This included suggestions to ask questions about whether participants ever got an "infection" (STI or HIV) from a partner and what they did about it. Other questions about health were suggested including asking whether participants ever went to get tested for HIV with their partner.

Questions about employment and how economic inequities and societal gender roles may impact relationships were also suggested by participants. For example, one young man from Durban stated:

"Maybe what can it be, ooh maybe it can be a job. Maybe if someone have a better job, does that affect the relationship. If I as a male work better and earn better, would it make me not to respect my partner during that period." – **Participant 58**

This recommendation highlights the intersecting nature of sexual relationship power inequities and 'gender role strain/stress' or men's stress related to inability to achieve hegemonic forms of masculinity including the ability to provide for one's family through work (55–57). This construct has been measured and explored among South African men using the gender role scale to better understand how multiple forms of masculine identities are formed in response to gender role strain, and how in turn these identities and beliefs about gender roles influence import sexual and relationship behaviours and outcomes (58–60). While quantitative validity evidence has been established among young men in South Africa, future research should consider how both young men and young women perceive existing measures of gender role strain (60).

Finally, both young men and women spoke about adding questions about technology and looking at each other's phones in relationships.

Discussion, Recommendation, And Reflections

The results from this study highlight multiple issues surrounding items that have been used in youth sexual and reproductive health studies in South Africa. Given that the SRPS was originally developed among women in the US in the year 2000, it is not overly surprising that many of the findings highlighted how the scale may not be contemporary for youth in present-day South Africa. This included that items did not acknowledge the current ways in which youth communicate, particularly when it comes to technology, cellphone use, and social media. Another key finding from this study was that the scale is extremely heteronormative and the wording of most of the items was problematic for youth who were in same-sex or open relationships. The lack of applicability of scale items was also discussed in conversations surrounding youth's perceptions that many of the scale items seemed to be for married people. Scale items were also limited in their ability to measure equitable relationship dynamics, including intimacy and

love. Given these issues, there are many recommendations made by participants that could help to make the scale more contemporary and relevant for understanding power dynamics within youth's relationships.

The use of technology and communication through social media is an important area for future research. For young people in today's society, relationship formation, sex and love most often begins and is sustained online and through social media and other dating apps (61). Thus, the results from this study further highlight the critical need for measures, such as the SRPS, to be adapted to reflect the increasingly virtual ways in which young people form and perform relationships. This should include further investigation into different modalities that youth use to communicate with each other and seek supports for relationship challenges is warranted given that mobile technology infrastructure is highly developed and used by populations of youth people in South Africa who may otherwise have limited available options to discuss challenging issues related to gender inequities (62–65).

Many participants brought up that the items in the scale seemed to be for married couples and weren't relevant as most participants were unmarried. Previous research has highlighted that even young men who are not yet married have perceived entitlement to any woman who they will have to pay lobola to marry her (66). This is concerning as previous research has found that this entitlement can lead to increased demands for unsafe sex in relationships (67). In the context of South Africa, where many young people are not married, or do not get married until later in life (68), items that focused on importance of decision-making, household duties, and breakups may be less relevant or thought of differently for young people who are in more casual relationships or not cohabitating with their partners. For example, youth in more casual non-cohabitating relationships may feel that it is easier to leave relationships or breakup with their partner over the phone than youth in more serious cohabitating relationships. As such, measures should consider the seriousness of youth's relationships and distinguish between current expectations and future relationship expectations.

In contexts like South Africa, where HIV is endemic, youth relationships are rarely discussed through a strength-based lens, instead researchers and program and policy makers have mostly focused on deficit-based narratives of youth sexual relationships as inherently risky (69). While there is increased attention to strength-based research and measurement development with Indigenous communities globally (70), and in the field of mental health (71), strength-based measures for gender equity and SRH are not widely available. Many of the discussions and recommendations made by young women and men in our study centered on the lack of focus on positive sexuality. This included recommendations for the addition of items which ask about partner communication regarding sexual health, HIV testing, and sexual behaviour more generally. Partner notification is an important aspect of sexual health and STI/HIV prevention and control, especially in contexts like South Africa where STI care is done through syndromic management (72). Power and control influence the ability and level of comfort in disclosing HIV and STI testing, thus scales should include items that explore young people's ability to get tested with their partners, as well as items exploring young people's comfort and preference for STI and HIV disclosure in relationships. Measures and efforts need to move away from deficit-oriented narrative to better understand the ways in which programs and policies can be implemented to build healthier relationships and more positive and open conversations about sexuality between young women and men as a pathway to achieve gender equity, SRH outcomes, and the overall wellbeing of young South African women and men across the life course.

Issues raised by participants were not equal across the items or genders. Overall, data indicated that young men raised more comprehension issues with the scale items, which is not overly surprising given that the scale was originally developed to measure women's perceptions of their male partners controlling behaviours and dominance in relationships (3). For women, the item "I could leave our relationship anytime I wanted to" and for men the item "I like to do what I want, even if my partner doesn't want me to" did not raise any specific issues. Issues relating to response processes only did not seem to affect the overall interpretation and ability to measure SRP equity. For example, item 8 "When my partner and I disagree, he gets his way most of the time" both young women and men often stated 'it depends' or used a yes or no response, but the item itself was overall well understood. Whereas issues in double barreled interpretations and comprehension affected the validity of the item, resulting in some items not accurately capturing sexual relationship power dynamics. For example, young women and men interpreted item 9 "I like to know where my partner is most of the time" most often as a caring and positive behaviour and not as a sign of control or dominance.

Future research wishing to use the SRPS in their research with youth globally should consider the recommendations and suggestions for adapting the scale as mentioned by the participants and outlined in Tables 3 and 4:

In general, some recommendations for revising the scale include:

1. Revising the scale language to be more inclusive of gender and sexual diversity as well as different types of relationships (e.g., open relationships or non-cohabitating relationships that may involve children).
2. Modifying items so that they have contemporary relevance. This could include ensuring translations of the scale match the age and group context. Also, to reflect youth's realities, we recommend modifying items about one another's whereabouts to capture how young people are more connected via technology than they were when the scale was developed. Also revising items that may not make sense for youth in South Africa who generally aren't married or living with their partners.
3. Revising items to be more strength-based, to accurately capture equitable relationship power dynamics and shift the focus away from deficit-based narratives of inequity and risky youth sexuality.
4. Revising some of the items to be more specific to avoid differing and multiple interpretations
5. Exploring whether different response options would make more sense for certain items. Also, if response items should have the option for participants to respond don't know/unsure. For example, providing the options of: Always, often, sometimes, rarely, and never. This could also include

exploring how having more than 4 response options and having a neutral option might affect the responses and overall scale scores.

Strengths and limitations

Participants for this qualitative study were recruited from a larger sample of youth who participated in a longitudinal study 'AYAZAZI' from 2015-2017. Participants, however, had not been in contact with the study for several years. While many participants were unreachable, there were no major differences between participants who we were and were not included in this sub-study (**Supplementary Material**), a moderate number of participants were still able to be contacted years after they're original participation. This study further solidifies the massive return on investment that youth engagement can have in the research process. By providing youth friendly spaces, training research staff to be youth allies and allowing youth to discuss important issues in their lives makes an impact and allows for greater opportunity to reconnect with young people for follow-up research and engagement.

Success in recontacting participants several years following the end of the AYAZAZI study is likely attributable to the youth engagement approach undertaken by the study, and high retention rate during the cohort follow-up which was facilitated by ongoing youth-friendly efforts to reconnect with participants. These included knowledge translation and exchange events, follow-up studies and social media engagement. Recruitment findings highlight important gendered considerations for recontacting youth in follow-up research. Overall, it was more challenging to reach young men and in Durban young women were more likely to decline participation, while in Soweto, where all interviews were conducted telephonically, young men were more likely to decline to participate or were unreachable after agreeing to participate. The timing of the calls in relation to the COVID-19 pandemic may have also influenced the response rates differently for young women and men. For example, every contacted woman in Soweto agreed to participate in CIs versus only 23% of young women in Durban. This provides potential indication that young women may have been more likely to be at home during the pandemic and potentially more likely to participate in research if they are able to do so in the comfort of their homes. Whereas while young men may be willing and agreeable to participating in research, other competing demands may keep them from participating at the scheduled time. Given that challenges in scheduling were more common among young men in Soweto, may be indicative of job insecurity and disruptions in routine and scheduling faced by many young South African due to the COVID-19 pandemic (73).

Our results found that since the 12-month AYAZAZI questionnaire was completed, young women had greater SRPS scores, and young men had lower SRPS scores. Differences across study visits were unlikely to be because of the sample recruited. When comparing responses among the participants who answered the SRPS scale at the 12-month AYAZAZI questionnaire and who participated in the CIs, the effects of the change were greater (Table 2). Thus, differences in scores may have been due to changes in relationships, a function of older age, shifts in gender norms by participants, or changes in the interpretation of the scale items over time. Issues with measurement invariance as participants age and mature has been recently discussed using the gender equity men's scale in a cohort of young women in South Africa (74). Other issues affecting the scores could have been due to the response options provided whereby for several items participants did not respond with the given response options of Strongly agree to Strongly disagree. Instead, some participants responded just with yes or no answers, and other times, due to other issues with the items, responded with sometimes, it depends, etc.... Table 3 and 4 presents additional response option issues for all applicable items. Future studies utilizing and adapting the SRPS for use among youth may want to explore different response options to the items including Likert-Type Scales that range from always to never instead of strongly agree to strongly disagree.

Improvements in SRP among young women in our study is different than prior research among young women in Kenya, highlighting reductions in SRP with age (50). This, however, could be partially explained by the fact that this study included young women only up to the age of 24, and did not look at changes in SRP among the same women over time. While no study to our knowledge has examined changes in SRP equity overtime among young women or men in sub-Saharan African contexts, a study among young women and men in Uganda found that younger adolescents (aged 10-14) had more gender inequitable beliefs than their older peers, highlighting that young people may become more gender equitable with age (75). Findings were in line with prior research from our study suggesting as young men get older they may form and exert more controlling and dominant behaviours in their relationships (76), however little is known about shifting gender equitable beliefs, norms, and behaviours overtime, thus requiring further research (74).

The use of cognitive interviewing in our study provided an opportunity to establish a youth-engaged process for appraising items of a well-established measure of gender equity that provided insight, evidence, and recommendations for scale adaptation strategies for the use of the SRPS in South African youth studies, and specifically how the SRPS may function differently for young women and men. However, due to limitations in recontacting participants several years after last contact with our study team, we were unable to fully follow the intended purposeful sampling approach. Our data collection took place over a period of 15 months due to the ongoing COVID-19 pandemic causing interruptions in data collection and requiring the study team to re-submit ethical approval to continue interviews telephonically. Interviews that were conducted telephonically may have differed from those done in-person pre-COVID, however the interviewers felt that they were able to have meaningful conversations with participants despite not being face-to-face. In fact, the female interviewer in Soweto (MK) felt that young women may have been able to be more open about their relationships than would have been possible in person. Telephonic interviews also allowed participants who may have moved out of the area to participate, and thus may have been why all the young women who were contacted in Soweto participated in the cognitive interviews. Moreover, our results present a disproportionate number of quotes from young men in Durban, which was reflective of young men residing in Durban, the majority of whom completed the CI in person, having more to say about the items in the scales than young men in Soweto, all of whom conducted the survey telephonically. These findings raise important gendered considerations for data collection and the importance of exploring youth preference for differing modalities for

collecting survey and interview data (e.g., in person vs. mobile/telephonic) in future youth studies focused on topics related to sexuality, relationships, and gender norms and roles.

Finally, our team spent an extensive amount of time reviewing the data, co-coding, and double coding transcripts; however, this cannot prevent our own world views and values from impacting the interpretation of the data. Because members of the team spoke different languages, and interviews were conducted in multiple languages, they had to be translated into English in order to be discussed as a group, which may in itself pose issues in cross-cultural interpretation of the data (34). As this project progresses, we intend to continuously share and incorporate the views of multiple audiences into future findings and will continue to support youth capacity building in our research program.

Conclusions

Given the wide use of the SRPS in research centered on youth's SRH, this study fills an important gap in unpacking the validity evidence of the scale and provides insights into the gendered comprehensiveness and contemporary relevance of the SRPS in the lives and relationships of young women and men in South Africa. While many of the participants felt that the scale adequately captured SRP and were relevant to their relationships and the relationships of their peers, this differed by gender, and there were several items which were interpreted differently than the original scale intended. Moreover, even when reminded of the response options many participants chose to answer the items using their own responses, raising potential issues in validity evidence surrounding scale content as well as response consistencies. Numerous recommendations for additional and more contemporary and relevant measures of sexual relationship power were suggested by participants, providing opportunity for researchers to adapt youth recommendations into future use of the SRPS in their research and program evaluations by, with and for youth. To address gender equity and improve the health and well-being of youth across the life course, the validity evidence of measures used within youth research needs to be evaluated on an ongoing basis to ensure measures remain contemporary and reflect the living realities of young people. As such, the methods used in this study could be applied across a range of disciplines and settings to support the meaningful engagement and participation of affected communities to improve measurement development, adaptation, and appraisal.

Declarations

Ethics approval and consent to participate

Participants were explained in detail the purpose of the study and provided written or oral voluntary informed consent prior to data collection. Ethical approval for the AYAZAZI study, and the Cognitive Interview sub-study, including the COVID-19 protocol amendments, were approved by the harmonized research ethics boards of Simon Fraser University and the University of British Columbia (H19-00762) as well as the University of the Witwatersrand (Ref 140707). All methods were performed in accordance with the relevant guidelines and regulations.

Consent for publication

Not applicable

Availability of data and materials

The Cognitive Interview data is not available for sharing, as we did not receive consent to share or archive transcripts from the participants. Please feel free to contact Kalysha Closson if there are any inquiries regarding the data.

Competing Interests

The authors declare that they have no competing interests

Funding

This primary data collected to produce this manuscript was funded by KC's International Development Research Centre Doctoral Research award and support from the University of British Columbia Public Scholars Initiative. KC is supported by a CIHR Vanier Canadian Scholarship. The work reported herein for JJD was made possible through funding by the South African Medical Research Council through its Division of Research Capacity Development under the SAMRC Postdoctoral Programme from funding received from the South African National Treasury as well as the CIPHER GROWING THE LEADERS OF TOMORROW grant from the International AIDS Society. The authors received no funding to produce this manuscript as it is part of the first author's dissertation research.

Author's contributions

KC, AK, GO, AG contributed to the study conception and design. Data collection was performed by CZ and MK. Data analysis was performed by KC, CZ, and MK. The first draft was written by KC. All authors contributed to data interpretation and reviewed content and edited the manuscript. The authors read and approved the final manuscript.

Acknowledgement

The authors would like to express their gratitude to the young people who participated in this research and shared their stories with us. Also, thank you to the members of the Perinatal HIV Research Unit (PHRU) Adolescent Community Advisory Committee (ACAB), members of Simon Fraser University's Global HIV Interdisciplinary Leadership Lab (GHIRL), and the WITSIE research group at the University of the Witwatersrand for providing feedback on the results of this study. Thank you to the staff at the Maternal Adolescent and Child Health Research Unit (MRU) in Durban and the PHRU in Soweto for supporting the data collection and logistics of this study. The view expressed in this manuscript are the authors' own.

References

1. Raj A. Gender equality, empowerment and health: From measurement to impact. *SSM Popul Health*. 2019 Dec;9:100493. PubMed PMID: 31993486. PMCID: 6978476.
2. Pryor EC, Seck PA. Improving gender data is essential for progress on equity and empowerment. *SSM Popul Health*. 2019 Dec;9:100494. PubMed PMID: 31993487. PMCID: 6978485.
3. Pulerwitz J, Gortmaker SL, DeJong W. Measuring sexual relationship power in HIV/STD research. *Sex Roles*. 2000;42(7/8):637–60.
4. McMahon JM, Volpe EM, Klostermann K, Trabold N, Xue Y. A systematic review of the psychometric properties of the Sexual Relationship Power Scale in HIV/AIDS research. *Arch Sex Behav*. 2015 Feb;44(2):267–94. PubMed PMID: 25331613. PMCID: 4324007.
5. Closson K, Ndungu J, Beksinska M, Ogilvie G, Dietrich JJ, Gadermann A, et al. Gender, Power, and Health: Measuring and Assessing Sexual Relationship Power Equity Among Young Sub-Saharan African Women and Men, a Systematic Review. *Trauma Violence Abuse*. 2020 Dec 23:1524838020979676. PubMed PMID: 33353490.
6. Connell R. *Gender and power: society, the person and sexual politics*. Cambridge: Polity in association with Blackwell; 1987. xvii, 334 p. p.
7. Connell R. Gender, health and theory: conceptualizing the issue, in local and world perspective. *Soc Sci Med*. 2012 Jun;74(11):1675–83. PubMed PMID: 21764489.
8. Jewkes R, Morrell R. Gender and sexuality: emerging perspectives from the heterosexual epidemic in South Africa and implications for HIV risk and prevention. *J Int AIDS Soc*. 2010;13:6. PubMed PMID: 20181124. PMCID: 2828994.
9. Connell RW. Rethinking gender from the South. *Feminist Studies*. 2014;40(3):518–39.
10. Gibbs A, Govender K, Jewkes R. An exploratory analysis of factors associated with depression in a vulnerable group of young people living in informal settlements in South Africa. *Glob Public Health*. 2018 Jul;13(7):788–803. PubMed PMID: 27533487.
11. Gibbs A, Jewkes R, Willan S, Washington L. Associations between poverty, mental health and substance use, gender power, and intimate partner violence amongst young (18-30) women and men in urban informal settlements in South Africa: A cross-sectional study and structural equation model. *PLoS One*. 2018;13(10):e0204956. PubMed PMID: 30281677. PMCID: 6169941.
12. Nduna M, Jewkes RK, Dunkle KL, Jama Shai NP, Colman I. Prevalence and factors associated with depressive symptoms among young women and men in the Eastern Cape Province, South Africa. *J Child Adolesc Ment Health*. 2013;25(1):43–54. PubMed PMID: 25860306.
13. Nduna M, Jewkes RK, Dunkle KL, Shai NP, Colman I. Associations between depressive symptoms, sexual behaviour and relationship characteristics: a prospective cohort study of young women and men in the Eastern Cape, South Africa. *J Int AIDS Soc*. 2010;13:44. PubMed PMID: 21078150. PMCID: 2992477.
14. Closson K, Dietrich JJ, Beksinska M, Gibbs A, Hornschuh S, Smith T, et al. Measuring sexual relationship power equity among young women and young men South Africa: Implications for gender-transformative programming. *PloS one*. 2019;14(9):e0221554. PubMed PMID: 31553723.
15. Conroy AA. Gender, power, and intimate partner violence: A study on couples from rural Malawi. *Journal of Interpersonal Violence*. 2014;29(5):866–88. PubMed PMID: 2014-03005-005.
16. Pettifor AE, Measham DM, Rees HV, Padian NS. Sexual power and HIV risk, South Africa. *Emerg Infect Dis*. 2004 Nov;10(11):1996-2004. PubMed PMID: 15550214. PMCID: 3328992.
17. Stockl H, March L, Pallitto C, Garcia-Moreno C. Intimate partner violence among adolescents and young women: prevalence and associated factors in nine countries: a cross-sectional study. *BMC public health*. 2015;14.
18. Zembe YZ, Townsend L, Thorson A, Silberschmidt M, Ekstrom AM. Intimate Partner Violence, Relationship Power Inequity and the Role of Sexual and Social Risk Factors in the Production of Violence among Young Women Who Have Multiple Sexual Partners in a Peri-Urban Setting in South Africa. *PloS one*. 2015;10(11):e0139430. PubMed PMID: 26599394. PMCID: 4658116.
19. Christofides NJ, Jewkes RK, Dunkle KL, McCarty F, Jama Shai N, Nduna M, et al. Risk factors for unplanned and unwanted teenage pregnancies occurring over two years of follow-up among a cohort of young South African women. *Glob Health Action*. 2014;7:23719. PubMed PMID: 25150027. PMCID: 4141943.
20. Christofides NJ, Jewkes RK, Dunkle KL, McCarty FA, Shai NJ, Nduna M, et al. Perpetration of physical and sexual abuse and subsequent fathering of pregnancies among a cohort of young South African men: a longitudinal study. *BMC public health*. 2014;14:947. PubMed PMID: 25214147. PMCID: 4177689.
21. Jewkes R, Dunkle K, Nduna M, Levin J, Jama N, Khuzwayo N, et al. Factors associated with HIV sero-status in young rural South African women: connections between intimate partner violence and HIV. *International journal of epidemiology*. 2006;35(6):1461–8.

22. Naidoo P, Chirinda W, McHunu G, Swartz S, Anderson J. Social and structural factors associated with vulnerability to HIV infection among young adults in South Africa. *Psychol Health Med*. 2015;20(3):369–79. PubMed PMID: 25025831.
23. Shai NJ, Jewkes R, Levin J, Dunkle K, Nduna M. Factors associated with consistent condom use among rural young women in South Africa. *AIDS Care*. 2010;22(11):1379–85. PubMed PMID: 2010-21378-011.
24. Shai NJ, Jewkes R, Nduna M, Dunkle K. Masculinities and condom use patterns among young rural South Africa men: a cross-sectional baseline survey. *BMC public health*. 2012;12:462.
25. Steffenson AE, Pettifor AE, Seage GR, 3rd, Rees HV, Cleary PD. Concurrent sexual partnerships and human immunodeficiency virus risk among South African youth. *Sex Transm Dis*. 2011 Jun;38(6):459–66. PubMed PMID: 21258268. PMCID: 3763704.
26. Jewkes RK, Dunkle K, Nduna M, Shai N. Intimate partner violence, relationship power inequity, and incidence of HIV infection in young women in South Africa: a cohort study. *Lancet (London, England)*. 2010;376(9734):41–8.
27. Shisana O, Rehle T, Simbayi LC, Zuma K, Jooste S, Zungu N, et al. South African National HIV Prevalence, Incidence and Behaviour Survey, 2012. Cape Town; 2014.
28. Borsboom D, Mellenbergh GJ, van Heerden J. The concept of validity. *Psychol Rev*. 2004 Oct;111(4):1061–71. PubMed PMID: 15482073.
29. Newton PE, Baird J-A. The great validity debate. *Assessment in Education: Principles, Policy & Practice*. 2016;23(2):173–7.
30. Patrick DL, Beery WL. Measurement Issues: Reliability and Validity. *American Journal of Health Promotion*. 1991 1991/03/01;5(4):305–10.
31. Messick S. Validity of psychological assessment: Validation of inferences from persons' responses and performances as scientific inquiry into score meaning. *American Psychologist*. 1995;50(9):741–9.
32. Scheidell JD. Measurement of gender equity: a clarification. *Am J Public Health*. 2014 Mar;104(3):e6. PubMed PMID: 24432946. PMCID: 3953780.
33. Beatty PC, Willis GB. Research Synthesis: The Practice of Cognitive Interviewing. *Public Opinion Quarterly*. 2007;71(2):287–311.
34. Willis GB, Miller K. Cross-Cultural Cognitive Interviewing: Seeking Comparability and Enhancing Understanding. *Field Methods*. 2011 2011/11/01;23(4):331–41.
35. Jewkes RK, Nduna M, N. JP, Levin JB, editors. Measuring relationship power: adaptation of the SRPS for South Africa. XIV International AIDS Conference; 2002 July 7-12; Barcelona, Spain
36. Jewkes RK, Dunkle K, Nduna M, Shai N. Intimate partner violence, relationship power inequity, and incidence of HIV infection in young women in South Africa: a cohort study. *Lancet*. 2010 Jul 3;376(9734):41–8. PubMed PMID: 20557928.
37. Jewkes R, Nduna M, Levin J, Jama N, Dunkle K, Khuzwayo N, et al. A cluster randomized-controlled trial to determine the effectiveness of Stepping Stones in preventing HIV infections and promoting safer sexual behaviour amongst youth in the rural Eastern Cape, South Africa: trial design, methods and baseline findings. *Tropical Medicine & International Health*. 2006 Jan;11(1):3–16. PubMed PMID: 16398750.
38. Jewkes RK, Levin JB, Penn-Kekana LA. Gender inequalities, intimate partner violence and HIV preventive practices: findings of a South African cross-sectional study. *Social science & medicine (1982)*. 2003;56(1):125-34.
39. Scott K, LeFevre AE, Ummer O. An introduction to cognitive interviewing: How can we enhance survey questionnaires to ensure that they actually measure what we want to know? In: University of Cape Town School of Public Health, editor. 2020.
40. Wolcott MD, Lobczowski NG. Using cognitive interviews and think-aloud protocols to understand thought processes. *Curr Pharm Teach Learn*. 2021 Feb;13(2):181–8. PubMed PMID: 33454077.
41. Perri S, Shao A, Swai N, Mitchell M, Staggers N. Crucial issues in think aloud techniques for cross cultural studies. *Stud Health Technol Inform*. 2014;205:863–7. PubMed PMID: 25160310.
42. Willis GB. Analysis of the cognitive interview in questionnaire design Leavy P, editor. New York, New York: Oxford University Press; 2015.
43. Gerber ER, Wellens TR. Perspectives on Pretesting: "Cognition" in the Cognitive Interview? *Bulletin of Sociological Methodology/Bulletin de Méthodologie Sociologique*. 1997 1997/06/01;55(1):18–39.
44. Tourangeau R. Cognitive Science and Survey Methods. In: Jabine T, Straf M, Tanur J, Tourangeau R, editors. *Cognitive Aspects of Survey Methodology: Building a Bridge Between Disciplines*. Washington: National Academic Press; 1984. p. 73–100.
45. Tourangeau R. Survey Reliability: Models, Methods, and Findings. *Journal of Survey Statistics and Methodology*. 2020.
46. 46.
47. Dr. Peter AIDS Foundation Vancouver [14 March 2016]. Available from: <http://www.drpeter.org/>.
48. Teitelman AM, Jemmott JB, Bellamy SL, Icard LD, O'Leary A, Heeren GA, et al. Partner Violence, Power, and Gender Differences in South African Adolescents' HIV/Sexually Transmitted Infections Risk Behaviors. *Health Psychol*. 2016 Apr 25. PubMed PMID: 27111184.
49. Jewkes R, Gibbs A, Jama-Shai N, Willan S, Misselhorn A, Mushinga M, et al. Stepping Stones and Creating Futures intervention: shortened interrupted time series evaluation of a behavioural and structural health promotion and violence prevention intervention for young people in informal settlements in Durban, South Africa. *BMC public health*. 2014;14:1325.
50. Pulerwitz J, Mathur S, Woznica D. How empowered are girls/young women in their sexual relationships? Relationship power, HIV risk, and partner violence in Kenya. *PLoS One*. 2018;13(7):e0199733. PubMed PMID: 30024908. PMCID: 6053148.
51. Podsakoff PM, MacKenzie SB, Podsakoff NP. Sources of Method Bias in Social Science Research and Recommendations on How to Control It. *Annual Review of Psychology*. 2011 2012/01/10;63(1):539–69.

52. Marsh HW. Positive and negative global self-esteem: A substantively meaningful distinction or artifactors? *Journal of Personality and Social Psychology*. 1996;70(4):810–9.
53. Bhana D. Love grows with sex: teenagers negotiating sex and gender in the context of HIV and the implications for sex education. *Afr J AIDS Res*. 2017 Mar;16(1):71–9. PubMed PMID: 28367751.
54. Wilkinson K. Five facts: Femicide in South Africa. *Africa Check*; 2019 03 September, 2019.
55. Sharpe MJ, Happner PP, Dixon WA. Gender role conflict, instrumentality, expressiveness, and well-being in adult men. *Sex Roles* 1995;33(1/2):1–18.
56. O'Neil JM. Summarizing 25 Years of Research on Men's Gender Role Conflict Using the Gender Role Conflict Scale. *The Counseling Psychologist*. 2008;36(3):358–445.
57. Pleck JH. The gender role strain paradigm: An update.. In: Levant RF, Pollack WS, editors. *A new psychology of men* New York, NY, US: Basic Books; 1995.
58. Gottert A, Barrington C, Pettifor A, McNaughton-Reyes HL, Maman S, MacPhail C, et al. Measuring Men's Gender Norms and Gender Role Conflict/Stress in a High HIV-Prevalence South African Setting. *AIDS and Behavior*. 2016 Aug;20(8):1785–95. PubMed PMID: 27209467.
59. Gottert A, Barrington C, McNaughton-Reyes HL, Maman S, MacPhail C, Lippman SA, et al. Gender Norms, Gender Role Conflict/Stress and HIV Risk Behaviors Among Men in Mpumalanga, South Africa. *AIDS and Behavior*. 2017 Feb 04. PubMed PMID: 28161801.
60. Closson K, Hatcher A, Sikweyiya Y, Washington L, Mkhwanazi S, Jewkes R, et al. Gender role conflict and sexual health and relationship practices amongst young men living in urban informal settlements in South Africa. *Cult Health Sex*. 2019 Feb 14:1–17. PubMed PMID: 30762491.
61. Arora P, Scheiber L. Slumdog romance: Facebook love and digital privacy at the margins. *Media Cult Soc*. 2017 Apr;39(3):408-22. PubMed PMID: 29708133. PMID: 5898417.
62. Dietrich JJ, Coetzee J, Otwombe K, Mdanda S, Nkala B, Makongoza M, et al. Adolescent-friendly technologies as potential adjuncts for health promotion. *Health Education*. 2014;114(4):304–18.
63. Szinay D, Perski O, Jones A, Chadborn T, Brown J, Naughton F. Influences on the Uptake of Health and Well-being Apps and Curated App Portals: Think-Aloud and Interview Study. *JMIR Mhealth Uhealth*. 2021 Apr 27;9(4):e27173. PubMed PMID: 33904827. PMID: 8114158.
64. Dietrich JJ, Otwombe K, Pakhomova TE, Horvath KJ, Hornschuh S, Hlongwane K, et al. High cellphone use associated with greater risk of depression among young women aged 15-24 years in Soweto and Durban, South Africa. *Glob Health Action*. 2021 Jan 1;14(1):1936792. PubMed PMID: 34431754. PMID: 8405067.
65. Dietrich JJ, Laher F, Hornschuh S, Nkala B, Chimoyi L, Otwombe K, et al. Investigating Sociodemographic Factors and HIV Risk Behaviors Associated With Social Networking Among Adolescents in Soweto, South Africa: A Cross-Sectional Survey. *JMIR Public Health Surveill*. 2016 Sep 28;2(2):e154. PubMed PMID: 27683173. PMID: 5074647.
66. Manyapel T, Nyembezi A, Ruiters RAC, Borne Bvd, Sifunda S, Reddy P. Understanding the Psychosocial Correlates of the Intention to Use Condoms among Young Men in KwaZulu-Natal, South Africa. *International journal of environmental research and public health*. 2017;14(4).
67. Campbell C, Gibbs A, Maimane S, Nair Y. Hearing community voices: grassroots perceptions of an intervention to support health volunteers in South Africa. *SAHARA J*. 2008 Dec;5(4):162–77. PubMed PMID: 19194598.
68. Hunter M. *Love in the time of AIDS: inequality, gender, and rights in South Africa*. Bloomington: Indiana University Press; 2010. xii, 303 p. p.
69. LoVette A, Kuo C, Harrison A. Strength-based interventions for HIV prevention and sexual risk reduction among girls and young women: A resilience-focused systematic review. *Glob Public Health*. 2019 Oct;14(10):1454–78. PubMed PMID: 30955450. PMID: 6779500.
70. Nelson V, Derrett S, Wyeth E. Indigenous perspectives on concepts and determinants of flourishing in a health and well-being context: a scoping review protocol. *BMJ Open*. 2021 Feb 10;11(2):e045893. PubMed PMID: 33568379. PMID: 7878123.
71. Duppong Hurley K, Lambert MC, Epstein MH, Stevens A. Convergent Validity of the Strength-Based Behavioral and Emotional Rating Scale with Youth in a Residential Setting. *J Behav Health Serv Res*. 2015 Jul;42(3):346–54. PubMed PMID: 24435227. PMID: 4102667.
72. Chitneni P, Beksinska M, Dietrich JJ, Jaggernath M, Closson K, Smith P, et al. Partner notification and treatment outcomes among South African adolescents and young adults diagnosed with a sexually transmitted infection via laboratory-based screening. *Int J STD AIDS*. 2020 Jun;31(7):627–36. PubMed PMID: 32403988. PMID: PMC7357572. Epub 2020/05/15.
73. Nwosu CO, Oyenubi A. Income-related health inequalities associated with the coronavirus pandemic in South Africa: A decomposition analysis. *Int J Equity Health*. 2021 Jan 7;20(1):21. PubMed PMID: 33413442. PMID: 7790046.
74. Wesson PD, Lippman SA, Neilands TB, Ahern J, Kahn K, Pettifor A. Evaluating the Validity and Reliability of the Gender Equitable Men's Scale Using a Longitudinal Cohort of Adolescent Girls and Young Women in South Africa. *AIDS Behav*. 2021 Aug 24. PubMed PMID: 34426864.
75. Vu L, Pulerwitz J, Burnett-Zieman B, Banura C, Okal J, Yam E. Inequitable Gender Norms From Early Adolescence to Young Adulthood in Uganda: Tool Validation and Differences Across Age Groups. *Journal of Adolescent Health*. 2017 2017/02/01;60(2, Supplement 2):S15-S21.
76. Closson K, Dietrich J, Beksinska M, Gibbs A, Hornschuh S, Smith T, et al. Measuring sexual relationship power equity among young women and young men in South Africa: Implications for gender-transformative programming. *PLoS one*. 2019.

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- [SupplementarymaterialIDchecklist.pdf](#)
- [Supplementarytablecomparingincvsexcl.docx](#)