

https://dspace.org/

# Pathways to transactional sex among periurban South African women the role of relationship control food insecurity and alcohol misuse

**Sarah Magni; Abigail Hatcher; A Gibbs; J Wamoyi; K Dunkle ...**

ROUTLEDGE JOURNALS, TAYLOR & FRANCIS LTD
https://hdl.handle.net/10539/42611
WOS

Downloaded from a DSpace repository. https://dspace.org/

Taylor & Francis
Taylor & Francis Group



AIDS Care

Psychological and Socio-medical Aspects of AIDS/HIV

ISSN: (Print) (Online) Journal homepage: www.tandfonline.com/journals/caic20

# Pathways to transactional sex among peri-urban South African women: the role of relationship control, food insecurity and alcohol misuse

**Sarah Magni, Abigail Hatcher, Andrew Gibbs, Joyce Wamoyi, Kristin Dunkle & Nicola Christofides**

**To cite this article:** Sarah Magni, Abigail Hatcher, Andrew Gibbs, Joyce Wamoyi, Kristin Dunkle & Nicola Christofides (2024) Pathways to transactional sex among peri-urban South African women: the role of relationship control, food insecurity and alcohol misuse, AIDS Care, 36:sup1, 179-186, DOI: 10.1080/09540121.2024.2307385

**To link to this article:** https://doi.org/10.1080/09540121.2024.2307385

© 2024 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group

Published online: 09 Feb 2024.

Submit your article to this journal

Article views: 730

View related articles

View Crossmark data

Citing articles: 1 View citing articles

Full Terms & Conditions of access and use can be found at
https://www.tandfonline.com/action/journalInformation?journalCode=caic20

AIDS CARE
2024, VOL. 36, NO. S1, 179–186
https://doi.org/10.1080/09540121.2024.2307385

Taylor & Francis
Taylor & Francis Group

OPEN ACCESS Check for updates

# Pathways to transactional sex among peri-urban South African women: the role of relationship control, food insecurity and alcohol misuse

Sarah Magni[a,b], Abigail Hatcher[a,c], Andrew Gibbs[d,e,f,g], Joyce Wamoyi[h], Kristin Dunkle[d] and Nicola Christofides [a]

[a]School of Public Health, Faculty of Health Sciences, University of Witwatersrand, Johannesburg, South Africa; [b]Genesis Analytics, Johannesburg, South Africa; [c]Department of Health Behavior, Gillings School of Global Public Health, University of North Carolina, Chapel Hill, NC, USA; [d]Gender and Health Research Unit, South African Medical Research Council, Pretoria, South Africa; [e]Centre for Rural Health, School of Nursing and Public Health, University of KwaZulu-Natal, Durban, South Africa; [f]Department of Psychology, Faculty of Life and Health Sciences, University of Exeter, Exeter, UK; [g]Institute of Global Health, University College London, London, UK; [h]Department of Sexual and Reproductive Health, National Institute for Medical Research, Mwanza, Tanzania

**ABSTRACT**

Transactional sex increases sub-Saharan African women's risk of HIV acquisition. We quantitatively explored the pathways contributing towards women's future engagement in transactional sex with casual partners and khwapheni (secret concurrent sex partners). We conducted secondary data analysis from a cluster randomised controlled trial in urban informal settlements in eThekwini Municipality., South Africa. Data were collected at enrolment (t0) and 24 months' later (t2) using self-completed questionnaires. Structural equation modelling (SEM) assessed pathways leading to transactional sex over two years. 677 women 18–35 years were enrolled and 80.5% ($n = 545$) were followed up. At t2, 44.6% of respondents reported transactional sex with a casual partner or khwapheni. The SEM demonstrated a small effect (d = 0.23) between transactional sex at t0 and at t2. Controlling for past transactional sex, main partner relationship control had a large effect size on future transactional sex (d = 0.60). Hazardous drinking had a medium effect size (d = 0.45) and food insecurity a small effect (d = 0.24), (RMSEA 0.03, 90%CI 0.02–0.04; CFI 0.97; TLI 0.96). HIV prevention programming should highlight current transactional sex but also address structural issues predicting future transactional sex, including food insecurity and alcohol misuse. Gender transformative interventions to reduce controlling behaviours in main relationships are worth investigating.

**ARTICLE HISTORY**
Received 17 July 2023
Accepted 10 January 2024

**KEYWORDS**
Transactional sex; relationship control; South Africa

**SDG KEYWORDS**
SDG 5: Gender equality

## Introduction

Transactional sex increases women's vulnerability to HIV acquisition in sub-Saharan Africa, but more longitudinal studies are needed to establish the causal pathways between transactional sex and HIV (Wamoyi et al., 2016). Transactional sex is defined as a sexual relationship which is primarily motivated by financial or material exchange and which occurs outside of marriages or "formal" sex work (Chatterji et al., 2005; Fielding-Miller et al., 2017; Pettifor et al., 2004; Stoebenau et al., 2016). Women engaging in transactional sex are often less able to influence the timing and nature of sex (MacPhail & Campbell, 2001; Wojcicki & Malala, 2001), placing them at higher risk of HIV acquisition.

Reasons why women engage in transactional sex are not uniform (Stoebenau et al., 2016). Transactional sex can be driven by structural factors such as poverty and food insecurity (Greif, 2012), where women exchange sex to obtain basic needs (Kamndaya et al., 2016; Zembe et al., 2013). It can also be motivated by psychosocial factors, including aspirations for social mobility, a modern lifestyle and material consumer goods (Duby et al., 2021; Kamndaya et al., 2016; Leclerc-Madlala, 2003; Maganja et al., 2007; Ranganathan et al., 2018; Stoebenau et al., 2013; Wamoyi et al., 2010; Zembe et al., 2013). The practice is also driven by the intertwined nature of romantic notions of love and security (Bhana & Pattman, 2011; Hunter, 2010; Mojola, 2014).

Transactional sex occurs in different types of sexual relationships. Women in sub-Saharan Africa frequently report receiving gifts from their main partners (Jewkes et al., 2001; Kaufman & Stavros, 2004; MacPhail & Campbell, 2001). These gifts are demonstrations of love (Hunter, 2010). Although gifts may incentivise women to have sex,

**CONTACT** Sarah Magni sarah.e.magni@gmail.com School of Public Health, Faculty of Health Sciences, University of Witwatersrand, Johannesburg, South Africa Genesis Analytics, 2193 Johannesburg, South Africa

This article has been corrected with minor changes. These changes do not impact the academic content of the article.

© 2024 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group
This is an Open Access article distributed under the terms of the Creative Commons Attribution-NonCommercial-NoDerivatives License (http://creativecommons.org/licenses/by-nc-nd/4.0/), which permits non-commercial re-use, distribution, and reproduction in any medium, provided the original work is properly cited, and is not altered, transformed, or built upon in any way. The terms on which this article has been published allow the posting of the Accepted Manuscript in a repository by the author(s) or with their consent.

they are not the only reason women have these relationships (Kaufman & Stavros, 2004; MacPhail & Campbell, 2001). Transactional sex is often reported with non-primary partners, including *khwapheni* [concurrent sexual partnership which is hidden from a main partner (Jewkes et al., 2002)] and casual partners. Sex with casual partners is exchanged for a variety of reasons such as a place to stay for the night (Wojcicki & Malala, 2001), a lift (Kaufman & Stavros, 2004) or in appreciation of alcoholic drinks (Wojcicki, 2002).

Factors associated with transactional sex in women include younger age, household hunger and lower socioeconomic status, low education, having a partner five or more years older and alcohol use (Choudhry et al., 2015; Duby et al., 2021; Okigbo et al., 2014; Pascoe et al., 2015). However, there are two gaps in the knowledge base which would be useful to fill in order to improve HIV policy and programming for women.

Quantitative research on transactional sex pathways using longitudinal data has not, to our knowledge, been adequately explored. This means that frequently HIV programming addresses one reason for transactional sex, at the expense of the others (Stoebenau et al., 2016). For example, in South Africa, one "sugar daddies" campaign, which highlighted the issue of cross-generational sex in exchange for gifts or money (South African Government, 2012), focused on sex for improved social status only, neglecting the other reasons described in the literature (Stoebenau et al., 2016). Secondly, little research has explored the relationship between controlling behaviour by a main partner and women's engagement in transactional sex.

This paper aims to quantitatively explore the pathways which contribute towards women's engagement in transactional sex with *khwapheni* and casual partners in South Africa. Specifically, we explored women's experiences of their main partner's controlling behaviour in the pathway.

## Materials and methods

### Design

Data were drawn from a two-arm cluster randomised controlled trial (CRCT) in urban informal settlements in eThekwini Municipality, South Africa (Gibbs et al., 2017). An estimated 3.4 million people live in eThekwini municipality, about 30% of whom are unemployed (Statistics South Africa, 2021). At a cluster level, eligibility was defined as urban informal settlements in the eThekwini Municipality, areas where the implementing partner, Project Empower, had determined it was safe to work. Informality was defined as not having formal service provision within the home. Clusters ($n = 34$) were informal settlements, with organically occurring boundaries.

In each cluster ~20 men and ~20 women were recruited. Women and men aged between 18 and 30, who were out of school, not in formal work, normally resident in an informal settlement, and able to communicate in English, isiXhosa or isiZulu were eligible (Gibbs et al., 2017). Data were collected from participants at baseline (t0; September 2015–September 2016) and 24 months later (t2; March–October 2018). Some 677 women aged 18–35 years were enrolled and 80.5% ($n = 545$) were followed up two years later.

The CRCT evaluated Stepping Stones and Creating Futures, two separate interventions designed to transform gender attitudes and strengthen livelihoods. Further information on the study design is available elsewhere (Gibbs et al., 2017). After providing written informed consent, questionnaires in English, isiZulu and isiXhosa were self-completed on mobile phones (Gibbs et al., 2017). For this analysis, only women's data were included.

The primary study was approved by the Biomedical Research Ethics Committee (BREC) at the University of KwaZulu-Natal, Durban, South Africa (BFC043/15) and the South African Medical Research Council Ethics Committee (EC006–2/2015). Secondary data analysis was approved by the University of the Witwatersrand (M180269). All participants provided written informed consent. Data were de-identified prior to analysis.

### Measures

We measured past year transactional sex using questions adapted from those previously used (Jewkes et al., 2012). Participants were asked: "In the past 12 months please think about any man you had sex with just once or any casual partner or *khwapheni*. Did you have a relationship or sex with them because you expected to receive, or received any of the following?". Examples of answer options are: "Somewhere to sleep for the night, bills or school fees" and "Cash or money to be looked after". Any transactional sex was defined as a positive answer to one or more of the five questions (Jewkes et al., 2012). A sum score ranging from 0 to 5 was created (Cronbach's alpha = 0.79). A score closer to five indicated a higher intensity of transactional sex engagement. Participants who had not had sex in the past 12 months were coded as 0. Alcohol use was assessed using the Alcohol Use Disorder Identification Test (AUDIT) scale (Saunders et al., 1993). Ten items asked about past year alcohol use, with scores summed. AUDIT demonstrated strong internal reliability (Cronbach's alpha = 0.81).

Eight items from the adapted sexual relationship power scale (SPRS) (Jewkes et al., 2010; Pulerwitz et al.,

2000), asked about controlling behaviours with the respondent's current or most recent main partner. Examples of the items, scored using a four level Likert scale, are: "when he wants sex, he expects me to agree" and "he tells me who I can spend time with". This demonstrated good internal reliability (Cronbach's alpha = 0.75). The scale was treated as a continuous score (range 0–24) with higher scores indicating more controlling behaviours by a main partner. We constructed a latent variable for main partner's controlling behaviour using the eight items of the SPRS score and tested this using confirmatory factor analysis [for which the data fit the latent construct in a strong manner: root-mean-square error of approximation (RMSEA) = 0.029; comparative fit index (CFI) = 0. 969 and Tucker-Lewis Index (TLI) = 0.958]. Socio-demographic variables considered included: age (continuous, per year) and education (highest level completed). Household food insecurity in the past month was assessed with three items: how often in the past month was there no food to eat, any member of your household goes to sleep hungry, and not eating for whole day and night, because there was no money or food (Deitchler et al., 2010). A direct sum was derived (range 0–9) with higher scores indicating more food insecurity. A dichotomous variable for intervention and control groups was included.

### *Statistical analysis*

Data were analysed in Stata version 17 (StataCorp, 2015). Sociodemographic characteristics of the sample were presented using frequencies and percentages. We compared the characteristics of those followed up and those lost to follow up at 24 months. We compared categorical variables using Pearson's Chi-squared test.

We used logistic regression to estimate crude odds ratios (ORs) and adjusted ORs (aORs), for transactional sex at t2, controlling for age, education, food insecurity, main partners' controlling behaviours, hazardous drinking, and transactional sex at t0 using the survey commands in Stata to account for clustering. We report ORs, aORs, 95% confidence intervals (CIs), and *p*-values.

We conducted structural equation modelling (SEM) and sem builder command. The continuous outcome score was transactional sex (0–5) with a casual partner or *khwapheni* at t2. We built the SEM using theoretical assumptions about pathways and controlled for education, food security, intervention/control arm and clustering at t0. We included food insecurity at t2 as we hypothesised that new instances of food insecurity would be an important pathway for ongoing transactional sex. We fitted the SEM to these data using maximum likelihood missing value estimates. We then assessed Goodness of Fit Measures for model fit.

## Results

At baseline, 677 participants were recruited into the study and at t2, 80.5% (545) participants were followed up. The mean age of participants at t2 was 26.2 years (SD = 3.7). Over half (297/545, 54.5%) were food insecure. Most (461/545, 84.6%) had a sexual partner that they did not live with and 16.3% (89/545) were currently studying. Those retained in the study at t2 were significantly less likely to cohabit with their partners and more likely to be in the control arm (Table 1).

At t2, 44.6%, (243/545) reported any transactional sex with a *khwapheni* or casual partner in the previous year (95%CI 0.40–0.49). Nearly a third (169/545, 31.0%) of women reported having had sex for cash or money to be looked after. About 15% (86/479, 15.8%) reported transactional sex for somewhere to stay. Some 22.2% (121/545) reported transactional sex to support their children or family and 22.9% (125/545) for various items including, drugs, cosmetics and clothes. Nearly a fifth (93/479, 17.1%) said they received somewhere to sleep for the night, bills or school fees.

Table 2 shows that transactional sex was significantly higher in women reporting food insecurity, having higher relationship control in a main partnership, and drinking hazardous levels. More women who reported t0 transactional sex engaged in transactional sex at t2 (58.2% vs 41.8%, < 0.001).

**Table 1.** Sociodemographic characteristics of those retained and loss to follow-up over two years.

| | Retained at t2 *n* (%) | Lost to follow-up t2 *n* (%) | *p* Value |
|---|---|---|---|
| **Sociodemographic characteristics** | | | |
| **Age in years (*n* = 677)** | | | |
| 16–24 | 308 (56.5) | 80 (60.6) | |
| 25–35 | 237 (43.5) | 52 (39.4) | 0.39 |
| **Food security (*n* = 677)** | | | |
| Food secure | 197 (36.2) | 46 (34.9) | |
| Food insecure | 348 (63.9) | 86 (65.2) | 0.78 |
| **Relationship status (*n* = 677)** | | | |
| Cohabiting | 79 (14.5) | 34 (25.8) | |
| Not living together | 466 (85.5) | 98(74.2) | 0.00 |
| **Behaviours** | | | |
| **Relationship control (*n* = 677)** | | | |
| Lower control by main partner | 331 (60.7) | 72 (54.6) | |
| Higher control by main partner | 214 (39.3) | 60 (45.5) | 0.19 |
| **Alcohol use (*n* = 634)** | | | |
| Non-hazardous alcohol use | 392 (76.6) | 101 (82.8) | |
| Hazardous alcohol use | 120 (23.4) | 21 (17.2) | 0.14 |
| **Intervention** | | | |
| Intervention arm | 260 (47.7) | 79 (59.9) | 0.01 |
| Control arm | 285 (52.3) | 53 (40.2) | |

**Table 2.** Associations between sociodemographic factors, behavioural factors and intervention/control group and transactional sex in women, t2 (%).

| | Had any transactional sex in the past 12 months (t2) | | |
|---|---|---|---|
| | Yes *n* (%) | No *n* (%) | *p* Value |
| **Sociodemographic characteristics** | | | |
| **Age in years (*n* = 545)** | | | |
| 18–24 | 82 (42.7) | 110 (57.3) | 0.52 |
| 25–35 | 161 (45.6) | 192 (54.4) | |
| **Education (*n* = 545)** | | | |
| Not currently studying | 207 (45.4) | 249 (54.6) | 0.39 |
| Currently studying | 36 (40.5) | 53 (59.6) | |
| **Food security (*n* = 545)** | | | |
| Food insecure | 157 (52.9) | 140 (47.1) | <0.001 |
| Food secure | 86 (34.7) | 162 (65.3) | |
| **Relationship status (*n* = 545)** | | | |
| Not living together | 199 (43.2) | 262 (56.8) | 0.12 |
| Cohabiting | 44 (52.4) | 40 (47.6) | |
| **Behaviours** | | | |
| **Relationship control (*n* = 545)** | | | |
| Lower control by main partner | 130 (36.3) | 228 (63.7) | <0.001 |
| Higher control by main partner | 113 (60.4) | 74 (39.6) | |
| **Alcohol use (*n* = 465)** | | | |
| Non-hazardous alcohol use | 132 (36.6) | 229 (63.4) | <0.001 |
| Hazardous alcohol use | 67 (64.4) | 37 (35.6) | |
| **Transactional sex at t0 (*n* = 475)** | | | |
| No transactional sex at t0 | 83 (34.2) | 160 (65.8) | <0.001 |
| Transactional sex at t0 | 135 (58.2) | 97 (41.8) | |
| **Intervention arm (*n* = 545)** | | | |
| Control arm | 125 (43.9) | 160 (56.1) | 0.72 |
| Treatment arm | 118 (45.4) | 142 (54.6) | |

Women who reported higher relationship control by their main partner at t0 had 6% higher odds of engaging in transactional sex at t2. Hazardous drinkers had 4% higher odds of engaging in t2 transactional sex. Women who engaged in t0 transactional sex had significantly higher odds of having had any transactional sex at t2 (aOR 1.9, 95% CI 1.19–3.05) than those who did not report t0 transactional sex (Table 3).

Our SEM works through three pathways, in addition to controlling for t0 engagement in transactional sex and sociodemographic factors. Figure 1 shows that there is a significant and medium effect between engaging in any transactional sex at t0 and transactional sex at t2. Controlling for past transactional sex, we found that relationship control by a main partner had a large effect size on future transactional sex with a casual partner or *khwapheni* (d = 0.60), while hazardous drinking had a medium effect size (d = 0.45) and food insecurity a small effect size (d = 0.24), (RMSEA 0.03, 90%CI 0.02–0.04; CFI 0.97; TLI 0.96).

## Discussion

This study is, to our knowledge, the first to quantitatively explore the pathways contributing to women's future engagement in transactional sex with a *khwapheni* or casual partner. We found that it is not just previous engagement in transactional sex which predicts future transactional sex. Consistent with other literature (Cluver et al., 2011; Dunkle et al., 2004; Greif, 2012; Kamndaya et al., 2016; Magni et al., 2015), this study found that social and structural factors are important pathways to future engagement in transactional sex. A novel finding is that higher relationship control in a main relationship is associated with transactional sex with a casual partner or *khwapheni*.

Prevalence of transactional sex with a *khwapheni* or casual partner in the past year was high with just over 40% of women aged 18–35 years reporting past year transactional sex. This is substantially higher than the 13.7% prevalence reported in 15–24 year-olds in five districts in South Africa (Duby et al., 2021). Although the measure of transactional sex was the same, we restricted transactional sex to casual partners or *khwapheni* in line recent guidance (Wamoyi et al., 2019). This study was conducted in one district only, with high unemployment, whereas Duby et al.'s study was conducted in five districts, not all of which comprised informal settlements.

The most common reason that women in this study gave for engaging in transactional sex was for cash or money to be looked after (35.3%). Although it is possible that women may be using the money received for luxury items, these findings suggest that material

**Table 3.** t0 factors associated with transactional sex at t2, *n* = 448.

| | Unadjusted odds ratio | 95% CI | *p* Value | Adjusted odds ratio | 95% CI | *p* Value |
|---|---|---|---|---|---|---|
| Age in years t0 | 1.02 | 0.97–1.07 | 0.420 | 0.98 | 0.92–1.04 | 0.53 |
| Completed high school education t0 | 0.50 | 0.34–0.72 | <0.001 | 0.66 | 0.40–1.10 | 0.115 |
| Food insecure t0 | 1.13 | 1.06–1.21 | <0.001 | 1.11 | 1.02–1.22 | 0.018 |
| Cohabitating t0 | 0.75 | 0.47–1.21 | 0.243 | | | |
| Controlling behaviours by main partner t0 | 1.11 | 1.06–1.16 | <0.001 | 1.06 | 1.00–1.12 | 0.05 |
| Hazardous drinking t0 | 1.08 | 1.04–1.11 | <0.001 | 1.04 | 1.00–1.09 | 0.05 |
| Transactional sex t0 | 2.68 | 1.85–3.89 | <0.001 | 1.90 | 1.19–3.05 | 0.008 |
| Treatment arm | 1.06 | 0.76–1.49 | 0.721 | | | |

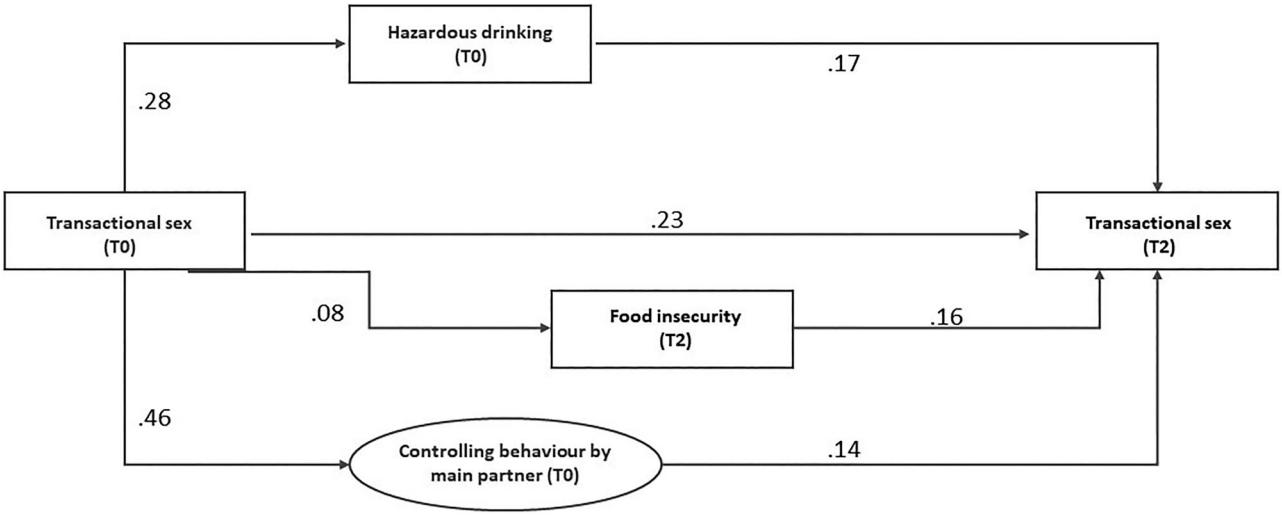


**Figure 1.** Structural equation model for pathways between controlling behaviours in main relationships, food insecurity, hazardous alcohol use, and transactional sex.

hardship and a lack of basic necessities seems to be driving a high proportion of transactional sex. The SEM demonstrates that controlling for baseline food insecurity, new food insecurity is an important pathway to future transactional sex. This is consistent with findings that food insecurity is associated with transactional sex (Cluver et al., 2011; Weiser et al., 2007) and the paradigm of transactional sex for "basic needs" described in the literature (Stoebenau et al., 2016).

Higher main partner relationship control is associated with transactional sex with a casual partner or *khwapheni*. Where main partners are aware of other sexual relationships women have, they may feel jealous and exert higher relationship control. There are two other potential explanations. Firstly, women in main relationships with high degrees of financial control may have to engage in transactional sex for basic needs. Alternatively, women in controlling relationships may attempt to assert their agency by choosing with whom, and partially, what the terms are, for a transactional sexual relationship. Another study found that young women reported finding sexual relationships with transactional partners stimulating (Duby et al., 2021). There may also be other reasons why women engage in transactional relationships with *khwapheni*. For instance, they may be seeking out expressions of love (Stoebenau et al., 2016) which they may not receive in their main relationship. Our data did not unpack these emotional pathways, but these would be worthwhile to explore in future studies.

Our finding that hazardous drinking is an important pathway contributing to transactional sex is consistent with other South African research (Magni et al., 2015). This may be because alcohol is a common and desired form of currency in transactional relationships (Pitpitan et al., 2014). Especially in taverns, it is widely understood that when men buy women alcoholic drinks it is likely to end in sex (Townsend et al., 2011; Watt et al., 2012).

## Implications for policy and programming

The findings from this research have several important implications for transactional sex policy and programming.

Firstly, initial engagement in transactional sex needs to be addressed. However, it is critical that interventions do not treat all women who engage in the practice as homogenous. Programming needs to move beyond telling women to avoid "sugar daddies" on the assumption that the reason all women engage in transactional sex is to gain material goods. Understanding the underlying factors why women engage in transactional sex is an important first step. The next is developing tailored risk-reduction programmes to address these factors.

Secondly, to disrupt transactional sex pathways, interventions need to address food insecurity and behaviour simultaneously. Interventions which support women around job skills and savings can improve women's livelihoods, however the Stepping Stones and Creating Futures intervention while significantly improving young women's livelihoods did not see this translate into any impact on women's engagement in transactional sex at follow-up (Gibbs et al., 2020). This suggests that factors such as emotions and gender norms are also important to address in effectively reducing transactional sex.

Relationship dynamics with a main partner can influence the extent to which women engage in future transactional sex. This novel finding suggests that interventions need to address women's main partners in addition to their transactional sex partners. Gender transformative interventions aimed at couples, such as Indashyikirwa, have shown promise in reducing interpersonal violence (Dunkle et al., 2020) and could be adapted for South Africa.

Interventions addressing constructions of gender need to be implemented in conjunction with those to reduce entrenched poverty in women. Where women have controlling main relationships, it is unlikely that they will be able to keep much of their money. Without an alternative means of income, they are unlikely to escape the transactional sex cycle. Cash transfers which have shown promise in young women (Cluver et al., 2016), may be a more appropriate intervention to disrupt the transactional sex cycle where women have controlling main partners. An alternative may be to reconsider the policies on provision of food parcels or other food security assurances.

Finally, it is important to consider hazardous drinking. Brief interventions offer a promising way to address hazardous drinking in South Africa (Kalichman et al., 2007). However, if, as postulated, hazardous drinking in women is related to a wish to defy gender norms and to increase agency (Watt et al., 2012; Wolff et al., 2006), these alone are unlikely to be efficacious.

### *Limitations*

Although this study makes use of rich panel data, the results of should be interpreted in light of its limitations. Data were self-reported. This may have resulted in respondent bias in reporting transactional sex. We aimed to limit this by asking participants to insert data themselves, but given widespread campaigns against "sugar daddies" it is possible that internalised sense of shame around these behaviours led to under- or skewed reporting of motives. That said, we measured transactional sex behaviours rather than measuring the labels such as "sugar daddies" or "blessers". Given that this study was conducted with women aged 18–30 years in one area, the findings are not generalisable to other age groups or regions. This study comprised secondary data analysis and the research questions were not designed *a priori*. With only two timepoints, we were unable to explore the bidirectional relationship between hazardous drinking and transactional sex in our SEM. Longitudinal panel data among this population is an area for future study.

## Acknowledgements

The authors thank the participants in the studies who gave their time and information.

## Disclosure statement

No potential conflict of interest was reported by the author(s).

## Funding

This work was supported by UK Government's Department for International Development: [Grant Number What Works To Prevent Violence?].

## ORCID

*Nicola Christofides* http://orcid.org/0000-0002-3559-6401

## References

Bhana, D., & Pattman, R. (2011). Girls want money, boys want virgins: The materiality of love amongst South African township youth in the context of HIV and AIDS. *Culture, Health & Sexuality*, *13*(8), 961–972. https://doi.org/10.1080/13691058.2011.576770

Chatterji, M., Murray, N., London, D., & Anglewicz, P. (2005). The factors influencing transactional sex among young men and women in 12 sub-Saharan African countries. *Social Biology*, *52*(1-2), 56–72. https://doi.org/10.1080/19485565.2002.9989099

Choudhry, V., Ambresin, A. E., Nyakato, V. N., & Agardh, A. (2015). Transactional sex and HIV risks - Evidence from a cross-sectional national survey among young people in Uganda. *Global Health Action*, *8*(1), 27249. https://doi.org/10.3402/gha.v8.27249

Cluver, L., Orkin, M., Boyes, M., Gardner, F., & Meinck, F. (2011). Transactional sex amongst AIDS-orphaned and AIDS-affected adolescents predicted by abuse and extreme poverty. *JAIDS Journal of Acquired Immune Deficiency Syndromes*, *58*(3), 336–343. https://doi.org/10.1097/QAI.0b013e31822f0d82

Cluver, L. D., Orkin, F. M., Yakubovich, A. R., & Sherr, L. (2016). Combination social protection for reducing HIV-risk behavior among adolescents in South Africa. *JAIDS Journal of Acquired Immune Deficiency Syndromes*, *72*(1), 96–104. https://doi.org/10.1097/QAI.0000000000000938

Deitchler, M., Ballard, T., Swindale, A., & Coates, J. (2010). *Validation of a measure of household hunger for cross-cultural use*. Washington, DC: Food and Nutrition Technical Assistance II Project (FANTA-2), FHI 360.

Duby, Z., Jonas K., McClinton Appollis, T., Maruping, K., Vanleeuw, L., Kuo, C., & Mathews, C. (2021). From survival to glamour: Motivations for engaging in transactional sex and relationships among adolescent girls and young women in South Africa. *AIDS and Behavior*, *25*(10), 3238–3254. https://doi.org/10.1007/s10461-021-03291-z

Dunkle, K., Stern, E., Chatterji, S., & Heise, L. (2020). Effective prevention of intimate partner violence through couples training: A randomised controlled trial of Indashyikirwa

in Rwanda. *BMJ Global Health*, *5*(12), e002439. https://doi.org/10.1136/bmjgh-2020-002439

Dunkle, K. L., Jewkes, R. K., Brown, H. C., Gray, G. E., McIntryre, J. A., & Harlow, S. D. (2004). Transactional sex among women in Soweto, South Africa: Prevalence, risk factors and association with HIV infection. *Social Science & Medicine*, *59*(8), 1581–1592. https://doi.org/10.1016/j.socscimed.2004.02.003

Fielding-Miller, R., Dunkle, K. L., Hadley, C., Cooper, H. L., & Windle, M. (2017). Agency as a mediator in the pathway from transactional sex to HIV among pregnant women in Swaziland: A multigroup path analysis. *Journal of the International AIDS Society*, *20*(1), 21554. https://doi.org/10.7448/IAS.20.1.21554

Gibbs, A., Washington, L., Abdelatif, N., Chirwa, E., Willan, S., Shai, N., Sikweyiya, Y., Mkhwanazi, S., Ntini, N., & Jewkes, R. (2020). Stepping stones and creating futures intervention to prevent intimate partner violence among young people: Cluster randomized controlled trial. *Journal of Adolescent Health*, *66*(3), 323–335. https://doi.org/10.1016/j.jadohealth.2019.10.004

Gibbs, A., Washington, L., Willan, S., Ntini, N., Khumalo, T., Mbatha, N., Sikweyiya, Y., Shai, N., Chirwa, E., Strauss, M., Ferrari, G., & Jewkes, R. (2017). The stepping stones and creating futures intervention to prevent intimate partner violence and HIV-risk behaviours in Durban, South Africa: Study protocol for a cluster randomized control trial, and baseline characteristics. *BMC Public Health*, *17*(1), 336. https://doi.org/10.1186/s12889-017-4223-x

Greif, M. J. (2012). Housing, medical, and food deprivation in poor urban contexts: Implications for multiple sexual partnerships and transactional sex in Nairobi's slums. *Health & Place*, *18*(2), 400–407. https://doi.org/10.1016/j.healthplace.2011.12.008

Hunter, M. (2010). *Love in the time of AIDS. Inequality, gender and right in South Africa*. University of KwaZulu-Natal Press.

Jewkes, R., Morrell, R., Sikweyiya, Y., Dunkle, K., & Penn-Kekana, L. (2012). Transactional relationships and sex with a woman in prostitution: Prevalence and patterns in a representative sample of South African men. *BMC Public Health*, *12*(1), 325. https://doi.org/10.1186/1471-2458-12-325

Jewkes, R., Vundule, C., Maforah, F., & Jordaan, E. (2001). Relationship dynamics and teenage pregnancy in South Africa. *Social Science & Medicine*, *52*(5), 733–744. https://doi.org/10.1016/S0277-9536(00)00177-5

Jewkes, R. K., Dunkle, K., Nduna, M., & Shai, N. (2010). Intimate partner violence, relationship power inequity, and incidence of HIV infection in young women in South Africa: A cohort study. *Lancet*, *376*(9734), 41–48. https://doi.org/10.1016/S0140-6736(10)60548-X

Jewkes, R. K., Nduna, M., Jama, N., Dunkle, K. L., & Levin, J. B. (2002). *Steadys, roll-ons and hit and runs: Using indigenous typology to measure number of sexual partners*. Paper presented at the XIVth International Conference on AIDS, Barcelona, Jul 7-12, 2002. (Abstract TuPpE2069).

Kalichman, S. C., Simbayi, L. C., Vermaak, R., Cain, D., Jooste, S., & Peltzer, K. (2007). HIV/AIDS risk reduction counseling for alcohol using sexually transmitted infections clinic patients in Cape Town, South Africa. *JAIDS Journal of Acquired Immune Deficiency Syndromes*, *44*(5), 594–600. https://doi.org/10.1097/QAI.0b013e3180415e07

Kamndaya, M., Vearey, J., Thomas, L., Kabiru, C. W., & Kazembe, L. N. (2016). The role of material deprivation and consumerism in the decisions to engage in transactional sex among young people in the urban slums of Blantyre, Malawi. *Global Public Health*, *11*(3), 295–308. https://doi.org/10.1080/17441692.2015.1014393

Kaufman, C. E., & Stavros, E. S. (2004). 'Bus fare please': The economics of sex and gifts among young people in urban South Africa. *Culture, Health & Sexuality*, *6*(5), 377–391. https://doi.org/10.1080/13691050410001680492. http://www.jstor.org/stable/4005305

Leclerc-Madlala, S. (2003). Transactional sex and the pursuit of modernity. *Social Dynamics*, *29*(2), 213–233. https://doi.org/10.1080/02533950308628681

MacPhail, C., & Campbell, C. (2001). 'I think condoms are good but, aai, I hate those things': Condom use among adolescents and young people in a Southern African township. *Social Science & Medicine*, *52*(11), 1613–1627. https://doi.org/10.1016/S0277-9536(00)00272-0

Maganja, R. K., Maman, S., Groves, A., & Mbwambo, J. K. (2007). Skinning the goat and pulling the load: Transactional sex among youth in Dar es Salaam, Tanzania. *AIDS Care*, *19*(8), 974–981. https://doi.org/10.1080/09540120701294286

Magni, S., Christofides, N., Johnson, S., & Weiner, R. (2015). Alcohol use and transactional sex among women in South Africa: Results from a nationally representative survey. *PLoS One*, *10*(12), e0145326. https://doi.org/10.1371/journal.pone.0145326

Mojola, S. A. (2014). *Love, money, and HIV: Becoming a modern African woman in the age of AIDS*. University of California Press.

Okigbo, C. C., McCarraher, D. R., Chen, M., & Pack, A. (2014). Risk factors for transactional sex among young females in post-conflict Liberia. *African Journal of Reproductive Health*, *18*(3), 133–141.

Pascoe, S. J. S., Langhaug, L. F., Mavhu, W., Hargreaves, J., Jaffar, S., Hayes, R., & Cowan, F. M. (2015). Poverty, food insufficiency and HIV infection and sexual behaviour among young rural Zimbabwean women. *PLoS One*, *10*(1), e0115290–e0115290. https://doi.org/10.1371/journal.pone.0115290

Pettifor, A. E., Measham, D. M., Rees, H. V., & Padian, N. S. (2004). Sexual power and HIV risk, South Africa. *Emerging Infectious Diseases*, *10*(11), 1996–2004. https://doi.org/10.3201/eid1011.040252

Pitpitan, E. V., Kalichman, S. C., Eaton, L. A., Watt, M. H., Sikkema, K. J., Skinner, D., Pieterse, D., & Cain, D. (2014). Men (and women) as "sellers" of sex in alcohol-serving venues in Cape Town, South Africa. *Prevention Science*, *15*(3), 296–308. https://doi.org/10.1007/s11121-013-0381-y

Pulerwitz, J., Gortmaker, S. L., & DeJong, W. (2000). Measuring sexual relationship power in HIV/STD research. *Sex Roles*, *42*(7), 637–660. https://doi.org/10.1023/A:1007051506972

Ranganathan, M., Heise, L., MacPhail, C., Stöckl, H., Silverwood, R. J., Kahn, K., Selin, A., Xavier Gómez-Olivé, F., Watts, C., & Pettifor, A. (2018). 'It's because I like things … it's a status and he buys me airtime': Exploring the role of transactional sex in young women's

consumption patterns in rural South Africa (secondary findings from HPTN 068). *Reproductive Health*, *15*(1), 102. https://doi.org/10.1186/s12978-018-0539-y

Saunders, J. B., Aasland, O. G., Babor, T. F., de la Fuente, J. R., & Grant, M. (1993). Development of the alcohol use disorders identification test (AUDIT): WHO collaborative project on early detection of persons with harmful alcohol consumption–II. *Addiction*, *88*(6), 791–804. https://doi.org/10.1111/j.1360-0443.1993.tb02093.x

South African Government. (2012). *KwaZulu-Natal MECs launch campaign against 'Sugar Daddies'*.

StataCorp. (2015). *Stata statistical software: Release 14*. StataCorp.

Statistics South Africa. (2021). *Ethekwini*. Retrieved November 20, from http://www.statssa.gov.za/?page_id = 1021&id = ethekwini-municipality

Stoebenau, K., Heise, L., Wamoyi, J., & Bobrova, N. (2016). Revisiting the understanding of "transactional sex" in sub-Saharan Africa: A review and synthesis of the literature. *Social Science & Medicine*, *168*, 186–197. https://doi.org/10.1016/j.socscimed.2016.09.023

Stoebenau, K., Nair, R. C., Rambeloson, V., Rakotoarison, P. G., Razafintsalama, V., & Labonté, R. (2013). Consuming sex: The association between modern goods, lifestyles and sexual behaviour among youth in Madagascar. *Globalization and Health*, *9*(1), 13. https://doi.org/10.1186/1744-8603-9-13

Townsend, L., Ragnarsson, A., Mathews, C., Johnston, L. G., Ekström, A. M., Thorson, A., & Chopra, M. (2011). "Taking care of business": alcohol as currency in transactional sexual relationships among players in Cape Town, South Africa. *Qualitative Health Research*, *21*(1), 41–50. https://doi.org/10.1177/1049732310378296

Wamoyi, J., Ranganathan, M., Kyegombe, N., & Stoebenau, K. (2019). Improving the measurement of transactional Sex in Sub-Saharan Africa: A critical review. *JAIDS Journal of Acquired Immune Deficiency Syndromes*, *80*(4), 367–374. https://doi.org/10.1097/QAI.0000000000001928

Wamoyi, J., Stobeanau, K., Bobrova, N., Abramsky, T., & Watts, C. (2016). Transactional sex and risk for HIV infection in sub-Saharan Africa: A systematic review and meta-analysis. *Journal of the International AIDS Society*, *19*(1), 20992. https://doi.org/10.7448/IAS.19.1.20992

Wamoyi, J., Wight, D., Plummer, M., Mshana, G. H., & Ross, D. (2010). Transactional sex amongst young people in rural northern Tanzania: An ethnography of young women's motivations and negotiation. *Reproductive Health*, *7*(1), 2. https://doi.org/10.1186/1742-4755-7-2

Watt, M. H., Aunon, F. M., Skinner, D., Sikkema, K. J., Kalichman, S. C., & Pieterse, D. (2012). "Because he has bought for her, he wants to sleep with her": Alcohol as a currency for sexual exchange in South African drinking venues. *Social Science & Medicine*, *74*(7), 1005–1012. https://doi.org/10.1016/j.socscimed.2011.12.022

Weiser, S. D., Leiter, K., Bangsberg, D. R., Butler, L. M., Percy-de Korte, F., Hlanze, Z., Phaladze, N., Iacopino, V., & Heisler, M. (2007). Food insufficiency is associated with high-risk sexual behavior among women in Botswana and Swaziland. *PLoS Medicine*, *4*(10), 1589–1597; discussion 1598. https://doi.org/10.1371/journal.pmed.0040260

Wojcicki, J. M. (2002). "She drank his money": survival sex and the problem of violence in taverns in Gauteng province, South Africa. *Medical Anthropology Quarterly*, *16*(3), 267–293. https://doi.org/10.1525/maq.2002.16.3.267

Wojcicki, J. M., & Malala, J. (2001). Condom use, power and HIV/AIDS risk: Sex-workers bargain for survival in Hillbrow/Joubert Park/Berea, Johannesburg. *Social Science & Medicine*, *53*(1), 99–121. https://doi.org/10.1016/S0277-9536(00)00315-4

Wolff, B., Busza, J., Bufumbo, L., & Whitworth, J. (2006). Women who fall by the roadside: Gender, sexual risk and alcohol in rural Uganda. *Addiction*, *101*(9), 1277–1284. https://doi.org/10.1111/j.1360-0443.2006.01516.x

Zembe, Y. Z., Townsend, L., Thorson, A., & Ekström, A. M. (2013). "Money talks, bullshit walks" interrogating notions of consumption and survival sex among young women engaging in transactional sex in post-apartheid South Africa: A qualitative enquiry. *Globalization and Health*, *9*(1), 28. https://doi.org/10.1186/1744-8603-9-28