



Published in final edited form as:

*AIDS Behav.* 2020 March ; 24(3): 823–826. doi:10.1007/s10461-019-02698-z.

## Self-Esteem as an Indicator of Transactional Sex Among Young Women in Rural South Africa (HPTN 068)

Danielle Giovenco<sup>1</sup>, Kathleen Kahn<sup>2</sup>, James P. Hughes<sup>3</sup>, Catherine MacPhail<sup>2,4</sup>, Ryan Wagner<sup>2</sup>, Audrey Pettifor<sup>1</sup>

<sup>1</sup>Department of Epidemiology, University of North Carolina at Chapel Hill, 135 Dauer Drive, 2101 McGavran-Greenberg Hall, Chapel Hill, NC 27599-7435, USA

<sup>2</sup>MRC/Wits Rural, Public Health and Health Transitions Research Unit (Agincourt), Parktown, South Africa

<sup>3</sup>Department of Biostatistics, University of Washington, Seattle, WA, USA

<sup>4</sup>School of Health and Society, University of Wollongong, Wollongong, Australia

### Abstract

Transactional sex (TS) has been shown to contribute to the HIV epidemic in sub-Saharan Africa. Previous research has yet to identify psychosocial factors that make young women vulnerable to engaging in TS. This analysis examined the association between self-esteem and TS among young women in rural South Africa. A post hoc analysis of post-intervention survey data from HPTN 068 was conducted. Log-binomial regression was used to compute a prevalence ratio measure of association. Among 1942 young women, the prevalence of TS among those with lower self-esteem was 4.7 times the prevalence of TS among those with higher self-esteem ( $p < 0.001$ ). Findings provide support for the association between lower self-esteem and TS in this context and may inform intervention development.

### Keywords

Young women; HIV; Self-esteem; Transactional sex; South Africa

### Introduction

Adolescents and young adults aged 15–24 years account for over one-third of all new global infections of HIV; in South Africa, a country disproportionately affected by HIV, young women contribute more than four times the number of new HIV infections compared to their male counterparts [1, 2]. Studies conducted among young women in South Africa have found that approximately 20% of participants report having had sex in exchange for material goods or money [3, 4]. Transactional sex (TS), defined as non-marital, noncommercial sexual relationships motivated by an implicit assumption that sex will be exchanged for material support or other benefits [5], has been well documented as a contributor to the HIV

<sup>✉</sup>Danielle Giovenco [dgiovenco@unc.edu](mailto:dgiovenco@unc.edu).

epidemic in sub-Saharan Africa [6]. While it is often assumed that TS is driven by financial need, it is a complex behavior driven by multiple factors, including the desire for improved social status, material expressions of love, and/or the fulfillment of basic needs [5].

Previous research has yet to identify psychosocial factors that increase young women's vulnerability to engaging in TS. Low self-esteem, a construct defined as an individual's evaluation of one's global self-worth [7], has been associated with the adoption of risk behaviors among adolescents, including sexual risk behavior [8, 9]. The conceptual framework put forward by Stoebenau et al. [5] posits that a desire to improve one's social status and gain peer approval through access to material goods may drive young women to engage in TS. This desire to improve one's social status and gain peer support from material goods may be associated with low self-esteem. Further, qualitative data has shown that young women may engage in TS to improve their self-esteem [10], suggesting that low self-esteem may be an important driver of TS. There are, however, no quantitative examinations of the association between self-esteem and TS. The identification of psychosocial factors that contribute to TS among young women in this context may have important implications for designing effective intervention programs. The objective of this analysis was to determine if self-esteem is associated with TS among young women in South Africa. Findings can inform HIV prevention efforts aimed at reducing the prevalence of TS in this already vulnerable population.

## Methods

Data from HPTN 068 was utilized for this analysis. HPTN 068 was a Phase III randomized controlled trial aimed at assessing the impact of cash transfers, conditioned on school attendance, on HIV incidence. Participants were young women aged 13–20 years who were in high school, not married or pregnant, and resided in the Medical Research Council/Wits University Agincourt Health and SocioDemographic Surveillance System study site, a rural area of Mpumalanga Province in South Africa characterized by high HIV prevalence, poverty, and migration. In this study, 2533 young women were enrolled between March 2011 and December 2012 and followed for 3 years. More information on HPTN 068 study methods are detailed elsewhere [11]. In 2015–2017, a post-study cross-sectional survey was offered to all young women from the main trial who had not died or been withdrawn in attempts to assess the durability of the effect of the conditional cash transfer intervention. This post hoc analysis included the 1942 young women who completed the post-study survey. The post-study survey was implemented in two phases: phase 1 occurring in 2015 and phase 2 occurring from 2016 to 2017.

The exposure of interest, self-esteem, was derived from the 10-item Rosenberg self-esteem scale [7] with possible scores ranging from 10 to 40. Among the sample, scores ranged from 17 to 38. Self-esteem was dichotomized at the median for ease of substantive interpretation with young women who scored less than 28 categorized as having “lower self-esteem” and young women who scored 28 or higher categorized as having “higher self-esteem”. The outcome of interest, TS, was derived from 8—yes/no questions that inquired if a participant had exchanged sex for food, money, housing, material goods, or social status since their last visit in the main study. The last visit of the main study was conducted 2–3 years prior to the

administration of the post-study survey, depending on when the participant exited the main study. If a participant responded “yes” to one or more questions related to TS they were categorized as having the outcome.

Additional covariates, including age, education, financial security, intimate partner violence, gender attitudes, and adverse childhood experiences were theorized to be confounders in a directed acyclic graph based on a review of the literature and biologic plausibility. Financial security was defined as the presence of discretionary funds. Participants were asked how often in the past 12 months they had their own money to spend however they would like and a 3-level categorical variable was created to compare participants who reported never, sometimes, or always having discretionary funds. Intimate partner violence (IPV) was measured using 8 binary (yes/no) items inquiring about IPV occurring in past 12 months. A binary variable was created to compare those with prevalent IPV in past 12 months to those with none. Gender attitudes were examined using 33-items from the Gender Equitable Men’s scale [12]. A 3-level categorical variable was created by dividing the range of possible scores into equal thirds for low, moderate, and high support for equitable gender norms per scale recommendations. Lastly, adverse childhood experiences were measured with 10-items inquiring about witnessing or experiencing physical abuse or emotional abuse in first 18 years of life. A 3-level categorical variable was then created to categorize participants who reported no experiences, few experiences (1–3), or many experiences (> 3).

Log-binomial regression was used to compute a prevalence ratio measure of association. All theorized covariates were included the full multivariable model in attempts to minimize confounding bias. Written informed consent/assent for participation in the HPTN 068 main trial and the post-study visit was provided by all study participants and their parents or legal guardians when applicable. Study procedures were approved by ethical review boards at the University of the Witwatersrand and the University of North Carolina.

## Results

Participants were 1942 young women, 17–26 years of age (median age = 19 years). Approximately half (52%) of young women were categorized as having “higher self-esteem” and 15% reported having exchanged sex for food, money, material goods, or social status in the 2–3-year period since their last study visit. Distribution of participants across measured covariates are shown in Table 1. The prevalence of TS among those with lower self-esteem (24.59%) was 4.70 times the prevalence of TS among those with higher self-esteem (5.23%), 95% CI 3.44, 6.42,  $p < 0.001$  (see Table 2). The effect remained significant after adjusting for age, education, financial security, intimate partner violence, gender attitudes, and adverse childhood experiences (PR 3.87, 95% CI 2.81, 5.34,  $p < 0.001$ ).

## Discussion

Findings provide support for self-esteem as an indicator of prevalent TS. A lower prevalence of TS since last study visit was observed among young women with higher self-esteem compared to young women with lower self-esteem. While previous research has yet to identify psychosocial factors that make young women vulnerable to engaging in TS

specifically, these findings are consistent with prior findings that low self-esteem was associated with the adoption of other sexual risk behaviors among adolescents [8, 9]. Further, these findings support the conceptual framework presented by Stoebenau et al., where the desire for improved social status and validation from peers, structural forces likely associated with low self-esteem, are posited to be drivers of TS [5]. Lastly, these findings provide quantitative support for prior qualitative research that has highlighted self-esteem as a potential motivator for adolescent girls and young women engaging in TS [10].

This study has several limitations. First, despite the etiologic nature of the study hypothesis, we are unable to assume temporality given the cross-sectional study design. Therefore, the potential for reverse causality exists. Second, although missing data was minimal for most key variables, almost 15% of participants from phase 1 of post-study visit survey skipped the TS question series due to an error in the survey programming. This could result in possible selection bias. However, given the large sample size, we feel this potential source of bias is minimal. Finally, TS is highly stigmatized and likely to be underreported in this population. Therefore, measurement bias may have occurred if cases were incorrectly classified as non-cases, resulting in potential information bias of our estimate.

## Conclusions

This investigation provides insight into a psychosocial indicator of TS, which has not yet been explored. The large, cross-sectional cohort utilized for this analysis had minimal missing data and unmeasured confounding. This research suggests that psychosocial factors, including self-esteem, should be considered when designing intervention programs aimed at reducing sexual risk behavior among adolescent girls and young women vulnerable to HIV infection. Further, early intervention on social and structural issues that are known to impact self-esteem (poverty, history of violence, etc.) may have important implications for future engagement in TS. Research is needed to examine self-esteem and incident TS in a longitudinal cohort to establish causality.

## Acknowledgements

This work was supported by Award Numbers UM1AI068619 (HPTN Leadership and Operations Center), UM1AI068617 (HPTN Statistical and Data Management Center), and UM1AI068613 (HPTN Laboratory Center) from the National Institute of Allergy and Infectious Diseases, the National Institute of Mental Health and the National Institute on Drug Abuse of the National Institutes of Health. This work was also supported by NIMH R01 (R01MH087118) and the Carolina Population Center and its NIH Center Grant (P2CHD050924). The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

## References

1. UNAIDS. AIDS by the numbers. Geneva: UNAIDS; 2016.
2. Shisana O, Rehle T, Simbayi LC, et al. South African national HIV prevalence, incidence and behaviour survey, 2012. Cape Town: HSRC Press; 2014.
3. Dunkle KL, Jewkes RK, Brown HC, Gray GE, McIntyre JA, Harlow SD. Transactional sex among women in Soweto, South Africa: prevalence, risk factors and association with HIV infection. *Soc Sci Med.* 2004;59(8):1581–92. [PubMed: 15279917]
4. Jewkes R, Vundule C, Maforah F, Jordaan E. Relationship dynamics and teenage pregnancy in South Africa. *Soc Sci Med.* 2001;52(5):733–44. [PubMed: 11218177]

5. Stoebenau K, Heise L, Wamoyi J, Bobrova N. Revisiting the understanding of “transactional sex” in sub-Saharan Africa: a review and synthesis of the literature. *Soc Sci Med*. 2016;168:186–97. [PubMed: 27665064]
6. Kilburn K, Ranganathan M, Stoner MC, et al. Transactional sex and incident HIV infection in a cohort of young women from rural South Africa. *AIDS*. 2018;32(12):1669. [PubMed: 29762176]
7. Rosenberg M *Society and the adolescent self-image*. Princeton: Princeton University Press; 1965.
8. Wild LG, Flisher AJ, Bhana A, Lombard C. Associations among adolescent risk behaviours and self-esteem in six domains. *J Child Psychol Psychiatry*. 2004;45(8):1454–67. [PubMed: 15482505]
9. Salazar LF, Crosby RA, DiClemente RJ, et al. Self-esteem and theoretical mediators of safer sex among African American female adolescents: implications for sexual risk reduction interventions. *Health Educ Behav*. 2005;32(3):413–27. [PubMed: 15851547]
10. Ranganathan M, Heise L, MacPhail C, et al. ‘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). *Reprod Health*. 2018;15(1):102. [PubMed: 29843814]
11. Pettifor A, MacPhail C, Hughes JP, et al. The effect of a conditional cash transfer on HIV incidence in young women in rural South Africa (HPTN 068): a phase 3, randomised controlled trial. *Lancet Glob Health*. 2016;4(12):e978–88. [PubMed: 27815148]
12. Pulerwitz J, Barker G. Measuring attitudes toward gender norms among young men in Brazil: development and psychometric evaluation of the GEM Scale. *Men Masc*. 2008;10:322–38.

**Table 1**

Participant characteristics (N = 1942)

Variable	N (%) <sup>a</sup>	Median (IQR)	Missing values N (%) <sup>b</sup>
Self-esteem			50 (2.57)
Lower	906 (47.89)		
Higher	986 (52.11)		
Transactional sex			285 (14.68)
No	1413 (85.27)		
Yes	244 (14.73)		
Age (years)		19 (19–20)	0 (0)
17–18	408 (21.01)		
19–20	1058 (54.48)		
21–22	409 (21.06)		
23–26	67 (3.45)		
Education			1 (0.05)
< Gr12	529 (27.25)		
Gr12/equivalent	817 (42.09)		
> Gr12	595 (30.65)		
Financial security/discretionary funds			37 (1.91)
Never	730 (38.32)		
Sometimes	927 (48.66)		
Always	248 (13.02)		
Intimate partner violence			24 (1.24)
No	1707 (89.00)		
Yes	211 (11.00)		
Equitable gender norms			24 (1.24)
Low support	138 (7.19)		
Moderate support	835 (43.53)		
High support	945 (49.27)		
Adverse childhood experiences			22 (1.13)
None	744 (38.75)		
Few	501 (26.09)		
Many	675 (35.16)		

<sup>a</sup>Percent of non-missing observations<sup>b</sup>Percent of all observations

**Table 2**

## Log-binomial regression analysis

	No transactional sex	Transactional sex	Total	Prevalence (%)	PR (N = 1630)	Adjusted PR <sup>a</sup> (N = 1614)
Lower self-esteem (score < 28)	595	194	789	24.59	4.70	3.87
Higher self-esteem (score ≥ 28)	797	44	841	5.23		

*PR* prevalence ratio

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript