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Alcohol use and relationship quality among South African couples

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Abstract

Objective: The HIV literature has largely ignored the importance of alcohol use in the quality of intimate relationships in sub-Saharan Africa (SSA), despite evidence of alcohol's role in relational behaviors that increase risk for HIV infection and other harms. The present study explored the association of alcohol use with relationship functioning among heterosexual couples from rural South Africa.

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Declaration of Interest

The authors declare that they have no conflicts of interest.

Method: Dyadic analyses were conducted with 443 sexually active, heterosexual, South African couples (886 individuals) to examine the association between male partners' alcohol use (abstinent, non-hazardous, hazardous) and male and female partners' reports of relationship intimacy, trust, mutually constructive communication, demand/withdraw communication, and satisfaction. Five structural equation models were fit using male partner alcohol use as a predictor of male and female reports of relationship quality.

Results: Women with a hazardous-drinking male partner (compared to an abstainer) reported significantly higher levels of intimacy ($p < .05$) and significantly more demand/withdraw communication ($p < .001$); men who were hazardous drinkers reported significantly less trust in their relationship compared to men who were abstainers ($p < .01$).

Conclusions: Hazardous alcohol use among South African couples is positively correlated with women's relationship intimacy and maladaptive communication patterns, yet negatively correlated with men's perceived trust.

Keywords

Alcohol; Africa; Relationships; Couples

Heavy alcohol consumption in sub-Saharan Africa (SSA) has been increasingly recognized as a major public health concern. Although approximately 60-70% of adults in SSA self-report as abstainers, drinkers in SSA report some of the highest levels of per capita consumption in the world (World Health Organization [WHO], 2014). In South Africa, for example, while 59% of adults (age 15+) report past year abstinence from alcohol, the per capita level of alcohol consumption among drinkers is high (27 liters of pure alcohol per year), with 26% of drinkers reporting heavy episodic drinking in the past 30 days. This level of consumption is >1.5 times higher than the worldwide average of yearly alcohol consumption among drinkers (17 liters/year).

South Africa has the highest alcohol-attributable burden of disease and disability in SSA, in part due to the role of alcohol use in the transmission and treatment of HIV/AIDS (Ferreira-Borges, Rehm, Dias, Babor, & Parry, 2016). It is estimated that 12% of the burden of HIV/AIDS (i.e., incidence and disease course) among men and 6% among women is attributable to alcohol use, with the proportion of all deaths attributable to alcohol use rising by 27% and 43% among men and women respectively after accounting for HIV/AIDS (Ferreira-Borges, et al., 2016). Alcohol has thus been characterized as "adding fuel to the fire" of the HIV epidemic by increasing the likelihood of onward transmission, and contributing to poorer treatment-related outcomes (Hahn, Woolf-King, & Muyindike, 2011).

Research on the consequences of alcohol use in SSA has been dominated by studies of behaviors that increase risk for HIV transmission, including sexual risk behavior (Woolf-King & Maisto, 2011), intimate partner violence, (Jewkes, 2002; Shamu, Abrahams, Temmerman, Musekiwa, & Zarowsky, 2011) and non-adherence to antiretroviral therapy (Conroy et al., 2017; Nakimuli-Mpungu et al., 2012). Although these behaviors often occur within a sexual and/or romantic partnership, alcohol's role in broader relationship functioning has been largely ignored in this context. This is a significant gap in the literature

given alcohol's well-documented role in close relationships in the United States (U.S.; Marshal, 2003), and the importance of relationship dynamics as correlates of sexual risk behaviors, (Higgins et al., 2014) intimate partner violence, (Conroy, 2014; Jewkes, 2002), and HIV testing (Conroy, 2015; Desgrées-du-Loû & Orne-Gliemann, 2008). Understanding how alcohol affects couples in SSA would enhance HIV and alcohol interventions, which have increasingly recognized the importance of couple-level approaches to prevention, care, and treatment (Crepaz, Tungol-Ashmon, Vosburgh, Baack, & Mullins, 2015; Jiwatram-Negrón & El-Bassel, 2014; LaCroix, Pellowski, Lennon, & Johnson, 2013).

The literature on the association of alcohol use and marital quality (e.g., satisfaction, couple interactions, and violence) in the U.S. has revealed empirical support for two hypotheses: (1) alcohol use has been shown to increase negative interactions between spouses, resulting in marital dissatisfaction and intimate partner violence (Gotlib & McCabe, 1990; Halford, Bouma, Kelly, & Young 1999; O'Farrell & Rotunda, 1997) and (2) alcohol use has been found to enhance relationship quality and satisfaction (Dunn, Jacob, Hummon, & Seilhamer 1987; Roberts & Leonard, 1998; Smith, Parker, & Noble, 1975), by relieving ongoing daily tension, and increasing affective expression and intimacy (Marshal, 2003). The apparent contradictions in this literature may be explained by several moderators, such as discrepancy in alcohol use between partners, location in which drinking occurs, level of alcohol consumption, and gender of the partner consuming alcohol. Longitudinal evidence among married couples in the U.S. suggests that when couples drink together, marital satisfaction is enhanced (above couples who do not drink), but when couples drink apart, or drink at discrepant levels (i.e. one partner drinks heavily and the other does not drink), they experience an increased risk for reduced marital satisfaction and reduced relationship functioning over time (Homish & Leonard, 2005, 2007). The quantity of alcohol consumed is also important, with maladaptive relationship outcomes (e.g., reduced marital intimacy, poorer adjustment, and increased verbal aggression), more likely to occur with heavy alcohol use, especially if it occurs outside the home or without the marital partner (Dunn, et al., 1987; Roberts & Leonard, 1998). Conversely, adaptive relationship outcomes are more likely to occur with light or moderate alcohol use (Marshal, 2003), especially if the alcohol use occurs in the home, and with the marital partner (Dunn, et al., 1987; Roberts & Leonard, 1998). Finally, studies have also shown that female partners are more likely to be negatively affected by their male partner's alcohol use than vice versa (i.e., a female partner's alcohol consumption is less maladaptive for the couple than the male partner's alcohol consumption; Marshal, 2003).

Generalizing from data in the U.S. is problematic given the unique consequences of alcohol-related risk for HIV transmission in SSA and the socio-cultural differences between the two contexts. In KwaZulu-Natal, South Africa, for example, where the data for this study were collected, HIV prevalence is high (17%; Shisana, Abrahams, Temmerman, Musekiwa, & Zarowsky, 2014), 30% of women report domestic violence during pregnancy (Hoque, Hoque, & Kader, 2009), and cohabitating unions are more common than marriage (Hosegood, McGrath, Moultrie, 2009). Although these factors suggest the role of alcohol use in relationship quality likely differs between the two contexts, the U.S.-based literature may be a useful point from which to generate hypotheses and examine similarities and differences.

We could find only one study that has examined alcohol use and relationship quality in all of SSA. The association of alcohol use before sex and dyadic adjustment, sexual satisfaction, commitment, intimacy, and communication was examined with a sample of 162 married or cohabiting couples from a peri-urban area near Kampala, Uganda (Ruark, Kajubi, Ruteikara, Green, & Hearst, 2017). Findings revealed that women who reported alcohol use with sex also reported significantly lower relationship quality in all domains except intimacy; women with a male partner who reported alcohol use with sex also reported lower dyadic adjustment and worse communication. Conversely, men who reported alcohol use with sex reported significantly *higher* dyadic adjustment. These findings are consistent with the U.S.-based data previously discussed indicating that women are more negatively affected by their male partner's alcohol use than men are by their female partner's alcohol use. The study by Ruark et al. (2017), combined with the gender discrepancy (WHO, 2014), heavy episodic pattern (WHO, 2014), and high prevalence of drinking in bars/venues in South Africa (Morojele et al., 2006), suggests that the role of alcohol in relationships in SSA may approximate the conditions under which it is most detrimental in the U.S.-based literature: heavy, discrepant, and outside the home.

Present study

Using baseline data from of a couples-based HIV intervention trial (Darbes, et al., 2014), dyadic analyses were used to examine the association between alcohol use and relationship intimacy, trust, communication, and satisfaction. Given that discrepant and heavy drinking patterns (i.e. one partner drinks heavily and the other abstains) are associated with poorer relationship quality, and because only five women in our sample self-reported consuming alcohol (all of whom were excluded from the analyses), our first *hypothesis* was that women in partnerships in which the male partner consumed alcohol at hazardous levels (i.e., alcohol discrepant couples), would report lower scores on all measures of relationship quality compared to women in partnerships in which the male partner abstained or consumed alcohol at non-hazardous levels. Based on research indicating that female partners are more likely to be negatively affected by their male partner's alcohol use (Marshal, 2003), our second *hypothesis* was that the association between partner alcohol use and decreased relationship quality would be present for women, but not men.

Methods

Overview

We examined alcohol use and relationship quality among 443 sexually active, heterosexual couples (896 individuals) participating in the baseline visit of Uthando Lwethu—a couples-based HIV intervention trial conducted in KwaZulu-Natal, South Africa (Darbes et al., 2014). The objective of Uthando Lwethu was to improve relationship dynamics and ultimately, uptake of couples' HIV testing and counseling (CHTC). In order to be eligible for the trial, both partners had to be at least 18 years old, in a non-polygamous relationship for at least six months, sexually active with each other, and not have experienced severe intimate partner violence in the last six months. Because the trial aimed to examine whether the intervention resulted in CHTC, couples who had tested together or mutually disclosed

their HIV status were excluded. This study received approval from the Committee on Human Research of the University of California, San Francisco, the Research Ethics Committee of the London School of Hygiene and Tropical Medicine, and the Research Ethics Committee of the Human Sciences Research Council in South Africa.

Procedures

Couples were recruited in KwaZulu-Natal using active (e.g., directly approaching couples together in public spaces) and passive (e.g., posting fliers in community areas) recruitment strategies (for detailed trial proceedures see Darbes et al., 2014). Mobile caravans with a divided partition for privacy were used to screen participants and conduct study assessments. Gender-matched interviewers administered informed consent and questionnaires to both partners simultaneously, but separately, in private rooms of the caravan. Baseline questionnaires (which were forward and backward translated into Zulu) asked about demographic characteristics, relationship dynamics, sexual risk behaviors, alcohol use, HIV testing history, and intimate partner violence. Participants received a modest reimbursement to cover travel expenses for the baseline study visit, which was equivalent to approximately $7.00USD (80 Rand).

Measures

Alcohol use.—The Alcohol Use Disorders Identification Test-Consumption (AUDIT-C), a brief (3-item), standardized screener for past year hazardous drinking (Bush, Kivlahan, McDonell, Fihn, & Bradley, 1998), was the only measure of alcohol use used in the Uthando Lwethu trial. Total scores on the AUDIT-C range from 0-12 with a score of ≥4 (men) or ≥3 (women) indicative of hazardous drinking. Men in the sample were categorized as past year: abstainers (score = 0), nonhazardous drinkers (score = 1-3), or hazardous drinkers (score ≥ 4). Because only five women in the sample self-reported drinking alcohol, we excluded these couples from the analyses and focused on the couples in which only the male partner reported drinking.

Relationship intimacy.—The 6-item intimacy subscale of the Relationship Values Scale (Kurdek, 1996) was used to measure relationship intimacy. Items on this sub-scale include statements such as “I think in terms of we or us instead of I or me” and “I can never get too close to my partner.” Response options range from 1 (not at all true) to 9 (extremely true) and higher scores indicate more relationship intimacy. Cronbach’s alpha in this sample was 0.62.

Relationship trust.—The 8-item Dyadic Trust Scale (Larzelere & Huston, 1980) was used to measure relationship trust. Items on this scale include statements such as “my partner is perfectly honest and truthful with me” and “my partner is truly sincere in his/her promises”; response options range from 1 (strongly disagree) to 7 (strongly agree). Cronbach’s alpha in this sample was 0.80.

Mutually constructive communication.—The 3-item mutually constructive communication (MCC) subscale of the Communications Patterns Questionnaire (Christensen & Shenk, 1991) was used to measure constructive communication. Items

included statements such as “during a discussion of an issue or problem, both of us express our feelings to each other” and “when an issue or problem arises, both of us try to discuss the problem.” Response options ranged from 1 (very unlikely) to 9 (very likely), with higher scores indicating higher MCC. Cronbach’s alpha in this sample was 0.47.

Demand/withdraw communication.—A 6-item subscale of the Communication Patterns Questionnaire (Christensen & Shenk, 1991) was used to measure the use of a demand/withdraw communication pattern –an indicator of conflict over closeness and distance in the relationship with one partner displaying demanding and critical behaviors, while the other partner seeks greater distance via withdrawal and defensiveness. Items included statements such as “during a discussion of an issue or problem, my partner pressures, nags, or demands while I withdraw, become silent, or refuse to discuss the matter further” and response options ranged from 1 (very unlikely) to 9 (very likely). Higher scores indicated higher use of the demand/withdraw pattern; Cronbach’s alpha is this sample was 0.73.

Relationship satisfaction.—A single-item (“In general, how satisfied are you in your relationship?”) was used to measure relationship satisfaction with a Likert-type scale of 1 (not satisfied at all) to 6 (completely satisfied). This item was taken from the 3-item Kansas Marital Satisfaction questionnaire (Nichols, Schumm, Schectman, & Grigsby, 1983); the other two items were not used due to difficulty with translation and comprehension (from English into Zulu).

Covariates.—Age, education, marital status, and duration (in months) of current relationship were included as covariates in all of the multivariable models. The average of relationship length was computed using the report of both partners, which were highly correlated ($r = 0.98$). Normality checks indicated that relationship length was highly skewed and was thus transformed using the square-root. We also considered including HIV status at baseline as a covariate. However, because couples who had tested together or mutually disclosed their HIV status were not eligible to participate, only 51% (n = 458) of the sample knew their HIV status at baseline. Of those who reported an HIV status, 12% (n = 55) self-reported being HIV-positive, and among these participants, HIV status was not significantly correlated with any of the relationship quality variables.

Data analyses

While there are multiple different ways to analyze dyadic data (Kenny, Kashy, and Cook, 2006), we chose an approach in which the data are analyzed at the couple level with the male partner’s alcohol use regressed onto both his own report of relationship quality and his female partner’s report of relationship quality. This approach with heterosexual dyads is appropriate to examine gender differences in men’s drinking on both partners’ reports of relationship quality (Kenny et al., 2006).

We fit five separate structural equation models (SEM) for each of the five measures of relationship quality using male partner alcohol use as a predictor of both male and female relationship quality. By including both partners’ relationship quality reports in the model

simultaneously, and allowing their corresponding residual errors to covary, we were able to account for interdependence across the dyad members. Models used maximum likelihood estimation with the Satorra-Bentler correction to account for non-normality in explanatory variables. We chose to fit five separate models, rather than for example using a latent variable for relationship quality, for several reasons. Different constructs of relationship quality (e.g., intimacy, trust) can be positively correlated with one another, but are often treated as distinct factors in the literature (Larzelere and Huston, 1980). For example, as pointed out by Fletcher, Simpson and Thomas (2000), individuals who rate their relationships as being high on trust, could still suffer from low intimacy. Because relationship quality has received even less attention in the African context, our intention was to explore associations with individual constructs of relationship quality and allow for nuanced patterns to emerge. Further, as discussed previously, the one study that has examined alcohol use and relationship quality in Africa (Ruark et al., 2017) also used separate models for each relationship quality domain, and indeed found both gender differences in the association between relationship quality and alcohol use before sex, as well as different findings for different domains of relationship quality.

In accordance with the literature on relationship dynamics and HIV risk behaviors (e.g., Darbes et al., 2014) we controlled for each partner's age (continuous variables), marital status (a couple-level dichotomous variable for married versus unmarried), and relationship duration (a continuous variable based on the square root of the couple-level mean). For hypothesis 1, we report the main results of the SEM models for each measure of relationship quality. All means for relationship quality variables represent the mean item score across the scale at the individual level. For hypothesis 2, we set constraints on the model to test whether the association between men's alcohol use and relationship quality differed by gender. For significant associations found with hypothesis 1, we tested whether the effect of men's alcohol use on relationship quality differed by gender by setting the two effects equal and assessing whether the model fit was significantly worsened via the Wald χ^2 test (Kenny, Kashy, & Cook, 2006). All models were fit using the SEM feature of Stata 14.1.

Results

A total of 886 heterosexual, South African adults (N = 443 couples) contributed data for these analyses. The average age of the full sample was 28.42 (SD = 9.32), the average relationship duration was 5.38 years (SD = 7.08), and 9% of the couples reported being married (see Table 1). With regards to alcohol use, 44% of the men were categorized as abstainers, 18% were categorized as non-hazardous drinkers, and 38% were categorized as hazardous drinkers. The results of the primary analyses are presented in Table 2. There were no significant associations between male non-hazardous alcohol use and any of the relationship quality outcomes; the findings reported here are for men categorized as hazardous drinkers compared to men categorized as abstainers.

Model 1: Relationship intimacy.

The mean level of intimacy in the full sample was 6.33 (SD = .80). Women with a male partner who was categorized as a hazardous drinker reported more relationship intimacy

compared to women with a male partner who was categorized as an abstainer ($p = .025$). Women also reported higher levels of intimacy as the difference in age between the two partners increased ($p = .013$). Male alcohol use was not significantly associated with male reports of intimacy. The association of men's alcohol use with intimacy was significantly different between men and women (Wald $\chi^2 = 7.56$; $p = .006$). Men who were married reported less relationship intimacy than men who were unmarried ($p = .006$), and men also reported more relationship intimacy with increasing age ($p = .009$).

Model 2: Relationship trust.

The mean level of trust in the full sample was 6.13 ($SD = .75$). Male alcohol use was not significantly associated with women's reports of trust. Men who were categorized as hazardous drinkers reported less trust in their relationship compared to men who were categorized as abstainers ($p = .008$). However, the association of men's alcohol use with trust was not significantly different between men and women (Wald $\chi^2 = 1.86$; $p = .173$). Men also reported less trust as the difference in age between the two partners increased ($p = .002$).

Model 3: Mutually constructive communication (MCC).

The mean level of communication on the MCC was 7.94 ($SD = .93$). There were no significant associations between male alcohol use and male or female ratings of constructive communication.

Model 4: Demand/withdraw communication.

The mean score on the demand/withdraw scale was 4.29 ($SD = 1.75$). Women with a male partner who was a hazardous drinker reported higher use of the demand/withdraw pattern of communication compared to women with a male partner who was an abstainer ($p < 0.001$). We did not find a significant association between male alcohol use and male report of demand/withdraw communication. The association between hazardous drinking and demand/withdraw communication was significantly different between men and women (Wald $\chi^2 = 12.9$; $p < 0.001$).

Model 5: Relationship satisfaction.

The mean level of satisfaction was 5.56 (SD = .60). There were no significant associations between male alcohol use and male or female ratings of relationship satisfaction.

Discussion

This is the first study to examine the association between alcohol use and relationship quality among couples in South Africa. We hypothesized that: (1) women in partnerships in which the male partner consumed alcohol at hazardous levels would report lower scores on all measures of relationship quality compared to women in partnerships in which the male partner abstained or consumed alcohol moderately and (2) that the association between male partner alcohol use and decreased relationship quality would be present for women, but not men. Results revealed that alcohol use was associated with *both* partner's reports of relationship quality. Women partnered with a male hazardous drinker (compared to an

abstainer) reported more intimacy, but also reported more demand/withdrawal communication; men who were hazardous drinkers reported less trust in their relationship than men who were categorized as abstainers.

Consistent with the hypothesis that alcohol use increases negative couple interactions, hazardous drinking men reported less trust in their relationship than men who abstained from alcohol use. It is possible that men in our sample were drinking in response to feelings of mistrust (rather than alcohol use precipitating the mistrust). While we cannot infer directionality from our data, there are several studies from the U.S. that have shown mistrust to be associated with alcohol use and alcohol-related problems (DiBello et al., 2014), with men significantly more likely to drink alcohol in response to these types of feelings, compared to women (Knox, Breed, & Zusman, 2007). Longitudinal studies are needed to clarify how gender, mistrust, and alcohol use are related in this context.

Women with a hazardous drinking male partner reported more demand/withdrawal communication— an indicator of conflict over closeness and distance within the relationship (Christensen & Shenk, 1991). Couples who display this pattern of communication generally have one partner who, in an attempt to seek more closeness, is demanding and critical, while the other partner seeks greater distance via withdrawal and defensiveness (Christensen & Shenk, 1991). This pattern is more prevalent in distressed couples, which is consistent with our findings and in support of the alcohol as a negative relationship influence hypothesis.

Conversely, women with a hazardous-drinking male partner reported *more* relationship intimacy compared to women with a male partner who abstained from alcohol use. These findings in support of the “alcohol and enhanced relationship quality/satisfaction” hypothesis may be attributable to alcohol’s acute effect on affective expression – i.e., men in this sample may have been more emotionally expressive while intoxicated, increasing women’s feelings of intimacy. There are some experimental data from alcohol administration studies with couples in the U.S. (Frankenstein, Hay, & Nathan, 1985; Smith, et al., 1975) and observational, experience sampling studies (e.g., aan het Rot, Russell, Moskowitz, & Young, 2008) in support of the intrepretation that alcohol use facilitaties positive affective expression. It is also possible that the measure of intimacy we used was more an approximation of caregiving (“I get so close to my partner I find it hard to separate from him”; “I think in terms of we/us instead of I/me”), rather than emotional intimacy as assessed by Ruark et al. (2017) (“I receive/give considerable emotional support to my partner”; “I feel that I really understand my partner”), who found alcohol use before sex to be unrelated to women’s feelings of intimacy.

We did not find a significant association between alcohol use and constructive communication or satisfaction. It is possible that relationship satisfaction and communication are not affected by alcohol use in this setting, although given the robust findings on the negative impact of alcohol use on relationship satisfaction and communication/conflict in the U.S. (Marshal, 2003), it may also be possible that the measures used in this study did not adequately assess these constructs. The mutually constructive communication scale had poor internal consistency (alpha = .47), suggesting that we were not reliably measuring positive relationship communication in this sample.

Similarly, we used a one-item measure of relationship satisfaction that had very little variation (M = 5.56, SD = .60, range = 1-6) indicating that it may not have been well-adapted or suitable for this context. Scale development studies are needed to formally adapt and psychometrically validate relationship quality assessments for use in SSA. At present, the limitations of the constructive communication and satisfaction assessments indicate that our findings for these variables may not be reliable.

Several additional limitations should be considered in the interpretation of our findings. First, only five women in our sample reported consuming alcohol, which is significantly lower than the 16%-17% prevalence of alcohol use among women observed in national data (WHO, 2014; Parry et al., 2005; Peltzer, Davids, & Njuhi, 2011). There are likely several reasons for this discrepancy. First, prevalence of alcohol use in KwaZulu-Natal is much lower than national data with 8.2% of women reporting current alcohol use and 1.3% reporting hazardous alcohol use (Peltzer et al., 2011). Second, underreport of alcohol use, compared to objective biomarkers, has been widely observed in samples of men and women from SSA, particularly in the context of face-to-face interviews (Bajunirwe et al., 2014; Hahn et al., 2012), with some data suggesting women are more likely to underreport alcohol use in this setting compared to men (Hahn, et al., 2012). Social desirability bias may have been more extreme among women who consented to enroll in the Uthando Lwethu trial given that alcohol use by women is highly stigmatized in the rural community from which participants were recruited. Finally, women who volunteer to enroll in a study that involves relationship-based counseling may represent a subgroup women who are systematically different from non-volunteers (Hill, Rubin, Peplau, & Willard, 1979) and/or different from women included in population-level estimates of alcohol use. These limitations may have affected both the prevalence and accurate reporting of alcohol consumption among the women in our sample.

Second, we cannot infer temporailty from these cross-sectional data and, as discussed previously with the findings on trust, we are unable to determine if the hazardous alcohol use preceeded the relationship outcomes, or if the relationship outcomes precipitated the alcohol use. Finally, the mean scores on the relationship quality outcomes were generally high in this sample, which may have been influenced by both the inclusion criteria and the procedures with which the data were collected. Couples were excluded if they reported severe intimate partner violence (as a perpetrator or victim) in the previous six months, and voluntarily participated in a couples intervention study. This likely biased the sample to better functioning couples for whom relationship quality was higher than average. Additionally, although partners were interviewed separately about their relationship quality and alcohol use, the interviews occurred simultaneously in the same mobile caravan. Although this mode of data collection was necessary in order to reach participants in the field, the lack of perceived privacy may have increased report of desirable relationship qualities—an issue that has been observed in other couples studies (Cox, Hindon, Otupiri, & Larsen-Reindorf, 2013).

The importance of alcohol use in intimate relationships in SSA has been neglected in the literature despite evidence for alcohol's role in couples-level behaviors that increase risk for HIV infection. Additional studies are needed to investigate the temporal ordering and causal

association between alcohol use and relationship outcomes, and the ways in which alcohol use can both enhance and negatively influence relationship dynamics that are relevant to HIV prevention (e.g., intimate partner violence, sexual risk behavior, adherence support). As others have noted (Ruark et al., 2017) there is a need for greater investment in couples intervention research in Africa, which has the potential to strengthen relationships and address couple interactions that can negatively affect HIV and other health-related outcomes.

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Table 1.

Background characteristics of the Uthando Lwethu baseline analytical sample (N=443 couples; 886 individuals)

	Couple level (N=443)	Full sample (N=886)	Women (N=443)	Men (N=443)
Variable	**Mean (SD), % (N)**	**Mean (SD), % (N)**	**Mean (SD), % (N)**	**Mean (SD), % (N)**
Demographic and couple characteristics				
Age		28.42 (9.32)	27.12 (8.92)	29.72 (9.54)
Years of education		10.47 (2.31)	10.51 (2.34)	10.44 (2.27)
Married	9.0 (80)			
Relationship duration	5.38 (7.08)			
Primary explanatory variable				
Alcohol consumption (men only)				
Non-drinker				44.02 (195)
Drinker				17.61 (78)
Hazardous drinker				38.37 (170)
Outcome variables				
Intimacy	6.33 (0.55)	6.33 (0.80)	6.06 (0.85)	6.61 (0.64)
Trust	6.12 (0.56)	6.13 (0.75)	5.92 (0.68)	6.33 (0.76)
Mututally constructive communication	7.94 (0.74)	7.94 (0.93)	7.76 (0.84)	8.11 (0.98)
Demand/withdraw communication	4.29 (1.24)	4.29 (1.75)	4.79(1.76)	3.80 (1.61)
Satisfaction	5.56 (0.40)	5.56 (0.60)	5.28 (0.59)	5.84 (0.46)

Table 2.

Unstandardized estimates from structural equation models for association of alcohol use with five dimensions of relationship quality (RQ from baseline Uthando Lwethu data with 443 couples (886 individuals).

Model 1: Intimacy		**Male RQ**			**Female RQ**	
Variable	**Estimate**	***SE***	***p***	**Estimate**	***SE***	***p***
Non-hazardous drinker (AUDIT=1-3)	−0.122	0.082	0.140	0.139	0.102	0.175
Hazardous drinker (AUDIT=4+)	−0.097	0.063	0.128	0.195	0.086	0.025
Married	−0.309	0.111	0.006	−0.131	0.117	0.265
Relationship duration (years)	0.001	0.006	0.854	−0.001	0.006	0.795
Age of female partner (years)	−0.008	0.008	0.271	0.001	0.008	0.872
Age of male partner (years)	0.017	0.007	0.009	0.019	0.008	0.013
Model 2: Trust		**Male RQ**			**Female RQ**	
Variable	**Estimate**	***SE***	***p***	**Estimate**	***SE***	***p***
Non-hazardous drinker (AUDIT=1-3)	−0.036	0.088	0.686	0.09	0.085	0.293
Hazardous drinker (AUDIT=4+)	−0.213	0.081	0.008	−0.077	0.071	0.28
Married	0.169	0.107	0.113	0.079	0.133	0.552
Relationship duration (years)	−0.002	0.006	0.646	0.000	0.006	0.926
Age of female partner (years)	−0.008	0.008	0.288	0.006	0.007	0.417
Age of male partner (years)	−0.023	0.008	0.002	0.005	0.008	0.497
Model 3: Mutually Constructive Communication		**Male RQ**			**Female RQ**	
Variable	**Estimate**	***SE***	***p***	**Estimate**	***SE***	***p***
Non-hazardous drinker (AUDIT=1-3)	−0.171	0.134	0.201	0.039	0.121	0.748
Hazardous drinker (AUDIT=4+)	−0.112	0.104	0.277	−0.011	0.085	0.901
Married	0.156	0.194	0.422	0.037	0.188	0.842
Relationship duration (years)	−0.010	0.011	0.343	−0.003	0.009	0.756
Age of female partner (years)	−0.005	0.013	0.686	0.012	0.009	0.195
Age of male partner (years)	0.017	0.011	0.140	0.002	0.010	0.792
Model 4: Demand/Withdraw Communication		**Male RQ**			**Female RQ**	

Model 1: Intimacy	Male RQ			Female RQ		
Variable	**Estimate**	***SE***	***p***	**Estimate**	***SE***	***p***
Variable	**Estimate**	***SE***	***p***	**Estimate**	***SE***	***p***
Non-hazardous drinker (AUDIT=1-3)	−0.175	0.217	0.421	0.254	0.234	0.277
Hazardous drinker (AUDIT=4+)	−0.079	0.165	0.633	0.739	0.181	<0.001
Married	0.231	0.415	0.577	−0.551	0.444	0.215
Relationship duration (years)	−0.004	0.018	0.819	0.030	0.019	0.122
Age of female partner (years)	0.023	0.019	0.225	0.005	0.021	0.802
Age of male partner (years)	−0.036	0.019	0.059	−0.014	0.019	0.462
Model 5: Satisfaction	**Male RQ**			**Female RQ**		
Variable	**Estimate**	***SE***	***p***	**Estimate**	***SE***	***p***
Non-hazardous drinker (AUDIT=1-3)	−0.002	0.058	0.961	0.064	0.078	0.409
Hazardous drinker (AUDIT=4+)	0.000	0.049	0.984	−0.103	0.061	0.093
Married	−0.048	0.112	0.667	−0.053	0.164	0.746
Relationship duration (years)	0.006	0.005	0.242	0.000	0.007	0.939
Age of female partner (years)	−0.006	0.006	0.268	0.008	0.007	0.250
Age of male partner (years)	0.005	0.006	0.377	0.000	0.006	0.890

Note. Higher scores on RQ variables indicate higher RQ. Structural equation models were fit using the maximum likelihood estimator in Stata with the Satorra-Bentler correction to account for non-normality in RQ variables. Drinking was modelled using dummy variables for non-hazardous (AUDIT score 1-3), and hazardous (AUDIT score +4) drinking. Scales were modelled as indicator variables rather than latent variables. Separate models were used for each outcome RQ variable, controlling for age of both partners, marital status, and relationship duration (mean of both partners' responses).