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Social Capital and Age at Sexual Debut: Race Differences in South Africa

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Abstract: Literature on social capital has long considered whether and how social capital is protective against various risk behaviors, including age at sexual debut. However, much of this literature uses data from wealthy countries in the Global North and is often cross-sectional, dampening generalizability. In this paper, we employ longitudinal South African data from adolescents in the Cape Area Panel Study to examine the longitudinal link between social capital and age at sexual debut. We first examine the overall relationship between age at sexual debut and social capital and then examine how the relationship differs by race. Results suggest that, on average, each additional activity is associated with an approximate 2 month delay in age at sexual debut. However, we observed steep racial differences. For Africans, the link between social capital and age at sexual debut was not significant, while the results for Coloureds and Whites were. For Coloureds, each additional activity translated into a 3 month delay in sexual debut, while for Whites we found a 4 month delay. We found no evidence of sex differences. Taken together, these results suggest that social capital is not equally efficacious for all South African adolescents. For Africans, social capital does not appear to be linked to age at sexual debut. In contrast, more social capital activities appear to be linked to delayed sexual debut, most particularly for Whites.

Keywords: adolescence; race; risky behaviors; sexual debut; social capital; South Africa

1. Introduction

Since the emergence of the construct a few decades ago, social capital has become a prominent subject of study across multiple disciplines. Business (Fernandez et al. 2000), economics (Karlan 2005), sociology (Dufur et al. 2019), and health (Hawe and Shiell 2000) scholars agree that social capital—an individual's social relationships and the resources available through those relationships—has far-reaching effects on human behavior and well-being. Much of the research indicates this influence to be positive, with social capital acquisition predicting favorable outcomes and protecting against harmful ones. This may be especially salient for youth, as social relationships gain new meaning (Nickerson and Nagle 2006) and problem behavior peaks (Arnett 1992, 1999; Steinberg 2007).

One domain of risky behaviors is sex. Risky sexual behaviors are detrimental to both physical and mental health (Hallfors et al. 2005; Sandfort et al. 2008; Stöckl et al. 2013), and can result in events that alter an individual's life trajectory, such as pregnancy. Adolescent sexual behavior is an especially important issue in South Africa due to a high prevalence of HIV/AIDS and teenage pregnancy (UNAIDS 2020), and while sexual encounters may be at least somewhat normative in adolescence, debuting too early can put youths even more at risk for these and other adverse sexual outcomes (Harrison et al. 2005).

The current research indicates that social capital can protect against early sexual debut (Jordahl and Lohman 2009). Regrettably, work on social capital outside of the United States is rare, and South Africa is no exception (Story 2013). Additionally, the existing literature on both social capital

and sexual debut hints at disparities between racial groups, though much research is needed before such nuance can be fleshed out. Thus, this study seeks to examine the protective influence that social capital can have on age at sexual debut and how that relationship may vary by race.

1.1. Social Capital

Social capital is a broad theoretical construct referring to the social relationships or networks an individual is part of as well as the resources available to that individual through those relationships (Coleman 1988). Individuals and organizations alike can be actors in a social capital relationship (Scott 1988), and actors can come from a variety of different contexts—family (Coleman 1988; Hoffman et al. 2006; Parcel and Menaghan 1994), school (Croninger and Lee 2001; Penuel et al. 2009), the broader community (Kingsley and Townsend 2006; Cramm et al. 2013), employment (Fernandez et al. 2000; Leana and Buren 2016), etc. Capital can be exchanged and/or invested in a variety of ways, although it is generally thought that such exchanges must be intentional in nature (Coleman 1988; Dufur et al. 2019). In many cases, social capital provides a network that one can rely on for social support (Lee et al. 2018; Putnam 2000) and can thus protect against many undesirable outcomes, including poor physical health (Hawe and Shiell 2000; Lomas 1998), mental health issues (Wind and Komproe 2012; Zissi and Chou 2017), and problem behaviors (Dufur et al. 2013; Croninger and Lee 2001). Such is the case for adults and youth alike (Cramm et al. 2013; Dufur et al. 2019).

Most of the literature on youth social capital centers on capital in the family, such as parental investment (Hoffmann and Dufur 2018; Parcel et al. 2010; Wright et al. 2001). Much less discussed is the concept of youth social capital outside the home (Dufur et al. 2019). Research suggests that adolescents may acquire community-level social capital in their neighborhood (De Coster et al. 2006; Dufur et al. 2019), at school (Crosnoe 2004; Hoffman and Dufur 2008), or within peer networks (Cleveland et al. 2012; Ream and Rumberger 2008). Indeed, such domains of social capital may be especially salient for youth, as adolescence is when non-familial social networks and relationships begin to play a more prominent role (Kaljee and Chen 2011; Nickerson and Nagle 2006).

During adolescence, the cognitive system in charge of social relationships reaches adult-like maturity, flooding youth with powerful cravings for social connection (Buhrmester 1998; Frith 2007). Teenagers thus feel the urge to form networks with their peers or in the broader community and tend to do so (Somerville 2013). Ironically, the cognitive system in charge of executive reasoning does not fully develop until adulthood, so adolescents often struggle to think rationally before engaging in behaviors to elicit social acceptance (Giedd 2015; Guyer Amanda et al. 2009). These developmental facets of adolescent functioning result in adolescents creating new social networks and being heavily influenced by social relationships. Youth groups and clubs may provide opportunities for adolescents to regularly engage with their peers and build meaningful social relationships. With adolescents' vulnerability to social pressure, peer relationships have a large influence on adolescent behavior, and positive relationships can go a long way in protecting against risky behaviors. Thus, social capital may have an especially large impact on adolescent well-being (Kaljee and Chen 2011).

Despite what we know concerning the importance of social capital, most of the extant research (including the studies above) focuses on in the United States, leaving large holes in the social capital literature regarding countries outside the U.S. Developing countries, especially, lack social capital research. Thus, with the protective effects social capital can have on risky behavior, which may play a particularly important role in adolescence, and the lack of literature on social capital in many countries outside the U.S., our study seeks to examine the protective effects of social capital on adolescent risky behavior in South Africa by examining a longitudinal sample in the Cape Town area.

1.2. Sexual Debut

One domain of risky behaviors that appears especially prevalent in the lives of adolescents is sexuality. Unhealthy sexual interactions can have a profound negative impact on adolescents' development and well-being (Hallfors et al. 2005), and scholars worldwide consider risky sexual

behaviors to be an important issue that warrants both study and policy enactments. This is particularly true in South Africa, where HIV/AIDS in youth and teenage pregnancy are more common than in many other areas of the world (Sandfort et al. 2008; UNAIDS 2020). Early sexual debut is associated with HIV/AIDS, teenage pregnancy, and many other problems in South Africa (Doyle et al. 2012; Tuoyire et al. 2018); and early sexual debut has been on the rise in recent years. In 1998, the median age at sexual debut in South Africa was 18 (Bakilana 2005), but that age has since decreased to approximately 15–16 for males and 16–17 for females (Amo-Adjei and Tuoyire 2017; Pettifor et al. 2009; Richter et al. 2015; Zuma et al. 2010). Most scholars consider sexual debut to be “early” before 15 (Harrison et al. 2005; Peltzer 2010; Richter et al. 2015). According to Peltzer’s 2010 probability sample across 8 African countries, 27.3% of 15-year-olds had experienced early sexual debut.

This reduction in age at first sex is concerning, as early sexual debut has been linked to a whole host of problems for South African youth. Early sexual debut is associated with sexual coercion (Jewkes and Abrahams 2002; Maharaj and Munthree 2007) and engaging in sexual behaviors before one feels ready or desires sexual interactions (Harrison et al. 2005). Early sexual debut predicts many risky sexual behaviors, such as lack of condom use (Harrison et al. 2005; Pettifor et al. 2009), multiple sexual partners (Harrison et al. 2005; Zuma et al. 2010), and casual sex (Harrison et al. 2005). Early age at first sex may also be associated with problem behaviors outside the sexual domain, such as substance abuse, truancy, lower educational attainment, physical fighting, and mental distress (Bengesai et al. 2018; Peltzer 2010). Longitudinal studies and systematic reviews alike suggest that early sexual debut may increase youth HIV risk (Stöckl et al. 2013; Wand and Ramjee 2012), which although decreasing, remains a prominent issue in South Africa (UNAIDS 2020).

Risk factors associated with early sexual debut include substance use (Durowade et al. 2017), being male (Asante et al. 2018), having sexually active friends (Durowade et al. 2017), living in a female-headed household (Amo-Adjei and Tuoyire 2017; Odimegwu and Somefun 2017), urbanization of residential area (Amo-Adjei and Tuoyire 2017; Asante et al. 2018; Odimegwu and Somefun 2017), and religious affiliation (Odimegwu and Somefun 2017). Socioeconomic status factors such as educational attainment and income are also associated with early sexual debut, though the direction of the effects vary by gender (Amo-Adjei and Tuoyire 2017; Asante et al. 2018; Odimegwu and Somefun 2017). These risk factors, in combination with the high prevalence of early sexual debut in South African youth, indicate the need for scholars to examine factors that can protect against early sexual debut. We thus seek to discover whether social capital, a component of positive outcomes for adolescents in other countries, is associated with age at sexual debut for South African youth.

1.3. Social Capital and Sexual Debut in South Africa

Multiple sources indicate that social capital is significantly associated with risky sexual behaviors (Carol Camlin 2008; Kaljee and Chen 2011; Smylie et al. 2006); however, fewer examine age at sexual debut specifically (e.g., Jordahl and Lohman 2009; Lohman and Billings 2008), and only a handful of studies have examined this phenomenon in South African youth. This literature is inconsistent regarding what constitutes social capital and whether/how social capital influences age at sexual debut. One study (Djamba 2003) measured social capital by the participants’ number of siblings, finding that more social capital (i.e., larger family size) increased early sexual debut, likely due to greater dilution of parental resources. Another study (Odimegwu et al. 2017) examined perceptions of social capital, defined as a combination of overall level of trust of community members, whether people in the community collaborate in helping with HIV/AIDS, and whether those who have HIV/AIDS receive community support. This study reported no relationship between social capital and age at sexual debut.

The most common operationalization of social capital is participation in community-level social groups or activities. However, results from such studies are mixed. Agardh and colleagues 2010 concluded the number of social activities participated in to be associated with fewer risky sexual behaviors, including sexual debut, and Erulkar and Ferede 2009 similarly reported that a lack of youth

group membership is associated with early sexual debut. Conversely, Kalolo et al. 2019 found no correspondence between adolescents' social group membership and age at sexual debut. Additionally, these three studies are cross-sectional in nature, limiting the scope of inference that can be made. The present study utilizes a social capital measure examining social groups or activities, as well as longitudinal data, to help clarify the effects of the social participation operationalization of social capital.

1.4. Race Effects

The influence of social capital, however, as well as the age youth begin having sex, may vary by race. There is very little research on racial discrepancies in social capital in South Africa. At least one study, however, has documented that in general, Africans have more social capital than Indians (Maluccio et al. 2000). Studies specifically examining racial discrepancies in social capital within other countries is also relatively sparse, although it is clear there are racial discrepancies in the acquisition of social capital in the U.S. Whites generally have more social capital than other racial groups, including Blacks, Hispanics/Latinos, and those of mixed descent (Dufur et al. 2016; James 2000; McDonald and Day 2010; Miller and Weller 2019). In general, ethnic minorities tend to have fewer social networks (Smith 2000).

This may be due to the "social homophily" phenomenon, in which social relationships are based on similarities between people, including racial similarity (Gaddis 2012; Lazarsfeld and Merton 1954; Marsden 1988; McPherson et al. 2001). Racial homophily is evident in social networks across various disciplines, from business (Mollica et al. 2003) to intimate relationships (Smith et al. 2014) and even social networking (Wimmer and Lewis 2010). This concept is also consistent in the literature on adolescent social relationships. Adolescents tend to form friendships with individuals who have similar racial or ethnic backgrounds (Crosnoe 2000; Kao and Joyner 2004; McDonald et al. 2013; Moody 2001), and these racial homophily effects persist after controlling for other potential factors that may drive friend selection (Leszczensky and Pink 2015). Many of these friendships are school based (Neal 2010), and school-based social networks often carry over into extracurricular clubs or activities (Leszczensky and Pink 2015). However, there is very little research examining racial homophily in South African adolescent social networks (Luiz and Krige 1981; Luiz and Krige 1985; Finchilescu and Tredoux 2008).

Scholars have noted that experiences regarding sexual debut also vary across race and ethnicity (Cavanagh 2004). Studies conducted in the United States consistently reveal African Americans to experience sexual debut at an earlier age than Whites (Blum et al. 2000; Cavazos-Rehg et al. 2010; Jordahl and Lohman 2009), and racial discrepancies are prominent among African populations as well (Asante et al. 2018; Odimegwu and Somefun 2017). In South Africa, Africans generally debut younger than their White counterparts (Bengesai et al. 2018), and both Whites and Indians are more likely to be sexually abstinent than Africans (Maharaj and Cleland 2008). The extant research in this area is far from comprehensive, however, warranting greater study of race as a moderator for sexual debut. Thus, with evidence that both social capital and age at sexual debut may vary by race, but little research regarding such racial discrepancies in South Africa, our analysis examines race as a moderator of social capital and sexual debut to explore this nuance and its impacts on South African youth.

1.5. Current Study

The current study seeks to add to the social capital literature in meaningful ways. Our first goal is to expand social capital research outside of the United States, particularly in South Africa, which has not been the subject of many social capital -related studies. Second, we examine the potential protective influence of social capital on early sexual debut, which has been linked to the prominent issues of HIV/AIDS and other harmful sexual outcomes among South African youth. Third, we explore racial disparities in how social capital influences age at sexual debut. Finally, our analysis utilizes longitudinal data. Based on the current literature, we hypothesize that youth with a greater degree of social capital will experience their sexual debut at a later age (Hypothesis 1) and that this influence will vary by racial group (Hypothesis 2).

2. Materials and Methods

2.1. Sample

Participants from this study came from the Cape Area Panel Study (CAPS), a longitudinal study produced and distributed by the universities of Michigan and Cape Town, with funding from the National Institutes of Health and the Andrew W. Mellon Foundation ([University of Michigan and University of Cape Town 2012](#)). All data are publicly available from the DataFirst South Africa website under the reference id, zaf-uct-um-caps-2002-2009-v1.

Data collection involved a two-stage process. Enumeration areas (EAs) around Cape Town, South Africa were drawn from the 1996 South African Census and divided into racial strata (predominantly African, Coloured, or White), followed by primary sampling units selected within each stratum based on probability proportion to size. A total of 25 screener households were drawn from each PSU. In all, five waves of data were collected between 2002 and 2009. For more information, please see the Technical Documentation. All analyses used Stata's svy suite of commands to account for survey design effects including weights, sampling strata, and PSUs. The sample varied in age from 14 to 22, which prominent adolescence texts refer to as mid- through late-adolescence ([Steinberg 2016](#)).

2.2. Measures

All responses were self-reported by the participant. Unless otherwise stated, measures were coded so that higher values reflected greater values of the construct.

Social capital. At Time 1, individuals reported whether or not they were part of a number of social capital-generating activities or groups (i.e., sports team, study group, religious group, dance/music group, or other). We recoded these responses to indicate the total number of social capital activities or groups the respondent participated in. Few participants reported more than four social capital activities, so we topcoded those responses at four.

Sexual debut. At Times 1, 2, and 4, participants indicated the age at which they first experienced sexual intercourse. Very few participants reported less than age 12 or more than age 22, so we collapsed responses under 12 or over 22 into the categories "12 or younger" and "22 or older", respectively. Responses were coded so that the data value indicated the age at sexual debut (i.e., 12 = 12 or younger; 13 = 13; . . . , 21 = 21; 22 = 22 or older).

Race. At each time point, participants reported individual racial background. As each time point had data that the others did not, all five time points were collapsed into one measure. Initial categories included Indian and Other, but there were too few responses to include in the analysis. Race was thus coded into three categories (0 = White, 1 = African, and 2 = Coloured). Note that the racial naming system employed here is commonly used in South Africa, in everything from business materials to the South African Census.

Controls. Control variables included race cluster (0 = predominantly White; 1 = predominantly African; 2 = predominantly Coloured), sex (0 = male; 1 = female), age, urbanization or residential area (0 = other; 1 = urban), general health, HIV risk, whether the individual was born in Cape Town, whether the participant expected to marry within three years of Time 1, and logged household income.

2.3. Analytical Plan

The analysis involved weighted linear regression analyses using Stata's svy suite of commands to account for survey design effects accounting for strata and PSUs. We first tested the overall link between Wave 1 social capital and age at sexual debut (measured prospectively from waves 1 through 5), controlling for sociodemographic variables:

$$Y_i = \text{Social Capital}_i + \text{African}_{\text{excluded reference}} + \text{Coloured}_i + \text{White}_i + \chi_i + \varepsilon_i \quad (1)$$

where χ_i denotes a vector of control variables and i marks individuals. ε_i represents a stochastic error term to capture all sources of error not associated with the variables included in the model.

We then moved to examine whether the social capital/age at sexual debut link was similar across Africa's three most populous racial groups, African, Coloured, and White, which recent numbers from (Statistics South Africa 2020) report comprise (81%), (9%), and (8%) of the population, respectively:

$$Y_i = \text{Social Capital}_i + \text{African}_{\text{excluded reference}} + \text{Coloured}_i + \text{White}_i + \text{Social Capital} * \text{African}_{\text{excluded reference}} + \text{Social Capital} * \text{Coloured}_i + \text{Social Capital} * \text{White}_i + \chi_i + \varepsilon_i \quad (2)$$

Here we introduce a statistical interaction (i.e., multiplicative) term that allows us to test whether the link between social capital and age at sexual debut is similar across races. Descriptive statistics and results are found in Tables 1 and 2; to aid interpretation, we present the interactive results in Figure 1 as well.

3. Results

Table 1 presents the mean and standard deviations (where applicable) for all variables used in the analysis, broken down by race. Age at sexual debut varied by race, ranging from 16.66 among Africans ($n = 1663$) and 17.25 among Coloureds ($n = 982$) to 17.57 among Whites ($n = 219$). In terms of social capital, we again see racial differences, with the average number of activities at 1.06 among Africans and 0.62 and 0.73 among Coloureds and Whites, respectively. The sample was disproportionately female, particularly among Africans, which, along with the fact the sample comes from Cape Town, may partially explain why the average age at sexual debut is higher than in previous studies (Amo-Adjei and Tuoyire 2017). Interestingly, but not unexpectedly, we see extraordinarily high levels of residential segregation, with each racial group nearly universally living in a racially homogenous cluster. Coloureds are the most integrated, with 4% of Coloured adolescents/young adults living in predominantly White areas and 3% living in predominantly African clusters. Still, this leaves 93% of Coloured respondents living in predominantly Coloured areas. While a large majority of Coloured and White respondents (98% and 94%) have spent most of their lives in an urban setting, 57% of Africans have, suggesting greater mobility between urban and rural settings, bolstered by the fact that just 41% of African respondents were born in Cape Town compared to much higher numbers among the other groups. We see similar self-assessed health and HIV risk across the three groups, along with similar (low) expectations for marrying within the next 3 years. Finally, we see the well-established remnants of Apartheid through the lens of racial disparities in income. On average, Africans have a household income of approximately R 1700 ($e^{7.45}$), compared to Coloureds at R 3200 ($e^{8.07}$), and Whites at more than 4 times that amount, R 7500 ($e^{8.92}$).

Table 1. Descriptive statistics of all variables in the analysis.

| | African | | Coloured | | White | |
|-------------------------------|------------|------|------------|------|------------|------|
| | Mean/Prop. | SD | Mean/Prop. | SD | Mean/Prop. | SD |
| Age Sexual Debut | 16.66 | 1.83 | 17.25 | 2.01 | 17.57 | 1.82 |
| Social Capital (# Activities) | 1.06 | 1.07 | 0.62 | 0.88 | 0.73 | 0.89 |
| Female | 0.56 | | 0.51 | | 0.54 | |
| Age | 18.23 | 2.41 | 18.28 | 2.31 | 18.90 | 2.26 |
| <i>Race of Cluster</i> | | | | | | |
| Predominantly White Area | 0.01 | | 0.04 | | 0.98 | |
| Predominantly African Area | 0.98 | | 0.03 | | | |
| Predominantly Coloured Area | 0.01 | | 0.93 | | 0.02 | |
| Urban | 0.57 | | 0.98 | | 0.94 | |
| Born Cape Town | 0.41 | | 0.92 | | 0.63 | |
| Health | 3.99 | 1.06 | 3.85 | 1.00 | 3.90 | 0.93 |
| Self-Assessed HIV Risk | 1.53 | 0.91 | 1.65 | 0.88 | 1.88 | 0.78 |
| Yes Expect to Marry 3 Yrs | 0.05 | | 0.11 | | 0.09 | |
| Hhold Income (logged) | 7.45 | 1.54 | 8.07 | 1.23 | 8.92 | 2.06 |

Note: Standard deviations not included for binary variables.

Table 2 presents the linear regression (see Equation (1)) results linking age at sexual debut and social capital, operationalized as the number of community activities or groups in which respondents are involved. Model 1 shows the results, after controlling for race, age, composition of residential cluster, urbanity, Cape Town nativity, marital expectations, self-assessed general health and HIV risk, and household income. The relationship was significant and positive, indicating that each additional activity, whether moving from 0 to 1 or 3 to 4, was associated with a 0.16 ($p < 0.001$) increase in age at sexual debut, or approximately 2 months (1-unit age increase/12 months = 0.08), controlling for all other variables in the model. The model fit reasonably well, though not exceptionally so, with an R^2 of 0.194.

In Model 2, we entered the interaction term into the model. This was accomplished by multiplying social capital by the race dummy variables (see Equation (2) for a mathematical representation). The model included all variables in the first model as well. We found that the relationship between social capital and age at sexual debut, as described in the previous model, varied by race. To aid interpretation, we have graphed this relationship in Figure 1 and noted the estimated marginal effects (i.e., race-specific slopes, sometimes termed simple slopes). The interaction terms for both Coloured and White by social capital were significant, indicating that the slopes for social capital and age at sexual debut for both of these groups was significantly different than the slope for Africans ($b = 0.052$, $p > 0.05$). For Coloureds, the estimated slope was 0.252 ($p < 0.001$), whereas the equivalent slope for Whites was even higher at 0.363 ($p < 0.05$). In real-life terms, this translates to each social capital activity being associated with a 3 month delay in age at sexual debut among Coloureds and a 4.5 month delay among Whites, with no relationship detected among Africans. The interactive model fit the data slightly better, with an R^2 of 0.198.

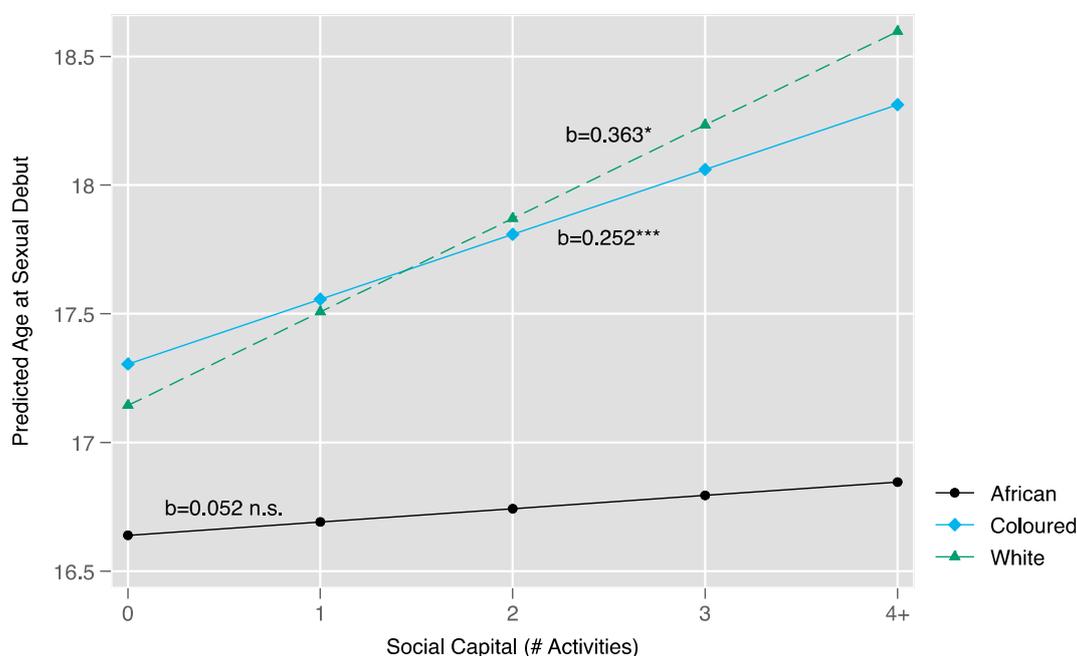
Table 2. Survey-adjusted linear regressions predicting age at sexual debut with social capital and race.

| | Model 1 | Model 2 |
|-------------------------------|----------------------|----------------------|
| Social Capital (# Activities) | 0.157 *** (0.038) | 0.052 (0.039) |
| Coloured | 0.848 ** (0.318) | 0.665 * (0.330) |
| White | 0.741 (0.452) | 0.505 (0.481) |
| Female | 0.813 *** (0.078) | 0.821 *** (0.077) |
| Age | 0.744 ** (0.243) | 0.758 ** (0.242) |
| Age X Age | −0.012 (0.007) | −0.013 (0.007) |
| Predominantly African Area | 0.043 (0.425) | 0.069 (0.428) |
| Predominantly Coloured Area | −0.231 (0.330) | −0.197 (0.329) |
| Urban | 0.136 (0.115) | 0.154 (0.115) |
| Born in Cape Town | 0.115 (0.116) | 0.113 (0.116) |
| Health | 0.016 (0.037) | 0.013 (0.037) |
| Self-Assessed HIV Risk | −0.041 (0.043) | −0.044 (0.043) |
| Expect to Marry in 3 Years | 0.111 (0.154) | 0.120 (0.152) |

Table 2. Cont.

| | Model 1 | Model 2 |
|--|---------------------|---------------------|
| Household Income (Logged) | 0.049 (0.026) | 0.047 (0.027) |
| Coloured X Social Capital (# Activities) | | 0.200 * (0.079) |
| White X Social Capital (# Activities) | | 0.311 * (0.149) |
| Constant | 6.122 ** (2.193) | 6.062 ** (2.182) |
| Observations | 2864 | 2864 |
| R ² | 0.194 | 0.198 |

Standard errors in parentheses. Reference categories include African, male, predominantly White area, non-urban, and not expecting to marry in next 3 years. * $p < 0.05$, ** $p < 0.01$, and *** $p < 0.001$.



Source: Cape Area Panel Study, Waves 1-5. Notations on graph are estimated marginal effects (i.e., simple slopes). * $p < .05$; *** $p < .001$

Figure 1. The differential relationship between social capital and age at sexual debut by race.

In exploratory models, we also examined whether the interaction between social capital and race varied by sex. We consequently entered a three-way interaction into the model (social capital X race X sex). The results (not shown) showed no evidence that the racial differential in how social capital activities are associated with age at sexual debut varied by sex.

4. Discussion

This paper sought to add to the literature on youth social capital by examining links between social capital and age at sexual debut in South Africa using longitudinal data collected from the Cape Town area. We also examined whether the link between social capital and age at sexual debut varied by race (African, Coloured, White). The results supported our hypotheses, suggesting that, on average, each additional activity was associated with approximately a 2 month delay in age at sexual debut. However, this average of 2 months does more to obscure rather than illuminate the relationship between sexual debut and social capital. This can readily be seen when we interact race with the association

between social capital and age at sexual debut. For Africans, the link between social capital and age at sexual debut was not significant ($b = 0.052$), despite the fact that Africans, according to our estimates, tend to have the more social capital than either Coloureds or Whites. For Coloureds and Whites, however, despite their relatively lower levels of social capital overall, the relationship between social capital and age at sexual debut was statistically significant. For Coloureds, each additional activity translated into a approximately 3 month delay in sexual debut; for Whites, we estimated that each additional social capital activity translated into a 4 month delay in age at sexual debut. Importantly, we found no evidence that the differential race relationship between social capital activities and age at sexual debut varied by biological sex.

In real-life terms, our estimates suggest that the association between social capital and age at sexual debut has no discernible relationship among Africans, after controlling for all other variables in the model. In contrast, each additional social capital activity is associated with greater delay in age at sexual debut for both Coloureds and Whites, though the delay is greater among Whites. For each additional social capital activity, age at sexual debut is associated with a delay of approximately 3 months for Coloured adolescents and approximately 4.5 months for Whites. Extrapolated over the course of 4 activities (we topcoded at 4 activities, although some participants reported more than 4), this means that with all other things being equal, the difference in predicted age at sexual debut could be as high as 16 months (4 months * 4 activities) for Whites and 12 months for Coloureds (3 months * 4 activities) between respondents who engaged in multiple social capital activities and those who did not. These predictions are merely intended as illustrative, as the model only predicts 20% of the variance in age at sexual debut. Further work should be done before making policy or programming decisions, but this demonstrates that social capital and its differential link with age at sexual debut based on race should be a key part of that discussion.

These findings align with scholars' reports that among South African youth, social capital (i.e., involvement in social groups or activities) is related to higher age at sexual debut (Anette Agardh et al. 2010; Erulkar and Ferede 2009). This notion corresponds with the broader literature suggesting that social relationships have a high level of influence on adolescent behavior (Dufur et al. 2019; Kaljee and Chen 2011), as adolescents explore an increased need for social belonging and behave in conjunction with the social influences surrounding them (Giedd 2015; Somerville 2013). Accordingly, it stands to reason that adolescents may find meaningful social connection via participation in a social group or activity, which may then provide the adolescent with a supportive network that promotes healthy sexual behaviors, leading the youth to pursue healthy sex and avoid risky behaviors such as early sex. Conversely, it may be that adolescents who struggle to find intimacy in close relationships turn to sexual encounters in hopes of filling those needs, thus engaging in sex at an earlier age than their socially involved counterparts.

Unfortunately, while this line of reasoning coincides with many empirical studies, including some that specifically examine South African youth (Anette Agardh et al. 2010), there are other sources that dispute such claims, reporting no difference between age at sexual debut for South African youth high in social capital (i.e., support from community members) and those who have lower levels of social capital (e.g., Kalolo et al. 2019). However, knowing that prior literature has identified racial differences in behavior (Cavanagh 2004), we examined race as a potential moderator for the relationship between social capital and age at sexual debut and found significant differences between Africans, Coloureds, and Whites. This result may provide insight into potential reasons for existing discrepancies between previous studies.

It is possible that the racial makeup of past studies at least partially accounts for the few studies whose results suggest social capital does not influence sexual debut. The current literature suggests that among South Africans, African youth have sexual intercourse for the first time at a younger age than Whites (Bengesai et al. 2018). These studies in conjunction with research on racial homophily (Gaddis 2012; Lazarsfeld and Merton 1954; Marsden 1988; McPherson et al. 2001), which can play a magnified role in adolescent social relationships (Crosnoe 2000; Leszczensky and Pink 2015;

McDonald et al. 2013), may result in racially homogenous social groups that have different ideals and thus varying influences within the realm of adolescent sexuality.

To sum, our findings bring clarity to a body of literature, which, though small, holds some discrepancies. Our study supports previous research suggesting social capital can protect South African youth against risky behaviors such as early sexual debut; examines racial differences in that relationship; and furthers exploration of the nuance inherent in the interaction of social capital, sexual debut, and race. These contributions are especially important when seen in light of the current lack of research on social capital outside of the United States and particularly in developing countries such as South Africa (Story 2013). Additionally, our study utilizes longitudinal data, which are notably absent from much of the social capital literature surrounding developing countries (De Silva and Harpham 2007; Lua and Ataguba 2015; Odimegwu et al. 2017). Although our findings did not directly align with all previous studies, our results do align with the bulk of past research.

Like any paper, this one is not without important limitations. First, although we have longitudinal data, we make no causal claims and have consequently steered clear of predictive language throughout the paper. This is for two reasons—there are many other alternative explanations for the links we discuss here, and some respondents had already had sex prior to the time we measured social capital at the first wave, indicating probable endogenous influences (although to check for major issues due to endogeneity, we looked for evidence to determine whether a relationship between social capital and sexual debut varied by whether sexual debut occurred before Time 1 and found no evidence that this was the case, lending credibility to our models). Second, although the data are of very high quality, they are of only limited geographic generalizability, as the sample only included people from around Cape Town. Future studies should examine how this relationship plays out using nationally representative data. Finally, although our measurement of social capital (the number of activities one participates in) is upheld in the mainstream of social capital research, it does not include many other mechanisms that generate social capital. Although participation in activities clearly shows a race differential, there are no guarantees that other ways of generating social capital will hold to the same pattern.

Scholars should continue to study social capital in children, youth, and young adults, as it can significantly impact the well-being and development of individuals within those age groups. Further research should focus on developing countries where the influence of social capital has not yet been fleshed out and utilize large nationally representative datasets when possible to ensure valid generalization to broad populations. Another worthwhile endeavor would be to examine whether certain types of social capital-related activities are more closely linked to age at sexual debut than others or perhaps examine whether social capital-activities function similarly by race. Additionally, future studies would benefit by exploring whether the income required to engage in specific social capital activities might explain the race disparities observed here, though two observations are worth noting in this context. First, we controlled for household income in the models, so the relationship is likely to be nuanced. Second, African respondents actually had the highest level of social capital, so explaining the relationship strictly in terms of income may prove complex. Such research may prove key in making informed policy decisions in various country contexts.

5. Conclusions

The results of this paper indicate that adolescent social capital should be strongly considered when making policy and programming decisions in South Africa. Sexual behavior is known to drive a multitude of negative outcomes for adolescents, both during adolescence and throughout the life course, implying that predictors of sexual behaviors are a crucial piece of evidence for policy makers, social service delivery professionals, and academics when considering next steps. Importantly, the link between social capital and sexual debut varies by race but not sex. For Africans, there appears to be no association between the two factors. In contrast, more social capital activities appear to be linked to delayed sexual debut for other racial groups, particularly Whites. We call on scholars, social service

workers, and policy makers to consider these findings when determining how to expand individual rights and opportunities and societal well-being, as well as to encourage further research on social capital. Such decisions and scholarship may have profound implications for individuals, families, and countries.

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