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Drivers of male perpetration of family and intimate partner violence in Cape Town

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Abstract

This paper examines the drivers of male perpetration of violence against adult family members and intimate partners in Cape Town, South Africa. Data on 1,369 young men from the Cape Area Panel Study are analyzed and significant causal pathways are examined for the full sample and for disaggregated samples of African and coloured respondents. Socioeconomic disadvantage plays a role in a culture of patriarchal violence, but its effects are largely mediated by behavioral factors such as routine alcohol consumption and having concurrent sexual partners, and norms of acceptance of violence against women. Different factors emerge as predictors of violence in the African and coloured samples. The findings of the quantitative analysis are illustrated with evidence from 45 qualitative interviews that address the role of violence in family and gender relations in Cape Town. Economic interventions are of uncertain efficacy give South Africa's difficulties since the end of apartheid in improving economic opportunities for the poor; thus interventions targeting norms and behavior hold the most promise for reducing family and intimate partner violence in the near term.

Introduction

Awareness of and concern over South Africa's extremely high levels of family and intimate partner violence (FIPV) has intensified since the end of apartheid in 1994. While the fear of violence committed by *strangers*, whether in public spaces or the home, fuels the intense fear of crime that permeates South African society, violence in the home committed by *partners or family members* may be more prevalent and a more immediate threat to many South Africans. Despite the increases in scrutiny of FIPV among the public and policymakers and the passage in 1998 of a new, more comprehensive Domestic Violence Act, violence against family members and partners remains disturbingly common, with South Africa reportedly having the world's highest rate of killings of women by intimate partners (Mathews et al. 2004).

In their efforts to understand the sources of this violence in South Africa, researchers in the social sciences and public health have most frequently examined the social, economic, and behavioral factors that predict women's violent victimization by intimate partners, using either quantitative data (Jewkes et al. 2001; Jewkes, Levin and Penn-Kekana 2002) and qualitative research (Dangor, Hoff and Scott 1998; Wood, Maforah and Jewkes 1998; Fox et al. 2007). Recently, attention has shifted to understanding what may predispose or drive men to perpetrate violence against those to whom they are supposed to be closest (Abrahams et al. 2004, 2006; Strebel et al. 2006; Boonzaier 2008; Gupta et al. 2008). As Abrahams et al. (2004:248) affirm, if we are interested in understanding the dynamics of and preventing violence in the family and in intimate relationships, it is imperative to look more closely at the risk factors for male perpetration of such violence and not only at female victimization. This investigation in turn should enable more effective policy interventions.

Previous studies of perpetration of FIPV in South Africa have used cross-sectional survey data. In its National Youth Risk Behaviour Surveys, the Medical Research Council (MRC) asked samples of male and female secondary school students whether they had hit a girlfriend or boyfriend (Reddy et al. 2003, 2010). Other MRC studies have used cross-sectional survey data on rape perpetration by young rural males in the Eastern Cape (Jewkes et al. 2006) and perpetration of rape (Abrahams et al. 2004) and IPV (Abrahams et al. 2006) by male municipal workers in Cape Town. While researchers may ask retrospective questions about respondents' pasts, memories and perceptions of the past may be shaped by intervening experiences. It is also difficult to determine the direction of causation between variables such as drinking and FIPV perpetration when these behaviors are reported in the same time frame. These problems may be overcome, however, by using data from a panel survey, in which a sample (or

'panel') is re-interviewed repeatedly over a period of time. Data from earlier 'waves' may be tested to see if they predict a particular outcome in a later wave.

This paper uses data from a panel study of young people in Cape Town that allow us to test a number of hypotheses derived from the existing literature on the perpetration of violence. We can examine, for instance, if childhood abuse reported in 2002, or poverty reported in 2005, or unemployment reported in 2006 predict subsequent FIPV perpetration, as reported in 2009.[1] This provides us with greater certainty as to the direction of causation for factors that have previously been found to be associated with male FIPV perpetration in South Africa. I then used multivariate analysis to examine possible causal pathways and the potential effects of race on socioeconomic predictors of FIPV perpetration. These findings are elucidated with evidence from qualitative interviews with residents of high-violence neighborhoods and the results of this analysis are discussed in terms of their implications for improved policy making in Cape Town, and possibly elsewhere, for the prevention of FIPV.

Data and methods

Data for this paper come from two sources. The quantitative data analyzed come from the Cape Area Panel Study (CAPS), a longitudinal study of the lives of a panel of young people in the Cape Town metropolitan area. CAPS was initiated in 2002 when respondents were ages 14-22. The fifth and most recent wave of CAPS was conducted in 2009 when respondents were ages 20-29. Due to attrition in the sample, especially among older respondents, the CAPS sample is no longer representative of the general population of young people in Cape Town (see Lam et al. 2010). Data from the fifth wave are also still undergoing quality checks and are unweighted, so all results reported here are preliminary. However, CAPS remains the best source of data on the life experiences of young Capetonians (or of young people of the same age anywhere in South Africa). The fifth wave of CAPS in 2009 collected data from over 3,000 young people, including answers to the question, "In the past three years, have you ever hit or physically assaulted a girlfriend/boyfriend/partner or any adult in your family?" (emphasis original). Unfortunately, respondents who answered affirmatively were not asked further questions about whom exactly they had assaulted, the prevalence of such violence, or the situation in which the violence had occurred. Questions about the perpetration of child abuse were not asked. Additionally,

[1] Different versions of the survey were used in different waves, so variables for similar attributes may have different specifications depending on their source wave. See http://www.caps.uct.ac.za for survey forms and documentation.

while many definitions of IPV include sexual and psychological harm to victims (see e.g. Heise and Garcia-Moreno 2002), our data only allow us to consider assault perpetration. Thus this paper examines assaultive family violence[2] and intimate partner violence (IPV) perpetration, though these types of violence and the motivations for committing them may have intricate differences.

In this paper, I analyze only the perpetration of FIPV by young *men*. Other researchers in South Africa have found concern among focus groups and respondents about male victimization by female intimate partners (e.g. Strebel et al. 2006), though also some skepticism (Britton 2006:158-9), as well as high levels of reported male IPV victimization in surveys (Wong et al. 2008). Some studies in the United States conducted with the widely used Conflict Tactics Scale (CTS) (Straus 1979) or its revised successor, the CTS2 (Straus et al. 1996), have found approximately equal levels of family violence and IPV reported by men and women. In South Africa, Dawes et al. (2006), using the CTS2, found women more likely to report victimization, but approximate gender symmetry in perpetration rates. However, CTS and CTS2 studies tend to obscure the fact that men are more likely than women to underestimate or underreport their own violence (Cano and Vivian 2001), that women's use of violence is more likely to be defensive, and that men are more likely to cause serious injury (see generally Kimmel 2002).[3] As discussed in Seekings and Thaler (2010), most violence in Cape Town is attributed to young men, and in our sample more men (12%) than women (8%) reported having committed FIPV,[4] so this paper focuses on the over 1,300 young men who responded to the fifth wave of CAPS (henceforth, 'respondents'). Statistical analyses were conducted using logistic regressions in Stata 11.

The second source of data is a set of 45 qualitative interviews conducted in 2008 with African[5] adult residents of Khayelitsha and Delft, two high-violence townships in the impoverished Cape Flats area. After two pilot interviews, interviews were conducted with 26 randomly selected respondents from a 2005

[2] The term 'family violence' is used instead of the more common 'domestic violence' because our survey question asks about assaulting *any* adult family member, not only one who was cohabiting with the respondent.

[3] Johnson (1995) describes IPV as being composed of two types: 'common couple violence,' in which there is gender symmetry in perpetration but injury rates are low, and 'patriarchal terrorism,' in which men systematically use violence to terrorize and control women.

[4] This is supported by the findings of the 2008 National Youth Risk Behaviour Survey, which found that male secondary school students were significantly more likely than their female counterparts to report having ever hit a partner (Reddy et al. 2010:48).

[5] Apartheid-era racial categories continue to have social and (declining) political currency in South Africa (see Seekings 2008). In this paper, 'African' refers to black South Africans, while 'coloured' refers to South Africans of mixed racial heritage.

survey and a further convenience sample of 17 other residents of these neighborhoods. The men and women in the sample (henceforth, 'interviewees') were aged 21-54. The interviews are denoted by numbers preceded by a 'V', followed by the interviewee's gender and age. As these interviewees must daily navigate terrains of real or prospective violence, we may expect them to have good knowledge of the dynamics of violence in their areas, where many perpetrators of violence may be their relatives, friends, or neighbors. The thoughts of these interviewees are thus used to augment discussion of hypotheses and the results of regression analysis with personal elements of the lived experience.

Through this combination of methods we gain not only a clearer picture of who among young Capetonian men assaults his family members or intimate partner(s), but also of how this pattern reflects or diverges from the views of members of communities where this violence may be prevalent.

Formulating hypotheses

There has been a great expansion in research on FIPV in South Africa and elsewhere in the region in the past twenty years. I use evidence from studies specifically examining risk factors for male perpetration of violence and from studies of risk factors for female victimization, especially those including variables such as female reports of partner problems with substance abuse, in concert with the perceived causes of FIPV reported by our interview respondents to formulate hypotheses that are testable with the CAPS data.

Hypothesis 1: *Men who are beaten as children will be more likely to perpetrate FIPV.*

Some U.S. studies suggest that the path to perpetration of FIPV may begin early in childhood with the experience of abuse committed by one's parents (e.g. Straus, Gelles and Steinmetz [1980] 2007; Hotaling and Sugarman 1986; Ehrensaft et al. 2003). Being hit as a child is a relatively common experience in South Africa, with one study of high school students in Cape Town finding that almost half had been victims of violence in the home or perpetrated by someone known to them (Ward et al. 2001). Abrahams et al. (2006) found a significant bivariate relationship among men between being beaten during childhood and later perpetration of IPV; this relationship remained significant in some multivariate models, but ceased to be significant when variables for intimate relationship conflict were included, suggesting that childhood abuse may predispose men to later relationship conflict and through such conflict to IPV perpetration as well. More recently, Gupta et al. (2008), in a nationally

representative study of men who had been married or cohabited with a partner, found that suffering physical abuse in childhood, an experience of over one-fifth of their sample, is a robust predictor of IPV perpetration in multivariate analysis.[6] One interviewee likewise suggested that FIPV is more likely "if one of the partners grew up in a violent family and they believe that violence solves things. So that partner will use violence to sort out their relationship problems" (V6, female, 43). In the CAPS sample, 8% of male respondents reported being beaten or pushed around as children.

Hypothesis 2: *Men who drink or use drugs will be more likely to perpetrate FIPV.*

One of the most frequently cited risk factors for FIPV perpetration is abuse of alcohol or illegal drugs.[7] South Africa, and in particular the Western Cape, has some of the highest rates of alcohol consumption and "hazardous" drinking in the world (see Parry and Dewing 2006; Harker et al. 2008; Peltzer and Ramlagan 2009) and Cape Town has a rate of drug-related crime that in 2007-8 was over three and a half times the national average (City of Cape Town 2009:14). In a study of arrestees in Cape Town, Durban, and Johannesburg, Parry et al. (2004) found that 49% of those charged with family violence offenses reported having been under the influence of alcohol at the time of the offense. Jewkes, Levin, and Penn-Kekana (2002:1609), in a survey of women, found that those reporting suffering IPV were more likely to report their male partners drinking alcohol and having conflicts over both partners' drinking. In qualitative interviews, alcohol and drug abuse is often described as precipitating family violence and IPV (Dangor, Hoff and Scott 1998:131; Kim and Motsei 2002:1246; Boonzaier and de la Rey 2003; Dissel and Ngubeni 2003; Morojele et al. 2006; Strebel et al. 2006:519; Fox et al. 2007; Ross 2010:29), especially in situations of poverty when it is difficult for a man to feed his addiction (Boonzaier and de la Rey 2003:1023). Unfortunately, CAPS did not ask about individual incidents of FIPV perpetration, so we cannot examine whether substance abuse precipitated violence situationally (i.e. the perpetrator was drunk or high). However, we are able to test whether men's drug and alcohol use across multiple waves predicts FIPV perpetration. In our sample, 36% of men reported drinking across multiple waves of the survey and 27% said they binge

[6] These studies have also tended to find that witnessing the abuse of one's mother predicts family violence and IPV perpetration later in life, with one man telling Boonzaier (2008:195), 'My father used to hit my mother and all that stuff. But, um in the end actually we grew up believing that it was right. That the husband must hit the wife, that is how we grew up.' However, CAPS has unfortunately never included a question that would allow us to test this.

[7] Past perpetration of IPV, though, may actually predict men's later drug and alcohol abuse (Abrahams et al. 2006:261).

drink in wave 5 (consuming seven or more drinks on a typical day), while 5% reported drug use across multiple waves.

Hypothesis 3: *Men of low socioeconomic status will be more likely to assault family members or partners.*

Hypothesis 4: *Men who are financially dependent on a wife or girlfriend will be more likely to perpetrate FIPV.*

It has been found in the international literature that living in situations of poverty can increase the likelihood of FIPV by creating high levels of stress (Heise, Ellsberg and Gottemoeller 1999:9; Jewkes 2002). Unemployment is endemic in South Africa and poverty remains widespread. In Cape Town, 38.9% of households were living below the poverty line in 2005 (City of Cape Town 2006). The Quarterly Labour Force Survey for the second quarter of 2010 found that the unemployment rate among economically active residents of the Western Cape was 73% for 15-19 year olds, 40% for 20-24 year olds, and 28% for 25-29 year olds, all lower than the national average, but still alarmingly high.[8] Further, unemployment rates tend to be even higher in the most impoverished and underserved areas of Cape Town (City of Cape Town 2008). South African studies have suggested that feelings of inadequacy and an inability to provide for oneself or one's family or partner due to lack of education, unemployment, or financial dependence on a partner, much of this rooted in structural issues related to the post-apartheid transition, may result in a "crisis of masculinity" for some men, leading them to commit violence against family members or partners (Campbell 1992; Dangor, Hoff and Scott 1998; Jewkes, Levin and Penn-Kekana 2002; Boonzaier and de la Rey 2004; Walker 2005; Strebel et al. 2006). This issue was also noted by one of our interviewees, who said violence in a relationship may erupt 'When a woman gives the man money and spoils her man and the man will get angry and she will get angry too' (V42, female, 36). Out of our sample, 39% of men reported growing up in a poor neighborhood, 25% were very poor in 2005, 17% were unemployed in 2006, and 24% lived in a food insecure household in 2009.

Hypothesis 5: *Men in disorganized social environments will be more likely to perpetrate FIPV.*

Peer groups, kin, and neighborhoods form the social environment of young men, shaping their norms and influencing their behavior. In interviews with IPV victims in Gauteng Province, Dissel and Ngubeni were told that 'the abuser was adversely influenced by his bad friends' (2003:6), though it is uncertain if this means the abuser was receiving peer support for his own behavior, or was

[8] My calculations, using a broad definition of unemployment that excludes those who were not economically active but stated that they did not want to work, such as young people still in school.

emulating the behavior of his peers. Within CAPS we can measure peer delinquency and its possible effect through responses in the third wave to a question asking whether respondents' had any friends who 'have been in trouble with the police because of their behaviour.' We can also examine the effects of having kin or knowing people in the neighborhood who use drugs, steal, or are otherwise engaged in criminal activity or have been incarcerated. These are measures of social disorganization at a family and community level, and can determine the role models available to young men. In the CAPS sample, 40% of men reported friends having been in trouble with the police, 31% have delinquent kin, and 62% live in 'bad,' socially disorganized neighborhoods.

Hypothesis 6: *Impulsive and short-tempered men will be more likely to commit FIPV.*

Some men may also be behaviorally predisposed to violence, acting impulsively and having short tempers, leading them to snap and lash out at those closest to them—family and partners. This explanation for FIPV has been frequently suggested by participants in qualitative studies in South Africa (e.g. Campbell 1992:624; Dissel and Ngubeni 2003). In our sample, 41% of men reported having either a short temper or impulsivity issues.

Hypothesis 7: *Men who report having had concurrent sexual partners will be more likely to perpetrate FIPV.*

One reason why tempers may flare within relationships is infidelity, suspected or real. Multiple concurrent sexual partnerships occur frequently in South Africa, with a review of the literature on sexual behavior of those aged 14-35 suggesting that 'between 10% and 30% of sexually active young people have more than one sexual partner at a given time, with more men than women engaging in concurrent multiple partnering' (Eaton, Flisher and Aarø 2003:151). Mah (2010:105), looking at only those CAPS respondents who in 2005 reported having had 'full penetrative sex,' found that 20.4 percent of young men reported concurrency. While suspected infidelity on the part of a woman may cause her husband or boyfriend to attack her, an unfaithful man may also beat his partner due to conflict about his own affairs[9] (Kim and Motsei 2002:1246; Abrahams et

[9] Conflict within families and relationships more generally is associated with family violence and IPV (e.g. Jewkes, Levin and Penn-Kekana 2002; Abrahams et al. 2006), but in CAPS, respondents were only asked about family conflict (if family members hit one another when angry) in the fifth wave, the same wave as the question about perpetration of family violence and IPV. Thus we would have a problem of endogeneity in analyzing the relationship between these variables. However, our interviewees did mention this issue, for instance saying, 'Most of the times for a man in order to be violent he is always provoked by a woman and abuse that woman' (V4, male, 30).

al. 2006). Among CAPS respondents, 41% reported having engaged in concurrent partnerships.

Hypothesis 8: *Men who normatively endorse violence against women will be more likely to perpetrate FIPV.*

Finally, one of the most immediate predictors of IPV perpetration may be adherence to norms endorsing the use of violence against partners or women in general. These norms supporting violent behavior may be shaped by one's background circumstances or experiences, but they can have a direct and immediate effect on perpetration of violence, a relationship found in South Africa (Jewkes, Levin and Penn-Kekana 2002; Kim and Motsei 2002; Strebel et al. 2006) and elsewhere (e.g. Heise et al. 1999; Andersson et al. 2007).[10] Of the group in our sample who were asked vignette questions about the acceptability of IPV (n=901), 17% said IPV was acceptable for a given reason.

Using the data from CAPS, we can next test these hypotheses by examining their bivariate and multivariate relationships with perpetration of FIPV using logistic regression analysis. This analysis will then be extended in an attempt to determine causal pathways from background and behavioral factors of respondents' to reporting FIPV perpetration in the fifth wave of CAPS.

Who commits FIPV?: Summary statistics and bivariate relationships[11]

In total, out of the 1,369 male respondents in wave 5 of CAPS, approximately one in eight reported having hit a partner or adult family member in the three years since they had last been interviewed. FIPV perpetration rates are slightly higher among younger respondents, with the highest reported rate among 20 year olds at about 17%, though age is not significant in bivariate regression (see Table 1). Among African male respondents, about 17% reported FIPV perpetration, compared to 10% of coloured and only 2% of white male respondents.[12] This pattern matches Reddy et al.'s (2003, 2010) findings that African male students were the most likely to report assaulting a girlfriend, followed by coloured and white students.

[10] We have data specifically on personal norms, though community norms are also likely to effect on perpetration of family violence and IPV (Koenig et al. 2006).

[11] See Table 1 for all bivariate regression results.

[12] It must be noted that the white sample is quite small (n=96) and should not be considered as representative.

Our finding that about 12% of respondents self-reported FIPV perpetration in the past three years is in line with previous research. Abrahams et al.'s (2006) study in Cape Town found 9% of men reporting having committed IPV in the past year and 42% in the past ten years, putting our numbers perhaps at the low end of the range, but well within the realm of statistical possibility, considering also their inclusion of older men. Gupta et al. (2008) found that 28% of men reported perpetrating IPV in their current or most recent marriage or cohabiting relationship, but this is in a nationally representative survey (not Cape Town-specific) and only among married or cohabiting men, of whom we have relatively few in CAPS, as well as using an indeterminate time frame.

Contrary to what the first hypothesis suggests, being beaten in childhood is *not* significantly associated with FIPV perpetration in a bivariate analysis (OR 1.02; p=0.958; 95%CI 0.57, 1.82). This contradicts Abrahams et al. (2006) and Gupta et al.'s (2008) findings in bivariate analysis that South African men who had suffered childhood abuse were about three times more likely to report perpetrating IPV.

Exposure to delinquent behavior among one's peers and in the surrounding environment was significant. Reporting most friends using drugs in 2005 and exposure to drugs in the neighborhood and among kin were all significant and positive, as were other measures of neighborhood crime and disorder and delinquent kin. Living in a neighborhood with drug use and/or criminal activity is one of the strongest predictors of FIPV perpetration (OR 3.07; p<0.01; 95%CI 2.04, 4.64).

The results for peer, kin, and neighborhood drug use suggest that drug use is significantly associated with FIPV perpetration. Both using drugs across multiple waves of the survey (OR 2.58; p<0.01; 95%CI 1.45, 4.58) and using drugs in 2006 (OR 1.71; p<0.05; 95%CI 1.01, 2.91) predict FIPV perpetration. The bivariate relationship of alcohol to FIPV perpetration is not as strong, but heavy drinkers who reported alcohol consumption across multiple waves (OR 1.45; p<0.05; 95%CI 1.04, 2.01) and those who reported binge drinking in 2009 (OR 1.83; p<0.01; 95%CI 1.31, 2.57) were more likely to report FIPV. These results support those of Abrahams et al. (2006), who found past and current drug and alcohol use significant in bivariate analysis.

Low socio-economic status does appear to be associated with FIPV perpetration, though this seems to apply only for real, lived poverty, rather than perceived poverty. Growing up in a poor household, being very poor in 2005, and being unemployed in 2006 all predict FIPV perpetration between 2006 and 2009. Household income per capita quintile in 2006 has a significant negative effect

on FIPV perpetration, meaning that the higher one's per capita household income, the less likely one was to report perpetration. Low educational attainment, operationalised as not having finished 'matric' year and graduating secondary school is weakly significant.[13] Gupta et al. (2008) likewise found that higher income significantly reduced the likelihood of IPV perpetration, but they found no effect for employment status. Feeling poor as a child and feeling in 2005 that one had few opportunities for the future were not significant. While the impact of poverty may lead to greater stress and low self-esteem and subsequently to violence, as predicted by general strain theory (see Agnew 1992; Agnew 2001), it may also be that poverty is associated with other mediating factors, such as neighborhood environment, an issue which will be explored further below. Despite general measures of poverty predicting FIPV perpetration, our measure of economic inequality within a relationship, reporting receiving material support from a partner in 2006[14] (which might trigger a crisis of masculinity) was not significant.

Unsurprisingly, those men who reported impulsive tendencies or having a short temper in wave 5 were also more likely to report having committed FIPV. Male sexual concurrency was also found to be significant, and is in fact the strongest predictor of FIPV perpetration. Men who reported having ever engaged in concurrent sexual relationships were almost three and a half times more likely to report FIPV perpetration (OR 3.43; $p<0.01$; 95%CI 2.42, 4.86).[15] This mirrors Abrahams et al.'s (2006) finding that men reporting concurrent partners were three times more likely to report IPV perpetration in the past ten years and more than twice as likely to report perpetration in the past year. Male partner concurrency may cause fights with a partner and lead to abuse, and may also be related to patriarchal attitudes that devalue women and hence endorse or tolerate violence against them.

Religion can play an important role in shaping one's attitudes, and it appears that in Cape Town it may play a beneficial one. Men who reported that religion did not play a role in their lives were significantly more likely to report FIPV perpetration (OR 1.96; $p<0.01$; 95%CI 1.38, 2.78). This supports Abrahams et al.'s (2006) finding that religious men in Cape Town were about 30% less likely to have committed IPV in the past year.

[13] In order to use this educational variable, it is necessary to control for age.

[14] While one might expect receiving support from a partner to be associated with unemployment, there is no significant relationship between unemployment in 2009 and support and a *negative* relationship between unemployment in 2006 and receiving support.

[15] A measure for ever having cheated in a relationship, including one night stands, is also significant (not shown in Table 1), but it is highly correlated with concurrency (0.68) and the odds ratio for concurrency predicting FIPV is higher.

Norms may shape violence by legitimating attacks against lower-status individuals (in the case of a patriarchal society, women) or by more generally legitimating the use of violence as a means of resolving conflict (see WHO 2009). Respondents were presented with different versions of a vignette involving IPV, four of which included a husband hitting his wife: 1) for suspected sexual infidelity; 2) for finding out she was cheating; 3) due to unhappiness with her cooking; 4) for her disobeying his will. Since different respondents received different versions, the number of respondents for each individual vignette was quite small; thus a variable was created measuring acceptance of IPV regardless of the scenario.[16] Accepting husband-to-wife violence when presented with a vignette in 2009 was also significantly associated with FIPV perpetration (OR 2.15; $p<0.01$; 95%CI 1.35, 3.41). This is a weaker effect than Abrahams et al. (2006) found using a very different index of attitudes concerning gender.[17]

Bivariate analysis of the CAPS data largely supports the hypotheses and the previous findings of Abrahams et al. (2006) and Gupta et al. (2008), with a few key differences. In contrast to those studies, bivariate analysis using CAPS data suggests that childhood abuse is not significant. It may be that what is actually more important is not the experience of violence, but rather exposure to violence as a witness, especially violence against one's mother. This is suggested in a number of studies (e.g. Campbell 1992; Boonzaier 2008; Gupta et al. 2008). CAPS, however, did not measure this specific form of exposure during childhood. Past and present economic hardship are associated with FIPV perpetration, including unemployment, in contrast to Gupta et al. (2008). One's surrounding environment emerges as important, with peer, kin, and neighborhood behavior and circumstances all influencing FIPV perpetration, but individual behavior and psychology also have significant effects. Finally, attitudes accepting violence against women were found to be significant. Some of the background factors predicting FIPV perpetration, though, may be driving others, such as poverty and unemployment or unemployment and neighborhood circumstances, so multivariate analysis is necessary to control for these relationships.

[16] Running bivariate regressions for each of the vignettes reveals that men who endorse IPV for suspected sexual infidelity (OR 2.88; 95%CI 1.36-6.11; $p<0.01$) or for disobedience (OR 2.51; 95%CI 0.90-6.99; $p<0.10$) are significantly more likely to perpetrate FIPV.

[17] The issue of differences in norms on FIPV will be explored further in future work.

Who commits FIPV? Multivariate analysis

Using variables that emerged as significant in bivariate analysis, we can create multivariate models to examine which factors remain significant predictors of FIPV perpetration. Categories of variables are progressively incorporated. Wherever possible, independent variables from wave 4 (2006) or earlier are included so as to be more certain of the direction of causality with respect to a dependent variable from wave 5 (2009). The results are shown in Table 2 with adjusted odds ratios reported and 95% confidence intervals in parentheses.

Model 2.1 shows the results of a model incorporating only socioeconomic variables: whether the respondent lived in a poor neighborhood in 2002, whether he was very poor in 2005 as determined by household per capita income, whether he was unemployed in 2006, and household food insecurity 2009 (measured by his reporting someone in his household going without food at least once during the previous month).[18] Unemployment and food insecurity are each significant when controlling for the other variables, but coming from a poor background is not significant. However, poor background is correlated at about 30% with both deep poverty in 2005 and food insecurity in 2009, suggesting that it has an indirect effect.

Incorporating variables on peer, kin, and neighborhood influences, Model 2.2 increases the predictive power, raising the r-squared from 4% to 8%. Peer drug use in 2005 and being from a bad neighborhood in 2009 are both significant, and unemployment and food insecurity remain significant. Having delinquent kin is not significant.

Model 2.3 adds variables on the lifestyle choices of the respondent. Reporting drinking across multiple waves of the survey, binge drinking in 2009 and having had concurrent sexual partners are significant, as are the unemployment, food insecurity, and bad neighborhood variables from the previous model. However, using drugs across multiple waves is not significant,[19] and peer drug use is no longer significant.

Next, Model 2.4 incorporates personality variables. Reporting having a short temper and/or being impulsive in 2009 is significantly associated with FIPV perpetration, but irreligiousness is not. Controlling for temper and impulsivity, significant variables from Model 2.3 remain significant, with the exception of

[18] These specific variables were used in this temporal order because not every variable was assessed in every wave of the survey.

[19] Replacing this variable in the model with a dummy for drug use in wave 4 only does not change the insignificance of the drug variables.

binge drinking. This full model explains about 14% of the variation in men's perpetration of FIPV.

Unemployment, food insecurity, drinking routinely, partner concurrency, living in a bad neighborhood, and temper/impulsivity are significant in Model 2.4. Model 2.5 contains only these significant variables and explains about 11% of the variation in FIPV perpetration among our sample. The r-squared for Model 2.5 is slightly lower than that for Model 2.4, but it has a larger sample size and greater specificity.

In Model 2.6, the variable for accepting IPV perpetration in vignette scenarios is added to Model 2.5.[20] Poor background and deep poverty become significant, while unemployment and food insecurity are no longer significant. Acceptance of IPV is not itself significant.

These analyses suggest that recent and immediate poverty, neighborhood disorder, consistent alcohol use, partner concurrency, and psychological volatility predict FIPV perpetration. Abrahams et al. (2006) similarly found in multivariate analysis that 'problematic' drinking and conflict about the man's sexual affairs were associated with FIPV perpetration over the past ten years, though they also found drug use and justification of hitting women significant. It may be that drug use is in fact a product of socioeconomic background circumstances for which Abrahams et al. (2006) did not control.

While dummy variables for race were significant in bivariate regressions, they are not significant when added to either Model 2.4 or Model 2.5 (results not shown), as also found in Gupta et al.'s (2008) multivariate analysis. While this might lead one to conclude that race is not a significant driver of FIPV perpetration in our sample, race is in fact a proxy for socioeconomic disadvantage. Including race variables in Model 2.1, coming from a poor background loses significance. Poverty's association with race reflects the disadvantage that has continued to afflict nonwhite populations since the end of apartheid, especially in Cape Town, with the African population also absorbing many economic migrants from the Eastern Cape who have found it difficult to prosper. Similarly, while variables from the earliest waves, such as coming from a poor neighborhood, may lose significance in multivariate models, it could be that their effects are being captured by associated variables from more recent waves. For instance, measures of poverty are highly correlated across the waves of CAPS, with poor background (2002), deep poverty (2005), and food insecurity (2009) all correlated at about 30%. Using an adapted path analysis[21]

[20] The IPV acceptance variable reduces the n by over one-third.
[21] See e.g. Alwin and Hauser 1975 on path analysis.

by constructing multiple regression models that control for relationships between independent variables in a sequential, temporal manner following Heimer (1997) and Seekings and Thaler (2010), I can capture both direct and indirect effects of background variables on FIPV perpetration, thus improving our predictive capacity.

Path analysis

Models are constructed to examine both relationships between background variables and FIPV perpetration and between the background variables themselves (see Table 3). Beginning with growing up in a poor neighborhood in Model 3.1, we test its bivariate relationship with FIPV perpetration, then test its relationship with recent deep poverty (Model 3.2), which is significant. This process is continued moving forward temporally from the Wave 1 variable of poor background from 2002 through to variables from Wave 5 in 2009 such as food insecurity. Model 3.3 shows that while poverty in 2005 directly predicts unemployment in 2006, coming from a poor background does not have a direct effect. However, a poor background has an indirect effect due to its significant relationship with poverty. Not passing matric, however, is directly and significantly related to both a poor background and recent deep poverty (Model 3.4). Coming from a poor background has a significant *negative* effect on drinking routinely (Models 3.6 and 3.7), an issue that will be discussed further below. Food insecurity in 2009 is predicted by prior low socioeconomic status, though drinking behavior is not significant (Model 3.9). Temper and impulsivity issues are negatively predicted by not matriculating (Model 3.11), while living in a bad neighborhood in 2009 is significantly predicted only by not passing matric (Model 3.10). Partner concurrency is significantly and positively predicted by coming from a poor background, unemployment, and not matriculating (Model 3.12).

In the final model (3.13), including all variables from the previous models, drinking routinely has a significant direct effect and predicts FIPV perpetration. Living in a bad neighborhood, food insecurity, temper/impulsivity, and partner concurrency are all significantly and directly associated with FIPV perpetration; however, since these variables are from Wave 5 of the CAPS study in 2009, it is not possible to infer causality, since respondents were asked about their FIPV perpetration between 2006 and 2009. However, it seems unlikely that FIPV perpetration would have been the cause of these other conditions.[22] Figure 1

[22] While acceptance of IPV was significantly predicted by unemployment, not matriculating, and drinking routinely, it was not significant when added to Model 4.12.

shows the interrelationships of variables and how a variable with no direct significant effect on FIPV perpetration may have indirect effects, mediated by intervening variables. For instance, coming from a poor background has indirect effects on FIPV perpetration through its significant prediction of all other variables (with the exception of bad neighborhood, though even here, it has an indirect effect through its relationship with unemployment).

The foregoing analysis has provided us with a sense of what variables are associated with FIPV perpetration in the full sample. While previous studies have controlled for race in their multivariate regressions (Abrahams et al. 2006; Gupta et al. 2008), and this is useful for knowing general risk factors for violence, it obscures important differences that may exist between racial groups, to the detriment of the practical application of the finding. South Africa remains socially and residentially segregated by race (see Seekings 2008:8-14), and as many FIPV prevention programs are community-based, it is important to know if different risk factors should be targeted in different racial contexts.

Among the African sample, multivariate analysis reveals that drinking routinely, partner concurrency, and temper/impulsivity are significantly associated with FIPV perpetration (see Table 4). As with the full sample, drinking behavior is the only variable from previous waves with a significant direct relationship to FIPV perpetration. In the path analysis (Table 5), coming from a poor background is not significantly associated with more recent poverty (Model 5.1). However, it is significantly and negatively associated with drinking routinely (Model 5.2). Routine drug use is not significantly associated with either a poor background or recent poverty (not shown). Temper/impulsivity is significantly associated with a poor background and drug use (Model 5.6), while partner concurrency had no significant associations with variables from previous waves (Model 5.7).[23] In the final model (5.8), drinking routinely, temper/impulsivity, and partner concurrency had significant direct relationships with FIPV perpetration. As Figure 2 shows, there are fewer indirect effects and fewer predictive factors of FIPV perpetration among the African sample as compared to the sample as a whole, though the r-squared value of the final model is only 1% lower than that of the final model for the full sample (11% vs. 12%).

In the coloured sample, measures of the two lowest income quintiles in 2005 were both significantly associated with FIPV perpetration in bivariate analysis (see Table 1), so a composite 'poor or very poor' dummy variable was created, including those in either category. Coming from a poor background was not significant in bivariate analysis, so it was not included in the initial multivariate

[23] Neither unemployment nor not matriculating was significant if added to the models for either temper/impulsivity or partner concurrency.

models (see Table 6). In Model 6.4, including all variables significant in bivariate analysis, delinquent or criminal kin, binge drinking, and partner concurrency were significant, with an r-squared of 16%. A model including only these three significant variables (Model 6.5) had an r-squared of 11%, but a higher n than the previous model. Norms accepting IPV against women were left out of earlier models due to the smaller subsample of people who responded to the vignette questions use to construct this variable. Adding acceptance of IPV to Model 6.4 (creating Model 6.6), being poor or very poor becomes significant, delinquent kin and partner concurrency remain significant, binge drinking is no longer significant, and acceptance of IPV itself is significantly related to FIPV perpetration. The sample size in Model 6.6 is over 30% smaller than that in Model 6.4, but the r-squared is the same, 16%.

In the path analysis for the coloured sample (see Table 7), only variables from Wave 5—delinquent kin, binge drinking, partner concurrency, and acceptance of IPV—were directly significantly associated with FIPV perpetration in the full model (7.10). Adding in acceptance of IPV, this new variable was significant and binge drinking was no longer significant (Model 7.12) However, other than unemployment, the background variables from earlier waves all had some indirect effects (see Figure 3); for instance being poor or very poor in 2005 significantly predicted partner concurrency.

While there are some common risk factors that cut across racial lines (heavy drinking and partner concurrency), socioeconomic factors, components of the social environment, psychological volatility, norms, and drug use are of varying significance in Cape Town depending on one's racial community.

Discussion

Capetonians tend to believe that poverty and unemployment are causes of violent crime. Our interviewees suggest that living in poverty and lacking employment strains households and a man's inability to provide for his partner or family can cause him to feel his masculinity is in doubt. 'Most of times people say that, no one is working in the house. When a woman needs help from a man, a man becomes angry' (V23, female, age unreported). Unemployment is noted as a particular issue. 'Mostly the reason for violence between a man and woman is caused by frustration. When men are jobless they are usually angry and take it out on women' (V32, female, 34). This is an especially great problem in households where the woman is employed and the man is not. 'Other cases include when a wife is employed and the husband is not – the husband usually gets the feeling that he is being undermined as the man-figure of the family and

he feels unvalued and disrespected. So he'll resort to violence to show his authority and manhood in the household' (V38, male, 41). In path analysis, though, poverty and unemployment tended to have only indirect effects on FIPV perpetration through their prediction of other factors, such as alcohol abuse and delinquent family and neighborhood environments. This is similar to the finding of Seekings and Thaler (2010) for violence against strangers that while interviewees give poverty and unemployment primacy in their accounting of the causes of violence, low socioeconomic status has only indirect effects on violence perpetration.

Unemployment does have a weak but significant effect on the quality of one's neighborhood in the full sample. Living in a neighborhood characterized by substance abuse and criminality has a direct and significant influence on FIPV perpetration. While this relationship has not been widely explored in South Africa, social disorganization at the neighborhood level has been found to predict IPV perpetration in the United States (Benson et al. 2003).

Interviewees believe that financial strain may be exacerbated by alcohol abuse as numerous respondents suggested that conflict and violence occur 'when the man wants beer or alcohol and he takes the family's money to buy that liquor. And if you stop him from taking the food money he will beat you up' (V41, female, 37). Yet in our statistical analysis, poverty is strongly and *negatively* associated with drinking routinely for the full and African samples, and only weakly positively associated for the coloured sample. As discussed in Seekings and Thaler (2010), there is a dichotomous distribution of alcohol consumption within the CAPS panel, with 37% respondents in 2009 reporting never consuming alcohol or not having drunk in the past year, but 57% of young men reporting consuming alcohol in the past month. Over one-third of males reported drinking across multiple waves of the survey from 2002 to 2006 and over one-quarter reported binge drinking in 2009. Drinking across multiple waves of the study significantly predicted FIPV perpetration in all analyses, though for the coloured sample its effect is mediated by current binge drinking behavior.

While we do not have measures for the circumstances under which FIPV was perpetrated, alcohol consumption's effects may be more situational. Asked why violence occurs in relationships, one interviewee said, 'Let's say I drink a lot of alcohol and keep on coming home drunk and angering my woman. We end up fighting about my drunkness' (V20, male, 42). In one case of extreme violence, alcohol was blamed for causing, or at least contributing to the FIPV perpetration. 'I don't know what was wrong, they were fighting and so the husband stabbed his wife. And we were all shocked at night and we could hear

the fighting. But you see the husband was also a bit drunk – so I think alcohol also played a role' (V26, male, age unreported).

Drinking across multiple waves of CAPS is not significantly associated with reported temper or impulsivity issues in any sample. Temper and impulsivity were significantly associated with FIPV perpetration in the African sample and were predicted by routine drug use. Temper and impulsivity were not widely mentioned by interviewees, but one interviewee suggested that it may be mediated by alcohol (rather than drug) abuse. 'My baby's father was quite violent – he had a temper and he wasn't a drinker. So every time he drank liquor he would become very violent and even be jealous of our neighbours – so he would abuse me by beating me up' (V43, female, 34).

Sexual partner concurrency emerged as one of the variables most strongly associated with FIPV perpetration in all analyses. It was raised as an issue by one interviewee in particular, who said 'Nowadays – when fathers have affairs, they brag to their wives and tell them that they are getting better sex outside and then that continues and flares up domestic violence. And some women will not tolerate that and there can be violence and the torture from the father can become physical. Let's say the wife asks or interrogates the husband and the husband gets irritated and ends up beating her up' (V14, female, age unreported). One woman spoke from her own experience about this problem.

> 'You see the reason my husband beats me up is because he is having an affair and I am jealous and continuously complaining about it. The worst thing is that his girlfriends call him here at home and he can't even answer his phone at home. And he is also careless of his belongings – for instance I usually come across pieces of paper with phone numbers from girls. So I end up being the bad person when I ask about these phone numbers and calls from women. Which is when I get slapped – for asking' (V19, female, 32).

Partner concurrency had the strongest effect in the African sample, and appears to be more prevalent in the African community, with over half of African male respondents report having had concurrent partners compared to about 30% of coloured respondents and 8% of whites.

Attitudes accepting IPV appear to have a significant effect on FIPV perpetration only in the coloured sample. However, it may be that norms of acceptance of IPV against women are simply more widespread among African respondents,

held by both those who do and do not perpetrate FIPV.[24] Our survey vignettes asked about the acceptability of a man hitting a woman for suspected sexual infidelity, discovered sexual infidelity, the man's displeasure with her cooking, and her disobedience of the man; all of these themes were mentioned by interviewees. A man is likely to become violent when he is 'thinking that she is cheating or that he is being made a fool' (V13, female, 26). Male sexual jealousy and suspicion can lead women to be beaten 'even for visiting friends,' for as one women reported, her abusive boyfriend became 'possessive and jealous especially when I was with friends' (V37, female, 35). Men also feel they have a right to hit a woman for cheating, one reinforced, 'Because he knows that she is not gonna hit him back' (V45, female, 38).

Beatings over food preparation are also apparently common. 'When a women maybe has cooked but not what the man wants to eat he will beat her up' (V8, female, 36). 'Another example is when your husband wants food forcefully and you are too tired to cook. He will beat you up – because he doesn't want cook. He wants you to cook' (V41, female, 37).

While IPV was generally considered unjustified by interviewees, female disobedience of men was seen as problematic and a reason for conflict and violence. 'A man must not beat a woman. But there are certain things and circumstance where a man can maybe slap her once – just to shock her and put her in line. Because some women abuse men and swear at men – so a man can maybe put her in her place once in a while' (V6, female, 43). As women have gained more equality in many aspects of South African society, many have also become more assertive in the home, challenging their husbands' wills. Confronting the patriarchal order, though, can come at a price, as 'now it's easier for men to beat their wives because they exchange words equally so men turn not to tolerate that; they choose to beat them' (V5, female, 33).

Conclusion

South Africa's great structural inequalities remain racially tainted by the legacy of apartheid and these combine with high rates of substance abuse and partner concurrency to play a significant role in driving FIPV perpetration in Cape Town. Interviewees suggest that, at least in the African community, socioeconomic conditions have led men to feel that their masculinity is in doubt. Men may seek to bolster their masculinity by cultivating concurrent sexual

[24] As discussed by Dibble and Straus (1980), norms of acceptance of FIPV perpetration do not necessarily translate into perpetration.

partnerships and also by violently imposing their will domestically.[25] While empowering women may help reduce FIPV perpetration (see Kim et al. 2007), it may also exacerbate existing gender-based tensions. At the same time, measures that promote job creation and economic growth targeted toward the most impoverished sector of the population may help reduce the strain on men and thus to prevent FIPV, but additional income could also be spent by men on alcohol and supporting concurrent sexual relationships.

As years of empty rhetoric and ineffective programs aimed at uplifting the impoverished masses have shown little in the way of results, it may be more productive to attack the behavioral and normative roots of FIPV perpetration. South Africa, and the Western Cape in particular, have extremely high rates of alcohol consumption and 'hazardous drinking' (see see Parry and Dewing 2006; Peltzer and Ramlagan 2009); reducing these would have a direct public health benefit, and should help prevent FIPV.

Norms about sexual behavior are of great concern, as partner concurrency has the strongest direct effect on FIPV perpetration in our analysis in both the African and coloured samples. Shifting norms about the acceptability of partner concurrency has been a component of HIV/AIDS education programs; these efforts should be redoubled due to their potential to reduce FIPV perpetration as well. Reduction of physical FIPV perpetration may also help in combating the high rates of rape in South Africa, as IPV perpetrators are significantly more likely to commit both intimate partner and stranger rape (Jewkes et al. 2006).

Changing cultural norms specifically about violence is also imperative. Despite Fox et al.'s (2007:586) objections to the 'pathologizing' and 'reifying' effects of 'cultural' explanations for violence, our quantitative and qualitative results concur with those of others (Jewkes and Abrahams 2002; Jewkes, Levin and Penn-Kekana 2002:1605) in finding that a patriarchal "culture of violence" is a likely driver of FIPV perpetration. Male violence in general must cease to be seen as an acceptable or ordinary means of managing family and intimate relationships. The tide may be beginning to turn, though, as this violence is now seen by some as old fashioned. 'Because let me say this comes from olden days, where a woman was told to respect a man no matter what the man is doing, no matter the man is beating you. So our parents were telling us to respect a man, but that time has elapsed, but there are still people who do not know that time has passed' (V23, female, age unreported).

[25] It is unclear, though, if a man striking a woman is doing so from a position of strength and power as a member of the patriarchy or instead from a position of weakness and desperation as he feels his masculinity is under siege. This question and the broader issue of a crisis of masculinity warrant further investigation.

Educational programs about FIPV and counseling of male offenders can help keep men from becoming or persisting as FIPV perpetrators. Workshops with community organizations and non-state law enforcement groups such as community policing forums and neighborhood watches can reinforce the seriousness of FIPV and the need for its punishment, helping overcome the influence of neighborhood social disorganization on FIPV perpetration (see Benson et al. 2005), which was found to be significant in the full sample. An attitudinal shift is also necessary within the South African Police Service, whose officers spend much of their time policing FIPV, but are often unsympathetic or unhelpful to victims (see e.g. Artz 2001; Steinberg 2008:136-55).

In South Africa's extremely security conscious society, vast sums of money are spent on securing and policing public spaces and installing gates, alarms, and other measures to keep criminals out of homes. Yet it is in private, within the confines of homes, where much of the country's violence occurs. Given that being either a victim or perpetrator of FIPV may increase the likelihood of perpetrating violence outside the home (Hotaling, Straus and Lincoln 1989), crime prevention in South Africa might be well served by spending less time worrying about electric fences and security cameras and more time concentrating on social relationships and norms.

Table 1: Bivariate logistic regressions of possible drivers of FIPV perpetration

	Full Sample		*African Sample*		*Coloured Sample*	
Independent Variable	*Odds Ratio*	*95% CI*	*Odds Ratio*	*95% CI*	*Odds Ratio*	*95% CI*
Age (2006)	0.95	0.89, 1.01	0.94	0.86, 1.02	0.92	0.83, 1.03
Hit as child (2002)	1.02	0.57, 1.82	0.91	0.34, 2.43	1.25	0.59, 2.63
Felt poor as child (2006)	1.26	0.89, 1.79	0.68	0.41, 1.16	1.18	0.69, 2.01
Grew up in poor neighborhood (2002)	1.74***	1.26, 2.41	0.82	0.49, 1.37	1.64	0.86, 3.15
Poor (2005)	1.31	0.92, 1.87	0.78	0.47, 1.28	1.86**	1.10, 3.16
Very poor (2005)	2.02***	1.42, 2.87	1.49*	0.94, 2.36	1.72*	0.91, 3.26
Poor or very poor (2005)					2.55***	1.51, 4.31
Perceived low opportunities (2005)	1.01	0.66, 1.52	0.88	0.48, 1.62	1.24	0.69, 2.23
Household per capita income quintile (2005)	0.73***	0.64, 0.83	0.94	0.77, 1.14	0.69***	0.56, 0.85
Had not finished matric (2006)†	1.42*	0.97, 2.07	0.93	0.56, 1.55	1.92**	1.02, 3.62
Received financial support from partner (2006)	1.04	0.55, 1.96	1.19	0.46, 2.52	0.67	0.19, 2.35
Unemployed (2006)	1.79***	1.22, 2.64	1.34	0.79, 2.28	2.22***	1.25, 3.95
Household food insecurity (2009)	2.62***	1.87, 3.67	1.75**	1.12, 2.73	2.62***	1.87, 3.67
Drank in 1 wave (2002, 2005, 2006)	1.24	0.87, 1.77	1.41	0.88, 2.26	1.11	0.62, 1.96
Drank in multiple waves (2002, 2005, 2006)	1.45**	1.04, 2.01	1.97***	1.26, 3.09	1.22	0.73, 2.04
Most friends drink (2005)	1.15	0.81, 1.65	1.31	0.81, 2.11	1.29	0.72, 2.30
Binge drink (2009)	1.83***	1.31, 2.57	1.95***	1.22, 3.12	1.90**	1.14, 3.19
Used drugs in 1 wave (2002, 2005, 2006)	1.28	0.81, 2.03	1.20	0.58, 2.48	1.45	0.77, 2.71
Used drugs in multiple waves (2002, 2005, 2006)	2.58***	1.45, 4.58	4.09**	1.08,15.50	3.40***	1.72, 6.73
Most friends use drugs (2005)	1.47*	0.99, 2.16	1.09	0.53, 2.25	2.24***	1.32, 3.83
Had concurrent partners (2009)	3.43***	2.42, 4.86	2.83***	1.70, 4.71	3.14***	1.85, 5.33
Kin in jail (2009)	1.79***	1.26, 2.55	1.14	0.70, 1.87	2.53***	1.50, 4.29
Kin use drugs (2009)	1.44**	1.02, 2.05	0.68	0.39, 1.17	2.92***	1.75, 4.88
Kin steal (2009)	1.68***	1.18, 2.39	0.93	0.56, 1.55	2.76***	1.64, 4.65
Composite bad kin measure (2009)	1.84***	1.32, 2.56	0.98	0.61, 1.56	3.46***	2.05, 5.84
People in neighborhood use drugs (2009)	2.57***	1.82, 3.63	2.77***	1.78, 4.33	3.62***	1.76, 7.45
People in neighborhood steal (2009)	2.65***	1.84, 3.82	1.95***	1.23, 3.08	3.69***	1.85, 7.38
Criminals in neighborhood (2009)	2.61***	1.79, 3.80	1.90***	1.19, 3.05	3.67***	1.78, 7.56
Composite bad neighborhood measure (2009)	3.07***	2.04, 4.64	2.31***	1.39, 3.85	4.06***	1.82, 9.06
Friends have been in trouble with police (2005)	1.33	0.93, 1.89	1.43	0.87, 2.36	1.70*	0.98, 2.97
Temper or impulsive (2009)	1.98***	1.43, 2.75	2.43***	1.56, 3.79	2.14***	1.26, 3.61
Irreligious (2009)	1.96***	1.38, 2.78	1.18	0.76, 1.82	3.58***	1.45, 8.82
Generally mistrustful of people (2009)	0.83	0.60, 1.14	0.83	0.50, 1.21	1.02	0.61, 1.69
African	2.12***	1.52, 2.94				
Coloured	0.61***	0.44, 0.85				
White	0.14***	0.03, 0.59				
Accept IPV against women (2009)	2.15***	1.35, 3.41	1.69	0.89, 3.20	2.64***	1.33, 5.25

Significance: * p<10%; ** p<5%; *** p<1%. †Adjusted for age. All variables are dummy variables except for age and household per capita income by quintile. Year of data collection in parentheses.

Table 2: Multivariate Regression Models Predicting Reported FIPV Perpetration Between 2006 and 2009, Adjusted for Age

	Model 2.1	*Model 2.2*	*Model 2.3*	*Model 2.4*	*Model 2.5*	*Model 2.6*
Poor background (2002)	1.31 (0.89, 1.92)	1.31 (0.88, 1.97)	1.38 (0.89, 2.13)	1.39 (0.90, 2.17)		1.81 (1.04, 3.17) **
Deep poverty (2005)	1.29 (0.86, 1.94)	1.39 (0.91, 2.11)	1.37 (0.88, 2.13)	1.36 (0.87, 2.13)		1.71 (0.99, 2.97) *
Unemployed (2006)	1.65 (1.08, 2.51) **	1.60 (1.03, 2.48) **	1.52 (0.96, 2.42) *	1.52 (0.96, 2.42) *	1.49 (0.97, 2.27) *	1.44 (0.80, 2.59)
No matric (2006)	1.26 (0.83, 1.90)	1.02 (0.66, 1.57)	0.87 (0.55, 1.38)	0.80 (0.50, 1.28)		0.86 (0.49, 1.51)
No food (2009)	1.86 (1.23, 2.82) ***	2.04 (1.33, 3.15) ***	1.71 (1.08, 2.70) **	1.68 (1.05, 2.67) **	1.81 (1.22, 2.67) ***	1.08 (0.59, 1.98)
Most friends use drugs (2005)		1.52 (0.98, 2.36) *	1.25 (0.77, 2.03)	1.21 (0.73, 1.98)		1.27 (0.69, 2.34)
Bad kin (2009)		1.10 (0.73, 1.66)	0.97 (0.63, 1.50)	1.06 (0.67, 1.65)		0.82 (0.46, 1.45)
Bad neighborhood (2009)		3.01 (1.77, 5.13) ***	2.61 (1.49, 4.55) ***	2.45 (1.40, 4.31) ***	1.91 (1.22, 2.99) ***	1.93 (1.03, 3.63) **
Drink routinely (2002, 2005, 2006)			1.85 (1.20, 2.84) ***	1.90 (1.23, 2.92) ***	1.76 (1.20, 2.58) ***	2.46 (1.43, 4.22) ***
Binge drink (2009)			1.52 (1.00, 2.31) *	1.42 (0.93, 2.17)		1.37 (0.80, 2.34)
Use drugs routinely (2002, 2005, 2006)			1.87 (0.84, 4.15)	1.68 (0.75, 3.76)		2.04 (0.77, 5.41)
Had concurrent partners (2009)			2.57 (1.67, 3.96) ***	2.58 (1.68, 3.98) ***	2.92 (1.99, 4.30) ***	2.06 (1.22, 3.48) ***
Short temper and/or impulsive (2009)				1.85 (1.22, 2.81) ***	1.98 (1.37, 2.86) ***	1.68 (1.00, 2.82) *
Irreligious (2009)				1.24 (0.77, 2.00)		1.17 (0.64, 2.14)
Accept IPV (2009)						1.44 (0.79, 2.62)
R-squared	0.04	0.08	0.13	0.14	0.11	0.13
N	1106	1023	952	952	1132	626

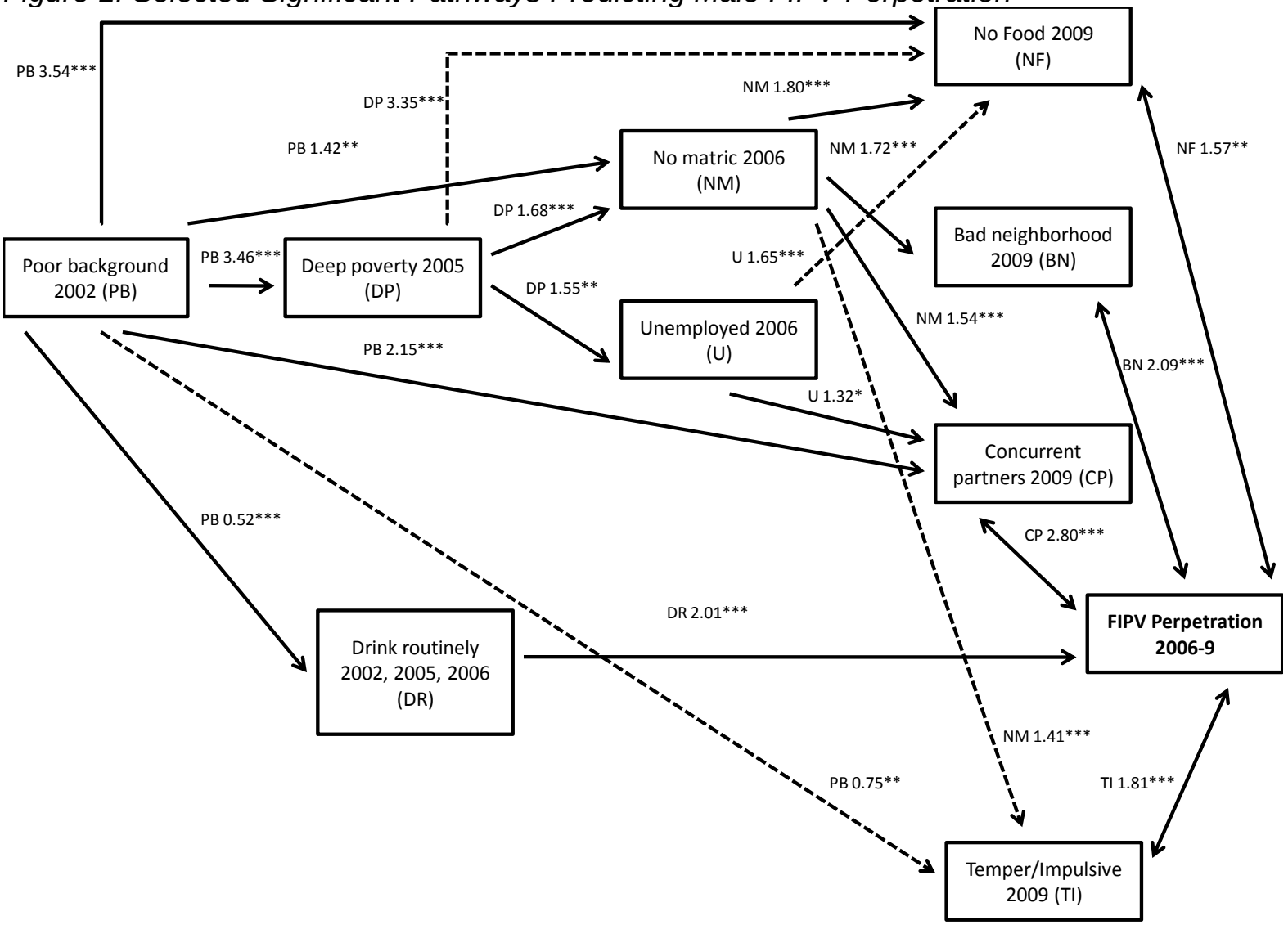
All variables are dummy variables. Significance: * p<10%; ** p<5%; *** p<1%.

Table 3: Path Analysis of Variables Associated with Men's FIPV Perpetration, Adjusted for Age

Model →	*3.1*	*3.2*	*3.3*	*3.4*	*3.5*	*3.6*	*3.7*	*3.8*	*3.9*	*3.10*	*3.11*	*3.12*	*3.13*
Dependent Variable →	FIPV	DP	U	NM	FIPV	DR	DR	FIPV	NF	BN	TI	CP	FIPV
Poor background 2002 (PB)	1.72 (1.22, 2.42) ***	3.46 (2.62, 4.58) ***	0.99 (0.71, 1.37)	1.42 (1.08, 1.86) **	1.49 (1.02, 2.16) **	0.50 (0.39, 0.65) ***	0.52 (0.40, 0.69) ***	1.67 (1.14, 2.45) ***	3.54 (2.57, 4.87) ***	0.98 (0.75, 1.28)	0.75 (0.58, 0.98) **	2.15 (1.64, 2.81) ***	1.37 (0.91, 2.08)
Deep poverty 2005 (DP)			1.55 (1.10, 2.19) **	1.68 (1.23, 2.29) ***	1.49 (1.01, 2.21) **		0.86 (0.64, 1.17)	1.55 (1.05, 2.31) **	3.35 (2.43, 4.61) ***	1.04 (0.78, 1.41)	0.98 (0.74, 1.31)	1.19 (0.89, 1.61)	1.34 (0.88, 2.06)
Unemployment 2006 (U)					1.71 (1.12, 2.60) **			1.74 (1.14, 2.65) **	1.65 (1.14, 2.41) ***	1.29 (0.92, 1.80)	1.14 (0.83, 1.56)	1.32 (0.96, 1.83) *	1.49 (0.95, 2.33)
No matric 2006 (NM)					1.33 (0.89, 2.00)			1.32 (0.87, 1.98)	1.80 (1.27, 2.54) ***	1.72 (1.32, 2.24) ***	1.41 (1.09, 1.83) ***	1.54 (1.17, 2.03) ***	0.98 (0.64, 1.52)
Drink routinely 2002, 2005, 2006 (DR)								2.08, (1.41, 3.07) ***	1.05 (0.75, 1.48)	1.08 (0.83, 1.41)	1.04 (0.81, 1.35)	1.16 (0.88, 1.53)	2.01 (1.34, 3.03) ***
No food 2009 (NF)													1.57 (1.01, 2.44) **
Bad neighborhood 2009 (BN)													2.09 (1.29, 3.39) ***
Temper/impulsive 2009 (TI)													1.81 (1.22, 2.67) ***
Concurrent partners (CP)													2.80 (1.86, 4.22) ***
McFadden's pseudo r-squared	0.01	0.07	<0.01	0.05	0.03	0.06	0.06	0.05	0.16	0.02	<0.01	0.04	0.12
N	1217	1106	1106	1106	1106	1217	1106	1106	1106	1106	1106	1028	1028

Significance: * p<10%; ** p<5%; *** p<1%.

Figure 1: Selected Significant Pathways Predicting Male FIPV Perpetration



Independent variable and adjusted odds ratios reported above lines. Significance: * p<0.10; ** p<5%; *** p<1%.

Table 4: Multivariate Regression Models Predicting African Men's Reported FIPV Perpetration Between 2006 and 2009, Adjusted for Age

	Model 4.1	*Model 4.2*	*Model 4.3*	*Model 4.4*	*Model 4.5*
Deep poverty (2005)	1.27 (0.78, 2.09)	1.34 (0.89, 2.28)	1.48 (0.88, 2.51)	1.45 (0.85, 2.47)	
No food (2009)	1.47 (0.90, 2.42)	1.46 (0.89, 2.39)	1.29 (0.77, 2.17)	1.33 (0.78, 2.25)	
Bad neighborhood (2009)		2.13 (1.21, 3.77) ***	1.67 (0.92, 3.01) *	1.60 (0.88, 2.92)	
Drink routinely (2002, 2005, 2006)			2.51 (1.44, 4.39) ***	2.59 (1.47, 4.56) ***	2.35 (1.38, 3.97) ***
Use drugs routinely (2002, 2005, 2006)			3.32 (0.63, 17.60)	2.19 (0.40, 11.83)	
Had concurrent partners (2009)			2.66 (1.47, 4.81) ***	2.97 (1.62, 5.45) ***	3.13 (1.79, 5.46) ***
Short temper and/or impulsive (2009)				2.38 (1.40, 4.05) ***	3.09 (1.89, 5.06) ***
R-squared	0.02	0.03	0.09	0.12	0.10
N	467	467	450	450	505

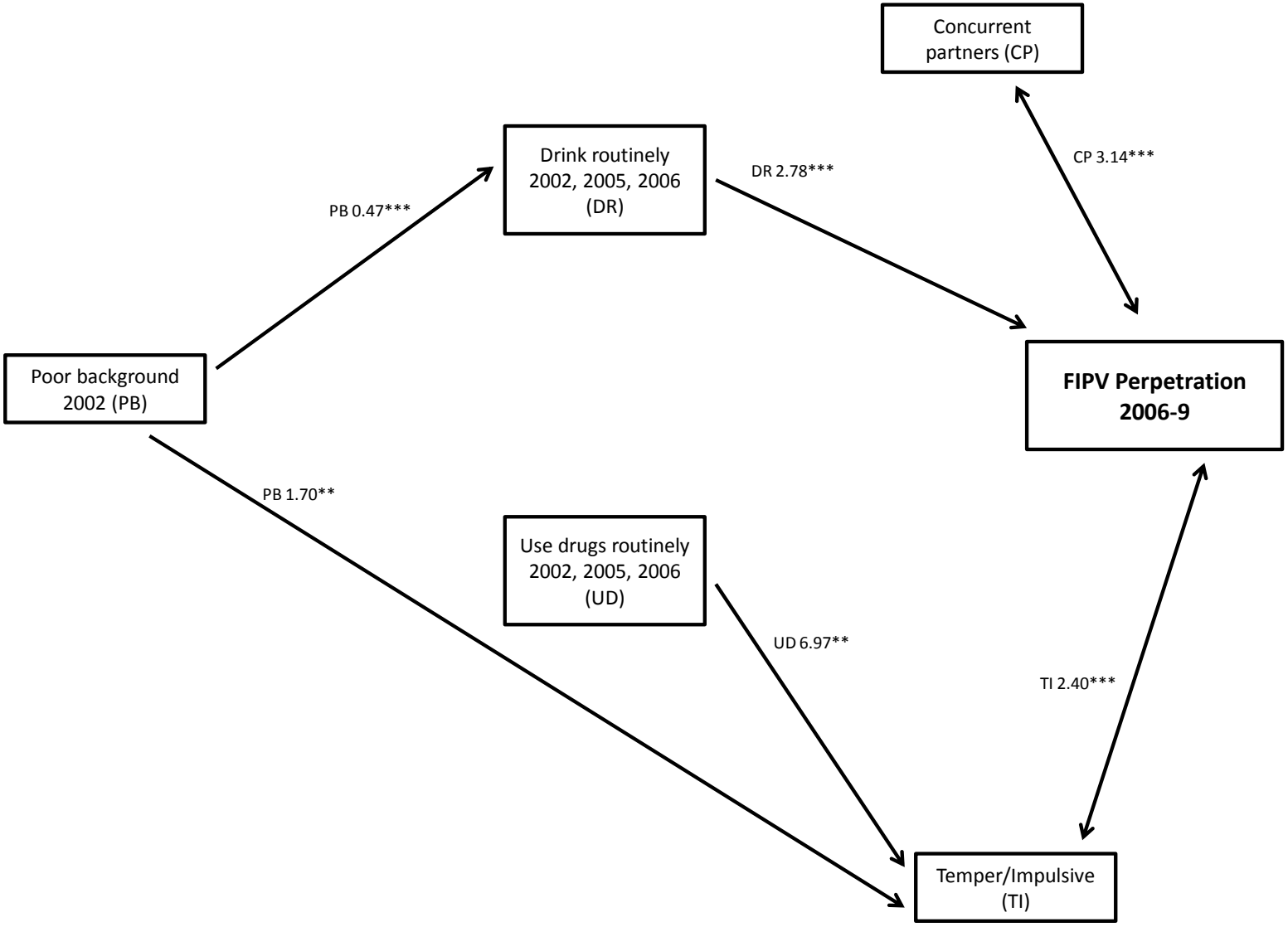
All variables are dummy variables. Significance: * p<10%; ** p<5%; *** p<1%.

Table 5: Path Analysis of Variables Associated with African Men's FIPV Perpetration, Adjusted for Age

Model →	*5.1*	*5.2*	*5.3*	*5.4*	*5.5*	*5.6*	*5.7*	*5.8*
Dependent Variable →	DP	FIPV	DR	DR	FIPV	TI	CP	FIPV
Poor background 2002 (PB)	1.08 (0.69, 1.69)	0.85 (0.48, 1.51)	0.47 (0.30, 0.73) ***	0.45 (0.28, 0.73) ***	0.91 (0.52, 1.57)	1.70 (1.03, 2.80) **	0.86 (0.54, 1.38)	1.02 (0.55, 1.91)
Deep poverty 2005 (DP)		1.36 (0.84, 2.22)		0.79 (0.52, 1.21)	1.56 (0.98, 2.49) *	1.12 (0.76, 1.65)	0.76 (0.52, 1.12)	1.50 (0.89, 2.54)
Drink routinely 2002, 2005, 2006 (DR)					2.09 (1.30, 3.38) ***	0.96 (0.62, 1.50)	1.27 (0.82, 1.96)	2.78 (1.58, 4.90) ***
Use drugs routinely 2002, 2005, 2006 (UD)						6.97 (1.35, 35.91) **	1.67 (0.32, 8.89)	2.37 (0.45, 12.57)
Temper/impulsive 2009 (TI)								2.40 (1.41, 4.07) ***
Concurrent partners 2009 (CP)								3.14 (1.72, 5.74) ***
McFadden's pseudo r-squared	0.01	0.01	0.09	0.10	0.02	0.02	<0.01	0.11
N	467	467	524	467	508	467	450	450

Significance: * p<10%; ** p<5%; *** p<1%.

Figure 2: Selected Significant Pathways Predicting FIPV Perpetration for African Men



Independent variable and adjusted odds ratios reported above lines. Significance: * p<0.10; ** p<5%; *** p<1%.

Table 6: Multivariate Regression Models Predicting Coloured Men's Reported FIPV Perpetration, Adjusted for Age

	Model 6.1	*Model 6.2*	*Model 6.3*	*Model 6.4*	*Model 6.5*	*Model 6.6*	*Model 6.7*
Poverty (2005)	1.74 (0.98, 3.06) *	1.52 (0.81, 2.85)	1.62 (0.84, 3.14)	1.67 (0.86, 3.26)		2.15 (0.92, 5.03) *	1.94 (0.96, 3.90) *
Unemployed (2006)	1.86 (1.00, 3.43) **	1.71 (0.87, 3.36)	1.59 (0.77, 3.24)	1.66 (0.80, 3.42)		1.03 (0.39, 2.76)	
No matric (2006)	1.56 (0.81, 3.00)	1.63 (0.78, 3.42)	1.35 (0.61, 3.00)	1.27 (0.56, 2.85)		1.06 (0.41, 2.77)	
No food (2009)	2.05 (0.85, 1.07)	1.74 (0.64, 4.71)	1.42 (0.51, 4.01)	1.33 (0.47, 3.76)		0.71 (0.14, 3.75)	
Most friends use drugs (2005)		1.74 (0.87, 3.48)	1.45 (0.69, 3.06)	1.41 (0.66, 2.98)		1.33 (0.53, 3.29)	
Criminal friends (2005)		0.89 (0.44, 1.78)	0.81 (0.39, 1.67)	0.80 (0.38, 1.66)		0.89 (0.37, 2.12)	
Bad kin (2009)		2.43 (1.26, 4.68) ***	2.17 (1.09, 4.32) **	2.24 (1.11, 4.51) **	2.93 (1.63, 5.24) ***	2.31 (0.96, 5.53) *	2.33 (1.17, 4.65) **
Bad neighborhood (2009)		2.34 (0.85, 6.45)	2.13 (0.70, 6.15)	2.06 (0.67, 6.35)		1.85 (0.52, 6.58)	
Use drugs routinely (2002, 2005, 2006)			1.82 (0.71, 4.64)	1.73 (0.67, 4.50)		1.34 (0.38, 4.70)	
Binge drink (2009)			1.90 (1.00, 3.62) *	1.74 (0.90, 3.38) *	2.00 (1.12, 3.57) **	1.27 (0.55, 2.92)	
Had concurrent partners (2009)			2.17 (1.12, 4.21) **	2.07 (1.05, 4.06) **	2.80 (1.57, 5.00) ***	2.09 (0.93, 4.71) *	2.53 (1.26, 5.05) ***
Felt worthless (2006)				1.04 (0.69, 1.56)		1.10 (0.64, 1.88)	
Short temper and/or impulsive (2009)				1.64 (0.82, 3.29)		1.93 (0.83, 4.48)	
Irreligious (2009)				0.98 (0.24, 3.96)		0.96 (0.12, 7.78)	
Accept IPV (2009)						3.47 (1.30, 9.27) **	2.59 (1.15, 5.83) **
R-squared	0.05	0.12	0.15	0.16	0.11	0.16	0.11
N	622	525	476	476	561	307	365

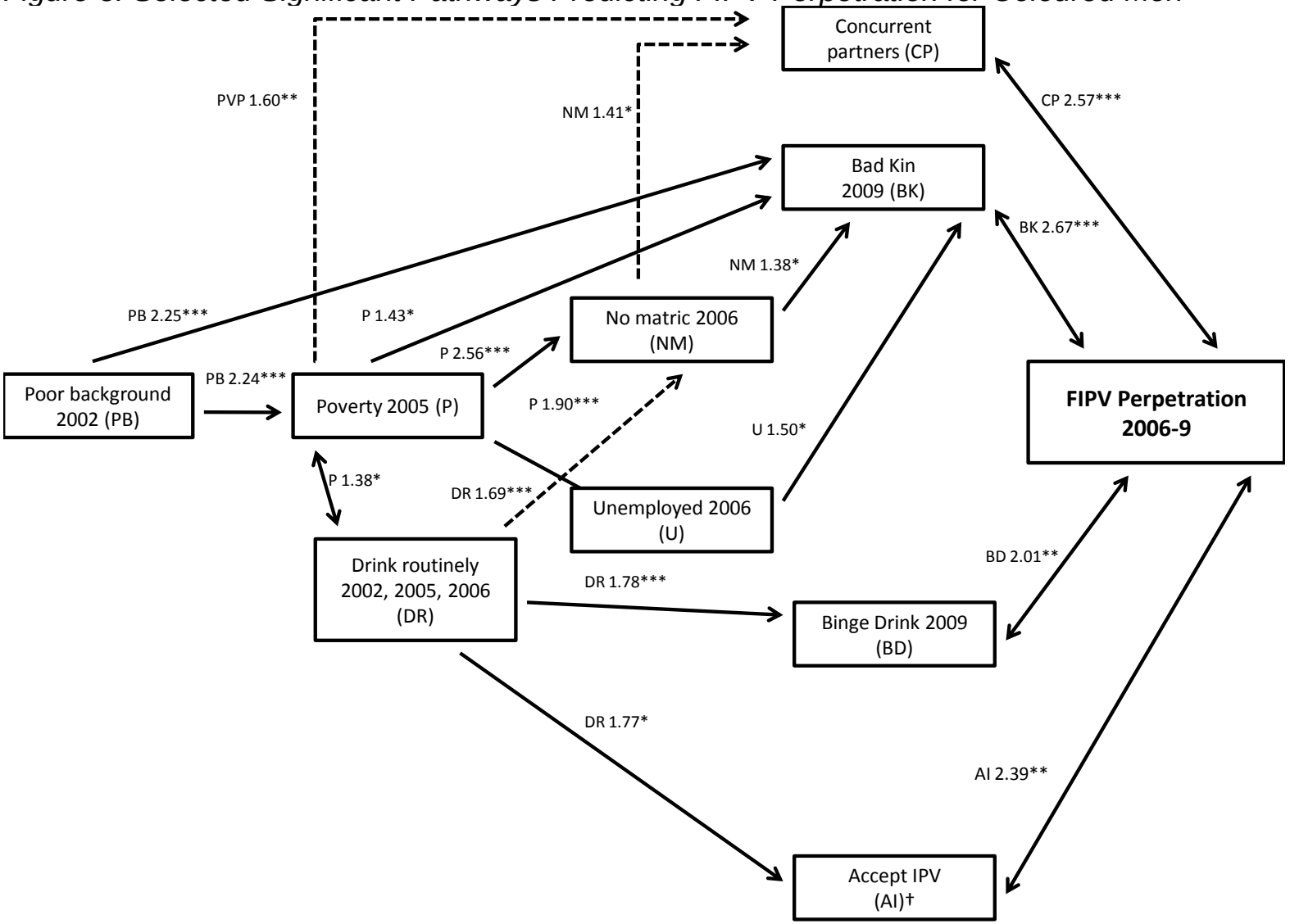
All variables are dummy variables. Significance: * p<10%; ** p<5%; *** p<1%.

Table 7: Path Analysis of Variables Associated with Coloured Men's FIPV Perpetration, Adjusted for Age

Model →	*7.1*	*7.2*	*7.3*	*7.4*	*7.5*	*7.6*	*7.7*	*7.8*	*7.9*	*7.10*	*7.11*	*7.12*
Dependent Variable →	P	FIPV	DR	U	NM	FIPV	BK	BD	CP	FIPV	AI	FIPV
Poor background 2002 (PB)	2.11 (1.31, 3.42) ***	1.24 (0.59, 2.58)	0.82 (0.49, 1.36)	1.37 (0.78, 2.41)	1.50 (0.86, 2.50)	1.18 (0.56, 2.48)	2.25 (1.38, 3.64) ***	0.65 (0.37, 1.13)	1.04 (0.62, 1.74)	0.92 (0.41, 2.07)	1.11 (0.50, 2.44)	1.39 (0.59, 3.30)
Poverty 2005 (P)		2.04 (1.17, 3.57) **	1.38 (0.98, 1.95) *	1.90 (1.25, 2.90) ***	2.56 (1.78, 3.68) ***	1.73 (0.98, 3.07) *	1.43 (1.00, 2.04) *	0.87 (0.60, 1.25)	1.60 (1.09, 2.34) **	1.66 (0.91, 3.03)	1.22 (0.69, 2.18)	1.91 (0.92, 3.94)
Drink routinely 2002, 2005, 2006 (DR)				0.74 (0.47, 1.16)	1.69 (1.17, 2.45) ***	1.48 (0.84, 2.62)	0.94 (0.65, 1.35)	1.78 (1.24, 2.55) ***	1.24 (0.84, 1.81)	1.53 (0.83, 2.83)	1.77 (1.00, 3.13) *	1.21 (0.57, 2.57)
Unemployment 2006 (U)						2.07 (1.13, 3.78) **	1.50 (0.98, 2.31) *	0.83 (0.52, 1.32)	1.34 (0.85, 2.10)	1.73 (0.00, 3.35)	0.83 (0.38, 1.81)	1.00 (0.42, 2.38)
No matric 2006 (NM)						1.53 (0.80, 2.94)	1.38 (0.95, 2.02) *	1.24 (0.93, 1.07)	1.41 (0.94, 2.12) *	1.20 (0.60, 2.43)	1.35 (0.74, 2.47)	1.08 (0.48, 2.43)
Bad kin 2009 (BK)										2.67 (1.47, 4.88) ***		2.34 (1.15, 4.77) **
Binge Drink 2009 (BD)										2.01 (1.11, 3.61) **		1.62 (0.79, 3.29)
Concurrent partners (CP)										2.57 (1.43, 4.62) ***		2.44 (1.22, 4.90) **
Accept IPV 2009 (AI)												2.39 (1.05, 5.43) **
McFadden's pseudo r-squared	0.04	0.02	0.05	0.03	0.08	0.05	0.04	0.02	0.02	0.13	0.02	0.12
N	622	622	622	622	622	622	622	622	561	561	404	365

Significance: * p<10%; ** p<5%; *** p<1%.

Figure 3: Selected Significant Pathways Predicting FIPV Perpetration for Coloured Men



Independent variable and adjusted odds ratios reported above lines. Significance: * p<0.10; ** p<5%; *** p<1%. † Variable from Model x.11, so n=365.

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