

The Importance of Romantic and Work Relations on Nonmedical Prescription Drug Use Among Adults

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Abstract:

Drawing from Sampson and Laub's age-graded theory, we examine whether the presence and quality of social bonds influences nonmedical usage of prescription drugs (opioids, tranquilizers, sedatives, and stimulants). We analyze data from a large and nationally representative sample of adults from the National Longitudinal Study of Adolescent Health (Add Health). Results from a series of logistic regression models indicate that married individuals are significantly less likely to use prescription drugs nonmedically than non-married persons. However, romantic relational satisfaction is also salient; cohabiters who are highly satisfied with their romantic unions are less likely to report misuse than cohabiters who are less satisfied in their relationships. Additionally, being highly satisfied at work predicts a lower likelihood of misuse, but only among cohabiters. Overall, age-graded theory is useful for understanding nonmedical prescription drug use, although romantic relationship bonds are generally more consistently influential than employment bonds. These results add to a growing knowledge base regarding patterns of nonmedical prescription drug use.

Keywords: prescription drugs | nonmedical prescription drug use | drug use | relationships | adults

Article:

Prescription drug misuse has become a significant public health concern. Recent surveys estimate that approximately 2.4 million Americans 12 years of age and older currently take prescription drugs nonmedically, with persons reporting taking drugs that are not prescribed to them, consuming prescriptions in greater frequency or amount than is prescribed, or taking prescriptions for reasons other than what they are intended (SAMHSA 2010; UNODC 2011). Injuries related to misuse now account for more than half a million emergency visits each year, approximately the same number as for heroin and cocaine injuries combined (SAMHSA 2010; Inciardi and Cicero 2009). In light of these estimates, it is surprising that we know relatively

little about the etiology of illicit prescription drug use, and what we do know is generally limited to adolescent or young adult samples (e.g., Ford 2008a, 2008b, 2008c; Hall, Howard, and McCabe 2010; Havens, Young, and Havens 2011; Schroeder and Ford 2012; Ford and Schroeder 2009). Considering the high prevalence of use and impending public health anxiety associated with subsequent injuries, it is also important to assess what factors promote misuse among adults (Han et al. 2009). Drawing from Sampson and Laub's (1990) age-graded theory and from extant research that demonstrates the importance of social bonds in deterring other types of illicit substance use (i.e., alcohol, marijuana, etc.), we examine the extent to which the presence *and* quality of romantic and employment bonds predict adults' misuse of prescription drugs.

THEORETICAL FRAMEWORK

Sociologists often cite social bonds as having a deterrent effect on deviant behavior. Hirschi's (1969) social control theory argues that despite a natural proclivity toward delinquency, individuals who devote time and energy into conventional institutions such as work and family accumulate “stakes in conformity” and view criminal prospects as contradictory to the investments they have made in these relationships. Moreover, individuals who form strong affective bonds with others internalize the psychological presence of their attachments and avoid criminal behaviors because they do not wish to threaten the quality or existence of those relationships. The importance of affective relationships for guiding individuals' behaviors is also central to the social capital framework and the concept of “bonding” social capital (Coleman 1988; also see Putnam 2000). Pro-social attachments embed a sense of belonging and accountability in individuals, and thereby stifle the allure of criminal behaviors that could threaten one's connection to the group or, more generally, undermine the stability of the group.

Building from these traditions, Sampson and Laub's (1990, 1993; Laub and Sampson 1993, 2003) theory of age-graded informal social control emphasizes the importance of informal social bonds across the life course, suggesting that adult relationships, such as marriage and employment, can increase an individual's resistance to criminal behaviors and/or create a turning point that interrupts pathways of deviance. Although Sampson and Laub recognize that the presence of the bond is important, they echo Coleman's (1988) conceptualization of bonds as investments, thus suggesting the *quality* of the bond is an essential condition under which delinquent behaviors are restrained. High-quality bonds discourage criminal offending for fear of harming the relationship and because the time spent cultivating prosocial investments alters one's routine activities away from contexts in which criminal opportunities arise (Laub and Sampson 2003). Nevertheless, some forms of capital may actually *encourage*, instead of *discourage*, criminal involvement (Hagan and McCarthy 1997). For instance, close relationships with deviant friends facilitate criminal and deviant engagement because they provide a basis for learning criminal behaviors (Warr 1998). Below, we review research that examines the effects of social bonds on prescription drug misuse and on criminal behaviors more generally.

BACKGROUND RESEARCH

Nonmedical Prescription Drug Use

Much of the research on nonmedical prescription drug use has focused on misuse during adolescence or young adulthood. Examining a sample of adolescents from the National Survey on Drug Use and Health, Schroeder and Ford (2012) find that adolescents with strong bonds to their parents, school, or religion are less likely to misuse prescription drugs. Similarly, Schwartz et al. (2009) conclude that retrospective perceptions of parental acceptance during childhood are an important influence on nonmedical prescription drug use in young adulthood. Other studies also suggest that adolescent bonds to pro-social friends and schools have similar deterring effects (e.g., Ford 2009; McCabe and Teter 2007; Ford and Arrastia 2008). Although the aforementioned studies do not explicitly clarify the mechanisms that explain associations between social bonds and prescription drug misuse, age-graded theory would suggest that pro-social attachments to “conventional” persons and institutions increase the risks associated with misuse and leave adolescents with little time and opportunity to experiment with prescription drugs.

With only one exception, the etiology of nonmedical prescription drug use among adults has been ignored. Dollar and Ray (2013) examine data from the National Survey of Drug Use and Health (NSDUH) and find that married adults are less likely than non-married adults to have misused a range of prescription drugs. Interestingly, they find no difference between employed and non-employed adults on the likelihood of misuse. One possible explanation for this null relationship is that the authors do not model job satisfaction, which may be more important for explaining adults’ misuse of prescription drugs than simply being employed. Additionally, although the authors find that being married predicts a lower likelihood of misuse, it is not clear to what extent relationship quality further explains adults’ likelihood of using prescription drugs nonmedically. Hence, additional research that more precisely elaborates the nature of adult social bonds and their influence on misuse is warranted. Below, we review the literature on the effects of informal social bonds on adult criminal behavior.

Social Bonds

Marriage

Although we know relatively little regarding the extent to which social bonds deter nonmedical prescription drug use, both cross-sectional and longitudinal analyses suggest ample support for a “marriage effect,” or the tendency for adults’ entry into marital unions to follow with a declined participation in other types of risky or criminal behavior (Curran, Muthen, and Harford 1998; Duncan, Wilkerson, and England 2006; Farrington and West 1995; Sampson and Laub 1990, 1993). Entering into marital unions provides the opportunity to invest emotionally with pro-social spouses who may alter one's attitudes towards crime, incite “cognitive transformations” and changes in self-identity, and simultaneously generate psychological mechanisms of virtual supervision that dissuade criminal behavior (e.g., Giordano, Cernkovich, and Rudolph 2002; Laub and Sampson 2003). Additionally, marriage can significantly modify individuals’ routine activities and dissolve relationships with deviant friends (Simons et al. 2002; Warr 1998).

As proposed by age-graded theory, non-offending may not be an automatic outcome of marriage; rather, it is contingent on interpersonal bonding processes that may or may not occur within marital unions (Laub, Nagin, and Sampson 1998; Laub and Sampson 2003). Bonding processes within marriages may be disrupted by power differentials, economic instability, or interpersonal conflicts (see Wolcott and Hughes 1999), in which case barriers to illicit behaviors break down. These findings underscore the importance of assessing not only the presence of a marital union, but the satisfaction or relational quality associated with the partnership. Likewise, Sampson and Laub's emphasis on the quality of bonds suggests that romantic relationships can have a deterrent effect on criminal behavior if affective bonds are strong, regardless of whether or not the partnership is legally recognized.

Cohabitation

Cohabitation has become an increasingly common type of living arrangement among romantic partners in the United States (Casper and Cohen 2000; Manning 2013). Hence, it is important to understand whether cohabiting partnerships can offer insulating effects against illicit behaviors in ways similar to marriage. Although individuals in cohabiting unions are not legally bound to one another, non-marital living arrangements may be as symbolically meaningful as marriage and also provide contexts for emotional bonding that dissuade illegitimate or illicit behavior (Cherlin 1992).

Several studies report that while marriage is associated with lower levels of substance use and various types of criminal behavior, cohabitation is not equally protecting (Bachman et al. 2002; Duncan et al. 2006). One possible explanation for these findings is that cohabiting unions are marked by lower levels of commitment amongst one or both partners, potentially one reason why the couple has not transitioned into marriage (Smock 2000). Cohabiting unions are often short-lived, with most terminating within a few years and perhaps allowing too little time for crime-detering bonds to harvest (Bumpass and Lu 2000). In addition, because it is relatively recent phenomenon, some scholars argue that cohabitation is an "incomplete institution," a context in which the norms of partnership are unclear and one that makes it difficult to establish a predictable and stable union where needs and desires of each partner are fulfilled (Cherlin 1978; Hofferth 2006). If mutual feelings of commitment are not realized, bonds between partners may be inadequately developed and insufficient for producing psychological mechanisms of informal control.

It is also conceivable that cohabiters possess select characteristics that make them less eligible for establishing quality bonds and ultimately for receiving their deterring effects. The decision to cohabit may reflect individuals' embrace of an "individualistic ethic" that values their personal freedom and happiness above the wellbeing of romantic partnerships, in which case quality bonds are not fully appreciated (Cherlin 1992; Smock 2000). Cohabiters also typically have less "traditional" views regarding drug use, marriage, and divorce, and tend to have lower socioeconomic status, which may exacerbate relationship conflict and disrupt the bonding process (Lillard, Brien, and Waite 1995; Nock 1995; Thornton, Axinn, and Teachman 1995). Despite prior findings that high-quality cohabiting unions are relatively scarce, some research is suggestive that cohabiting unions, especially when partners have the intent of eventually

marrying, have comparable levels of relationship quality and rates of unhealthy and illicit behaviors as marital unions (Duncan et al. 2006; Forrest 2014). In addition, age-graded theory suggests that high-quality cohabitating relationships will have a similar constraining effect on nonmedical prescription drug use as quality marriages.

Employment

Ample studies suggest that employed persons are less likely than those non-employed to engage in deviant or illegal behaviors (French, Roebuck, and Alexandre 2001; Sampson and Laub 1993). Uggen's (2000) experimental study on adult offenders suggests that any type of employment, even "marginal" types, is associated with lower levels of recidivism. Some evidence implies, however, that the deterrent effect of employment is conditional on particular characteristics of workers' employment experiences. Shover's (1996) interviews with "persistent" offenders suggests that desistance is more likely only when one has a "good" job, which is arguably related to steadiness and providing a livable wage (Laub and Sampson 1993, 2003; Wilson 2009). Other studies emphasize that it is employment stability and associations with pro-social coworkers, rather than employment itself, which reduce illegal behaviors (Kandel and Yamaguchi 1987; Wright and Cullen 2004). Although these studies suggest that employment can have a deterrent effect on some types of deviant behavior, more research is needed to understand to what extent the presence and quality of employment bonds affect one's likeliness of using prescription drugs nonmedically.

DATA AND METHODS

We rely on data collected from Wave IV of the National Longitudinal Study of Adolescent Health (Add Health) to examine the relationship between romantic and employment bonds on nonmedical prescription drug use. Add Health is a longitudinal, nationally representative survey of ethnically diverse U.S. residents designed to capture various issues related to adolescent health and their outcomes into adulthood. Add Health collects misuse data on various types of prescription drugs, and given prior findings that misuse patterns can vary across drug types, this dataset Add Health offers an important advantage over other existing datasets (e.g., see McCabe, Teter, and Boyd 2006; Simoni-Wastila, Ritter, and Strickler 2004; Herman-Stahl et al. 2007).

Add Health began as a school-based study and includes a stratified random sample 132 schools—80 high schools and 52 middle schools. Wave I was conducted from 1994–1995 when respondents were 12 to 19 years of age. Although the survey is a school-based survey, interviewers conducted extensive in-home interviews with 20,745 respondents in Wave I, including an oversample of disabled persons and racial-ethnic minorities. The most recent wave, Wave IV, was conducted from 2007–2008 and sought to re-interview respondents who participated in the Wave I in-home interviews ($n = 15,701$). During Wave IV, respondents were 24–34 years of age. Although much of the survey remained consistent across all waves, Wave IV included questions about the respondents' romantic and work relationships, substance use and abuse, and involvement in criminal activities. Thus, this wave contains questions that are most relevant for the present analysis as earlier waves do not contain adequate variation on some of our key variables, including romantic relations. Scholars have previously concluded that Wave

IV non-response bias is negligible and that the Wave IV sample adequately represents the same population surveyed at Wave I (Chantala, Kalsbeek, and Andraca 2008).

Measures

Dependent Variables

We use self-reported nonmedical prescription drug use to inform our dependent variables. Respondents are asked to report whether or not they have ever used any prescription drugs nonmedically and to report their nonmedical use of pain relievers, tranquilizers, stimulants, and sedatives. Add Health's definition of nonmedical drug use is broad and includes taking prescription drugs in ways that were not prescribed, including, but not limited to the feeling or experiences that it causes and/or taking larger amounts, more frequent dosages, or extending the duration of drugs beyond that which is prescribed.

The survey asks respondents to report the incidence of nonmedical prescription drug use but not the frequency of use. Thus, we rely on a dichotomous measure of each type of nonmedical prescription drug use (1 = use reported). We begin by examining each type of drug misuse separately because some research indicates that total misuse masks variation across drug types (e.g., Blazer and Wu 2009; Dollar and Ray 2013). Following the initial "disaggregated" analysis, we further examine models predicting *any* nonmedical drug use, which is a dichotomous item coded as "1" if the respondent reports any type of nonmedical prescription drug use (i.e., pain relievers, tranquilizers, stimulants, or sedatives).

Independent Variables

The presence of bonds

Prior research suggests that romantic attachments are negatively related to illicit drug use among adults; however, there is some indication that marital bonds may have a more significant deterrent effect than non-marital romantic relationships (Duncan et al. 2006; Yamaguchi and Kandel 1985). In order to assess the influence of the presence and type of romantic bond, we generate measures that capture whether the respondent is currently married, currently living with a non-marital romantic partner, or currently single (operationalized as not currently married or not living with a non-marital romantic partner). Our measure of romantic relationship status uses household roster information. We assign priority to legally sanctioned relationships; thus, if a respondent indicated that s/he was currently married and involved in a cohabitating relationship with one or more additional romantic partner(s), we code the respondent as married.

Employment status is also understood as an important adult social bond that influences antisocial behaviors (Laub et al. 1998; Sampson and Laub 1993; Uggen 2000). Employment bonds are expected to influence illicit drug use, including nonmedical prescription drug use, by capturing how attached, committed, and involved one is in conventional social institutions. We examine respondents' employment status using a single indicator, which asks respondents to report whether or not they were currently employed at least part time (0 = *not employed*; 1 = *employed*).

The quality of bonds

Although the presence of social bonds may be important, there is further evidence that the quality of the bond matters (e.g., Giordano, Cernokovich, and Holland 2003; Sampson and Laub 1993). For example, persons who report being more satisfied with their marriage are even less likely to participate in substance use than married persons who are unsatisfied with their relationship (Haynie et al. 2005; Daly 1994). However, questions remain as to whether this negative relationship holds among cohabiters (Bachman et al. 2002). Our romantic satisfaction variable is comprised of 10 survey items that capture various aspects of relationship quality. Using a 5–7 category response, respondents were asked to report on their relational permanence, commitment, enjoyment, happiness, and closeness as well as their satisfaction with their partner listening, being faithful, expressing love and affection, decision-making in financial matters, and sexual relations. We recoded each item such that higher scores indicate higher levels of relational satisfaction and combined the 10 items into a single summation measure.¹ Thus, higher scores reveal higher quality of bonds.

Our employment satisfaction variable reflects information from a single indicator. Respondents were asked to report their employment satisfaction on a scale of 1 to 5 ranging from “extremely satisfied” to “extremely dissatisfied.” We coded the item so that higher scores indicate greater work satisfaction.

Control Variables

We include measures of the respondents’ self-reported sex, race, other illicit drug use, overall health status, and access to health insurance as controls. Prior studies conclude that drug use patterns vary by sex (Duncan et al. 2006; Simoni-Wastila et al. 2004), so we control for sex in our analyses by including a dummy-scored measure that indicates if the respondent is male (0) or female (1). Researchers also note racial differences in drug use (Beckett et al. 2005; Harrell and Broman 2009; Shih et al. 2010) and across various types of informal social bonds, including marriage and work (Cherlin 1998; Tucker and Mitchell-Kernan 1995; Cancio, Evans, and Maume 1996). We create a dummy-scored measure indicating whether or not the respondent self-identified as non-white (0) or White (1). Non-white respondents include those who reported being black, Native American, or Asian.

Extant work indicates that nonmedical prescription drug use is associated with other types of illicit substance use (e.g., Dollar and Ray 2013; McCabe et al. 2006; Simoni-Wastila et al. 2004). To assess this relationship, we compute a dichotomous measure by combining the respondents’ reported use of cocaine, heroin, hallucinogens, crystal methamphetamine, or inhalants. Consistent with prior research (Dollar and Ray 2013; Maume, Ousey, and Beaver 2005; Thompson and Petrovic 2009), we exclude marijuana use in this variable construction, although supplemental analyses reveal that including marijuana use in the index does not alter the substantive findings.

Our measure of overall health status is based on a single response item that asks respondents to report their overall health. We coded health status as “1” if the respondent reported being in generally good health (i.e., excellent, very good, good). Finally, it is plausible that nonmedical drug use may be more common among persons without access to health insurance and who may

be using prescription drugs non-medically as a way to self-medicate. To address this, we dummy-score our health insurance measure. Respondents who have health insurance are coded as “1”.

Analytic Strategy

We begin by presenting descriptive statistics and bivariate correlations of the variables used in the analyses and follow by presenting multivariate regression models. Because respondents are asked to report only on the incidence of nonmedical prescription drug use – rather than the frequency of use, we rely on logistic regression models to examine the effects of social bonds on each type of prescription drug misuse. We report our findings below for *any* nonmedical use as well as nonmedical pain reliever, tranquilizer, stimulant and sedative use.

RESULTS

Table 1 details the descriptive statistics of the total sample of Wave IV ($n = 15,701$). The sample contains slightly more females than males and 68 percent report being white. The majority of respondents report being in good health, but only about 79 percent have health insurance. Sixteen percent of the sample reports using prescription drugs nonmedically. Although the data suggest that respondents most frequently use pain killers nonmedically, about 8 percent report using sedatives and tranquilizers nonmedically, while 6 percent misuse stimulants. We should note that Add Health respondents report higher prevalence rates than respondents from the NSDUH, a nationally representative survey conducted annually by Substance Abuse and Mental Health Services Administration (SAMHSA). We suspect that this difference is because of Add Health's younger sample. Indeed, young adults are more likely to report misuse of prescription drugs than other age groups (SAMHSA 2014). Despite the difference in prevalence across these studies, our findings are consistent with NSDUH reports that painkillers are the most common prescription drug misused (SAMHSA 2014).

Table 1. Descriptive Statistics for Dependent and Independent Variables ($n = 15,701$)

	Mean	SD	Minimum	Maximum
Female	.53	.49	0	1
White	.68	.46	0	1
Health Status	.90	.29	0	1
Health Insurance	.79	.40	0	1
Any Nonmedical Drug Use	.16	.36	0	1
Nonmedical Pain Killer Use	.13	.33	0	1
Nonmedical Sedative Use	.08	.27	0	1
Nonmedical Tranquilizer Use	.08	.27	0	1
Nonmedical Stimulant Use	.06	.24	0	1
Other Illicit Drug Use	.28	.44	0	1
Married	.40	.48	0	1
Cohabitation	.18	.38	0	1
Single	.42	.49	0	1

Romantic Relationship Satisfaction	51.46	9.27	15	61
Employed	.78	.41	0	1
Work Satisfaction	3.85	.94	1	5

Note. The mean for dichotomous measures can be interpreted as a percentage

Using other types of illicit drugs is not uncommon. Twenty-eight percent of the respondents report such use. Forty-two percent of the sample reports being single, 40 percent are currently married, and 18 percent cohabit with a non-marital romantic partner. Well over half of the respondents are currently employed, with employed persons reporting a mean satisfaction score of 3.85.

Table 2 reports the percent of persons using any prescriptions nonmedically and bivariate correlation coefficients for key independent variables. The data indicate that nonmedical prescription drug use is more common among single individuals and those who are unsatisfied with their jobs, but employment status is virtually unrelated to misuse. In addition, men and whites are more likely to misuse than women and non-whites, respectively, and people who use other types of drugs are significantly more likely to use prescription drugs nonmedically than those who do not. Finally, persons in good health condition are more likely to misuse than those in sub-par condition, and a larger percentage of persons with health insurance misuse than those without insurance. While these bivariate analyses reveal important information about significant associations, multivariate analyses is necessary to assess these robustness of these relationships while simultaneously considering other relevant factors.

Table 2. Percent Using Any Prescriptions Non-Medically by Independent Variables

Variable	Percent	Pearson Correlation	Chi Square
Married			
Yes	5.0	-.088*	121.92*
No	11.4		
Cohabiting			
Yes	4.3	.090*	125.30*
No	12.0		
Single			
Yes	17.0	.018*	4.81*
No	10.7		
Employment			
Employed	17.2	.006	.452
Unemployed	16.7		
Work Satisfaction			
Satisfied	13.5	-.068*	58.96*
Not satisfied	2.6		
Sex			
Female	13.8	81.86*	-.072*
Male	19.1		

Race			
White	20.1	329.31*	.147*
Non-white	8.5		
Misuse Other Drugs			
Yes	42.0	288.40*	.438*
No	6.2		
Health Status			
Good	14.5	6.03*	-.020*
Not good	2.0		
Health Insurance			
Yes	11.6	11.56*	-.086*
No	4.7		

*p≤.05.

Table 3 reveals the results of our analyses regressing social bonds presence on each form of nonmedical prescription drug use. As indicated in Table 3, other things being equal, married respondents are significantly *less* likely to use drugs nonmedically as compared to cohabitating and single respondents across all drug types.² Employment bonds, however, are not significant in any models. Thus, the bivariate associations largely remain for indicators of bond presence. Interestingly, our multivariate analyses indicate that the respondent's sex is only a significant factor in predicting pain reliever misuse. Specifically, when other factors are included in the model, females are about 15 percent less likely to report using pain relievers. This finding reflects recent findings, which also identifies differential sex effects depending on the drug misuse being examined (e.g., Dollar and Ray 2013). Also consistent with prior research, we find that when controlling on other relevant factors, whites are significantly more likely to report misusing prescription than non-whites (e.g., Harrell and Broman 2009), and persons who use other illicit drugs report greater incidence of nonmedical prescription drug use. Moreover, persons with health insurance are less likely to report such drug use across all drug types.

Table 3. Logistic Regression Models Predicting Any and Specific Nonmedical Prescription Drug Use for Entire Sample (n = 15,701) Unstandardized Regression Coefficients with Odds Ratios (in parentheses)

	Any Misuse	Pain Relievers	Tranquilizers	Stimulants	Sedatives
Cohabitation	.550(1.73)*	.507(1.76)*	.528(1.69)*	.366(1.44)*	.568(1.76)*
Single	.298(1.34)*	.252(1.28)*	.384(1.46)*	.348(1.41)*	.395(1.48)*
Employed	-.009(.99)	-.058(.94)	-.010(.99)	-.213(.80)	-.017(.98)
Female	-.096(.90)**	-.159(.85)*	.029(1.02)	.033(1.03)	.005(1.00)
White	.646(1.90)*	-.159(.85)*	.881(2.41)*	.718(2.05)*	.737(2.09)*
Other Illicit Drug Use	2.20(9.02)*	.732(2.07)*	2.79(16.40)*	3.13(23.04)*	2.56(12.98)*
Health Status	-.131(.87)	-.149(.86)	-.029(.97)	-.003(.99)	-.205(.77)*
Health Insurance	-.203(.81)*	-.210(.81)*	-.307(.73)	-.161(.85)**	-.351(.70)*

Intercept	-2.97(.05)*	-3.35(.03)	-4.67(.01*)	-5.07(.01)*	-4.14(.02)*
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*p<.05; **p<.10.

Table 4 displays models predicting any and specific drug use among employed married and cohabitating persons and includes measures of relationship and employment quality. Compared to persons who are married, cohabitating persons are about 1.5 times more likely to misuse prescription drugs when modeling any nonmedical drug use (OR = 1.49), but this relationship is not statistically significant when predicting specific forms of nonmedical use. Similarly, romantic satisfaction is only significant when predicting any nonmedical drug use, suggesting that persons who are more satisfied with their romantic relationships are less likely to use prescription drugs nonmedically (OR = .98; .90 respectively). When controlling on other factors, satisfaction with one's work is not significantly associated across any models. Although it may seem inconsistent that these relationships are significant in models predicting *any* misuse but not specific forms of misuse, supplemental analysis (not shown here) reveals that many respondents reporting nonmedical prescription drug use indicate misusing various forms of drug types. Consequently, models predicting misuse of specific types of drugs may not fully capture patterns of misuse. Nevertheless, the multivariate analyses suggest that the negative bivariate relationship between work satisfaction and prescription drug misuse may be partially explained by controlling for other variables.

Table 4. Logistic Regression Models Predicting Any and Specific Nonmedical Prescription Drug Use among Employed Adults who are Married and Cohabiting (n = 9125) Unstandardized Regression Coefficients with Odds Ratios (in parentheses)

	Any Misuse	Pain Relievers	Tranquilizers	Stimulants	Sedatives
Cohabiting	.404(1.49)*	.314(1.36)	.106(1.11)	-.063(.93)	.361(1.43)
Romantic Relationship Satisfaction	-.016(.98)*	-.002(.99)	-.001(.99)	-.002(.99)	-.003(.99)
Work Satisfaction	-.061(.94)	-.098(.90)	-.020(.98)	-.054(.94)	.067(1.07)
Female	-.106(.89)	-.512(.59)*	.158(1.17)	.063(1.06)	.033(1.03)
White	-.035(.96)	.025(1.02)	.319(1.37)*	.111(1.11)	.042(1.04)
Other Illicit Drug Use	2.35(10.53)*	1.12(3.08)*	1.45(4.27)*	1.85(6.40)*	1.08(2.95)*
Health Status	-.123(.88)	-.236(.79)	.113(1.19)	.272(1.31)	-.425(.65)**
Health Insurance	-.213(.80)*	-.018(.98)	-.258(.77)	-.108(.89)	-.284(.75)**
Intercept	-1.37(.25)*	1.55(4.73)*	-1.27(.28)*	-1.96(.14)*	-.612(.54)

*p<.05; **p<.10.

To further clarify the relationship between relationship quality and any nonmedical prescription drug use, we created two subsamples – one containing respondents who are married and the other containing respondents who are cohabitating with a non-marital, romantic partner – and

reanalyzed the data. Table 5 reveals these results. As shown, relationship satisfaction is a significant predictor of prescription drug misuse, but only for married adults (OR = .96). Conversely, work satisfaction is not related to lower use among married persons but does significantly alter nonmedical drug use among cohabiters. The data demonstrate that cohabiting persons who are satisfied with their work are nearly 10 percent less likely to report prescription drug misuse (OR = .91).

Table 5. Logistic Regression Models Assessing the Effects of Social Bond Quality on Any Nonmedical Prescription Drug Use Separately for Married (n = 6243) and Cohabiting (n = 2882) Adults Unstandardized Regression Coefficients with Odds Ratios (in parentheses)

	Married	Cohabitation
Romantic Relationship Satisfaction	-.032(.96)*	-.005(.99)
Employed	-.047(.95)	-.139(.87)
Work Satisfaction	-.058(.94)	-.900(.91)*
Female	-.143(.86)	-.138(.87)
White	-.104(.90)	.059(1.06)
Other Illicit Drug Use	2.28(9.86)*	2.29(9.59)*
Health Status	-.208(.81)	-.056(.94)
Health Insurance	-.264(.76)*	-.107(.89)
Intercept	-.262(.77)	-1.44(.23)*

*p<.05.

As discussed previously, researchers often explain differential outcomes among married and cohabiting persons by focusing on the lack of commitment and permanence or lower relational satisfaction among cohabiters as compared to married (e.g., Bumpass and Lu 2000; Cherlin 1978; Smock 2000). Our theoretical framework, however, emphasizes the quality of social bonds, suggesting that high quality cohabiting romantic arrangements may have a similar deterrent effect on nonmedical prescription drug use as high quality marriages. Thus, we examine how relationship quality independently influences nonmedical prescription drug use by creating a dummy-scored measure of high relationship for persons who are married or cohabiting, which we entered into models predicting any nonmedical prescription drug use. High romantic relationship quality (coded “1”) is defined as reporting a relational satisfactions score that is above the mean score ($\bar{x} = 51.46$). As shown in Table 6, persons reporting high satisfaction levels within their romantic relationship are less likely to report misusing prescription drugs and this relationship is consistent among married (OR = .70) and cohabiting (OR = .80) respondents. While this finding highlights the significance of relationship satisfaction among persons who are married and cohabiting, we find statistically significant differences between the reported relationship satisfaction of married and cohabiting people, with married people consistently reporting higher relationship quality ($t = -17, p > .001$).

Table 6. Logistic Regression Models Assessing the Effects of High Relationship Satisfaction on Any Nonmedical Prescription Drug Use Separately for Married and Cohabiting Adults Unstandardized Regression Coefficients with Odds Ratios (in parentheses)

	Married	Cohabitation
High Romantic Relationship Satisfaction	-.345(.70)*	-.233(.80)*
Employed	-.047(.95)	-.145(.86)
Work Satisfaction	-.067(.93)	-.084(.91)*
Female	-.121(.88)	-.131(.87)
White	-.106(.89)	.054(1.05)
Other Illicit Drug Use	2.29(9.94)*	2.29(9.87)*
Health Status	-.278(.75)**	-.049(.95)
Health Insurance	-.282(.75)*	-.105(.90)
Intercept	-1.72(.78)*	-1.62(.19)*

CONCLUSIONS AND DISCUSSION

Although prescription drugs are more widely misused than any other drug, excluding marijuana (SAMHSA 2010), most research ignores this form of drug use. The present study focuses on examining patterns of adult nonmedical prescription drug use. Guided by Sampson and Laub's age-graded informal social control theory, we examine if adult relational bonds dissuade prescription drug misuse. Our results indicate that being married is a significant buffer against nonmedical prescription drug use. Married adults are less likely to misuse prescription drugs as compared to single and cohabiting adults. In general, cohabitation does not offer equally insulating effects. Specifically, while the presence of marriage alone is enough to deter nonmedical prescription drug use independent of relationship quality, simply being in a cohabitating relationship does not discourage the misuse of prescription drugs. These findings provide some support for Sampson and Laub's (1990, 1993) arguments regarding the presence of romantic bonds, although these protective effects are limited to adults who are legally married.

As discussed previously, it might be the case that cohabitating relationships offer less of an insulating effect than marriages because the former relationships are less likely to be high quality relationships (Smock 2000). Drawing from Sampson and Laub's (1990, 1993) emphasis on the *quality* of bonds as critical conditions under which criminal behaviors is deterred, we investigated the possibility that cohabitating unions offset prescription drug misuse when relationship bonds are strong. Our results indeed indicate that cohabiters who are highly satisfied in their romantic relationships are less likely to use prescription drugs nonmedically. This finding dampens at least some of the concern about cohabitation as an “incomplete institution” and the notion that non-marital unions are less capable of promoting positive health and behavioral outcomes among adults. Additionally, it suggests that the relationship between cohabitation status and prescription drug misuse is not simply an artifact of social selection. If that were the case, we would expect relationship satisfaction to be unassociated with misuse among cohabiters, even among those who are highly satisfied in their relationships. Such a scenario would indicate that cohabiting adults are different from married adults in that romantic relationships play little to no role in their decisions to use prescription drugs nonmedically. However, our findings suggest that even though high-quality relationships may be more uncommon in cohabitating unions, such

partnerships can offer similar advantages to marriage when romantic bonds are strong. Hence, our findings bolster Sampson and Laub's arguments regarding the quality of bonds and psychological turning points that dissuade criminal behavior.

Our study shows little support for the notion that the presence of employment deters nonmedical prescription drug use. More research is needed to understand why employment bonds appear to be less critical for curbing prescription drug misuse than romantic bonds, but one possibility for this finding is that employed adults believe they are less likely to be drug tested for prescription drugs by employers than for other illicit drugs, in which case having a job is uninfluential on one's likelihood of misuse. Such a possibility would be consistent with survey findings that suggest that many Americans perceive prescription drug misuse to present fewer legal, moral, and health risks than other types of drug use (Lord, Brevard, and Budman 2011). We also find only limited support for the notion that quality employment deters misuse. Our models indicate that job satisfaction is related to misuse only among cohabiters.

Considering that romantic bonds are more universally related to lower misuse among married adults and that employment bonds are associated with misuse only among cohabiters may reflect the differential salience of family and work identities for married and unmarried adults. Identity theorists argue that individuals possess multiple identities that exist in a hierarchy of salience; the more salient the role-identity, the more meaning and purpose individuals derive from its enactment and the more that role will influence attitudes and behaviors (Stryker 1968). Because married adults have legally legitimized their romantic unions, perhaps it is the case that married adults view their familial and romantic bonds as more salient to their identities than their employment bonds, in which case romantic bonds are more influential on their use of illicit drugs. Alternatively, unmarried adults may invest more emotionally in their work roles, given that they have not made a binding commitment to their romantic partners and may perceive their partnerships to be more momentary, in which case employment bonds exert a more pronounced influence on misuse than romantic bonds. More research that clarifies these associations is needed.

The present analyses rely on a representative sample of adults – an age group known to commonly misuse prescription drugs. Consequently, this study greatly contributes to our knowledge about the patterns of nonmedical prescription drug use. Notwithstanding this contribution, the present study has some limitations that future research should examine. Specifically, researchers should continue to investigate other aspects of social bonds, paying particular attention to how relationship presence and quality influence this form of drug misuse over time. Prior research finds that only “enduring marriages” lasting five years or more reduce criminal offending, possibly because this gives couples an appropriate amount of time to develop their conflict-resolution skills, establish economic stability, or otherwise cultivate their marital bond (e.g., Theobald and Farrington 2010). Some scholars also point out that the marriage effect is unlikely to manifest in partnerships involving two individuals with similar anti-social propensities (i.e., assortive mating), a context in which criminal behavior is reinforced and sustained rather than deterred (Farrington and West 1995; Simons et al. 2002).

In addition, future research should give more attention to the gendered effects of social bonds. Some research suggests that marriage deters men's illicit substance use, but this marriage effect is not evident for women's alcohol or drug use (Thompson and Petrovic 2009; Duncan et al. 2006). What is more, romantic bonds may be more influential on women's outcomes than are employment bonds, whereas the opposite may be true for men (Daly 1994; Haynie et al. 2005; Steffensmeier and Allan 1996; Simons et al. 2002). The notion that different types of social bonds have differential symbolic meanings for men and women based on what is deemed to be culturally appropriate has long been emphasized in the social-psychological literature (Stryker 1968). For example, females may be socialized to view interpersonal and nurturant roles as central, whereas males are socialized to see economic and occupational roles as most meaningful in their respective identity hierarchies. Indeed, several studies suggest that family relationships are especially important for motivating women's desistance from illicit drug use, whereas employment bonds are critical for men (Riehm, Hser, and Zeller 2000; Sampson and Laub 1993). None of these studies, however, include measures of illicit prescription drug misuse, despite its prevalence.

Finally, relying on secondary data necessarily restricts our indicators and research design. Add Health defines nonmedical drug use as *any* ingestion of prescription drugs that is not prescribed by a physician. It is likely, however, that the extent of such misuse varies greatly among the respondents. In fact, some individuals may use prescription drugs outside of a physician's order for "legitimate" medical reasons. While restrictive, Add Health's broad definition of prevalence is currently used across all large-scale surveys on prescription drug misuse, likely because research on this area of delinquency is relatively recent. As scholarship accumulates in this area, more refined measures of nonmedical prescription drug use will become essential. Similarly, since we are interested in adult prescription drug misuse, we rely only on the most recent wave of Add Health. Although age-graded informal social control was developed to explain continuity and change in criminal activities over one's life course, our findings nonetheless highlight a largely ignored, yet prevalent, social issue. As additional waves of adult data are collected, longitudinal analyses examining continuance and desistance will be possible.

Nonmedical prescription drug use has emerged as an important social and public health issue. Despite the current difficulties in assessing this form of drug use, identifying patterns of prescription drug misuse is crucial given its prevalence and significance. The present research emphasizes the importance of social ties in deterring nonmedical substance use; however, additional research is needed to elucidate potential causes and consequences of intermittent and chronic use.

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