Relationship Power and Sexual Risk among Women in Community-Based Substance Abuse Treatment

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ABSTRACT *Relationship power has been highlighted as a major factor influencing women's safer sex practices. Little research, however, has specifically examined relationship power in drug-involved women, a population with increased risk for HIV transmission. Using baseline data from a National Institute on Drug Abuse Clinical Trials Network multisite trial of a women's HIV prevention intervention in community-based drug treatment programs, this paper examined the association between sexual relationship power and unprotected vaginal or anal sex. The Sexual Relationship Power Scale, a measure of relationship control and decision-making dominance, was used to assess the association between power and unprotected sex in relationships with primary male partners. It was hypothesized that increased relationship power would be associated with decreased unprotected sexual occasions, after controlling for relevant empirical and theoretical covariates. Findings show a more complex picture of the association between power and sexual risk in this population, with a main effect in the hypothesized direction for decision-making dominance but not for relationship control. Possible explanations for these findings are discussed, and future research directions for examining power constructs and developing interventions targeting relationship power among drug-involved women are suggested.*

KEYWORDS *Relationship power, HIV/AIDS, Substance abuse, Women*

INTRODUCTION

Women are at risk for HIV infection through heterosexual transmission with casual and primary male sexual partners.¹⁻⁴ In an attempt to explain heterosexual transmission routes, HIV prevention research has highlighted gender inequality and the resulting power differential between men and women.⁵⁻⁷ Gendered relationship power is posited to be a factor in whether women can initiate, negotiate, and insist upon safer sex.^{8,9} Gendered relationship power, herein referred

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to as relationship power, is a multidimensional construct with roots in individual empowerment, interpersonal dominance, and macrolevel social and structural factors, such as gender norms and economic practices favoring men.^{10,11} Although research has examined the association between relationship power and sexual risk,^{12,13} it has been hampered by inconsistent measurement¹⁰ and a lack of differentiation among conceptual domains of relationship power.

Further, there is a paucity of research on the influence of relationship power on sexual risk among drug-involved women (see Amaro et al.¹⁴ for an exception). Given the established link between drug and alcohol use and increased risk for HIV transmission,^{9,15} women with substance use disorders are a particularly vulnerable population. The social and economic context in which alcohol and drugs are used also increases sexual risk. Illicit substance use often place individuals within “underground” networks, increasing the likelihood of unwanted sexual activity and violence.¹⁶ Sexual partners are also more likely to be substance users. Research has shown that drug-involved couples are vulnerable to high levels of stress related to poverty, underemployment, and limited social supports.¹⁷ Further, drug use may have direct effects on sexual functioning that may hinder safer sex. For example, cocaine or other stimulants may cause hyperarousal, impulsivity, or disinhibition.¹⁸ Opioids may suppress sexual functioning¹⁹ and increase the risk of sexual coercion or violence between partners.²⁰ Thus, information on how sexual relationship power may act as a protective factor for drug-involved women is needed.

The current study uses the Sexual Relationship Power Scale (SRPS)⁸, one of the few assessment tools that comprehensively measures relationship power. The measure was constructed using two theories—one structural (Connell’s Theory of Gender and Power)²¹ and one interpersonal (Emerson’s Social Exchange Theory)²²—which help explain gender-based power inequalities on multiple levels. The SRPS consists of two subscales: relationship control and decision-making dominance. The concept of power is often split into two components: “power to” and “power over.” “Power to” is defined as the ability to act as one desires and corresponds to the relationship control subscale.²³ “Power over” is the ability to assert desires or goals “even in the face of opposition”²³ (p. 5) and includes sexual decision making. Similar definitions of power were used to operationalize empowerment in a recent study of an economic intervention to promote gender equity and decrease sexual risk and intimate partner violence in South Africa.²⁴ Qualitative studies also corroborate the use of control and decision-making dominance as indicators of power (e.g., Harvey and Bird²⁵).

To date, the SRPS has been examined in a handful of studies with relatively diverse populations. The vast majority of studies use the total SRPS score or permutations of the original subscales, making comparisons difficult. Studies conducted in the USA found positive associations between sexual power, as measured by the total SRPS score, and condom use.^{13,14} Using data collected from a sample of women with substance abuse disorders, mental health disorders, and a history of trauma (and a part of the larger Substance Abuse and Mental Health Services Administration Women, Co-Occurring Disorders and Violence Study), Amaro and colleagues¹⁴ showed that women with higher relationship power were less likely to have unprotected sex. Several international studies (i.e., Haiti, South Africa) using an adapted 12-item SRPS measure²⁶ or a subset of SRPS questions^{27,28} found mixed results. Dunkle and colleagues²⁶ reported that women with higher relationship control were more likely to have used a condom and less likely to have contracted HIV. Pettifor and colleagues²⁸ also found relationship control positively

associated with more consistent condom use, but not with less HIV infection. Kershaw et al.²⁷ reported that decision-making dominance (using five items from the SRPS) was not significantly associated with condom use. Given the extent of the current literature, this study offered a unique opportunity to further examine sexual relationship power among a large, multisite sample of treatment-seeking women.

The current analysis addressed the question of whether relationship power among drug-involved women is associated with unprotected vaginal or anal sex with a primary male partner. Previous research showing that increases in power are associated with safer sexual behaviors led the authors to hypothesize that the SRPS subscales will each be inversely associated with sexual risk, that is higher scores on relationship control and decision-making dominance subscales would be associated with fewer unprotected sexual occasions. Additional factors associated with increased sexual HIV risk, including age and race/ethnicity,²⁹ economic dependence,^{15–17} condom use intention,^{30,31} sexual concurrency,^{32–34} and partner abuse,^{35–38} were included in the analytic model to assess the unique contribution relationship power has on unprotected sex. Findings contribute to the understanding of how multidimensional heterosexual power dynamics influence unprotected sexual behavior with particular attention to a subpopulation of women who may be at higher risk for HIV transmission.

METHOD

Sample and Procedures

The National Institute on Drug Abuse (NIDA) Clinical Trials Network (CTN) is composed of 16 regional research training centers connected to over 240 community treatment programs across the country with the goal of testing the effectiveness of proven evidence-based interventions in community-based drug treatment programs. This study used baseline data collected from a randomized trial funded by NIDA's CTN to test the effectiveness of a five-session HIV/STD safer sex skills building group intervention³⁹ designed to reduce unprotected sexual risk behavior in sexually active women in seven methadone maintenance treatment programs and five outpatient psychosocial treatment programs (see Tross et al.⁴⁰ for a full description of the study). The sites were a combination of urban ($n=6$) and suburban ($n=6$) settings, located geographically in the West ($n=2$), Midwest ($n=2$), Northeast ($n=4$), and Southeast ($n=4$) USA.

Five hundred fifteen women were recruited from the community treatment programs from May 2004 to October 2005. If a participant was interested in the study, she completed a brief screening assessment to determine eligibility and the main baseline assessment, within 30 days. Women were eligible for the study if they (1) had unprotected vaginal or anal sex with a male partner in the previous 6 months, (2) were 18 years of age or older, (3) did not have a mental health impairment that would impede participation, (4) did not immediately plan to become pregnant, and (5) were capable of providing informed consent.

Of the 515 women randomized, 396 (76.9%) reported a primary male sexual partner at baseline and were included in the analysis. The sample was restricted to women with a primary male partner because these relationships provided a context in which patterns of relationship power could develop. The question ascertaining primary partner status asked the participant "in the past 3 months, have you had a main male partner—like a husband, lover, friend, or someone else you have sex with regularly?" Those who responded yes were considered to have a primary male partner.

Measures

All data collection measures were administered by trained research assistants, except sexual risk behaviors and relationship characteristics which were part of a computer-assisted assessment completed directly by the participant.

Unprotected vaginal and anal sexual occasions were collected using the Sexual Experiences and Risk Behavior Assessment Schedule (SERBAS),^{41,42} a psychometrically sound instrument capturing sexual behavior in the previous 3 months. For this analysis, unprotected sex was restricted to the number of occasions with the primary male partner only in order to correspond with the partner who was identified in the relationship power assessment. Unprotected sexual occasion was used to quantify the frequency of potential exposures to HIV and/or other sexually transmitted infections across the sample.⁴³ The SERBAS instrument was administered using an audio computer-assisted structured interview. In response to spoken questions delivered through headphones, the participant provided answers to sensitive sexual behavior questions on the computer rather than to an interviewer. This method has been shown to elicit greater frequency of HIV sexual risk behaviors compared to interview-administered measures.⁴⁴ Women who reported no vaginal or anal sexual occasions were categorized as having no unprotected sex.

Relationship power was measured using the SRPS⁸ which consists of two subscales: relationship control and decision-making dominance. Three condom-specific questions from the relationship control subscale and one from the decision-making dominance subscale were removed from the analysis. This procedure was suggested by Pulerwitz et al.⁸ to reduce potential bias when testing the association between relationship power and condom-related sexual risk behaviors. The relationship control subscale consists of 15 items assessing empowerment, such as “My partner won’t let me wear certain things.” and “I feel trapped or stuck in our relationship.” The decision-making dominance subscale consists of eight items capturing the ability to assert personal desires. Questions include “Who usually has more say about whether you have sex?” and “Who usually has more say about when you talk about serious things?” The questions were asked in reference to the participant’s primary male sexual partner. Internal consistency reliability of the SRPS in the current sample ($n=395$) is excellent for the relationship control subscale (Cronbach’s $\alpha=0.90$) and adequate for the decision-making dominance subscale (Cronbach’s $\alpha=0.78$).

Other covariates were obtained by participant self-report, chiefly on the Addiction Severity Index (ASI).⁴⁵ Age, race, and ethnicity were collected using a standard CTN demographic assessment. Due to small numbers within the sample, participants who identified as multiracial, Asian, Native American, or Native Hawaiian/Pacific Islander, were combined into a single category (mixed or other). Educational level was collapsed into a three-level categorical variable reflecting its distribution (i.e., less than a high school degree, high school degree or equivalent, and more than high school education). Prior 30-day alcohol and drug use was measured using the ASI.⁴⁵ Participants were categorized as using substances on 0, 1–12, or 13 or more days based on the maximum number of using days across a subset of substances (alcohol, heroin, opiates, cocaine, or amphetamines). The category of 13 or more days corresponds to the definition of “regular use” on the ASI (i.e., three or more days per week). Condom use intention was collected using the SERBAS and based on a single-item response to “how likely is it that you will increase the number of times that you use a male condom when you have vaginal or anal sex with your main male partner in the next 3 months?” Participants answered

on a five-point Likert scale from very unlikely to very likely. This was recoded into a dichotomous variable; those that responded likely or very likely were coded as having positive condom use intentions.

Economic dependence was measured using the ASI.⁴⁵ Participants were asked if anyone contributed to the majority of their support and provided a yes/no response. Sexual concurrency was defined as having a primary male sexual partner and at least one additional male partner in the prior 90 days. This information was collected as part of the SERBAS and was coded as no (only one male partner) or yes (2 or more male partners). Partner violence was collected via self-report. Partner abuse was assessed from questions ascertaining whether the current primary male partner ever physically or sexually abused the participant. A dichotomous variable indicated the presence or absence of such abuse.

Data Analysis

The aim of the analysis was to examine the association between relationship power and unprotected sexual occasions, controlling for theoretically and empirically relevant covariates: age, race/ethnicity, education, substance use, condom use intention, sexual concurrency, economic dependence, and partner abuse. Means, standard deviations (continuous variables), and percentages (categorical variables) were computed for all variables. The bivariate correlation between the SRPS subscales, relationship control, and decision-making dominance, were calculated as the Pearson correlation coefficient.

Mixed-effects modeling was used to test the effect of relationship control and decision-making dominance on the outcome variable, unprotected vaginal or anal sexual occasions. Mixed-effects modeling was considered an optimal approach for analyzing the effects of relationship power on the outcome variable, while accounting for site as random effect and accommodating for missing data (provided missing data occurred at random).⁴⁶ Missing data were minimal (i.e., $\leq 2\%$ missing on any covariate). Interactions between covariates and the SRPS subscales were included in the final model if significant at the 90% confidence level (i.e., $p < 0.10$). The statistical package PROC GLIMMIX⁴⁷ was used to evaluate the mixed-effect models. This package accommodates many underlying distributions of the outcome variable and has a flexible structure for random effects. Because the outcome variable was a count with an overdispersed distribution, a negative binomial distribution was most appropriate.

RESULTS

Sample Characteristics

Table 1 displays descriptive statistics for all variables. The average age of the sample was 38.6 years. The majority was White (56.8%) and about a quarter African American (24.0%). Education level was evenly split among those with less than a high school diploma (28.5%), those with a high school diploma (37.9%), and those with more than a high school diploma (33.6%). On average, 22.7% of participants did not use alcohol or other drugs in the previous 30 days, with 36% using 1–12 days and 41.3% using 13 or more days. About 28% of the sample indicated that it was likely or very likely that they would use a condom in the next 3 months. About one third of the sample (36.4%) had more than one male partner in the prior 90 days, and about 30% reported sexual or physical abuse at some time from their

TABLE 1 Sample characteristics (*n*=396)

	Mean or %	SD	Number
Age (years)	38.6	8.6	396
Race/ethnicity			
White	56.8		225
African American	24.0		95
Hispanic/Latina	9.6		38
Mixed/other	9.6		38
Education			
<High school	28.5		113
High school	37.9		150
>High school	33.6		133
Alcohol or drug use—max days past 30			
None	22.7		89
1–12 days	36.0		141
≥13 days	41.3		162
Economic dependence (yes)	47.2		396
Condom use intention (positive)	27.8		396
Sexual concurrency (yes)	36.4		396
Current partner abuse (yes)	29.0		395
SRPS—total score	2.7	0.6	395
SRPS—relationship control subscale	2.9	0.7	395
SRPS—decision-making dominance subscale	2.5	0.7	395
# Unprotected vaginal sex occasions	21.0	30.0	387
# Unprotected anal sex occasions	1.3	4.4	387

current male partner. Finally, participants reported on average 22 unprotected vaginal or anal sexual occasions in the prior 90 days ($SD=32.1$). Participants reported a mean SRPS score of 2.7 out of 4.0 with a mean relationship control subscale score of 2.9 and a mean decision-making dominance subscale score of 2.5. The Pearson correlation between the two subscales indicated a moderate association ($r=0.52$, $p<0.001$).

Relationship Power and Sexual Risk

Table 2 displays modeled results for the fixed effects for the association of relationship control and decision-making dominance subscales on the outcome variable unprotected sexual occasions, controlling for relevant covariates. The decision-making dominance subscale was significantly associated with unprotected sex ($t=-2.69$, $p<0.01$); a one-point increase in the decision-making subscale corresponded to a 27% decrease in unprotected sex. Interactions between relationship control and substance use and condom use intention were found to be significant predictors of unprotected sexual occasions. Specifically, for women with ≥ 13 days of substance use in the past 30 days, a one-point increase in relationship control was associated with almost twice the increase of unprotected sex observed in women with no substance use ($t=2.21$, $p<0.05$). For women who intend to use condoms with their male partners in the future, a one-point increase in relationship control was associated with a 39% smaller decrease in unprotected sex observed in women without condom use intention ($t=-2.23$, $p<0.05$). To further illustrate these interactions, Figure 1 compares three levels of relationship control (low-25th

TABLE 2 Negative binomial model of relationship power fit to unprotected sexual occasions in the previous 90 days with a main male partner (*n* = 396, *df* = 356)

	AOR	95% CI
Decision-making dominance subscale	0.73**	0.59, 0.92
Relationship control subscale	1.16	0.80, 1.67
Relationship control×alcohol or drug use		
RC×none		
RC×1–12 days	1.34	0.85, 2.10
RC×≥13 days	1.82*	1.07, 3.09
Relationship control×condom use intention	0.61*	0.39, 0.94
Age (≥40)	0.75*	0.57, 0.968
Race/ethnicity		
White (referent)		
African American	0.78	0.56, 1.09
Hispanic/Latina	0.90	0.56, 1.43
Mixed/other	1.10	0.70, 1.73
Education		
<HS (referent)		
=HS	1.14	0.83, 1.59
>HS	0.96	0.68, 1.35
Alcohol or drug use—max past 30 days		
None (referent)		
1–12 days	0.39	0.10, 1.51
≥13 days	0.24	0.05, 1.19
Condom use intention (yes)	2.94	0.80, 10.82
Economic dependence (yes)	1.60***	1.24, 2.08
Sexual concurrency (yes)	0.87	0.66, 1.16
Current partner abuse (yes)	0.85	0.62, 1.15

AOR adjusted odds ratio, CI confidence interval
*p < 0.05; **p < 0.01; ***p < 0.001

FIGURE 1. Interaction of relationship control and substance use on unprotected sexual occasions with a primary male partner.

percentile, median, and high-75th percentile) by substance use category. Those with more days of substance use in the top quartile of the relationship control scale had 16 more unprotected sexual occasions than those in the top quartile with no substance use. Figure 2 shows the interaction of condom use intention and relationship control (low-25th percentile, median, and high-75th percentile). Women in the top quartile of the relationship control subscale who report condom use intentions had about 12 fewer unprotected sexual occasions compared to those who did not intend to use condoms.

Several additional covariates were also significant predictors of unprotected sex. Women who were 40 or older had fewer unprotected sexual occasions ($t=-2.13$, $p<0.05$), while women who depended on someone else for the majority of their economic support had 60% more unprotected occasions than those who did not ($t=3.53$, $p<0.001$).

DISCUSSION

The analysis revealed mixed support for the hypothesis that higher relationship power, represented by the decision-making dominance and relationship control SRPS subscales, would be associated with reduced sexual risk behavior in drug-involved women. Increased decision-making dominance was associated with decreased unprotected sexual occasions. Relationship control, however, showed a more complex relationship with sexual risk denoted by significant interactions with substance use and condom use intention. For women with more severe substance use (i.e., use on 13 or more days in the previous month), an increase in relationship control was significantly associated with increased unprotected sex. Women who did not intend to use condoms with their primary male partner also had increased risk as the relationship control subscale increased. Findings indicated that more severe substance use, which may impede ability to use condoms, and negative intentions towards condom use were risk factors for women even with higher levels of relationship control.

Within this population of drug-involved women, decision-making dominance, purported to assess “power over,” appeared to be a more direct mechanism through which women could reduce risky sexual behavior within their relationship with

FIGURE 2. Interaction of relationship control and condom use intention on unprotected sexual occasions with a primary male partner.

primary male partners. Decision-making dominance subscale items more often elicit a woman's report of relative power (i.e., denoted by the clause, "who usually has more say about...") in a variety of practical relationship situations. Thus, the decision-making dominance subscale could be viewed as conveying a more explicit assessment of concrete power dynamics within the relationship. In other words, decision-making dominance seems to be a better measure of a woman's instrumentality in daily life with her partner as expressed in decisions about spending time together or alone, talking seriously, and whether to have sex. This may be a better characterization of the relationship power of drug-involved woman, which has been described by others as manifest in her responsibilities for maintaining the couple's basic resources (e.g., housing, food, etc.) or collaborating in drug transactions with her partner.⁴⁸ The relationship control subscale is comprised of a mixture of items that favors a woman's perception of her partner's experience of the relationship (e.g., "My partner does what he wants, even if I do not want him to." and "My partner gets more out of our relationship than I do.") and her perception of power disparity (e.g., "My partner gets his way most of the time.").

In this study, relationship control, in part, appeared to place some active substance users at higher risk for unprotected sex in their primary heterosexual relationships. Although this was a surprising finding, it highlights the importance of considering the context in which women use alcohol and drugs. In particular, if a woman perceives condom use as a barrier to closeness or affiliation with her partner, then unprotected sex would, in fact, be an assertion of her will or "power to." This may be more likely for more severe substance users, who commonly have fewer social supports and increased social or economic dependence on male partners. Conversely, intention to use condoms appeared to act as a protective factor. HIV prevention interventions should continue to focus on individual-level behavioral intention and substance use reduction but with recognition of the interpersonal dynamics between partners.

Further underscoring research showing that women with fewer economic resources have increased HIV risk (e.g., Zierler and Krieger⁴⁹), this study found that women who received the majority of their support from another individual had significantly more unprotected sex controlling for other variables. Similar findings were reported in a convenience sample of women in Botswana. Negotiating power (i.e., safer sex communication, ability to insist on condom use, discussion of previous sexual partners) and economic independence were both associated with increased condom use.⁵⁰ These authors, along with promising results from an economic empowerment and HIV prevention intervention study with commercial sex workers in the USA,⁵¹ indicate that empowering women through income-generating activities and negotiation skill building may influence safer sex behaviors. These findings and others suggest that structural-level interventions show potential to increase economic resources and decrease HIV/AIDS risks, particularly for disenfranchised women.^{52,53} Among poor or drug-involved women, safer sex concerns are likely to fall far below pressing survival priorities.^{10,15,54} Thus, the development of interventions that impact the risk environment of drug-involved women and increase economic opportunity and independence are needed.⁵⁵

Race/ethnicity was not significantly associated with differences in unprotected sex. Prior research has found mixed results for the relationship between HIV risk and race/ethnicity.^{54,56} For example, more recent studies have shown that Black and Latina women report more consistent condom use compared to White women,^{57,58}

while an earlier study reported more consistent condom use among White and Latina women.⁵⁹ Additional research with drug-involved women is needed to unpack contextual and cultural differences across race and ethnicity in the relationship between power and HIV sexual risk behaviors. Ensuring adequate sample sizes of multiracial and other ethnic minority groups is also critical.

Partner abuse was also not significantly associated with unprotected sexual occasions in this study. Although research has shown that intimate partner violence is linked to sexual risk, the current findings suggest that it may be a proxy for control and dominance in the relationship. The indirect influence of violence may work through relationship power in a woman's ability to suggest, negotiate, or insist upon condom use.

Finally, as in the validation study of the SRPS⁸, these results further support the assertion that the relationship subscales capture two distinct domains of relationship power. The divergent results for the relationship control subscale have also been noted in recent studies^{60,61} and may indicate that it is capturing more than one construct. Prior studies have found higher total SRPS scores to be associated with fewer unprotected sexual occasions in a community sample¹³ and substance abuse treatment-seeking sample.¹⁴ The current findings support the use of multidimensional domains of power to better understand and disentangle heterosexual power dynamics in the context of sexual risk behavior.

Limitations

Several limitations should be noted. First, we cannot discern from the current analysis whether women had the intention or desire to use condoms with their primary male partners for the period of time assessed (i.e., previous 3 months). The condom use intention variable was prospective, assessing future intention. Second, other variables not included in the current analysis may also explain sexual risk behavior. For example, Kershaw et al.²⁷ examined sexual communication with partners, partner infidelity, and emotional, physical, and sexual abuse as separate independent variables predicting sexual behavior. In addition, research has shown a clear relationship between childhood abuse and sexual risk (e.g., Heiman and Heard-Davidson⁶²). It was decided that including additional interpersonal trauma would take the focus of the paper beyond a reasonable scope. Future research should examine how trauma histories intersect with relationship power and sexual risk.

The SRPS is a landmark measure of relationship power; however, additional considerations may improve the measurement of this complex construct. First, the SRPS captures only the female's perception of power in the relationship. Querying both partners might allow for measurement of important interpersonal dynamics. Contextual components are also not captured in the responses to individual items, and this may impact the interpretation of relationship power findings. The SRPS, although theoretically grounded to Connell's structural model, does not include items addressing economic or employment (sexual division of labor) issues. Economic inequity within relationships may have particular importance,⁶³ and more work is needed to comprehensively measure "power over" constructs, including resource control and economic dependence. Finally, the moderate Pearson correlation between the two subscales ($r=0.52$, $p<0.001$) indicates that the constructs are related—further research should continue to hone in on the unique attributes of each relationship power factor.

Implications

Given that drug-involved women are at increased risk for HIV transmission, additional research should examine the association between relationship power and sexual risk in more detail (e.g., stratified by primary substance of abuse or program type) to further understand the mechanisms involved in the association between relationship power domains and substance use and abuse. Findings suggest that examining different types of relationship power can be useful in understanding the association between power and sexual risk behaviors for drug-involved women and could lead to targeted improvements in HIV prevention intervention components.

Theories based on rational health promotion behaviors to explain HIV prevention presume that personal health is a top priority for women; health may be perceived as a top priority among more privileged women who may be less concerned with basic needs (e.g., housing, employment), but this perception might not be shared within marginalized groups, such as substance-using women. These findings support the use of the theories and measures which take into account social, cultural, and economic forces that negatively impact women's health in the context of their primary sexual relationships. Multilevel interventions targeting individual motivation, relationship-level factors, and structural barriers are called for to address socially constructed inequality among women and their male partners.

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