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## Male Same Sex Couple Dynamics and Received Social Support for HIV Medication Adherence

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### Abstract

This qualitative study examines received social support by analyzing relationship dynamics concerning antiretroviral therapy (ART) adherence among HIV+ seroconcordant and serodiscordant male couples. Using narrative data from forty participants (20 couples interviewed separately), we describe patterns of relationship dynamics and support preferences. One group viewed adherence as a Personal Responsibility. A second group viewed adherence as a Couple Responsibility and integrated support for medication adherence into the relationship. A third group was in the process of ending their relationships and adherence support was one-sided or withdrawn altogether. Examining support exchanges contexts at cultural, situational, relational, and personal levels illuminated adherence processes. Qualitative methods provided a framework for investigating these complex relationships and their associations with HIV treatment adherence.

### Keywords

Adherence; Antiretroviral Therapy; Gay Couples; HIV Infection; Social Support

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There is a large body of evidence linking social support to important health constructs, including adherence to treatment regimens and social support has been hailed as beneficial for physical and emotional well-being (House, Landis & Umberson, 1988). In the context of HIV, social support may be particularly important for understanding adherence to medications prescribed to curtail the progression of HIV, known as antiretroviral therapy (Burgoyne, 2005; Burgoyne & Renwick, 2004). In the present paper, we use narrative data to provide an understanding of couple support for antiretroviral therapy adherence.

Current antiretroviral therapies (ART), shifted HIV from a terminal illness to a manageable chronic one. Strict ART adherence is required, however, for treatment success and increased survival. Nonadherence can increase the risk of developing drug-resistant viral strains and transmitting drug-resistant strains to others. Considerable research has examined the association between social support and levels of ART adherence across a number of affected populations. These studies found that perceived (i.e., available) support is associated with better adherence (Burgoyne, 2005; Burgoyne & Renwick, 2004; Murphy, Marelich, Hoffman, & Steers, 2004). Measures of perceived support, however, do not indicate whether support was actually required, requested, or enacted, nor do they illuminate support transactions or what aspects of those transactions helped or hindered adherence. By focusing primarily on perceived support, previous studies fail to describe relationship dynamics that may play an important role in ART adherence.

In the light of contradictory findings of the effect of different aspects of social support on well being, researchers have called for a closer examination of the specific transactional nature of offering and receiving support (Addis & Mahalik, 2003; Wethington & Kessler, 1986). The goal of this study is to examine narrative accounts of offered and accepted support and non-support for adherence to ART in 20 male couples. The result should be a better understanding of when, why, and how support is offered and received and the extent to which it is beneficial.

## The Context of Social Support

The health benefits, including mortality, of perceived available social have been replicated extensively (Uchino, 2004). Findings for received support are less clear, however, as studies have either concluded no benefit or even a negative association between received support and well-being. (Kaul & Lakey, 2003; Lakey & Lutz, 1996; Reinhardt, Boerner & Horowitz, 2006). Understanding why received social support is inconsistently linked to well being remains a prerequisite for developing a workable theory of social support. What is it about received (enacted) support that might account for its negative association with well-being? Context has been offered as an over-arching term that is able to answer that question (Uchino, 2004).

Within support exchanges, context encompasses cultural, relational, and personal levels. Cultural differences exist in the meaning assigned to, and the enactment of, social support (Dressler, Balieiro, & Dos Santos, 1997; Dressler, Viteri, Chavez, Grell, & Dos Santos, 1991). For example, attitudes and behaviors reflecting Americans' cultural commitment to individualism have been compared with those in more collectivist cultures such as Japan (Caudill & Weinstein, 1969; Masuda & Nisbett, 2001; Miyamoto, Nisbett, & Masuda, 2006). Therefore, the individualistic North American cultural context must be considered to fully understand the meaning of social support exchanges.

Who provides support is another important and widely-studied aspect of the social support context. Although family and friends frequently provide support, relationship partners are a primary source of social support for gay male couples coping with HIV (Haas, 2002; Power et al., 2003). Seidman, ShROUT and Bolger (2006) proposed that social support studies should generally account for dyadic dynamics as opposed to identifying one partner as provider and the other as recipient. The present study of support exchanges examines who provides what kind of support (emotional, functional); whether the situation is considered a crisis, as stressful, or as ongoing daily life; and whether the support provided is visible to the recipient, and if so, whether it is viewed as helpful. One way that support provided within a dyad falls short is that it does not fit with the receiver's sense of what is needed. For instance, Bolger, Foster, Vinokur, and Ng (1996) found that breast cancer patients received support from their significant others for physical impairment, but not emotional distress, and did not alleviate overall distress.

It is also possible to identify the heterogeneity in dyadic (i.e., relational-level) support for illness management. For example, some couples where one partner suffered from rheumatoid arthritis shared illness management, other couples held the ill partner responsible for managing it, and a third group of couples experienced conflict about illness management (Mann & Dieppe, (2006). Little research focuses on the how relationship factors influence ART adherence. Theodore, Duran, Antoni Fernandez and Schneiderman (2003) reported that a lack of intimacy in the primary relationships of HIV+ gay men taking ART was related to poorer adherence. Identifying different dyadic support styles and linking them to different outcomes can help to increase our understanding of the conditions under which received support is effective and why.

## Partner Support for ART Adherence

Few studies address partner support for people with HIV and even fewer focus specifically on medication adherence. Darbes and Lewis (2005), in a longitudinal study of 47 gay male couples, found perceived HIV-specific support from a partner (but not general social support) to be a robust predictor of lower risk sexual behavior. This suggests that it is important to examine specific aspects, rather than overall assessments, of support exchanges. Fife, Scott, Fineberg, and Zwicky (2008) conducted a randomized clinical trial to test an intervention with co-residing heterosexual and homosexual couples where one member of which was HIV+. Couples in the intervention condition attended 4 sessions focused on couple communication, stress appraisal, adaptive coping, and increasing social support. Compared to a control group, the intervention increased well-being, but not social support.

Among the few studies on partner support for ART adherence, Power (2003) highlighted the importance of partner social support for ART adherence among 73 HIV+ men and women. They found that perceived satisfaction with partner support (but not support from family and friends) was associated with better adherence. Remien and colleagues (2005) performed a randomized clinical trial to investigate an intervention to improve ART adherence among a sample with previously low adherence. The study included 215 serodiscordant (i.e., one partner being HIV+ and the other HIV-) heterosexual and homosexual couples. The intervention group, which received four couple-focused sessions, achieved significantly higher adherence than the control group; however, by the 3 and 6-month follow-up these effects diminished.

Finally, Project HEART was a randomized controlled trial of an intervention for individuals with HIV initiating ART (Davies et al., 2006; Koenig, et al., 2008). Participants in the intervention group identified an adherence partner (i.e., lover, spouse, friend, family or other caregivers who may or may not co-reside with the participant), who attended at least two of the four intervention meetings with the participant. The intervention, conducted through individual and group meetings with a formal care provider, consisted of education, cueing and monitoring medication doses, and enhancing adherence support. The intervention group showed significantly higher adherence than the control group; however, as with other studies, these effects diminished with time.

These studies suggest that social support can facilitate the maintenance of adherence to ART for people with HIV. What remains unknown are the particulars of adherence support as enacted in a dyad. The ultimate goal, in this case, is to identify the kinds of support and receivers that generate sustained long-term adherence.

## Theoretical Framework

Research suggests that effective social support leads to better adherence to treatment and to improved health outcomes (DiMatteo, 2004; Dunbar-Jacob & Schlenk, 1996). Our current program of research is guided by two relationship and health behavior theories. First, interdependence theory focuses on the interaction between partners in close relationships (Rempel 1985; Drigotas 1999; Wieselquist 1999), and more specifically, each partner's ability to influence the other's behavior. Particularly relevant to adherence to HIV treatment, is transformation of motivation. Interdependence theory posits that within relationships there are ongoing shifts between *given preferences*, behavioral preferences based on immediate, self-centered reactions to an event, and *effective preferences*, based on the implicit or explicit consideration of long-term consequences, implications for the partner and broader concerns (e.g., relational well-being) (Arriaga, 1998). Thus, the transformation of motivation, whereby individuals relinquish immediate self interests for the best interest of

the relationship (Rusbult 1993) is directly relevant to ART adherence. Such a motivational shift could be beneficial to the relationship if, for example, one partner typically acts defensively toward his partner's nonadherence to avoid an argument. Bringing up his discomfort about his HIV-positive partner's nonadherence to medications "for the good of the relationship," represents a meaningful opportunity to intervene with the partner.

The second, complementary, theoretical framework is Social Control Theory (Lewis, Butterfield, Darbes, & Johnston-Brooks, 2003; Lewis & Rook, 1999; Umberson, 1987, 1992). Social control indicates that social bonds serve to regulate or control behavior. In health-related contexts, social control can influence behavior directly or indirectly (Lewis & Rook, 1999; Rook, Thuras, & Lewis, 1990). When one partner avoids risky or unhealthy behavior to more effectively fulfill obligations to the partner, social control is thought to be operating indirectly. In contrast, direct control occurs when one partner actively attempts to influence the other's behavior.

The present research focuses on direct control tactics and effects. A wide range of both negative (e.g., nagging or guilt induction) and positive control strategies (e.g., modeling desired behavior and providing encouragement) have been identified (Butterfield & Lewis, 2002). Frequency and success of tactics varies by gender and the particular outcome (Lewis et al., 2003), but greater behavior changes follow positive, when compared with, negative tactics. Little research focuses on social control and medical adherence. One study reported a positive relationship between spousal social control and increased antihypertensive adherence (Rook et al., 1990). In another study, wives' positive beliefs about the benefit and necessity of coronary treatment predicted their husbands' adherence over time (Doherty Schrott, Metcalf, & Iasiello-Vailas, 1983). The current study is the first to apply social control and interdependence theories to the challenge of medication adherence among same-sex male couples facing HIV.

The primary research question is how the relationship dynamics within gay male couples affect the giving and receiving of support for ART adherence. Using narrative data from both partners, we describe relationship dynamics, their role in support transactions, and contextual (cultural, situational, relational, personal) relevant to adherence support. Such data should help us understand the nature of desired support, what is actually offered, what is accepted, as well as how and when they benefit adherence. Qualitative analysis is particularly appropriate for addressing these issues that are difficult to capture quantitatively (Addis & Mahalik, 2003; Sankar, Golin, Simoni, Luborsky, & Pearson, 2006; Wethington & Kessler, 1986).

## Methods

### Participants

Data for this study come from the first phase of the Duo Project, a three-phase study of how relationship dynamics influence HIV medication adherence. In the first phase (December 2006 to March 2007), 20 male couples were recruited for a one-time, detailed interview about their relationship, health care practices, and HIV medication adherence issues. Couples were recruited from local HIV care newsletters, referrals from other studies, HIV clinics, and gay venues. Interviewers obtained informed consent at the time of the interview. To be eligible for the study, the participants had to be 18 or older, in a relationship and co-residing for a minimum of 3 months, and at least one partner had to be HIV+ and on an acknowledged antiretroviral therapy (ART) regimen for at least the previous 30 days.

Couple members were interviewed simultaneously but separately to avoid one person shaping his answers based on the other individual's account of the interview. Experienced

(i.e., minimum of 1 year of HIV-related research) interviewers with were trained by the study's lead qualitative investigator. Prior to conducting actual interviews, interviewers conducted mock interviews that were reviewed for protocol adherence. Each participants received US\$40 for the approximately 90-minute interview, which was held in a private room.

The sample was composed of 10 couples who were HIV + seroconcordant and 10 serodiscordant couples (40 total interviews) with a mean age of 48.7 years. The sample was ethnically diverse and mirrors the gay male population with HIV in San Francisco; 70% White, 15% African American, and 10% Latino. Twenty percent completed high school as the highest level of education, 32 % had some college, and 25% graduated from college. The majority (60%) reported an annual income of less than US\$20,000 per year. The 30 participants with HIV had been living with HIV for a median of 15 years, had been taking antiretroviral medication for a median of nearly 7 years, and reported high current adherence levels. Many participants with HIV were on disability insurance, and reported income was low for the sample.

## Procedures

The interview protocol included questions about the couple's relationship (mutual activities, points of disagreement, finances, sex life), health-related social support (the participant's and partner's health, what each person does to support the other's health), HIV (diagnosis history, medication history, current medications), and adherence practices (when is medication taken, adherence strategies, what the participant or partner does to support adherence, context of missed doses, last missed dose). For all topics, participants were asked to respond in general and also to provide a narrative of a recent event (e.g., "Tell me about a recent good time with your partner; a time when you had fun or felt particularly close or really enjoyed yourselves.").

Participants in HIV+ seroconcordant relationships were asked questions relating to their own and to their partner's adherence as they could both be the adherence support giver and recipient. Participants in serodiscordant relationships were asked questions relevant to their own or their partners' serostatus. Interviews were audio recorded, transcribed, and entered into ATLAS.ti, a narrative data analysis software program.

For participants on ART, we assessed adherence over the past 30 days using a visual analog scale (VAS) (Walsh, Mandalia, & Gazzard, 2002). For each HIV medication prescribed, participants indicated how much of each drug he had taken in the past 30 days on a 20 cm scale (0% to 100%). Adherence was an average across all medications in a respondent's regimen.

We approached narrative analysis with a rigorous three-step process—coding, case studies, and cross-case analysis. The aims of coding cases were (i) to identify characteristics of the couple relationship; (ii) to note narrative accounts of specific events that illustrated the couple dynamic; and (iii) to identify attitudes, actions, and strategies concerning taking medication in each case, in order to examine aspects across all cases. We initially used a team-based approach to developing codes and coding the narratives (Fernald & Duclos, 2005; MacQueen, McLellan, Kay, & Milstein, 1998). Each team member began narrative data analysis with broad questions: Which interactions illustrate relationship dynamics? What are the roles of HIV and ART in the relationship? What are the couple dynamics around health issues; around medication adherence practices? The team read the narrative accounts repeatedly with these questions in mind, articulated more specific questions based on these close readings, and developed codes that reflected what was said in the interviews. Codes were further refined into index codes to demarcate themes and marker codes to note

the presence of actions, attitudes, feelings, and experiences that were relevant to the study questions (MacQueen, McLellan, Kay et al., 1998; Seidel & Kelle, 1995).

The team developed the coding protocol from 5 couples' interviews (i.e., 10 interviews), after which no new codes emerged and the codes were judged to be saturated (Bowen, 2008). The remaining cases were coded by one team member and verified by the other two. The few disagreements encountered were resolved through discussion until consensus was reached.

Written case studies were completed by one team member of and verified by a second. Interviews from both partners constituted a case. Case studies articulated the couple dynamic both in general and as it specifically related to health issues and ART adherence (Ragin, 1999; Yin, 1999). Case studies addressed interactive dynamics that were thematic for the couple, with particular attention to health- and adherence-related support that was offered or not, and that was accepted or not. Case studies also examined personal meanings that were explicit in the narratives and that were relevant to the couple support dynamic and/or individual adherence.

Cross-case analysis (Stake, 1995) in which the cases (couples) were grouped according to similarities in patterns of themes, personal meanings, attitudes, and actions completed data analyses. Cases were grouped by one team member and verified by a second.

## Results

We found two basic orientations to ART adherence in the sample: Personal Responsibility and Couple's Responsibility. The Personal Responsibility group viewed adherence as an individual's responsibility and unconnected to the relationship. Within this group were two subgroups: My Responsibility and His Responsibility.

The Couple's Responsibility group viewed adherence as falling to the couple and how they defined their relationship. This group integrated adherence support practices into the relationship. This group also contained two subgroups: Consensual Dominance and Mutuality. Only the His Responsibility subgroup contains all serodiscordant couples. All other groups include both seroconcordant and serodiscordant couples. It is not the seroconcordance or serodiscordance that drives the offering and/or the acceptance of adherence support. In the Personal Responsibility group, personal meanings concerning autonomy or HIV appeared to determine adherence support. Either accepting or offering ART adherence support was distinct from other couple dynamic. By contrast, couple dynamics in the Couple Responsibility group shaped the acceptance and the offer of support, even though some partners held personal meanings concerning autonomy.

### Personal Responsibility

In five couples (1 HIV + seroconcordant) at least one partner viewed adherence as a personal responsibility. In two cases, the participants with HIV took that responsibility and in the other three serodiscordant couples, the HIV- participant considered adherence the HIV+ partner's responsibility.

**My Responsibility**—The 2 couples in this group (1 seroconcordant), embraced the notion that adherence was a personal responsibility and not a relationship issue. Their view reflects the larger cultural meaning of autonomy, which they apparently embraced personally.

I don't let my partner get involved with taking my medication type stuff. That's an automatic thing for me. It's between me and my doctors and my people. Just like D

and his medicine is between him and his doctors and he does what they tell him, and I do what mine tell me. And it hasn't anything to do with my relationship with my partner. [Seroconcordant, couple for 3 ½ years, HIV+ 20 & 15 years]

The second (serodiscordant) couple echoed that the HIV-positive partner's adherence was his own responsibility and he did not want or expect reminders from his partner. In these couples, non-involvement in adherence did not mean emotional detachment. For example, the serodiscordant couple, in a long-term committed relationship, described instances of providing emotional support and described the relationship as "*We're an old, boring married couple.*" When the positive partner was asked if his partner did anything that was helpful in his taking his medications, he replied: "*He loves me. He makes life worth living.*" [Serodiscordant, couple for 13 years, HIV+15 years] The partner was emotionally supportive; but practical support for adherence was not desired, requested, nor offered.

**His Responsibility**—All three couples in this Personal Responsibility subgroup were serodiscordant, and the HIV-negative participants held that the partners on ART were and should be responsible for their own health care issues, including adherence. The HIV seronegative participants did not provide practical or emotional support for adherence. If their partners decided to miss doses or stop altogether, they would not try to convince them to remain adherent.

He doesn't need me to stand behind him to take it [ART]. And this is another thing why we get along so well, is because you know what, if he decides one day that he doesn't want to take it, I'm not going to push him on it, okay? Because it's his choice whether he wants to take it, okay? It's his body; it's his temple. [Serodiscordant, couple for 6 months, HIV+ 14 yrs]

These three seronegative participants had a personal meaning regarding HIV that reflected an avoidant attitude toward HIV and issues surrounding it (e.g., ART adherence). They avoid talking about HIV not because it does not matter, but precisely because it does:

[When we met, he said,] "Yeah, I'm positive." I'm like, "Okay, cool." I mean it's no big deal to me. I don't think about it. I think about it, I get depressed. Because I had -- my aunt had HIV and my cousin had it and he passed. And my ex-partner had it, so I don't really think about it that much. I mean, he tries to bring it up, but I always cut him off. What is there to talk about? I mean you're positive; I'm not, so why would we discuss it? [Serodiscordant, couple for 5 years, HIV+ 12 years]

On the other hand, while the seropositive participants in this group did not express a desire for adherence support, they did want to talk about HIV and their disease progression in order to prepare their partners for what was to come.

Participant: He hasn't really totally accepted the fact that eventually I'm going to die. That's what people do from this disease. They die. You know, maybe not right away, but I'm going to. You know, he needs to know what to do if that happens.

Interviewer: So you really kind of push him to do that.

P: I make him do that. I have to because who? There's nobody to look out for me if I get, you know, if I can no longer take care of myself, feed myself, and stuff like that, but him. So he needs to know what to do. [Serodiscordant, couple for 10 years, HIV+ 20-plus years]

Although participants with HIV in the His Responsibility group currently reported high levels of adherence, their interviews indicated past difficulties maintaining consistent adherence. One participant's failure to adhere was long-term, and he was currently in a directly observed therapy program. Although partners in each couple had differing views on

support for HIV-related issues, their relationships were committed and caring. For example, typical statements included “*We say we love each other each and every day.*”

### Couple’s Responsibility

Twelve couples (6 seroconcordant) integrated ART adherence into their couple relationships. Their relationships could be characterized as either Consensually Dominant or Mutual. Unlike couples in the Personal Responsibility group, Couple’s Responsibility couples integrated ART adherence and support for adherence into their relationships. Specifically, the Couple’s Responsibility group described varied ways of weaving adherence into their daily lives.

**Consensual Dominance**—Five couples (4 seroconcordant) described their relationship as one partner being the “boss” or the “daddy.” Both partners were clear that this was their preferred relationship and did not involve power struggles.

Partner 1: I like the daddy type and he certainly is—he’s that type, looks, and personality. ... He’ll remind me about my prescription. He’ll say, “Are you getting low? You better call it in before you run out.”

Interviewer: Do you remind him?

Partner 1: He’d think I was henpecking him if I [laughter] went to him, “Did you take your medication?”

In his separate interview, this participant’s partner described the situation this way:

Partner 2: “Well, I certainly love him. He’s very dependent, which I don’t mind. I mean, I don’t mind being a parent. ... He doesn’t keep up with my health issues as much as I keep up with his, I mean, I oversee him far more than he oversees me. [seroconcordant, couple for 12 years, HIV+ for 16 years & 13 years]

In these couples, one partner embraced the personal meaning of autonomy, but only for the self. In terms of adherence, the HIV+ partners-in-charge might accept some limited practical support from their partners (e.g., partners bring them medication), but basically assumed responsibility for their own adherence, and at the same time were very involved in their partners’ adherence.

The partners-in-charge offered a wide range of support, from organization (e.g., setting up a system for the pills, or keeping track of laboratory reports), to regular reminding or intensive situational reminding. They also provided support through problem-solving, reinforcing incremental gains, and offering affirmations. For example, one partner-in-charge suggested that his partner, who was having trouble remembering his medications, associate taking his medications to an already established habit, like brushing his teeth. The partner took up the suggestion and his adherence improved.

The partners-in-charge who were HIV-positive were not particularly open to receiving adherence support from their partners, because it conflicted with their personal meaning of autonomy or the overall couple dynamic. The partner-in-charge in one couple described his reaction to the occasions when his partner inquired about his medication: Sometimes it’s a little much, you know, because I’m a very self-sufficient person. But, after I’m annoyed for a second I realize that this is really sweet. [seroconcordant, couple for 16 years, HIV+ for 25 years & 16 years] In this case, the reminder about taking his medication was understood as a challenge to his autonomy (self-sufficiency) and irritated him. Then he reframed his partner’s action; although unnecessary, as a nice gesture and a sign of love.



**Mutual Relationship**—Seven couples (2 seroconcordant) had mutuality as the basis of their relationship and this mutuality extended to support for ART adherence. They expressed their mutuality through being synchronized with each others' schedules, by division of responsibilities, or through reciprocity.

Two serodiscordant couples had a relationship that was synchronized with respect to the HIV-positive partner's medications so that the partner's HIV health concerns and his medication needs were woven into the daily fabric of the couples' lives.

Participant: So, every night before we go to sleep, he's like, "Have you taken all your medicines?"

Interviewer: Do you find it helpful that he asks and helps you?

P: I don't mind it at all. I think it's a very caring gesture, that he says it.  
[Serodiscordant, couple for 6 years, HIV+ for 22 years]

Regularly reminding was a common practical support strategy for them, as was checking the pill organizer to see if the pills were taken, bringing pills to the partner, and helping to organize them. Both of these couples had the HIV+ individual's medications listed on their home computer should the HIV- partner need to access information about the medications to make future health decisions.

One seroconcordant couple described their relationship as having a very clear division of labor, with everything having to do with medications handled by one partner, and other responsibilities (namely, cooking and employment) performed by the other. The partner with responsibility for the medications dealt with every aspect, from calling the doctor for prescriptions, getting refills, organizing the pills, and seeing that his partner remained adherent. The participant responsible for medication had excellent adherence and he made sure that his partner was as well. At one point, the participant without medication responsibility forgot to take his noon dose when he was at work, and described his partner's reaction:

He's so pissed. He goes, "Well," when he finds out, especially last week when I missed four days in a row, "God damn it." And he goes, "I'm going to have to just light up your cell phone. I don't care what you're doing, you know, whatever you're doing you're going to drop what you're doing and take your pills." He said, "I'm going to call you between 10 and 1 every day, just light up your phone until you tell me you've taken your pills." But ever since then I've been taking them, so, when he does call, "Yeah, I took them." So that's it. [Seroconcordant, couple 30 years, HIV+ for 6 years]

Four couples (3 serodiscordant) described reciprocity as a basic relationship style that often translated into medication adherence. As one participant said in response to the question of what kept them together as a couple:

Love, and I think we each meet different needs in the other person. In some ways we're very dependent upon each other for different needs. He tends to be the more physical, you know, as far as cleaning and lifting things and carrying things. And I tend to be the more organized one who sets up appointments and does the taxes and so on. So we complement each other. [Serodiscordant, couple for 10 years, HIV+ for 12 yrs]

One factor that possibly contributed to this reciprocity was that the HIV- participants also had health issues and received support from their HIV+ partners. For example, one seronegative partner had a food allergy, and the HIV+ participant did all the food preparation with great care and was also vigilant when they visited other people, or went out

to dinner. In this way, he reciprocated the care provided by his partner. He mentions this when asked what keeps them together as a couple:

Our compatibility. I think that we're very good for each other. I know that he cares about me deeply and I care about him as well. I have some unique situations in life that kind of would make me a challenge to live with. I'm not good in the mornings. I take my meds at night and sometimes when I wake up in the morning I have kind of like a sour stomach, and I usually have two, three bowel movements before I can even think about leaving the apartment, which is just one of those things of living with HIV for over 10 years and being on meds. He, on the other hand, even though he's HIV-negative, has a very unique dietary allergy where he can't eat any pork products. And so it's a give and take, but we do that well, and we consider each other in making decisions. [Serodiscordant, couple for 5 years, HIV+ for 10 years]

It is striking that in 2 other couples that embraced reciprocity, one partner strongly endorsed autonomy, but adapted its meaning such that it was possible to provide and receive support for adherence and other health-related activities. A seroconcordant couple describes how they support each other in making doctor appointments.

Interviewer: What do you do to take care of his health?

Participant: I repeatedly remind him that he should be doing blood work more than twice a year, as his doctor always tell him to.

I: How does that work for him?

P: He finds it annoying. And I find it annoying that he finds it annoying. But I don't stop doing it because I care about him. [Seroconcordant, couple for 12 years, HIV+ for 21 & 20 years]

In his interview, the "annoyed" participant recounts going to the doctor with his partner when he was not feeling well, and says:

When he's not feeling well or something different is going on, I'll go to the appointment with him. ... I look out for him, he looks out for me.

They have found a way to be reciprocally supportive within the relationship while still maintaining the ideal of autonomy. The participant articulates this best when he talks first about giving his partner reminders to take his medication:

And does it happen often? That I remind him? Sometimes. But he's very independent in that sense.

And later recounts his reaction to his partner calling him to tell him that he forgot to take his morning medication:

It's comforting. I know that it's another sign that he loves me. So, I like it. But again, there are never any expectations. It's not like he's responsible for it.

As long as it is clear that they are each responsible as individuals, they can offer and receive adherence support reciprocally within the relationship as part of the way they show love for one another.

Another couple described how received support was initially viewed as a challenge to self-sufficiency, but reciprocal care was now integral to their relationship. Reciprocity came to be understood as part of their mutual caring commitment. The seronegative partner noted:

Participant: He cares, definitely, about my health and how I'm feeling, and as much as I do for him, as well. So, we sense that between each other, so I think that's a good thing.

Interviewer: So, how does it work for you?

P: I think at first it used to bother me, 'cause I feel like I have no problem really taking care of myself. But it's something that he enjoys doing, so it's not one of those things that's worth pursuing, like I can do it myself, kind of thing. It's something he likes to do, and I do back, so it's a win-win, 'cause we're both always looking out for each other. [Serodiscordant, couple for 3 years, HIV+ for 12 years]

The seronegative partner, for his part, had developed ways of providing adherence support that was acceptable to his partner. The support involved being responsive to what kind of support was acceptable to his partner and adapting strategies that were effective.

He doesn't like being told what to do. And so I found ways of approaching it differently. I figure out ways to suggest what the point I'm trying to get across, instead of coming across too forcefully. He's finding out things that he took for granted over the years, I guess of taking your meds for so long, you get those little pieces of paper that come attached from the pharmacy. And I read them, and then some of them, there's interesting things in there. And I said, "You know, these things change over time. You've been takin' 'em for 15 years." I said, "Do you read this every time they give it to you? You know, where they tell you, 'Don't take on a full stomach,' or 'Don't take it on an empty stomach.'" He goes, "Oh, I didn't know that about this one." It causes severe nausea and vomiting. Hello, there it is, it's telling you why. But--I care for him enough to know that he doesn't always make time for himself that way. He doesn't intentionally, but he's got so many things going, and he's just focusing on what he should be doing. I think I show a lot of care for him, as much he does for me, too.

The seronegative participant had a whole armamentarium of strategies to support his partner's adherence: seeking information, discerning when help may be needed, taking a stand about what matters, coaching, and selective intensive reminding (Wrubel, Stumbo & Johnson, 2008). His reason for his actions is: "I want him to stay healthy. Because again, his health down the road affects my health, too."

**Relationship Ending**—Three couples, all seroconcordant, were in the process of ending their relationships. These 3 couples illustrate that relationships and adherence support both change and evolve over time, and that an ending dyadic relationship may have very real consequences for individual adherence. One couple had divided responsibilities with one partner in charge of the medications and supervising adherence for both of them.

We don't miss our pills or anything like that. I mean, if you were to look at us, we would be the model for taking care of ourselves, but our relationship, I don't think we're [going to make it], unfortunately. [seroconcordant, couple for 5 years, HIV+ for 14 years & 20 years]

This man's partner did not even know the names of the medications he took for his own HIV. He just took what the participant set out for him. When they separate, his adherence may be severely affected.

In another couple who were planning on moving to separate apartments, one man persisted in supporting his partner's adherence to the point of nagging him about it, but his partner had no such concern with respect to his partner's adherence.

I have no idea what his system is for remembering to take his meds. I don't pay attention. [Seroconcordant, couple for 7 years, HIV+ for 15 & for 8 years]

## Discussion

The initial goal of this study was to provide an in-depth description of enacted support practices for ART adherence in a group of male-sex couples. We found that the context of received support at the cultural, situational, relational and personal levels all contributed to enacted and un-enacted support, but not uniformly. For example, our analysis yielded, among other things, a number of themes relating to autonomy and self-sufficiency that could not be determined quantitatively.

A couple's seroconcordance or discordance does not appear to be the primary factor determinant of beliefs about responsibility for ART adherence. With the exception of the *His Responsibility* subgroup of the Personal Responsibility group, all others were a mix of seroconcordant and serodiscordant. Rather, couples' cultural, situational, relational, and personal context appeared to drive adherence support preferences and processes. What is more, the present, including autonomy and self-sufficiency, would likely play a role in adherence support for heterosexual couples as well (Addis & Mahalik, 2003).

In 9 of the 20 couples in the study (6 seroconcordant, 3 serodiscordant), one or both partners voiced the personal importance of autonomy, but it was expressed differently among three sub-groups. First, in the *Personal Responsibility* group, 2 couples (1 seroconcordant, 1 serodiscordant) embraced self-sufficiency for ART adherence and did not want or expect adherence support from the partner. In other respects, however, relationships were mutually supportive.

Second, in the *Couples' Responsibility* group, 5 couples' (4 seroconcordant, 1 serodiscordant) relationships were Consensually Dominant. One partner was in charge, and both partners wanted it that way. The 4 partners-in-charge who were on ART embraced autonomy and took full responsibility for their own adherence. Because of relationship style, all 5 partners-in-charge provided a great deal of support for their partners' adherence, and did not expect their partners to be self-sufficient.

In the third subgroup (Mutuality), in 2 (1 seroconcordant, 1 serodiscordant) of the 4 couples who had relationships based on reciprocity, one partner strongly valued autonomy. However, their relationships overall were based on reciprocity, including their ART adherence support practices. Research on received support has shown that reciprocity in support exchanges can mitigate the negative emotional effects of received support for those who feel it challenges their self-sufficiency (Gleason, Iida, Bolger, & Shrout, 2003). This is not to say that relationships are reciprocal *because* of the need to be able to receive support without negative consequences. Two other couples had relationships based on reciprocity and neither partner voiced a value for autonomy.

Avoidance toward all things HIV characterized 3 partners who were HIV- and who formed the only group whose adherence support was determined by one partner instead of the couple. This personal meaning likely contributed to their offering no adherence support to their partners. If we had examined only nonsupport, they might have appeared to be respecting their partners' autonomy. However, both partners' narratives made it clear that this was not the case.

In terms of the situational context of HIV and ART, there was uniformity across the couples ART adherence as not assessed as a stressor requiring coping. For HIV+, participants, taking their medications was simply part of daily life that occasionally required extra attention.

The relational context, however, differed across couples. Our sample provided a "snapshot" of couples at different points in their evolving relationships and with different adaptations to

giving/accepting support. Even though many possible variations of relationship style, attitudes toward offering or receiving adherence support, and attitudes toward HIV and ART likely exist, we found recurring themes of attitudes toward adherence among individuals and couples with similar relationship styles. In this examination of couples' relational accounts and ART adherence support or non-support, we found two basic groups. One group indicated that adherence was and should be an individual's responsibility (although for different reasons), while the second group integrated support for medication adherence into the relationship.

While this study does not the needed coherent all-encompassing theory of social support, it is consistent with other studies in several ways. Received support differs dramatically from perceived or structural support. Measures of structural or perceived support assess support as an available resource, not as a resource that is actually used. Because received support is inter-personal rather than intra-individual, it is necessary to account for the relationship between support provider and recipient. There are cultural and personal meanings that influence what can be offered as well as what can be received. Support that is enacted as part of daily life and not in response to a crisis is possibly different and has different consequences from support that is part of coping with a stressful situation. Further, support that is part of daily life as well as support in a crisis that comes from a familiar source (spouse, partner) might well not be noticed by the recipient. Therefore, received support measures that query only the support recipient may underestimate actual support exchanges.

The current study allows the extension of prior work based in social control and interdependence theories. First, results vary across studies linking of social control tactics to behavior change. This variation likely occurs because couples might favor multiple target behaviors. One husband might want to quit smoking, whereas another may target increased exercise. Pooling these divergent behaviors likely creates excess variability that limits the study's focus and ability to detect patterns in social control and interdependence on specific health behaviors. Our emphasis on a single outcome (i.e., medication adherence) is often missing in the literature.

The context of social control and interdependence among same-sex male couples extends theoretical emphases into new directions. Most previous research explores heterosexual, usually married, couples (e.g., Rook et al., 1990), creating a confound between gender roles and expectations (e.g., caregiving role for wives and autonomy for husbands). While social control and interdependence theories are useful for studying partner support for HIV treatment adherence, other conceptual and theoretical models require attention as well. For example, traditional individual-level health models of stress, coping, and illness such as Stress and Coping Theory (Lazarus & Folkman, 1984), Leventhal's Self Regulation Model (Leventhal, Benyamini et al., 1997; Leventhal, Lambert, Diefenbach, & Leventhal, 1997), its extension to medication adherence by Horne and Weinman (1998), and Brashers' model of uncertainty management (Brashers, Neidig, & Goldsmith, 2004) may describe the transactional nature of partner support for medication adherence. Similarly, a number of other relationship theories can explain these processes. For example, the notion of the autonomy-connection and openness-closedness contradictions in Baxter's (1990) dialectic perspective has direct relevance to relationship characteristics and associations with health behaviors (Baxter, 1990).

Beyond theory, however, lies the pressing issue of support for ART adherence. Future investigations directed at making formal recommendations for interventions are clearly necessary. In particular, contextual issues of personal meaning and of relational style need to be taken into account when planning ways to assist couples in effective support provision.

## Conclusion

While the sample provided rich qualitative data, it was too small for inferential statistics. Likewise, the cross-sectional design precluded evaluating change over time. On the whole, participants were relatively old, had been diagnosed for a long time, and had been on ART for a number of years, which limits generalizability. Further, self-reported adherence was quite high. A longitudinal study on less than optimal adherers or included younger couples, newly on ART, would provide a more complete picture of the evolution of support for adherence in couples.

In summary, this close look at support or nonsupport for ART adherence in male-sex partner relationships highlights the usefulness of examining the dynamic nature of enacted social support. The study also underscores the value in studying a group with good adherence and exploring the various pathways by which adherence is maintained, instead of comparing good and poor adherers. Of immediate clinical implication is that only asking the patient about ART adherence represents an oversimplifying of a complex situation. For instance, it may be helpful to discuss the partners' attempted support that may not be noticed by the patient. Likewise, it may be helpful for providers to ask both partners about the perceived relationship consequences of providing or receiving adherence support. In addition, relationship termination may generate adherence risks for patients, depending on personal and couple responsibility for adherence.

The next logical step is to determine how relationship dynamics and partner provision of adherence support relate to adherence and clinical outcomes over time. Such data could assist researchers and program developers interested in including a relationship partner in an ART adherence intervention. This analysis also demonstrates that a couples-based adherence intervention may be more complex than inviting the partner to participate. Couples' interventions may need to account for relationship stability, individual- and couple-level preferences for giving and receiving support, and the general rhythms of dyadic interactions. Such intervention approaches have the potential to increase survival, quality of life, and relationship satisfaction among couples affected by HIV and other illnesses.

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## References

- Addis ME, Mahalik JR. Men, masculinity, and the contexts of help seeking. *American Psychologist* 2003;58(1):5–14. [PubMed: 12674814]
- Arriaga XB, Rusbult CE. Standing in my partner's shoes: Partner perspective taking and reactions to accommodative dilemmas. *Personality and Social Psychology Bulletin* 1998;24:927–948.
- Baxter L. Dialectical contradictions in relationship development. *Journal of Social and Personal Relationships* 1990;7:69–88.
- Bolger N, Foster M, Vinokur AD, Ng R. Close relationships and adjustment to a life crisis: the case of breast cancer. *Journal of Personality and Social Psychology* 1996;70(2):283–294. [PubMed: 8636883]
- Bowen GA. Naturalistic inquiry and the saturation concept: a research note. *Qualitative Research* 2008;8(1):137–152.
- Brashers DE, Neidig JL, Goldsmith DJ. Social support and the management of uncertainty for people living with HIV or AIDS. *Health Communication* 2004;16:305–331.

- Burgoyne R, Renwick R. Social support and quality of life over time among adults living with HIV in the HAART era. *Social Science & Medicine* 2004;58:1353–1366. [PubMed: 14759681]
- Burgoyne RW. Exploring direction of causation between social support and clinical outcome for HIV-positive adults in the context of highly active antiretroviral therapy. *AIDS Care* 2005;17:111–124. [PubMed: 15832838]
- Butterfield RM, Lewis MA. Health-related social influence: A social ecological perspective on tactic use. *Journal of Social & Personal Relationships* 2002;19:505–526.
- Caudill W, Weinstein H. Maternal care and infant behavior in Japan and America. *Psychiatry* 1969;32:12–43. [PubMed: 5779087]
- Darbes LA, Lewis MA. HIV-specific social support predicts less sexual risk behavior in gay male couples. *Health Psychology* 2005;24:617–622. [PubMed: 16287408]
- Davies G, Koenig LJ, Stratford D, Palmore M, Bush T, Golde M, Malatino E, Todd-Turner M, Ellerbrock TV. Overview and implementation of an intervention to prevent adherence failure among HIV-infected adults initiating antiretroviral therapy: lessons learned from Project HEART. *AIDS Care* 2006;18:895–903. [PubMed: 17012078]
- DiMatteo MR. Social support and patient adherence to medication treatment: A meta-analysis. *Health Psychology* 2004;23:207–218. [PubMed: 15008666]
- Doherty WJ, Schrott HG, Metcalf L, Iasiello-Vailas L. Effect of spouse support and health beliefs on medication adherence. *Journal of Family Practice* 1983;17:837–841. [PubMed: 6355370]
- Dressler WW, Viteri FE, Chavez A, Grell GA, Dos Santos JE. Comparative research in social epidemiology: measurement issues. *Ethnicity and Disease* 1991;1:379–393. [PubMed: 1842552]
- Dressler WW, Balieiro MC, Dos Santos JE. The cultural construction of social support in Brazil: associations with health outcomes. *Culture, Medicine and Psychiatry* 1997;21:303–335.
- Drigotas SM, Rusbult CE, Verette J. Level of commitment, mutuality of commitment, and couple well-being. *Personal Relationships* 1999;6:389–409.
- Dunbar-Jacob, J.; Schlenk, EA. Treatment adherence and clinical outcome: Can we make a difference?. In: Resnick, RJ., editor. *Health psychology through the life span: Practice and research opportunities*. American Psychological Association; Washington, DC, US: 1996. p. 323-343.
- Fernald DH, Duclos CW. Enhance your team-based qualitative research. *Annals of Family Medicine* 2005;3:360–364. [PubMed: 16046570]
- Fife BL, Scott LL, Fineberg NS, Zwickl BE. Promoting adaptive coping by persons with HIV disease: evaluation of a patient/partner intervention model. *Journal of the Association of Nurses in AIDS Care* 2008;19:75–84. [PubMed: 18191771]
- Gleason ME, Iida M, Bolger N, Shrout PE. Daily supportive equity in close relationships. *Personality and Social Psychology Bulletin* 2003;29:1036–1045. [PubMed: 15189621]
- Haas SM. Social support as relationship maintenance in gay male couples coping with HIV or AIDS. *Journal of Social & Personal Relationships* 2002;19:87–111.
- Horne, R.; Weinman, J. Predicting treatment adherence: An overview of theoretical models. In: Myers, LB.; Midence, K., editors. *Adherence to treatment in medical conditions*. Amsterdam, Netherlands: 1998. p. 25-50.
- House JS, Landis KR, Umberson D. Social relationships and health. *Science* 1988;241:540–545. [PubMed: 3399889]
- Kaul M, Lakey B. Where is the support in perceived support? The role of generic relationship satisfaction and enacted support in perceived support's relation to low distress. *Journal of Social and Clinical Psychology* 2003;22:59–78.
- Koenig LJ, Pals SL, Bush T, Pratt Palmore M, Stratford D, Ellerbrock TV. Randomized controlled trial of an intervention to prevent adherence failure among HIV-infected patients initiating antiretroviral therapy. *Health Psychology* 2008;27:159–169. [PubMed: 18377134]
- Lakey, B.; Lutz, CJ. Social support and preventive and therapeutic interventions. In: Pierce, GR.; Sarason, BR.; Sarason, IG., editors. *Handbook of social support and the family*. Plenum Press; New York: 1996. p. 435-465.
- Lazarus, RS.; Folkman, S. *Stress, appraisal and coping*. Springer; New York: 1984.

- Leventhal, H.; Benyamini, Y.; Brownlee, S.; Diefenbach, M.; Leventhal, EA.; Patrick-Miller, L., et al. Illness representations: Theoretical foundations. In: Petrie, KJ.; Weinman, JA., editors. Perceptions of health and illness: Current research and applications. Harwood; Amsterdam, The Netherlands: 1997. p. 19-45.
- Leventhal, H.; Lambert, JF.; Diefenbach, M.; Leventhal, EA. From compliance to social-self-regulation: Models of the compliance process. In: Blackwell, B., editor. Treatment compliance and the therapeutic alliance. 1997. p. 17-33.
- Lewis MA, Butterfield RM, Darbes LA, Johnston-Brooks C. The conceptualization and assessment of health-related social control. *Journal of Social and Personal Relationships* 2003;21:669–687.
- Lewis MA, Rook KS. Social control in personal relationships: impact on health behaviors and psychological distress. *Health Psychology* 1999;18:63–71. [PubMed: 9925047]
- MacQueen KM, McLellan E, Kay K, Milstein B. Codebook development for team-based qualitative analysis. *Cultural Anthropology Methods* 1998;10(2):31–36.
- Mann C, Dieppe P. Different patterns of illness-related interaction in couples coping with rheumatoid arthritis. *Arthritis and Rheumatism* 2006;55:279–286. [PubMed: 16583421]
- Masuda T, Nisbett RE. Attending holistically versus analytically: comparing the context sensitivity of Japanese and Americans. *Journal of Personality and Social Psychology* 2001;81:922–934. [PubMed: 11708567]
- Miyamoto Y, Nisbett RE, Masuda T. Culture and the physical environment. Holistic versus analytic perceptual affordances. *Psychological Science* 2006;17:113–119. [PubMed: 16466418]
- Murphy DA, Marelich WD, Hoffman D, Steers WN. Predictors of antiretroviral adherence. *AIDS Care* 2004;16:471–484. [PubMed: 15203415]
- Ragin CC. The distinctiveness of case-oriented research. *Health Services Research* 1999;34:1137–1151. [PubMed: 10591277]
- Reinhardt JP, Boerner K, Horowitz A. Good to have but not to use: Differential impact of perceived and received support on well-being. *Journal of Social and Personal Relationships* 2006;23:117–129.
- Rempel JK, Holmes JG, Zanna MP. Trust in close relationships. *Journal of Personality & Social Psychology* 1985;49:95–112.
- Rook KS, Thuras PD, Lewis MA. Social control, health risk taking, and psychological distress among the elderly. *Psychology and Aging* 1990;5:327–334. [PubMed: 2242237]
- Rusbult CE, Buunk BP. Commitment processes in close relationships: An interdependence analysis. *Journal of Social and Personal Relationships* 1993;10:175–204.
- Sankar A, Golin C, Simoni JM, Luborsky M, Pearson C. How qualitative methods contribute to understanding combination antiretroviral therapy adherence. *Journal of Acquired Immune Deficiency Syndromes* 2006;43(Suppl 1):S54–68. [PubMed: 17133205]
- Seidel, J.; Kelle, U. Different functions of coding in the analysis of textual data. In: Kelle, U., editor. *Computer-Aided Qualitative Data Analysis: Theory, Methods, and Practice*. Sage; Thousand Oaks, CA: 1995. p. 52-61.
- Seidman G, Shrout PE, Bolger N. Why is enacted social support associated with increased distress? Using simulation to test two possible sources of spuriousness. *Personality and Social Psychology Bulletin* 2006;32:52–65. [PubMed: 16317188]
- Stake, R. *The art of case study research*. Sage; Thousand Oaks, CA: 1995.
- Theodore, P.; Duran, R.; Antoni, MH.; Fernandez, I.; Schneiderman, N. Intimacy and medication adherence among HIV-positive men in primary relationships; Paper presented at the Society of Behavioral Medicine; Salt Lake City, UT. 2003;
- Uchino, BN. *Social support and physical health: Understanding the health consequences of relationships*. Yale University Press; New Haven CT: 2004.
- Umberson D. Gender, marital status and the social control of health behavior. *Social Science and Medicine* 1992;34:907–917. [PubMed: 1604380]
- Walsh JC, Mandalia S, Gazzard BG. Responses to a 1 month self-report on adherence to antiretroviral therapy are consistent with electronic data and virological treatment outcome. *AIDS* 2002;16:269–277. [PubMed: 11807312]



- Wieselquist J, Rusbult CE, Foster CA, Agnew CR. Commitment, pro-relationship behavior, and trust in close relationships. *Journal of Personality and Social Psychology* 1999;77:942–966. [PubMed: 10573874]
- Wethington E, Kessler RC. Perceived support, received support, and adjustment to stressful life events. *Journal of Health and Social Behavior* 1986;27:78–89. [PubMed: 3711634]
- Wrubel J, Stumbo S, Johnson MO. Antiretroviral medication support practices among partners of men who have sex with men: a qualitative study. *AIDS Patient Care STDS* 2008;22:851–858. [PubMed: 19025479]
- Yin RK. Enhancing the quality of case studies in health services research. *Health Services Research* 1999;34(5 Pt 2):1209–1224. [PubMed: 10591280]