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Contextual compatibility of three empirically-supported behavior therapies for cART adherence among patients with substance use disorders

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Abstract

Substance use disorders complicate adherence to combination antiretroviral therapy (cART), yet behavior therapies offer means to ameliorate this influence. Multiple randomized controlled trials demonstrate efficacy to improve adherence in substance-misusing patients for: cognitive-behavioral therapy (CBT), contingency management (CM), and motivational interviewing (MI). To inform dissemination of these therapies, this mixed-method study was undertaken involving a full-day site visit to each of four HIV care settings. At each setting, an initial interview with the administrator elicited setting data, and was followed by paired focus groups with setting staff and patients serving as forums for open discussion and live polling concerning the three therapies' respective contextual compatibilities. Focus group recordings were transcribed and subjected to a phenomenological narrative analysis by multidisciplinary investigators, and compatibility ratings elicited from staff and patients were analyzed via two generalized linear models. Findings include: 1) emergent themes among staff of adaptability, patient-centeredness, and mission-congruence as desired therapy attributes, 2) emergent themes among patients of intrinsic motivation, respect for patient autonomy in illness management, and fairness among service recipients as desired therapy attributes; and 3) comparatively stronger staff perception of compatibility for MI than CBT or CM, and a similar albeit less robust or reliable pattern among patients. Collective findings support MI as a behavior therapy of choice for broad dissemination to HIV care settings to improve the cART adherence of patients with substance use disorders.

Keywords

substance use disorders; behavior therapy; cART adherence; HIV/AIDS

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Author Contributions.

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Introduction

Pursuit of ‘90–90–90’ public health goals persists, but with 59% of HIV+ Americans on combination antiretroviral therapy (cART) meeting minimum adherence thresholds (Lima et al., 2009). Effective care must account for clinical attributes of patients less likely to adhere—like presence of a substance use disorder (SUD), for which prevalence is 48% (Hartzler et al., 2017). While some hesitate to prescribe cART to patients with SUDs, research suggests they exhibit non-differential: 1) cART response when regimens are followed (Werb, Mills, Montaner, & Wood, 2010), 2) survival rate (Wood et al., 2008), 3) viral suppression when SUD services are provided (Roux et al., 2009), and 4) risk for cART resistance (Wood et al., 2005). Though optimal HIV care will necessarily include SUD services, availability is uncommon (Volkow, Baler, & Normand, 2011).

Benefits of integrating behavioral health services for SUDs, rather than the traditional practice of relying on external referral, extend to increasing patients’ cART adherence (Altice, Kamarulzaman, Soriano, Schechter, & Friedland, 2010). Multiple behavior therapies—guided by conceptual models addressing underlying motivational and behavioral issues via clinician-patient discourse—demonstrate efficacy for cART adherence by patients with SUDs (Camp Binford, Kahana, & Altice, 2012). Consequently, a key task is selecting which are best-suited for community dissemination to HIV care settings. Often, therapies are tabbed by virtue of efficacy demonstrated in RCTs, which ignores salient issues of contextual compatibility that promote implementation success—like staffing demands or logistical fit within existing services. Likelihood of such success is enhanced by a therapy’s acceptability to the setting administrator and staff (Aarons, 2006; Proctor et al., 2011). As therapy recipients, patients are also well-positioned to offer valuable consumer input about acceptability of potential services. Accordingly, this mixed-method study examined perspectives about candidate therapies from such stakeholders at a set of HIV care settings.

Methods

Recruitment

Settings included a hospital-based HIV-primary care clinic, HIV-outreach clinic, university-affiliated virology clinic, and HIV-focused group practice. A letter invited setting administrators to contact the PI, who outlined a procedural template and negotiated a visit date. Flyers posted in common areas noted: 1) voluntary opportunity for staff and patients to attend respective one-hour focus groups about promoting cART adherence among patients with SUD; 2) broad inclusion criteria; and 3) terms of employment and care access were to be unaffected. Settings were offered \$1000 to defray lost staff time, with participating patients receiving \$50.

Site Visits

With university-based IRB approval, the PI traveled to settings to lead study activities. After providing informed consent, the administrator shared setting information concerning structural, economic, technological, and staffing features; patient census/characteristics; staff training opportunities; and anticipated barriers for therapy implementation (see Table 1).

Focus groups were audio-recorded after attendees provided informed consent and completed surveys. Each group discussed: 1) cognitive-behavioral therapy [CBT; (Beck, Wright, Newman, & Liese, 1993)], wherein maladaptive beliefs about cART adherence are identified and restructured; 2) contingency management [CM; (Higgins, Silverman, & Heil, 2008)], wherein cART adherence is shaped through behavioral reinforcement via contracted delivery of valued incentives, and 3) motivational interviewing [MI; (Miller & Rollnick, 2013)], wherein patient-centered communication builds intrinsic motivation for cART adherence. Each met an *a priori* criterion of 2+ RCTs demonstrating efficacy in promoting cART adherence by patients with SUD. Therapies were allotted 15–20 minutes apiece in each group, with visual aids orienting attendees to a conceptual rationale, efficacy support, and implementation methods. Standard probes elicited discussion of feasibility, clinical effectiveness, and sustainability, after which live polling prompted compatibility ratings (7=extremely, 1=not at all).

Survey Measurement

All surveys gathered personal demography. Staff also reported educational attainment, service tenure and responsibilities, and prior therapy exposure, whereas patient surveys included service enrollment data and select Addiction Severity Index (McLellan et al., 1992) items.

Participants

Mean age of 32 staff-attendees was 43.1 years (S.D.=10.6), of whom 63% were female. Race was 94% non-Hispanic white, 3% non-Hispanic black, and 3% Hispanic. Degrees were 16% doctoral, 47% masters, 28% bachelors, and 9% high school. Regarding therapy exposure, 57% reported training in MI, 22% in CBT, and 13% in CM. Service tenure ranged 0–26 years (Md=4). Clinic responsibilities included direct therapy services by 69%; staff supervision by 47%; intake interviewing and case management by 44%; and medication monitoring by 41%.

Mean age of 44 patient-attendees was 52.3 years (S.D.=10.9), of whom 86% were male. Race/ethnicity was 59% non-Hispanic white, 30% 'Other', 9% Hispanic, and 2% non-Hispanic black. Service enrollment ranged 0–38 years (Md=6). Though 68% received prior substance treatment, 32% reported past month problems with 11% noting chronicity (i.e. 10+ days).

Data analysis

A phenomenological narrative analysis treated focus group sentiments as 'windows into lived experience' of existing services (Bernard & Ryan, 2010), with themes extracted from transcripts of the audio-recordings and excerpts identified for presentation. The nested data structures informed two generalized linear models (GLMs) for therapy-compatibility ratings, each dummy-coding setting as a covariate with pairwise contrasts directly comparing therapies.

Results

Staff Focus Groups

Among staff, narrative analysis identified as themes differentiating compatibility of MI, CBT, and CM: *adaptability*, *patient-centeredness*, and *mission-congruence*. Table 2 presents corresponding excerpts, with collective sentiments conveying strong preferential support for MI as a candidate therapy. Staff compatibility ratings offered convergent validation, with GLM detecting an effect of therapy, $F(2,29) = 9.56, p < .001$; and therapy x site interaction, $F(2,29) = 4.58, p < .05$. As Figure 1 illustrates, staff in each setting rated MI as more compatible than CBT and CM, though the magnitude varied (range: $M_{diff} = 1.83-2.00$ at HIV-primary care clinic, $M_{diff} = 2.57-4.00$ at group practice). Modal sample ratings corresponded to ‘very compatible’ for MI, ‘somewhat compatible’ for CBT, and ‘slightly compatible’ for CM.

Patient Focus Groups

Among patients, narrative analysis identified as themes differentiating compatibility of MI, CBT, and CM: *intrinsic motivation*, *patient autonomy*, and *fairness*. Table 3 presents corresponding excerpts, with collective sentiments evidencing interest in all three therapies to supplement existing services. As for compatibility ratings, GLM detected an effect of therapy, $F(2,41) = 5.68, p < .01$; and therapy x site interaction, $F(2,41) = 14.85, p < .001$. As Figure 2 illustrates, patients rated MI more compatible than CM ($p < .001$) and CBT ($p < .01$). Strongly favored at the group practice ($M_{diff} = 1.00-3.00$), MI was slightly favored at HIV-primary care ($M_{diff} = .37$) and virology ($M_{diff} = .18$) clinics. At the HIV-outreach clinic, CM was slightly favored ($M_{diff} = .59$). Modal sample ratings corresponded to ‘very compatible’ for MI, and ‘moderately compatible’ for both CBT and CM.

Discussion

In this mixed-method study of HIV care stakeholders, MI emerged as a behavior therapy of choice for SUD patients’ cART adherence. As therapy attributes, staff valued adaptability, patient-centeredness, and mission-congruence. Patients valued therapies targeting intrinsic motivation, supporting autonomy in illness management, and maintaining fairness among service recipients. Findings suggest efforts to scale up MI target fluid use of its patient-centered counseling style, which mirrors Rollnick et al.’s (2008) clinical practice recommendations for flexible confluence of nondirective reflective listening (‘following’), provision of treatment advice (‘directing’), and support of patient choice (‘guiding’). In the current study, multiple setting administrators revealed use of informal screening of MI skills in staff hiring processes, suggesting implicit workforce selection processes may already be common. As for MI training and supervision of the HIV care workforce, effective processes are documented with many health professionals (Madson, Loignon, & Lane, 2009; Schwalbe, Oh, & Zweben, 2014). Optimally, this includes initial exposure via two-day workshop, with skills developed and maintained by supervisory coaching and performance-based feedback (Miller, Yahne, Moyers, Martinez, & Pirritano, 2004).

Study caveats bear mentioning. Though an aim of setting diversity was achieved, pro-innovation bias may have contributed to administrator willingness to participate. Administrator estimates of patient SUD prevalence revealed considerable between-setting variance, yet the presence at each setting of a majority of patient focus group participants who previously attended substance treatment suggests the elicited patient perspectives were both informed and applicable to setting. As for potential selection bias among participating staff/patients, use of broad inclusion criteria and planful scheduling of focus groups reduce its likelihood. Another caveat is potential impression management during focus groups, though interpersonal familiarity among participants may have just as readily promoted rather than curtailed open disclosure of opinions. While sample sizes are consistent with those suggested for this type of qualitative inquiry (Sandelowski, 1995), caution should be exercised in generalizing from the reported inferential statistics. Concern for potential investigator bias in this mixed-method study is mitigated by its conduct by a multidisciplinary team, and their inclusion of bracketing procedures during the phenomenological narrative analysis.

Conclusions

Caveats notwithstanding, study findings support broad dissemination of MI to HIV care to address cART adherence. Discussions with these administrators, staff, and patients offered intriguing possibilities, like application of MI: 1) with targeted populations in frequent setting contact (i.e., pregnant women), 2) to other adherence targets (i.e., addiction medications, pre-exposure prophylaxis), and 3) in eclectic combination with other behavior therapies. While these ideas await future study, we hope findings of this mixed-method study provide guidance to those in HIV care settings seeking to integrate MI into existing services.

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Figure 1.
Contextual Compatibility Ratings Among HIV Care Staff

Figure 2.
Contextual Compatibility Ratings Among HIV Care Patients

Table 1.

Characteristics of Participating HIV Care Settings

<u>Characteristic</u>	HIV-Primary Care	Outreach Clinic	Virology Clinic	Group Practice
Clinic Structure	Hospital-based	Independent	Health Center	Independent
Economic Model	For-Profit	Non-Profit	Non-Profit	For-Profit
Origin of Funding	Public	Public/Private	Public/Private	Private
Use of Electronic Health Records	No	Yes	Yes	Yes
Computer/Internet Availability	Staff Only	Staff and Patients	Staff Only	Staff Only
Clinical Staff Size	30	14	16	7
Percentage Medical Staff	83%	29%	88%	84%
HIV+ Patient Census	1300	380	276	1000
Estimated Percentage Patients With SUD	60%	100%	10%	20%
Staff Behavior Therapy Training	None	None	None	None
Anticipated Barriers to Use of Behavior Therapy	Funding, Lack of Privacy	Service Integration, Patient Stigmatization	Staff Interest and Availability	Reimbursement, Service Structure

Table Notes: Organizational data elicited via report of setting administrator during an initial interview; medical staff defined as those working as physician, physician assistant, nurse, pharmacist, or medical assistant; staff behavior therapy training reflects existence of setting-supported continuing education opportunities

Table 2.
Thematic Excerpts From Staff Focus Groups Regarding Contextual Compatibility of Behavior Therapies

Theme	Excerpts From Participating Staff Members
Adaptability	<p>“MI would be completely easy to integrate into our regular visits because it can be done flexibly, if we have 3 minutes or 30 with [a patient.]”</p> <p>“What I find helpful about MI is if I’ve got 8 people in clinic today, I can apply it in some manner with all of them.”</p> <p>“Care is not structured for lengthy visits every week. I’d find it difficult to try CBT.....the interventions we do here need to be brief.”</p> <p>“The encounters we have with patients are more opportunity to use MI than [CBT/CM] to make good use of those few minutes.”</p>
Patient-Centeredness	<p>“With MI, it’s not the system telling the patient what to do. And with the other approaches, it can feel like it all relies on [staff]. MI is based on what patients choose and ultimately do, so they’re responsible for their choices.”</p> <p>“It’s about recognizing the individual and allowing them to determine their authentic starting point. With the stigma they’ve already faced, the fact that they walked through the doors is a huge step.”</p> <p>“For our patients to say how they can make change happen.....to make change statements, that’s extraordinarily powerful. Listening for that is a good thing.”</p> <p>“Patients really remember little things we say. If we do it in an MI way that’s supportive, they’ll appreciate that and if change occurs they will feel proud of it.”</p>
Mission Congruence	<p>“We need things that can be integrated into services we already provide.....not like in these CBT research studies, with lengthy visits every week. It would need to be tailored to patient needs.”</p> <p>“If we applied CM with drug users, it may upset other patients if they do everything they’re supposed to with no rewards. Many patients are economically-disadvantaged, and not all are substance users.”</p> <p>“The documentation needed to do CM, like blood testing for meds or drug use, that’s a little against our philosophy. We value communicating trust to our patients, and not judging them.”</p> <p>“I don’t think we have a good answer yet on how to address substance abuse. Those patients don’t trust the system, but they trust us. And to infuse MI in what we do is helpful.....from a trust point of view.”</p>

Table Notes: Excerpts from staff focus group discussions at each of four HIV care settings.

Table 3.
Thematic Excerpts From Patient Focus Groups Regarding Contextual Compatibility of Behavior Therapies

Theme	Excerpts From Participating Patients
Intrinsic Motivation	<p>"With MI you talk about things that define your struggle.....and set goals you can meet, and the provider helps you go through with it." "Rather than getting a gift card or something, the real incentives are living longer and healthier. Actually seeing my health improve is a much bigger incentive." "CM gives you a reward.....when you don't really want to do something anyway, it gives you a reason to do it." "You can offer incentives and I'll do what it takes to get them, but.....the other side of my brain is going 'I shouldn't have to be rewarded to go take my meds'."</p>
Patient-Autonomy	<p>"When [the provider] does MI, it gives me confidence to make my own choices about what to do. It's more like an internal change, not a superficial one." "I took a 12-week CBT program from three staff here. At the time, I wasn't so sure about it.....but I'm still gaining new insights, you know, applying it myself." "I get turned off by the idea of CM, because to take the meds it has to come from me. To be successful with it gives me something back that a gift card, or whatever, can't. The CM idea is like.....off in the wrong direction." "I'm a believer that if you make an informed choice, as long as it's informed, it's your life. You're absolutely the one responsible for yourself."</p>
Fairness	<p>"My provider takes time to talk with me.....but I know friends here that don't receive that level of care, their providers are only interested in health indicators." "With how busy it is here, and how we sometimes have to wait in line, these therapies wouldn't work here. Staff just don't have enough time." "The training of staff doing these therapies has to be superb. And they have to be empathic and respectful of boundaries.....and, um, show curiosity. If you don't first do that, no matter what therapy it is it's not going to work." "A lot of people get treatment here, and providing these therapies will cost money. There's probably people who would like them, but too many so how would they do all that? Who gets it and who doesn't?"</p>

Table Notes: Excerpts from patient focus group discussions at each of four HIV care settings.