

**Research collaboration matters: a mixed methods study of HIV service providers'
involvement in research and their use of evidence based practices**

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ABSTRACT

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This study examined the influence of: 1) research experience; 2) knowledge and education; and 3) agency characteristics on providers' willingness to be involved in research *and* DEBI use. Grounded in an integrated theoretical framework of organizational and behavioral theories, this study used concurrent mixed methods for a secondary analysis of 20 in-depth interviews and cross-sectional surveys from 141 providers in New York City. Content analysis identified specific research tasks/procedures employed by providers involved in collaboration with researchers, according to whether they *do* or *do not* resemble service provision ("proximal") or ("distal"). Multivariate linear regression was applied to determine the influence of these tasks/procedures on willingness to be involved in research *and* use of DEBIs. The study showed that having been involved in proximal tasks was positively associated with providers' willingness to collaborate with researchers and with their use of DEBIs. Having been involved in distal tasks was negatively associated with providers' use of DEBIs. Providers' level of education, attitudes toward research, and agency capacity were positively associated with willingness to be involved in research. Providers' level of education, knowledge of DEBIs, and agency capacity were positively associated with use of DEBIs. This study demonstrates how proximal tasks/procedures and other modifiable factors (e.g., education, agency capacity, knowledge) may influence providers to use DEBIs. The findings may help inform: 1) best practices for research collaboration; 2) funding to involve providers in research; and 3) training for researchers and providers to collaborate.

TABLE OF CONTENTS

LIST OF TABLES AND FIGURES		iii
ACKNOWLEDGMENTS		iv
CHAPTER		
	INTRODUCTION	1
I	OVERVIEW OF DISSERTATION	4
	A. Study Aims	8
	B. Main Hypotheses	12
II	LITERATURE REVIEW	14
	A. DEBI Implementation in Community Based Organizations	14
	B. Factors Associated with Implementation of DEBIs	17
	C. Organizational-level Factors	19
	D. Provider-level Factors	21
	E. A Community Based Participatory Research Approach	23
	F. Providers' Involvement in Research and their Use of DEBIs	24
	G. Facilitators to Providers' Involvement in Research	26
	H. Barriers to Providers' Involvement in Research	27
III	INTEGRATED THEORETICAL FRAMEWORK	32
	A. Contextual Theories	36
	B. Organizational Theory	41
	C. Behavioral Theory	43
IV	METHODS	48
	A. Advantages of Mixed Methods	48
	B. Qualitative Study Design	52
	C. Interview Procedures	54
	D. Data Analysis	55
	E. Quantitative Study Design	65
	F. Procedures	69
	G. Measures	70
	H. Data Analysis	77
	I. Sample Size and Power	79

V	RESULTS	80
	A. Qualitative Findings	80
	B. Quantitative Findings	92
	C. Analytic Approach Quantitative Aim One	94
	D. Providers' Willingness to Collaborate in Research	94
	E. Analytic Approach Quantitative Aim Two	99
	F. Providers' Use of DEBIs	102
VI	DISCUSSION	106
	A. Content Analysis	108
	B. Statistical Analyses	111
	C. Implications for Policy, Practice, and Research	126
	D. Limitations	132
	REFERENCES	136
	APPENDIX A: Interview Protocol	145
	APPENDIX B: Organizational Survey	156
	APPENDIX C: Provider Survey	164

TABLES AND FIGURES

Figure One: Specific Aims	11
Figure Two: Integrated Theoretical Framework	33
Figure Three: Integrated Theoretical Framework Diagram	47
Table One: Codebook for Qualitative Interviews	62
Table Two: Qualitative Findings	84
Table Three: Research Tasks and Procedures and Required Skills	90
Table Four: Influence of Proximal and Distal Tasks/Procedures on Providers' Willingness to Be Involved in Research	96
Table Five: Influence of Proximal and Distal Tasks/Procedures on Providers' Delivery of DEBIs	101

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INTRODUCTION

Background and Significance

The vision statement of the National Strategy on HIV/AIDS stipulates that, “The United States will become a place where new HIV infections are rare....” Leading the effort to achieve this goal is a workforce of HIV prevention providers (“providers,” e.g. medical doctors, nurses, social workers, health educators, counselors, etc.) whose prevention efforts have been credited with preventing over 350,000 new infections in the U.S. (The White House, 2010). Despite the significant contribution that HIV prevention providers have made, in the United States, 1.1 million people are still living with HIV/AIDS.

While treatment advances have reduced morbidity and mortality, there remains no cure. The epidemic’s profound health, economic, and social consequences disproportionately affect communities of color (Fullilove III, 2001) and men who have sex with men (MSM) (Centers for Disease Control and Prevention, 2009c). New York State accounts for the largest proportion of all AIDS diagnoses (17.4%) in the nation. New York City has over 108,800 people living with HIV/AIDS (New York City Department of Health and Mental Hygiene, 2009). In 2010, the U.S. federal government spent \$26 billion to combat HIV/AIDS. Of this amount, prevention spending accounted for three percent (Kaiser Reports, 2010). The President’s national strategy referenced above, calls for increased support for and expansion of the workforce of HIV prevention providers, in order to ensure access to prevention services for, in President Obama’s words, “every person, regardless of age, gender, race/ethnicity, sexual orientation, gender identity or socio-economic circumstance”. This dissertation study responds to the national strategy’s objective for supporting the HIV prevention provider workforce by focusing on providers’ practices, which directly impact prevention efforts in underprivileged, ethnic, racial, and sexual minority communities.

HIV prevention providers use a variety of behavioral interventions (e.g., counseling strategies), with varying levels of supporting scientific evidence, with their clients, many of whom are at risk for HIV. Behavioral interventions, delivered by HIV prevention providers, are aimed at reducing behaviors that are associated with HIV transmission (e.g., unprotected sex, illicit drug use). Behavioral interventions are practices that, when employed by providers, are shown to have a beneficial outcome or effect, such as a reduction in clients' frequency unsafe sex or an increase in clients' frequency of condom use. The state -of- the- art in HIV prevention behavioral science are "evidence based" interventions –those based on the findings of scientific research. Evidence based behavioral interventions for preventing HIV have been tested in randomized controlled studies and have resulted in peer-reviewed publications. Evidence based interventions include: brief safer sex counseling (Richardson et al., 2004), syringe and needle exchange programs (Ksobiech, 2003), and HIV testing (Weinhardt, Carey, Johnson, & Bickham, 1999).

Of particular interest, the Centers for Disease Control and Prevention (CDC) have led the effort to promulgate the packaging, distribution, and proliferation of behavioral interventions aimed at preventing HIV transmission. Diffusion of Effective Behavioral Interventions (DEBI) is the CDC's initiative to develop and disseminate interventions that have been shown, through rigorous testing in randomized studies, as well as testing for feasibility and cost-effectiveness in community settings, to be effective in helping individuals reduce HIV risk behaviors (e.g., unprotected sex). DEBIs are structured behavioral interventions with different formats (e.g., group counseling, multimedia, individual counseling) and modes of delivery (peer-to-peer, trained facilitator, community-level).

DEBIs are usually delivered, by HIV prevention providers within Community Based Organizations (CBOs) over the course of one to twelve sessions, and they require adherence to certain core components and specific facilitator training. Core components are based upon the behavioral theory that underlies each DEBI. Core components are those aspects of the DEBI

intervention that are unalterable since they are thought to contain the ingredients essential to promote the targeted change in behavior (Centers for Disease Control and Prevention, 2009b; Kalichman, Hudd, & DiBerto, 2010). Providers' extent of adherence to core components is known as "fidelity" to core components.

Thus far, 26 DEBIs have been developed, targeting a variety of populations including men who have sex with men (MSM), women of color, youth, Latino/a populations, people living with HIV/AIDS, and couples. (For more details, see 2009 Compendium of Effective Behavioral Interventions). Some CBOs receive the necessary funding, training, and technical support from the CDC to implement DEBIs. While DEBIs are not the only evidence based interventions for HIV, their implementation is a critical focus within the National HIV Prevention Agenda (Centers for Disease Control and Prevention, 2007b).

Notwithstanding the CDC's efforts, implementation of DEBIs in CBOs has not kept pace with their development and testing. Despite ample evidence suggesting that DEBIs significantly reduce the spread of HIV, service providers (social workers, health educators, etc.) have not consistently used these evidence based interventions (Wandersman et al., 2008). Implementation of DEBIs within CBOs has been hampered by lack of human and financial resources, lack of support from management and staff, lack of training or education about how to deliver and adapt DEBIs to the diverse needs of populations that providers encounter, (Dworkin, Pinto, Hunter, Rapkin, & Remien, 2008) and misperceptions that DEBIs cannot be adapted because of required adherence to core components (Kalichman et al., 2010).

The present study is aligned with the United States National HIV/AIDS Strategy to: 1) reduce the number of people who become infected with HIV in the U.S.; 2) increase access to care and improve health outcomes for people already living with HIV; and 3) reduce HIV-related health disparities (The White House, 2010) by examining the practices of HIV prevention service providers, so that they may help fulfill these three mandates.

CHAPTER I

OVERVIEW OF DISSERTATION

This dissertation reflects the principles and spirit of Community Based Participatory Research (CBPR) (Israel, Schulz, Parker, & Becker, 1998), which require the active and equitable involvement of community stakeholders in conceptualizing research study aims, designing and specifying study methods, performing research tasks and procedures, analyzing and interpreting data, and disseminating findings. Involving service providers (“providers”) with academic researchers in HIV prevention research, has been recognized in HIV prevention and in other areas (e.g., substance abuse treatment) as a promising way to promote the use of scientific research to guide providers’ practices (Dworkin et al., 2008; Owczarzak & Dickson-Gomez, 2011; Pinto, 2009; Spector, 2012). Providers who have been involved in research as collaborative partners have been shown to be more willing to use research findings (e.g., evidence based interventions) than their peers (Chagnon, Pouliot, Malo, Gervais, & Pigeon, 2010; Pinto, Yu, & Spector, 2010). Missing in the literature and from any empirical base, is exactly which research tasks and procedures (e.g., data collection, analysis, dissemination) may influence providers to use research findings to guide their practice. Specifically, what types of involvement in research may lead to providers’ acceptance of and delivery of evidence based behavioral interventions? This knowledge is crucial to both research and practice fields. Knowing how to promote providers’ delivery of evidence based interventions may improve patient outcomes by availing consumers of services that have been shown, through rigorous testing, to be effective.

Focusing the broad concept of providers’ “involvement” into specific research tasks/procedures is critical in order to maximize the benefits gained from researcher-provider collaboration. Knowing which tasks/procedures (i.e., “tasks/procedures”) are most salient to

providers may help researchers to efficiently promote the use of scientific evidence in community settings with the goal of improving outcomes for consumers. Without this specific information, the behavioral sciences will continue to lag in identifying efficient strategies for involving providers in research.

This dissertation uses a concurrent mixed method approach, combining qualitative and quantitative data, which will seek to improve our understanding of how to promote providers' use of scientific evidence in HIV prevention. The study examines how providers' involvement in research influences their use of effective behavioral interventions (DEBIs). The quantitative and qualitative data were analyzed concurrently. Findings from the qualitative data informed quantitative models, and quantitative survey data informed the development of coding strategies for the qualitative data. For the purposes of clarity and organization, this dissertation will distinguish the “qualitative” portion from the “quantitative” portion throughout. However, wherever possible, the author will indicate how both data sets were used concurrently and how findings were integrated.

The qualitative portion of this dissertation identified, through content analysis of secondary data from 20 in-depth, semi-structured interviews with HIV prevention providers involved in research collaborations in their CBOs, the research tasks/procedures in which they were involved in the course of the research. The quantitative portion employs multivariate regression analyses, using secondary cross-sectional survey data from 141 HIV prevention providers from 24 CBOs, to examine the influence of those tasks/procedures on providers' willingness to be involved in research, and providers' delivery of DEBIs.

This study examines providers' willingness to collaborate in HIV prevention research. Willingness to collaborate is an aspect of providers' behavioral intention that is necessary to influence providers to do so. The research tasks/procedures that this study has identified arose out of interviews with providers who have collaborated in HIV prevention research. Notwithstanding the focus upon HIV prevention collaborative research, this study may hold

implications for other types of collaborative research in the behavioral sciences (e.g., substance abuse, mental health, etc.). Providers working in other fields and areas may share similar experiences, and the findings from this study may help to inform future research on other health-related services.

As there are currently 26 DEBIs and that list continues to grow, this study does not focus on any one particular DEBI, but on DEBIs in general. A broad focus on DEBIs is missing in the literature. The study is concerned with understanding provider use of DEBIs in general, because focusing on specific DEBIs might limit the study's ability to examine providers' overall use of DEBIs. By asking, in the survey instrument, that providers consider their use of DEBIs in general, the obtained response encompassed a broad range of work experience. Providers may exclusively offer DEBIs to consumers, or they may offer DEBIs to certain consumers rather than others. Providers may offer DEBIs as a small portion of the services that they provide. They may even offer portions of DEBIs, choosing to focus only on certain core components. Evidence based interventions targeting other types of behavioral change (e.g., substance abuse treatment and prevention) share characteristics with DEBIs in terms of their structured approach, training and education requirements for delivery, and use in community settings. Indeed, while this dissertation focuses on DEBIs, its findings hold implications for other behavioral interventions as well.

The qualitative portion of this dissertation identified, through content analysis of semi-structured in-depth interviews, the research tasks/procedures in which ten HIV prevention administrators (e.g., Executive Directors) and ten HIV prevention direct service providers (e.g., social workers) reported involvement in the course of HIV prevention research projects in their CBOs. The content analysis of interviews was informed by a concurrent reading of survey data from providers (n=141) in 24 New York City CBOs. Secondary analysis of cross-sectional surveys, which included a broad list of research tasks/procedures, were used to help guide the development of codes for the content analysis of the interview data. Grounded in the qualitative

findings, the author quantitatively examined the influence of research involvement on providers' willingness to be involved in future HIV prevention research projects and on providers' use of DEBIs to guide their practice. To accomplish the quantitative portion, the author analyzed cross-sectional survey data from providers (n=141) in 24 New York City CBOs. The study employed multivariate linear regressions whose independent variables included research tasks/procedures identified in the in-depth interviews.

This dissertation involves the pursuit of three interrelated aims, below: one qualitative and two quantitative. Together these aims illuminate research tasks/procedures that foster involvement in research, and which also may help promote delivery of DEBIs by HIV service providers. While this study focuses on the influence on providers of having performed research tasks/procedures, other factors also have been shown to influence implementation of DEBIs and providers' willingness to be involved in research.

Organizational factors (e.g., capacity to implement DEBIs and organizational support for research) and provider-level factors (e.g., knowledge, self-efficacy in implementing DEBIs, demographic variables) will also be considered in the model as independent variables, since these factors have been shown to influence DEBI implementation. This author acknowledges that organizational factors and provider-level factors may influence one another, and that, while the relationships between organizational and provider level factors are important, an examination of those relationships is beyond the scope of this study. Therefore, the focus here is on the relationships between having performed research tasks and procedures and providers' willingness to be involved in future research and in the actual delivery of DEBIs.

The literature points to a gap between the development, testing, and dissemination of behavioral evidence based interventions and their subsequent implementation in community settings. As a provider who has worked in CBOs, this author has observed the lack of integration of evidence based interventions, particularly in HIV prevention and was thus compelled to study this issue. Fellow providers, while well-intentioned, often relied on

supervisors' instructions, practice wisdom, personal philosophies, or other non-empirically supported interventions in their daily practice with clients. This resulted in clients not receiving the state-of-the-art in HIV prevention care that is available, to which clients are entitled. Thus, optimal outcomes for clients at risk for HIV were not achieved.

Providers' use of evidence-based interventions is hampered by many factors, including lack of "buy-in" or staff support (Pagoto et al., 2007), lack of organizational support for research and innovation (Aarons & Sawitzky, 2006), and lack of financial resources for training and implementation (Franklin & Hopson, 2007). Partnerships between universities and agencies have been recommended (Bellamy, Bledsoe, Mullen, Fang, & Manuel, 2008) to overcome barriers to providers' use of evidence based interventions. Involving providers in research as collaborative partners has been shown to promote providers' use of scientific evidence to guide practice (Chagnon et al., 2010; Pinto, Yu, Spector, Gorroochurn, & McCarty, 2010).

Missing from the literature is an examination of the process of research involvement to identify the specific tasks/procedures most likely to promote providers' use of evidence based interventions. Knowing this would help inform how research involvement may be most effectively leveraged to encourage providers to collaborate with researchers, and to promote use of evidence based interventions. This study adds to the literature by specifying research tasks/procedures as key independent variables, to better understand their relative importance vis-à-vis delivery of evidence based interventions in community settings. Below, the study aims and corresponding hypotheses are presented.

Study Aims

The overall goal of the present study is to understand how involvement in research-related tasks/procedures influences HIV service providers' practices. From the perspectives of HIV prevention service providers, this study aims to:

Qualitative Aim

1. Identify research-related tasks and procedures, with which providers are engaged and/or which they perform in the course of HIV prevention research (collaborative research projects between the providers' organizations and a researcher from an academic institution or government agency), using semi-structured, in-depth interviews with administrators and providers (N=20).

Quantitative Aim One

1. To examine the influence of providers' previous involvement in specific research tasks and procedures (from Qualitative Aim) on their willingness to be involved in future HIV prevention research, using a cross-sectional design with data from 141 HIV service providers.

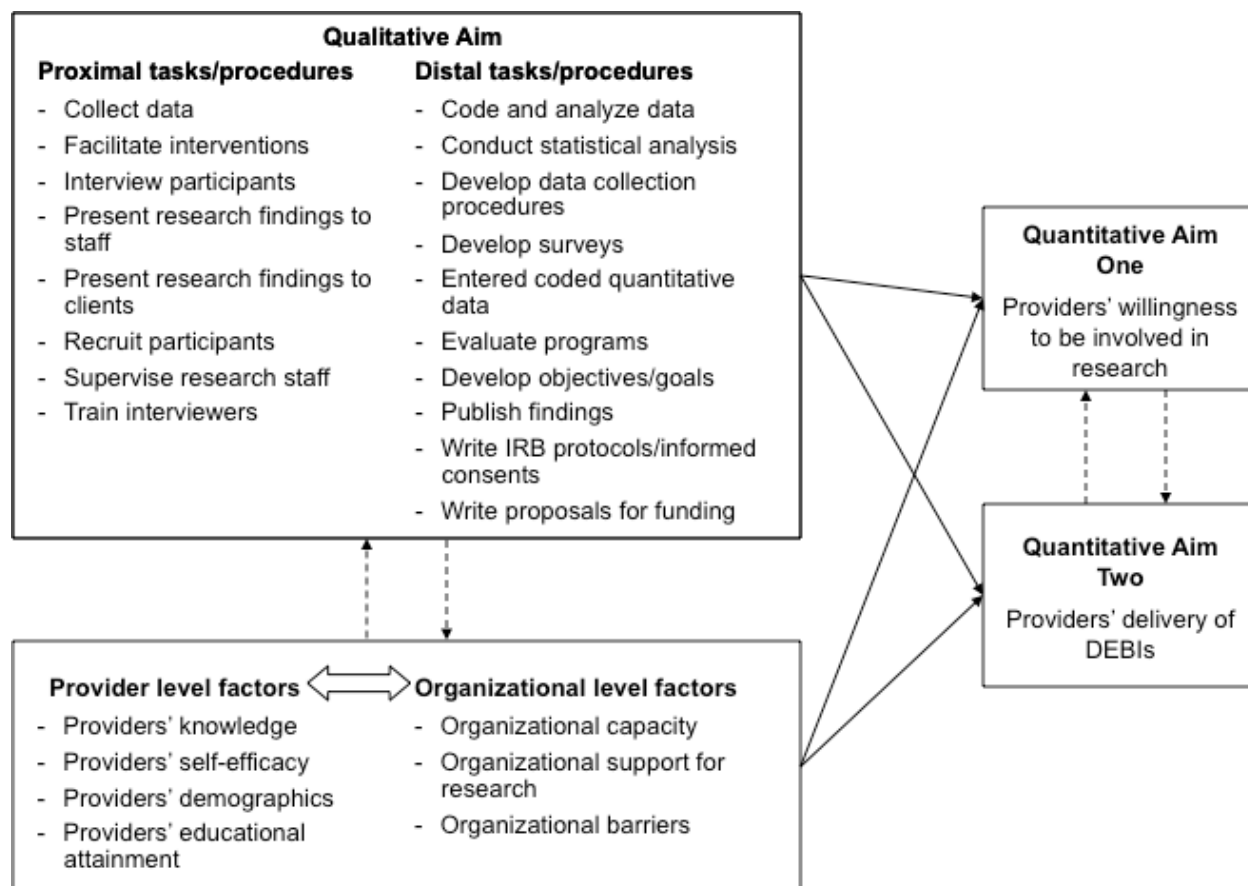
Quantitative Aim Two

2. To examine the influence of providers' performing specific tasks and procedures (from Qualitative Aim) on their self-reported *delivery* of HIV prevention effective behavioral interventions (DEBIs), using a cross-sectional design with data from 141 HIV service providers. "Delivery" represents the extent to which providers self-report using DEBIs with their clients.

Figure 1, below, depicts how having performed these various tasks/procedures, working in tandem with provider-level and organizational-level factors, influences the outcomes in Quantitative Aims 1 and 2.

Figure 1

Specific Aims*



*Figure 1 represents the present study's interrelated aims and the relationships between the independent and dependent variables that are being tested. The author acknowledges that there may be other relationships between the independent variables (e.g., organizational capacity and provider knowledge, research tasks/procedures and organizational support for research, etc.). However, those relationships were not tested in the present study. The present study focused upon examining the relative influence of provider and organization level factors upon providers' practices and attitudes, rather than provider and organization level factors upon one another. Therefore, the author modeled the qualitative and quantitative aims in a linear manner (i.e., multivariate linear regression), the statistical analytic tool employed in this study.

Main Hypotheses

Hypothesis #1

Using a secondary analysis of in-depth interview data from 20 HIV prevention providers from 24 New York City CBOs, all of whom had been involved in HIV prevention research, the author identified the research tasks/procedures performed by these providers in the course of their previous involvements in HIV prevention research. Based upon the theoretical framework that guides this study, on extant literature, and on preliminary data analysis (e.g., descriptive statistics) of the cross-sectional survey, the author identified two different types of research tasks/procedures, as follows. Providers will have been involved in *proximal tasks/procedures* requiring skills and knowledge that closely reflect service provision (e.g., interviewing participants, facilitating behavioral interventions, and disseminating information to community members). It is also expected that providers will have been involved in *distal tasks/procedures* that require skills that more closely resemble the work of researchers (e.g., data analysis, designing research procedures, and writing manuscripts). Providers will report having been involved in proximal tasks/procedures more frequently than distal tasks/procedures.

Hypothesis #2

A *positive* association is expected between providers' having performed *proximal* research tasks/procedures and their willingness to be involved in HIV prevention research in the future. A *negative* association is expected between providers' having performed *distal* research tasks/procedures and their willingness to be involved in HIV prevention research in the future.

Hypothesis #3

A *positive* association is expected between providers' having performed *proximal* research tasks/procedures and the extent to which they self-report their delivery of DEBIs. A *negative* association is expected between providers having performed *distal* research tasks/procedures and the extent to which they self-report their delivery of DEBIs.

The present study advances our understanding of how to support HIV prevention service providers who are working to halt the spread of HIV. The results from this study may advance knowledge of effective ways to engage service providers in research and to optimize their participation in research, so that providers become more willing to use evidence-based interventions. By promoting providers' delivery of DEBIs, consumers of services may gain access to treatments that are evidence-based, thus increasing knowledge of HIV prevention and reducing health disparities related to the HIV epidemic.

CHAPTER II

LITERATURE REVIEW

DEBI implementation in Community Based Organizations

CBOs providing HIV prevention services in New York City are tasked with responding to an epidemic that disproportionately affects low-income communities of color, communities already burdened by myriad chronic diseases and environmental risks (Center for Disease Control and Prevention, 2003; Centers for Disease Control and Prevention, 2007a; Rashid et al., 2009; Schulz, Krieger, & Galea, 2002). Providers working in CBOs, particularly in New York City, serve predominantly low-income communities of color, and they are responsible for addressing the well-documented health disparities between whites and ethnic minorities (Wolitski, Stall, & Valdiserri, 2007), which include lack of access to appropriate health services and preventive care (Dovidio et al., 2008). In light of the challenges faced by disadvantaged communities, CBOs require providers to use innovative practices and to offer high standards of service delivery to help reduce the health disparities in the communities they serve.

Regrettably, there is a growing gap between the discovery of effective behavioral HIV prevention interventions and their practical implementation in community settings. Therefore, providers who are not offering effective interventions may inadvertently compromise the quality of behavioral treatments being received by consumers at risk for HIV (Chillag et al., 2002; Kelly, Somlai, et al., 2000). Providers may be using interventions that have little or no scientific evidence, such as counseling clients to abstain from sexual practices. Alternatively, providers may avoid discussing topics with which they are unfamiliar or uncomfortable, such as certain sexual practices (Spector & Pinto, 2011). Vulnerable populations that are served by CBOs are entitled to receive a high standard of care. Professional providers, such as social workers, adhere to ethical principles that require them to offer the highest quality of care and requires them to advance their own expertise to keep pace with current knowledge (National Association

of Social Workers, 1996). Consumers (i.e., clients receiving services in CBOs) that do not receive up-to-date HIV prevention interventions may be at risk for HIV transmission, perpetuating a public health crisis.

The Centers for Disease Control (CDC) and National Institutes of Health (NIH) consider DEBIs to be the “state of the art” and “the gold standard” innovation in behavioral HIV prevention, as a result of the plethora of scientific evidence going back to 1999, supporting DEBIs’ efficacy (Centers for Disease Control and Prevention, 2009a). Providers that have research-based knowledge of current scientific findings (for example, through reading peer-reviewed journals or attending trainings), are often able to deliver behavioral interventions (DEBIs) that have been shown, through rigorous scientific testing, to help individuals reduce their risk for HIV. Through behavioral trials (e.g., randomized control, quasi-experimental, adaptation/translational research), DEBIs have been shown to reduce risk behaviors (e.g., unprotected sex) associated with HIV transmission, thereby lowering rates of infection and transmission. DEBIs are designed to target the needs of specific populations and groups (i.e., MSM, African American youth, Latino men, Latina women, etc.) and to be delivered using a variety of modalities.

Providers working in community settings may implement and/or deliver DEBIs with different populations through individual, group, and community-level interventions. The term “implementation” has received growing attention in the scientific literature. The emergence of “implementation science” research has been established as a new frontier aimed at understanding the processes surrounding the adoption, translation, and utilization of evidence based interventions within community settings (Eccles et al., 2006), as well as how organizational level factors may facilitate or hamper these processes (Weiner, 2009). While the present study certainly contributes to implementation science research by examining provider and organization level factors’ influence on providers’ use of evidence based interventions, the processes surrounding the actual implementation of DEBIs and the measurement of those

processes (for example, fidelity to core components) are not the focus here. Rather, the term “implementation” in this dissertation, signifies providers’ use of DEBIs, delivery of DEBIs, and their appropriation of any DEBI core components into their practices. This study examines implementation from the perspectives of the providers and relies upon providers’ own self-report of the extent to which such implementation is taking place.

The CDC offers mechanisms for CBOs to acquire DEBIs. CBOs may apply for funding from the CDC to implement DEBIs, receive training and ongoing technical support, and adapt DEBIs (tailor the interventions) to meet their consumers’ unique needs. A visit to the CDC’s DEBI website (Centers for Disease Control and Prevention, 2006) reveals myriad resources for CBOs to access information, training, funding applications, and technical assistance for DEBIs. Nonetheless, despite the availability of DEBIs for implementation by CBOs, there exists an extensive literature demonstrating that providers are not consistently integrating research into practice, suggesting that DEBIs are often not used in community settings (Dworkin et al., 2008; Franklin & Hopson, 2007; Kelly, Somlai, et al., 2000; Norton, Amico, Cornman, Fisher, & Fisher, 2009; Owczarzak & Dickson-Gomez, 2011). Service providers’ avoidance of DEBIs may result in consumers’ increased vulnerability to HIV infection, particularly when consumers do not receive any other science-based behavioral interventions to help prevent HIV.

Therefore, learning which research tasks/procedures influence providers to deliver DEBIs may ultimately enhance clients’ access to science-based interventions that have been shown to help reduce the risk of HIV transmission/infection. The present study integrates the findings from the literature that reveal a lack of implementation of scientifically validated practices like DEBIs in community settings, with the literature that demonstrates an association between providers having participated in research collaboration as partners, subsequently employing scientifically validated practices (e.g., DEBIs). This integration of literature leads the author to the main hypotheses: that there are specific research tasks/procedures with which providers are involved in the course of their collaborations with researchers; and that having had

involvement in certain types of research tasks/procedures will ultimately help inspire providers to use DEBIs.

Providers' use of DEBIs has never been studied in the manner presented herein. This study's measures are unique in that they rely on providers' self-reported assessments of the extent to which they use DEBIs, rather than a measure that pertains to any specific DEBI. The literature on providers' use of DEBIs in general has used descriptive data to characterize providers' attitudes and perceptions toward DEBIs, rather than their actual use of DEBIs (Dworkin et al., 2008; Owczarzak & Dickson-Gomez, 2011). Furthermore, this study's sample advances prior research, which used small sample sizes and case studies, by using a large, diverse sample of providers ("diverse," in education, race, age, work role, etc.) from a moderately large sample of CBOs that are diverse in size, budget, and capacity. This bolsters the external validity of the present study. Likewise, providers' willingness to be involved in research collaboration reveals a behavioral intention, which is necessary to actually carrying out the behavior of becoming involved in research (Montaño, Kasprzyk, & Taplin, 1997). Providers' willingness has also been studied, until now, descriptively with small sample sizes (Pinto, 2009). The present study, therefore demonstrates greater external validity compared to previous research, by using a large, diverse, sample.

Factors associated with implementation of DEBIs

Initiatives to promote the adoption and implementation of DEBIs within CBOs have been met with challenges, particularly when a top-down or hierarchical approach was employed, since such approaches may neglect to garner support or "buy-in" from service providers (Owczarzak & Dickson-Gomez, 2011) (Dworkin et al., 2008) (Fixsen, Naoom, Blase, Friedman, & Wallace, 2005; Johnson & Austin, 2006; Proctor, 2004). Providers that are instructed to implement DEBIs by CBO administrators may feel overburdened by what they view as "cookie cutter" or "one size fits all" approaches to treatment. DEBIs are packaged interventions

(manualized) that require adherence to core components and have been criticized for lacking flexibility, and being overly prescriptive. Providers who favor client treatment that emphasizes “meeting the client ‘where they are at’” sometimes eschew manualized interventions because they believe such interventions reduce the autonomy of the client in determining the direction of the counseling session (Borntrager, Chorpita, Higa-McMillan, & Weisz, 2009).

CBOs that employ a “top-down” approach to implementation of innovative practices (i.e., DEBIs) by mandating that providers alter their own therapeutic practices to conform to agency requirements often meet resistance from providers (Addis, 2002; Gandelman, DeSantis, & Rietmeijer, 2006). Providers that have been using homegrown behavioral interventions or non-empirically supported approaches may feel that their clinical judgment is undermined when they are instructed to adopt new approaches (e.g., DEBIs) without being consulted or their concerns adequately addressed. Providers may have misconceptions or biases toward DEBIs that, if left unaddressed, may increase their reluctance to deliver DEBIs to consumers. Since provider “buy-in” is crucial to successfully implementing DEBIs in community settings, approaches that emphasize collaboration and partnership may be most effective. The present study advances knowledge about collaboration between providers and researchers to promote the use of DEBIs.

The organizational context is also pertinent to providers’ use of DEBIs, as organizations that are able to secure the financial and human resources to implement innovative interventions are advantaged, while those that lack adequate resources may be compromised in their ability to deliver DEBIs. A plethora of research has identified the factors –organizational and provider-associated with implementation of DEBIs in CBOs. The present study integrates organization-level and provider-level factors in order to understand provider practices. Those factors are discussed below. Figure 2, below illustrates the organizational and provider factors, including research tasks/procedures specifically hypothesized to have an impact on provider delivery of DEBIs.

Organizational-level factors

Organizational factors that promote DEBI implementation include: an organizational culture that supports innovation; a cohesive workplace environment that bolsters professional growth and autonomy; fiscal stability; and adequate staff (Aarons, 2005; Gandelman et al., 2006; Nelson & Steele, 2007b). Providers do not offer services in a vacuum. They are greatly influenced by their social/work environment, which in the case cited here mean their CBOs. The factors affecting DEBI implementation within providers' social/work environment include concrete and other resources (e.g., social support) (Vega, 2009). Concrete resources include: space, personnel, and funding. Implementing DEBIs requires specific funding from the Centers for Disease Control and Prevention (CDC), in order for CBOs to gain access to training, materials, and technical support. CBOs must apply for funding under the assumption that they have the human resources to be considered eligible by the CDC and they must demonstrate that they can recruit consumers for DEBIs. Some DEBIs are delivered in group settings, while some are delivered one-on-one. CBOs must have adequate space to accommodate all such arrangements (i.e., to ensure confidentiality in each case) without disrupting other services that they offer.

In addition to concrete resources, CBOs implementing DEBIs also require: a work environment characterized by cohesion among peers (i.e., peer support for one another), and administrative policies that foster professional growth and reward innovation. DEBIs require providers to demonstrate a high level of skill and to receive training in core components of the interventions. Providers without adequate support from peers and training may feel overwhelmed by the tasks involved in learning and implementing a DEBI, whereas providers working in CBOs that reward the acquisition of new skills and competencies (i.e., offer training, supervision, bonuses or incentives) may feel energized by a new challenge. Many factors may be associated with providers' use of DEBIs. In particular, having access to concrete and other

resources offers providers exposure to new practices, thereby increasing the likelihood of their adopting those practices over time.

Similarly, organizations that lack resources (e.g., training, space, staff) to implement DEBIs, also often have cultures that discourage innovation, making it less likely that changes in provider practice will be initiated or sustained (Bauermeister, Tross, & Ehrhardt., 2008). Therefore, the intersection between providers and their environment is crucial to understanding how DEBIs are implemented in community settings. CBOs that acquire DEBIs through CDC funding initiatives may be unable to sustain offering DEBIs in the face of staff turnover, budgetary constraints, and other inadequate resources. For example, providers with expertise in providing certain DEBIs may leave a CBO, leaving management without the necessary expertise to continue to offer the intervention. A CBO may lose its lease and move to a different location, where lack of physical space prohibits the delivery of DEBIs. Unless a CBO has policies that allow for staff turnover by training providers at multiple levels to deliver DEBIs, staff turnover may result in that CBO's loss of science based interventions. Unless a CBO has adequate provisions for securing space (e.g., linkage agreements with other CBOs), a change of location may result in the loss of effective interventions.

The present study incorporates organization-level factors, an important element in understanding provider practices. Most prior research aimed at understanding practices and/or attitudes has focused on provider-level factors. The present study integrates both provider and organization-level factors in order to understand the relationship between providers' practices and having been involved in collaboration vis-à-vis research tasks/procedures. To the author's knowledge, no other study has examined providers' practices in this way.

Provider-level factors

Providers' involvement with research has been shown to be associated with their willingness to use evidence based interventions (Pinto, Yu, Spector, et al., 2010), and may likewise be associated with DEBI implementation. Therefore, this study examines providers' experiences with research by specifying the influence of having performed specific research tasks/procedures in the course of collaboration with researchers. While providers' participation in research tasks/procedures has been described in the literature qualitatively and in general terms (Spector, 2012), to this author's knowledge, this is the first study that combines qualitative and quantitative data to examine the influence of having performed specific tasks/procedures on providers' practices (i.e., DEBI delivery) and on their willingness to collaborate in research.

Notwithstanding the paucity of literature on the influence of having performed research tasks/procedures, other provider-level factors that influence provider practices have been articulated in the literature. Provider-level factors associated with DEBI implementation include: attitudes toward and perceptions of the usefulness of DEBIs, providers' opinion that they have the skill and ability to implement DEBIs successfully, and that DEBIs can be matched to the needs of their clients (Collins, Harshbarger, Sawyer, & Hamdallah, 2006; Miller, 2001; Owczarzak & Dickson-Gomez, 2011; Pagoto et al., 2007; Pinto, Valera, & Jones, submitted). Providers may perceive DEBIs as divergent from their current modes of practice and service delivery. Thus, they may view DEBIs as fundamentally incompatible with the ways in which they provide services. For example, those that are accustomed to providing individual counseling may find that using a group modality, as required by some DEBIs, is incompatible with their or their clients' preferences. Providers that favor an un-structured approach to treatment, may feel that DEBIs are ill-suited to their theoretical orientation of practice. In order for DEBIs to be implemented correctly, providers must adhere to core components and follow guidelines for delivering the components. Providers may feel that this rigor reduces their autonomy or professional authority by prescribing a standardized and systematized course of action.

Providers working in CBOs offer services to a wide range of clients, representing diverse racial/ethnic groups, sexual and/or gender identities, and cultural and/or religious backgrounds. Clients from all walks of life receiving services at CBOs often face many intersecting health and social issues (e.g., HIV, substance abuse, incarceration, homelessness, domestic violence, mental illness, etc.) and chronic diseases (e.g., tuberculosis, diabetes, cancer, etc.). Since DEBIs are targeted at reducing HIV risk behaviors, other health-related issues and social issues are not the focus of the interventions. Providers have criticized DEBIs for not adequately meeting the needs of clients with complex intersecting issues as mentioned above.

Providers may perceive DEBIs as being not applicable to the particular populations that they serve, which may look different demographically than the population on which the DEBI was tested or the population that it was meant to address (Owczarzak & Dickson-Gomez, 2011). For example, providers may feel that a DEBI designed for U.S. born African-American men may not work well with their clients who are predominantly African men who have recently immigrated to the United States. Providers who believe that DEBIs cannot be tailored to fit their clients' needs may perceive them as not useful and may not be willing to use them.

Conversely, providers that are offered training on how to deliver DEBIs, are offered technical support and assistance and are taught how to tailor DEBIs to meet the needs of their clients may be more willing to deliver DEBIs. Therefore, if providers hold the view that DEBIs or other evidence based interventions are useful to clients, improve client care, and if they are offered the necessary training and technical support to implement DEBIs, they may be inclined to use them. Providers that consider DEBIs to be beneficial to clients and that have the necessary training to implement them are well positioned to do so. The present study incorporates provider-level factors (e.g., attitudes, knowledge, and self-efficacy) in order to understand provider practices around DEBIs.

Despite our having identified organization and provider-level factors that influence the delivery of DEBIs, it is not well understood how to overcome barriers to DEBI delivery within

CBOs. The literature suggests that provider involvement in research may lead to acceptance and use of evidence based interventions. Therefore, DEBI delivery by CBOs may be expanded by involving providers in HIV prevention research. The present study sheds light on how to overcome barriers to delivery of DEBIs and other evidence based interventions by examining which specific research tasks/procedures undertaken by providers promote delivery of DEBIs. Knowing which research tasks/procedures influence providers to deliver DEBIs will help researchers develop effective and efficient partnerships with CBOs and with providers, in order to promote the use of evidence based interventions including, but not limited to, DEBIs. Ultimately, collaborative research partnerships between researchers and providers will be informed by this study, resulting in improvements in access to evidence based services for individuals at risk for HIV, thereby supporting HIV prevention providers' efforts to halt the spread of the virus.

A Community Based Participatory Research approach

According to the principles of Community Based Participatory Research (CBPR), involving providers in as many aspects of research conceptualization, design, and implementation as is feasible, is imperative. Provider involvement in research helps to develop projects that respond to the priorities of local communities (Israel et al., 1998; Lantz, Viruell-Fuentes, Israel, Softley, & Guzman, 2001), because CBOs are stationed within local communities and respond directly to the needs of the individuals living there. In order to advance a research agenda that addresses the needs of those being served by CBOs, providers' voices must be included in each step of the research process, since they are directly connected to, and responsible for, providing services within the community.

A CBPR approach requires that researchers and providers engage in mutually agreed-upon inquiry in an egalitarian manner (Pinto, Spector, & Valera, 2011). This is in contrast to a

traditional, researcher-driven approach, in which the researcher specifies aims and design and analyzes data with little or no provider involvement. Traditional approaches to research favor academic knowledge and training over clinical, practice, or indigenous experience (Cashman et al., 2008; Layde et al., 2012; Wells et al., 2006). Aside from community advisory boards (CABs), which often have little control over the research process and which have been criticized for giving researchers a “rubber stamp” (Cargo et al., 2008), traditional research is built on the expertise and assumptions of academics, rather than on the expertise of those being studied or of providers that are expected to employ the findings of the research. Therefore, traditional approaches to research have been criticized for lacking relevance or applicability to community “real world” settings, when providers are not included in the process of research. Community based participatory approaches to research seek to integrate the practice wisdom and indigenous knowledge that providers cultivate over years of experience providing direct services, along with the research knowledge that academic researchers cultivate over years of designing and executing research projects (Layde et al., 2012). Achieving a balance between practice and academic knowledge by explicitly addressing power differences and historical inequalities between community members, providers, and researchers, is a goal and a strength of participatory approaches (Champeau & Shaw, 2002). CBPR advocates for social justice through shifting ownership of research from scientists to those most affected by research: community members (participants) and the providers that serve communities in need.

Providers’ involvement in research and their use of DEBIs

Service providers who have been involved in research as partners are more willing to implement science-based practices (e.g., DEBIs) than their peers who have not been involved in research (Chagnon et al., 2010; Owczarzak & Dickson-Gomez, 2011; Pinto, Yu, & Spector, 2010). Having worked on research projects is positively associated with providers’ endorsement of science-based practices. However, collaborative processes vary and lack

systematization, and it is not clear how collaboration actually promotes providers' endorsement of practices. More specifically, we do not know how collaboration enhances providers' actual practices. Prior research has focused upon providers' attitudes toward DEBIs. The present study goes beyond previous research to examine how providers' involvement in research influences providers' actual delivery of DEBIs.

The term "involvement- in- research," may represent a diverse array of tasks/procedures that providers undertake. For example, it is unclear whether providers' involvement in research refers to their consultation on certain aspects of a project, such as the development of survey questions, or the actual implementation of an intervention that is being tested, or whether their involvement occurred only at the participant recruitment stage. The lack of clearly defined tasks/procedures associated with each type of provider involvement, represents a gap in the literature. The present study addresses this gap by identifying and examining research tasks/procedures that characterize various types of provider involvement in research.

Beyond knowing what types of tasks/procedures providers actually perform in research, there is a paucity of literature aimed to uncover which of those task/procedures are most likely to inspire providers to use DEBIs. For example, are providers who participate in research by recruiting participants or facilitating interventions as likely to deliver a DEBI as providers who analyze data or write manuscripts for publication? To fill this gap, the present study uses quantitative data to investigate the relationship between providers' self-reported use of DEBIs and their having experience conducting specific research tasks/procedures.

This study helps inform: 1) research, by providing empirical support that may inform how to optimize collaborative research processes between researchers and providers and improve the transportability of DEBIs and other evidence based interventions to CBOs; 2) practice, by demonstrating how to enhance providers' use of DEBIs and other evidence based interventions; 3) policy, by empirically validating the importance of participatory research so that funding sources will require community and provider involvement in public health related research.

Facilitators to providers' involvement in research

A CBPR approach emphasizes the value that providers with practice knowledge based on experience, and with sensitivity to contextual issues like clients' social environments and cultures, contribute to the development of research projects. Providers' perceptions and opinions about research collaboration influences whether or not they choose to participate in it. HIV prevention providers with experience in research designate three factors as being crucial to successful research collaboration: researcher's availability and personal manners; benefits for their clients; and the CBO's capacity (i.e., availability of organizational resources) to engage in research (Pinto, 2009). Researchers that exhibit positive social manners, return phone calls, share information, and attend staff meetings are viewed favorably, and they foster willingness to collaborate among providers. Researchers who can impart knowledge or other benefits that directly improve clients' quality of care inspire providers to become involved in research. By becoming involved with research, providers enrich the process and create an important link between the science and practice of HIV prevention. Collaborative approaches to HIV prevention research may lead to better methods, results, dissemination, and implementation of HIV prevention interventions than more traditional approaches do (Pinto, 2009; Spector, 2012; Viswanathan et al., 2004).

Capitalizing on the complementary knowledge and skills of providers and researchers yields research findings that are applicable to real world settings. This is achieved by balancing research rigor, technical expertise, practice wisdom and cultural sensitivity (Cashman et al., 2008; Gomez & Goldstein, 1996; Minkler & Wallerstein, 2008). Whereas providers have experiential knowledge about behavioral interventions, researchers have academic knowledge that helps them obtain funding and design studies. While researchers' and providers' knowledge areas may overlap, each is uniquely prepared to conduct distinct tasks based upon their primary interests, training, and skills. The synergy that results from the collaboration of

researchers and providers produces new knowledge through integration, and offers an advantage over the privileging of one or the other type of knowledge (Lasker, Weiss, & Miller, 2001). The combination of academic and practice expertise that arises from synergistic processes of sharing and exchanging information and resources improves many aspects of research, as mentioned earlier. However, lacking from the empirical literature is evidence that direct involvement of providers enhances DEBI delivery in community settings. The present study identifies such evidence.

Barriers to providers' involvement in research

While collaborative approaches to research have the potential to remove barriers to DEBI implementation, such approaches also pose significant challenges. Barriers to successful collaboration stem from mistrust toward researchers, disconnects between researchers and communities vis-à-vis perceived differences in goals, perceived benefits, language, education, and power differences, and lack of concrete resources such as time and funding (Gomez & Goldstein, 1996; Lantz et al., 2001; Pinto, 2009; Wallerstein, 1999).

Providers that rely exclusively on practice wisdom and intuition, and/or who lack training about DEBIs, may also hold negative attitudes toward research (Nelson & Steele, 2007b; Valdiserri, 2002). Having negative attitudes toward research may hamper providers from becoming involved with research or from seeking to acquire training to implement DEBIs. Lacking any intrinsic motivation, providers with negative attitudes toward research may be trained to implement DEBIs, yet this training may not be sufficient to motivate them to deliver DEBIs consistently. Instead, these providers may elect to use homegrown or untested interventions with their clients, because, lacking research experience, they continue to believe that such practices are effective.

Despite the evidence supporting DEBIs, providers with negative attitudes toward research may also be unconvinced of DEBIs' usefulness to their clients. Providers may dismiss DEBIs as irrelevant, because they have been developed by researchers rather than by those working "in the trenches". Providers may disregard the evidence supporting DEBIs because they lack knowledge of research terms and procedures (e.g., randomization and tests of statistical significance). Without this information, providers may not fully comprehend the published findings on DEBIs, and, based on this incomplete understanding, many challenge their usefulness.

Providers may harbor negative or skeptical attitudes toward researchers themselves (Stoecker, 1999). Often, negative attitudes toward researchers arise from mistrust and disconnects between researchers and providers. Providers working and/or living in communities of color may be aware of the egregious abuses and history of exploitation perpetrated by researchers in the U.S., particularly against African-Americans (Corbie-Smith, Thomas, & St. George, 2002). Providers may empathize or agree with the views of many in communities of color, that researchers and scientists may continue to intentionally inflict harm in order to conduct human experiments on people of color (Corbie-Smith, Thomas, Williams, & Moody-Ayers, 1999). Some providers and community members continue to subscribe to the once-popular conspiracy belief that HIV/AIDS was introduced into communities of color by the U.S. government as a form of "population control" (Bogart & Thorburn, 2005). Such views among racial/ethnic minority communities have hampered their enrollment in HIV research (Djomand et al., 2005; Mills et al., 2004). Thus engaging providers in collaborative HIV prevention research may also present obstacles in cases when providers believe that researchers are, at best, apathetic toward the plights of, and, at worst, harbor malice towards, communities of color.

Disconnects between researchers and service providers arise from providers' mistrust and suspicion about researchers' intentions; from fears of researchers further stereotyping or

stigmatizing the populations they serve (Pinto, 2009); from a lack of perceived common goals (Galea et al., 2001); from unavailability of researchers to attend staff meetings or respond to providers' phone calls (Flicker, 2006); and from differences in language and communication styles between researchers and providers (Baumbusch et al., 2008). Since provider "buy-in" has been shown to be critical for the implementation of practices within CBOs, overcoming mistrust and resolving disconnects between researchers and providers may be a requisite for gaining support among providers for DEBI implementation. Fostering collaborative partnerships through research between providers and researchers may help to resolve professional differences and overcome barriers like mistrust. The present study advances knowledge of how best to foster collaboration in research by examining factors that influence providers' willingness to be involved in research.

The literature about collaborative research is limited in that it has most often been studied from the perspectives of researchers seeking to understand how to engage and retain providers. There is a paucity of empirical literature to uncover the perceptions, attitudes, and practices of researchers around collaborative partnerships with providers. While researchers are in favor of involving providers in research, they approach the task of doing so with trepidation for fear of having to alter significantly how they work (Thompson et al., 2009). Having been trained and having become accustomed to wield full control over the research agenda, researchers are skeptical of sharing their power with providers. Researchers' personal characteristics have been shown to be associated with providers' willingness to collaborate. Researchers who are knowledgeable, display positive social manners, are available and communicative, and who disseminate findings in language that is free of jargon, and useful to community partners are able to sustain collaborative partnerships. Conversely, researchers who maintain social distance, exhibit hierarchical power imbalances with providers, and resist sharing data or disseminating results are less able to secure providers' engagement and retain them in collaborative projects (Pinto, 2009).

Research has shown that providers' involvement in research is associated with their use of DEBIs (Pemberton et al., 2009). However, prior studies have not distinguished specific research tasks, that when performed by providers, ultimately promote their delivery of DEBIs versus research tasks/procedures that have no association at all, or may even have a negative association with DEBI implementation. Therefore, missing from the literature is evidence of whether providers' involvement in certain specific types of research tasks/procedures makes a difference in whether or not those providers use DEBIs or other evidence based interventions in their agencies. We will therefore elucidate how collaborative research may help promote use of DEBIs by examining the relationships between specific research tasks/procedures undertaken by providers and those providers' self-reported use of DEBIs.

Disconnects between researchers and providers are barriers to collaboration, but providers' involvement in specific tasks/procedures in research may help to overcome these barriers. Through involvement in research, providers' interactions with researchers may facilitate dialogue and help both parties appreciate and understand one another's realities. When researchers demonstrate empathy and respect toward providers and sincerely solicit their views and opinions, they may help develop rapport and trust and foster relationships based on mutually beneficial interactions. When providers' gain new skills and competencies or bolster existing skills by working on research projects, they may help solidify bonds between all research partners. Researchers may improve their understanding of contextual issues faced by providers, and the experience of delivering services and practicing in the community. This may help researchers engage providers in a genuine and sincere manner.

Thus far, the literature has not demonstrated empirically, the specific aspects of collaboration between researchers and providers that influence providers' willingness to be involved in research. It is still unknown to what extent having had certain specific roles within collaborative research projects facilitates or hampers providers' willingness to be involved in future research. The present study aims to fill this gap by examining the relationships between

providers' involvement in specific aspects of research and their willingness to collaborate further with researchers. The concurrent mixed method approach, reflecting CBPR principles, relied on the qualitative data from providers' interviews to inform the selection of independent variables. Providers themselves indicated the tasks/procedures they took on in collaborative research projects. Integrating the voices of providers that were interviewed specifically about their research collaboration experiences enriched the present study's results by grounding the selection of variables in real-world experiences. This enhances the ecological validity of the present study by contextualizing the quantitative models in the reported experience of providers. The concurrent approach to analyzing the qualitative and quantitative data involved corroborating qualitative findings by using the quantitative survey as a guide for coding for specific research tasks/procedures that were found in the survey instrument. Therefore, the author used both sources of data to inform one another, augmenting the face validity of the study design.

Rather than include every possible variable that describes tasks/procedures from the cross-sectional survey, the author analyzed qualitative interviews to carefully craft the model grounded in the voices of the providers, from whose rich descriptions of research collaboration the author extracted the tasks/procedures they prioritized. Doing so optimized the face validity of the measures by providing corroborating evidence for the survey items. For example, finding that nearly every provider discussed "recruitment of participants" as a task in which they were involved provided evidence of the relevance and face validity of the survey item that asks whether respondents were involved in "recruitment of participants" during their experiences in research collaboration. Therefore, only those items with such evidence, gleaned from qualitative data were selected for the quantitative models.

CHAPTER III

INTEGRATED THEORETICAL FRAMEWORK

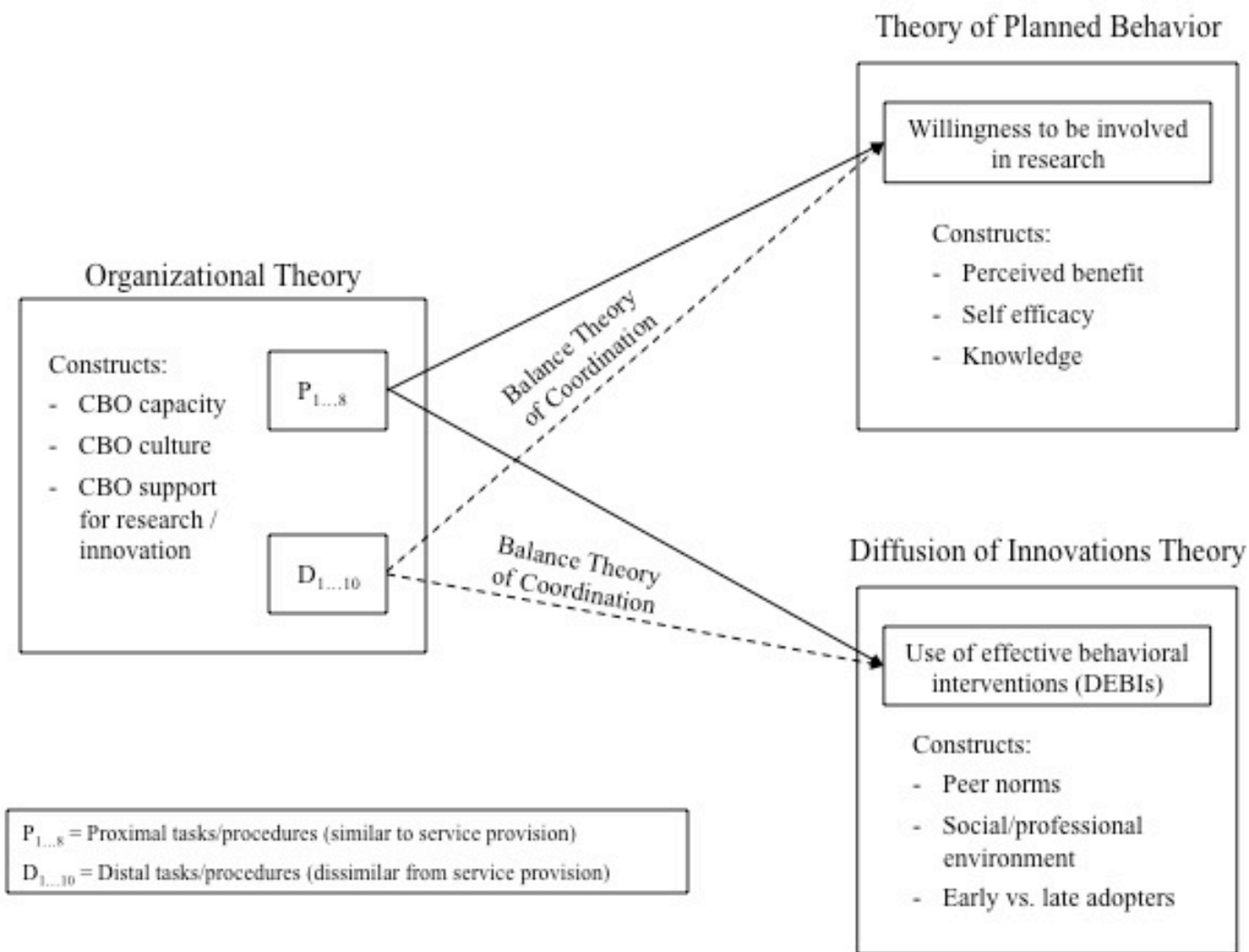
The literature underscores many environmental and individual factors, on both the organizational and provider levels, that facilitate or hamper providers' delivery of DEBIs in community settings. To help advance our conceptualization of the interplay between organizational factors surrounding DEBI delivery and the provider-level factors related to providers' use of DEBIs, a theoretical framework is described below.

Integrated Theoretical Framework Overview

The present study is informed by an integrated theoretical framework comprised of four theories. Two of the theories establish the context or environment surrounding the variables under study, while the other two theories guide our rigorous selection of variables. The author will refer to the two theories that offer a perspective on environment and context as "contextual" theories, while the two theories that specifically guide the selection of variables being examined will be referred to as "key" theories. While, this author has not previously seen a theoretical framework described in this manner, doing so helps to organize the framework without compromising a thorough integration of the four theories. Grounding the study in four distinct yet integrated theories helps add depth and richness to our understanding of the provider-level factors and the providers' environment (i.e., CBOs) surrounding the complex variables that influence providers to deliver DEBIs. Figure II below, depicts the integrated theoretical framework.

Figure 2

Integrated Theoretical Framework



This study is focused upon individual differences among providers and uses individual level data from providers, therefore *The Theory of Planned Behavior* is a key theory used to guide the selection of independent variables. *The Theory of Planned Behavior* would reason that providers use DEBIs and other evidence based interventions, and become involved in research, if they perceive a benefit (for themselves and/or their clients) and if they believe that they are capable (i.e., have the necessary skills and knowledge) of delivering these interventions (Perkins et al., 2007). Based on this theory, providers involved in research, who engage in proximal tasks/procedures (i.e., those closely reflecting the skills, knowledge and practices involved with providing services) may perceive a greater benefit than those who engage in distal tasks (i.e., those closely reflecting the skills, knowledge and practices of the researchers), because they may view proximal tasks as offering a direct benefit to them or to their clients, for example, such as the improvement of skills and knowledge for service provision.

Service providers are not entirely unique since they exist and work in, and are influenced by their organizations' professional and social environments. Therefore it is imperative to understand their CBO environment and how it influences their service provision practices. Organizational Theory is the second key theory guiding the selection of variables for the present study. *Organizational Theory* states that organizational culture and structure influence providers' involvement in research by making available necessary resources (i.e., physical space and human resources) and incentives (i.e., professional support, training and educational opportunities) (Hatch & Cunliffe, 2006). *Organizational Theory* and *Theory of Planned Behavior* comprise the two theories guiding the selection of variables for the present study, and they will be referred to below, as "key" theories, in order to represent their close proximity to the variables under study.

The present study's integrated theoretical framework presents two theories to establish the context and background within which providers deliver DEBIs. The present study is

concerned with the process of providers engaging in, promulgating, and delivering DEBIs and other evidence based interventions within organizations. There are two theories that conceptualize these processes and that can provide background information on a complex and dynamic phenomenon. *Diffusion of Innovations Theory* informs the present study by emphasizing the influence of peer consultation and social support on provider delivery of DEBIs and other evidence based interventions (Rogers, 2003). The *Balance Theory of Coordination* suggests that providers' involvement in research works best when they do not replicate or repeat the work of researchers but rather capitalize upon their distinct skills (Litwak & Meyer, 1966). These two theories enrich the present study's framework by helping to explain the contextual issues surrounding providers' delivery of DEBIs and their involvement in research. Therefore, we will discuss these theories below as "contextual" theories in order to provide a deeper understanding of the theoretical environment from which our specific aims are drawn.

Describing Providers' Practices

Below, we offer a brief scenario that connects the four theories, in order to highlight the framework as it pertains to providers' delivery of DEBIs. The name of each theory appears in parentheses next to an example highlighting the role of the theory in the scenario.

According to the integrated framework, providers deliver DEBIs and other evidence based interventions influenced by prior experience performing research tasks/procedures. Such experience may enhance their knowledge and skills related to providing direct services to clients (Theory of Balance and Coordination). Having improved their practice skills through research involvement, providers may perceive the products of research (i.e., DEBIs) favorably and perceive themselves as capable of using those products (Theory of Planned Behavior). In turn, providers will highlight their skill acquisition and positive experiences with DEBIs when communicating with their peers. Barriers such as negative experiences with research - due to researchers' characteristics, poor opinions of research, and lack of workplace support for

research involvement - may hamper this process (Theory of Diffusion). However, in order for providers to experience research involvement or to have the choice to deliver DEBIs, they must be located in an organization that has the capacity to offer those opportunities, and, therefore, adequate organizational resources must be available (Organizational Theory).

Having broadly described each theory and how they all fit together in the brief scenario, above, below, the author will provide a detailed description of each theory that comprises the integrated framework.

Contextual Theories

Balance Theory of Coordination

Balance Theory of Coordination states that providers and researchers ought to capitalize upon their unique and varied skills in order to collaborate on research. This has been empirically demonstrated in a study showing that research collaboration between providers and researchers was most successful when researchers demonstrated skills and competencies and personal characteristics (e.g., sharing results of research, helping CBOs build capacity, and being available to providers), and when providers were engaged in various aspects of the research process (Pinto, 2009).

However, providers' and researchers' skills and interests often differ, and the two groups are not necessarily suited to perform the same tasks. Whereas providers may be skillful at engaging participants in interviewing or recruiting, researchers may be better able to manage data and develop data analytic plans. There are research tasks/procedures for which providers are well-prepared by virtue of their practice and service provision training and experience. Meanwhile, other tasks are more consistent with the professional training and experience of researchers. Researchers and providers involved in HIV prevention research need not replicate one another's tasks, but rather perform complementary tasks for which each is intrinsically qualified. Simply stated, while the Balance Theory calls for provider involvement in research, it

suggests that provider involvement ought to be planned prudently in order to maximize the use of service provision skills, rather than involve providers indiscriminately in each and every research task and procedure.

Grounded in the Balance Theory, research tasks/procedures have been categorized based upon the skills and knowledge they require as “proximal” or “distal” to service provision. Proximal tasks are those research tasks/procedures similar to service provision in that they require skills similar to those that providers routinely employ (e.g., engaging clients, eliciting information, providing information, and offering support). Distal tasks require providers to use skills that are more closely aligned with research than service provision (e.g., quantitative skills, use of statistical software, qualitative analytic skills, scientific writing).

Providers who have performed proximal tasks may derive direct benefits from their involvement in research because they may improve upon their service provision skills, enhance self-efficacy, and experience their research involvement as “making sense” to them, since they are using skills and knowledge compatible with their professional identities. According to this theory, we would expect to find that providers having performed proximal tasks positively influences their willingness to be involved in research and use of DEBIs, because proximal tasks capitalize on providers’ service provision skills and knowledge.

For example, providers that have been involved in research as facilitators of a behavioral intervention may find that they have learned a new treatment that is scientifically validated and applicable to their work with clients. Moreover, they may simply enjoy the exercise of facilitating a behavioral intervention for research purposes, since such facilitation is well aligned with their repertoire of professional skills. Therefore, having been involved in a proximal task, such as behavioral intervention facilitation, may influence providers to implement DEBIs, which are also scientifically validated interventions. Similarly, having been involved in proximal tasks from which providers perceived a direct benefit will influence providers’ willingness to be involved in research in the future. The Balance Theory of Coordination offers a sound argument

connecting proximal and distal research tasks/procedures to both outcomes: DEBI implementation; and willingness to be involved in research.

Theory of Diffusion of Innovations

Theory of Diffusion of Innovations suggests that providers are the key facilitators of DEBI adoption. Providers are responsible for implementing DEBIs, for influencing other providers to implement DEBIs and for maintaining the use of DEBIs within organizations. Providers are influenced by factors within their social system (in this case, their professional environment) which consists of their organization and their peers (Moulding, Silagy, & Weller, 1999; Rogers, 1995). Factors within the social system might include any aspect of the environment: both concrete aspects (e.g., physical space, funding, personnel, community locale); and intangible aspects (e.g., culture within the organization that either encourages or discourages innovation, cohesion among staff, job satisfaction, “burn-out”).

These influences impact providers and they impact one another in an iterative cycle. For example, funding influences the organization’s hiring of qualified personnel, which in turn influences the culture within the organization and dictates the manner in which services are provided. Funding may also determine the types of services offered, as well as the number of clients that must be retained or units of services being provided (e.g. number of billable hours per week), in order to maintain funding. The physical space of the organization may directly impact the provision of services. Lacking sufficient private areas may limit the number of clients receiving DEBIs and lacking large rooms may hamper the offering of group-based DEBIs. Therefore, concrete resources and intangible aspects of the social environment of the organization dynamically influence one another in complex and sometimes unforeseen ways. The present study includes variables to measure organizations’ resources and capacity to implement DEBIs, integrating concrete resources as well as other resources as independent variables.

The organizations in which service providers reside comprise the diffusion system. The diffusion system is the context within which providers are situated and within which innovations, like DEBIs, are implemented and adopted. Adoption refers to the process whereby a DEBI becomes routinized and maintained, such that it is widely accepted within the organization and persists over time. One way to assess whether adoption has occurred is to examine whether staff or administration turn-over halts the use of the DEBI. If the DEBI continues to be used by providers despite changes in staff and/or administrators, one can conclude that adoption has taken place. If changes in personnel result in cessation of the DEBI, one can conclude that, while implementation of the DEBI occurred at one point in time, adoption did not follow. Implementation of a DEBI is necessary for adoption, however adoption and implementation are not synonymous.

The present study focuses upon delivery of DEBIs in general and does not include assessments or measures of level of implementation fidelity (e.g., adherence to core components) or adoption. Future research ought to shed light upon providers' actual implementation practices and levels of adoption of DEBIs within CBOs after having experiences engaging in proximal and distal research tasks/procedures.

Providers vary in terms of willingness to be involved in research and adoption of DEBIs. Communication over time between providers within the diffusion system influences both providers' involvement in research and DEBI implementation. Peer consultation, a common practice in service provision (Granello, Kindsvatter, Granello, Underfer-Babalis, & Moorhead, 2008; Lincoln & McAllister, 1993), may inhibit or promote providers' willingness to be involved in research and to use DEBIs. Whereas favorable experiences, articulated in the course of peer consultation, may promote involvement in research and DEBI implementation, negative experiences may do the opposite.

For providers, the adoption process is comprised of several stages, including awareness, interest, evaluation, trial and adoption. Providers must first become aware of DEBIs

in order to become interested in learning about them. As their interest grows, providers evaluate the benefits of DEBIs and make decisions about whether to try to deliver them. Depending on the quality of the experience of delivering a DEBI, a provider may adopt that DEBI as part of their service provision. Providers evaluate DEBIs based upon how easy or difficult they are to implement, how similar or dissimilar they are from their current practices, and how clients respond to DEBIs. All of these factors are considered in the decision to adopt a DEBI.

Providers may be early or late adopters of DEBIs, based upon their knowledge, their fellow providers' use and endorsement of DEBIs, and a social and professional environment that may encourage or discourage innovation. Theory of Diffusion of Innovations suggests that providers working in organizations that implement DEBIs are more likely to increase communication with one another about DEBIs and, over time, to increase the adoption of DEBIs in the organization. The Theory of Diffusion of Innovations posits that characteristics of DEBIs may be facilitators to adoption. DEBIs that are not overly complex and are compatible with providers' existing practices are more likely to be adopted. This study does not address adoption of DEBIs per se, since the design here is cross-sectional, and adoption is best studied over time, or longitudinally. In this study, Theory of Diffusion of Innovations helps explain providers' use of DEBIs at a given time.

Therefore, providers that have had experience performing proximal research tasks/procedures may exhibit willingness to collaborate with researchers and to deliver DEBIs, since proximal research tasks are not overly complex, and they require skills and knowledge similar to those that providers already use in service provision. Providers may perceive proximal research tasks as compatible with their current practices, enabling them to continue those practices. The characteristics of a DEBI, including its complexity and compatibility with current practices, may determine whether it is adopted over time. Providers that have performed distal research tasks/procedures may exhibit less willingness to collaborate with researchers and deliver DEBIs, since distal research tasks are complex, requiring skills and

knowledge that are inconsistent with providers' training, education, and practices. Providers may perceive distal research tasks as incompatible with their current practices, and that having performed distal research tasks/procedures as being not pertinent to their daily work. Thus, providers that engaged in distal tasks may not have developed or practiced the skills to deliver DEBIs and may have negative perceptions of DEBIs. The characteristics of a DEBI, including its complexity and its compatibility with current practices, may determine whether it is adopted over time. Providers that view DEBIs as incompatible with their practices, may hold this opinion because of lack of exposure to, or training in, the skills necessary to deliver the DEBI. Those providers may likewise have been involved in distal research tasks/procedures.

Organizational theory

Organizational theory asserts that the culture and structure of the organization where providers are situated influences their willingness to be involved with research and their use of DEBIs in practice. This theory emphasizes the role of the organization in motivating the behaviors of providers. It assumes that organizations, by virtue of their characteristics, exert an influence on providers, which can promote or inhibit provider practices (e.g., the use of DEBIs) and shape providers' attitudes (i.e., willingness to be involved in research).

The organizational structure is comprised of the organization's resources and hierarchy. Physical resources are those concrete items that define and occupy the physical space of an organization, such as technology, office configuration, community locale, and funding. The hierarchical structure of the organization determines the way that it makes decisions. Flat hierarchies exist within organizations that minimize power differences, emphasize collaborative decision-making, and have less differentiation of roles among staff. Steep hierarchies, on the other hand, exist within organizations where significant power differentiation determines who makes decisions. In steep hierarchies, there is a clearly discernable "chain of command" leading to one top official, usually the Executive Director, who has ultimate power over decision-

making. Organizations that have steep hierarchical structures favor role differentiation among employees and are often bureaucratic.

The culture of the organization is comprised of its social norms, values, symbols, and the way that the organization is represented in the community through media and social networks. While culture itself is a conceptual term, organizational culture is manifested in myriad observable ways (e.g., interactions between staff, type of dress, décor of the office, etc.). The culture of the organization may be oriented toward the use of scientifically validated treatments like DEBIs, or, conversely, toward homegrown interventions. The culture may likewise favor collaboration with outside researchers, or, conversely, may frown upon bringing “outsiders” in.

The structure of the organization helps to determine the culture of the organization. The resources available enable the organization’s culture to respond to the demands of the environment. The funding environment for human service organizations demands that organizations document their effectiveness, use scientifically supported interventions, like DEBIs, and remain accountable for the services that they provide. For example, organizations that have adequate funding, ample physical space and access to technology often have organizational cultures that favor innovations, such as DEBIs, and encourage providers’ involvement in research (Kelly, Sogolow, & Neumann, 2000; Kraft, Mezoff, Sogolow, Neumann, & Thomas, 2000). Providers in well-resourced organizations may enjoy opportunities to become involved in research and may become engaged in various research tasks/procedures, as opposed to providers in organizations where time is dedicated exclusively to service provision (Pagoto et al., 2007). Organizations in which providers have the flexibility to be involved with research also have human and financial resources to disseminate information to the community (Bowser, Mishra, Reback, & Lemp, 2004). Providers in organizations that are involved in research and disseminate information to the community are, therefore, able to use research findings in a number of ways. For example, providers in organizations that implement

DEBIs are able to use research to guide practice and service provision. In this way, organizational culture and structure bear upon the practices of providers.

Both the culture and the structure of an organization influence whether the organization is able to respond to changes in its environment. Organizations with low capacity for change are often unable to respond adequately to changing demands, including funding changes and changes in client or staff composition (Lehman, Greener, & Simpson, 2002). In an ever-changing socio political climate, such as the one that exists in human service provision in the United States, organizations that are unable to meet such challenges are threatened. Providers working in organizations that have higher capacity for change and are able to meet new demands by responding appropriately and expeditiously are more likely to endorse scientifically validated interventions like DEBIs (Fuller et al., 2007). This finding is consistent with Organizational Theory, which highlights the direct link between organizational culture and structure and providers' attitudes and behaviors. Therefore, the selection of organizational variables in the multivariate analyses will include measures of providers' perceptions of organizational culture, structure, and the organization's capacity to implement DEBIs.

Behavioral Theory

Theory of Planned Behavior

The Theory of Planned Behavior reasons that providers implement DEBIs and participate in research based upon their behavioral intentions. That is, if providers intend to perform a particular behavior, they will do so under the following conditions: if they perceive that the outcome will be a benefit, if the perceived gain is greater than the cost or output of energy, if there is peer support for and social norms that promote the practice or behavior, and if the provider has self-efficacy or believes that he/she is capable of implementing the practice or behavior.

The Theory of Planned Behavior asserts that providers' willingness to collaborate with researchers conveys intention, which is necessary for collaboration. Providers that report willingness to be involved in research collaboration reveal that their behavioral intention is to be involved in as many aspects of research as possible. According to the Theory of Planned Behavior, having a behavioral intention is a crucial aspect of performing the behavior. Therefore, if other conditions are met (e.g., organizational capacity for research, belief in one's own ability to be involved in research, etc.), providers exhibiting the intention to be involved in research will indeed do so.

The theory also states that perceiving a behavioral outcome to yield beneficial results is key to promoting a given behavior. For example, providers that surmise that their involvement in research will be fruitful with regard to their own practice or enhancing their clients' outcomes will most likely elect to be involved in research. Therefore, if providers perceive or can foresee a benefit from their involvement in research, they will be more likely to become and/or remain involved in it.

Ostensibly, providers who engage in research tasks that are closely related to their job skills (i.e., proximal tasks) will perceive a greater benefit than those who engage in distal tasks. Having experience performing proximal tasks may give providers a perception that they are developing or improving skills that they need for practice, thereby improving their self-efficacy in delivering a DEBI or other evidence based intervention and increasing their behavioral intention to do so. Conversely, providers that engage in distal tasks may be less inclined to be involved in research because they may not have realized a benefit from having performed tasks that are not similar to their professional practices. Providers that have performed distal tasks may likewise not have improved their skills or self-efficacy in delivering DEBIs, and thus they may be less inclined to do so than providers that have experience with proximal tasks.

For example, providers that have facilitated interventions in research studies may view the skills that they learned in order to deliver the intervention as being translatable to and

useable in their routine work providing services to clients. Providers may be able to tailor or deliver components of the interventions in which they were trained when serving clients. Likewise, providers that have been involved in recruiting participants, using interpersonal skills to engage and provide information and/or education about research participation, may view having been involved in recruitment as bolstering their engagement and didactic skills. They may enhance their confidence in their interviewing skills, as well as their ability to build rapport with clients. Likewise, having been involved in dissemination of research findings to peers, community members, or administrators may help providers to develop public speaking capabilities and knowledge of how to explicate how research may be used to guide practice. Dissemination of findings often takes place in conferences, workshops, and staff and/or board meetings where providers are encouraged to articulate research findings in their own words. Providers' presenting research findings may help sharpen presentation skills useful in staff meetings, case conferences and meetings of coalitions, work groups, and professional networks. Providers' development of the ability to speak publicly and address diverse constituents, as well as to translate research findings to peers, enhances their capacity to take on leadership roles within their organizations and in the practice community in general.

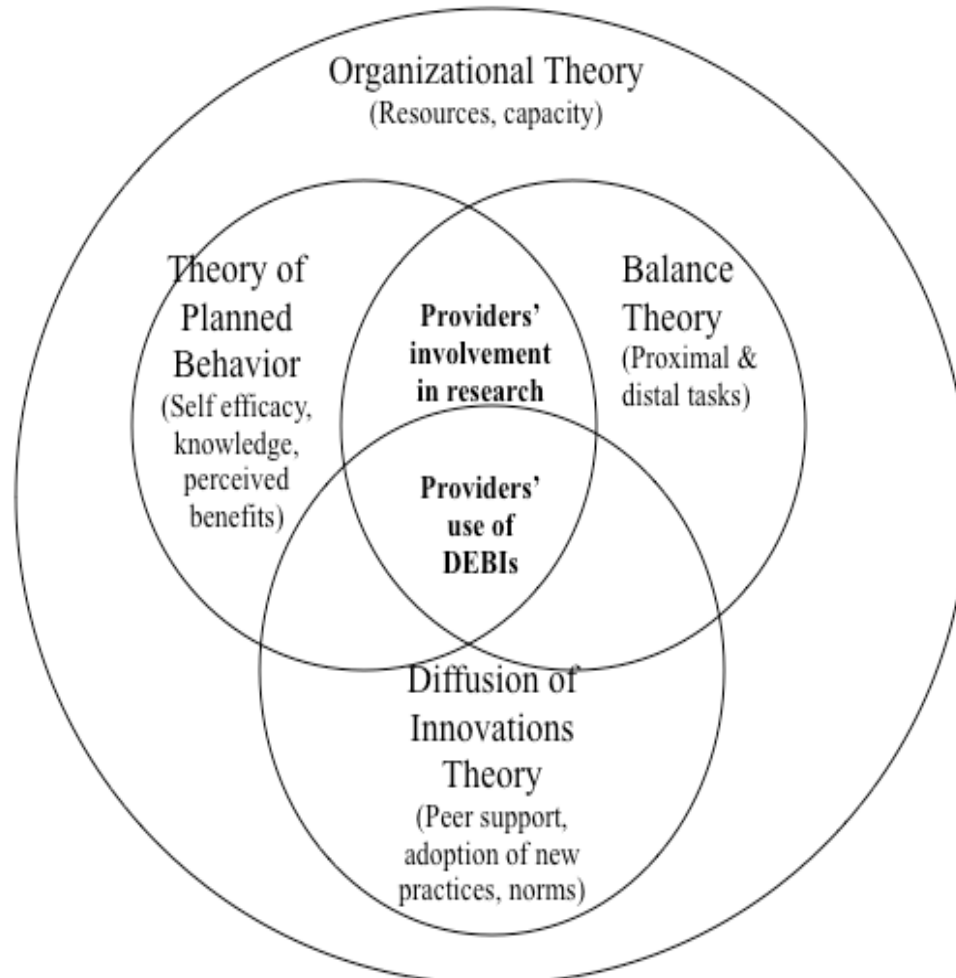
The benefits of performing distal tasks, however, may not be as readily perceived as those of having performed proximal tasks. Some providers may find distal tasks interesting while others may find them burdensome. Providers that do not perceive that involvement in distal tasks, or procedures, enhances professional service provision skills or professional capacity for growth may believe that performing distal tasks imposes a burden. For instance, having been involved in statistical data analysis may be regarded as dissimilar to providing services, and therefore of limited utility to providers. Advanced quantitative skills required to perform statistical analyses are rarely needed in the basic model of service provision that relies on interpersonal communication as the main tool with which to assist clients. Likewise, designing research procedures may be difficult for providers to translate into useable skills for

their daily work of service provision, since data collection and sampling for the purposes of advancing knowledge through research are not directly part of the helping process. Therefore, there may be a difference in the influence of proximal and distal tasks, according to this theory. The Theory of Planned Behavior is used to guide the categorization of research tasks/procedures into “proximal” and “distal” for the quantitative models in this study.

The theories discussed above provide an explanatory framework to support the selection of variables and an articulation of the main hypotheses. The contextual theories offer explanations about providers’ environments and the processes of appropriating new practices (e.g. DEBIs and involvement in research) by situating providers within their social and professional systems, including their peers, CBOs, networks of CBOs, and the practice community. The two key theories explain the way that providers’ participation in proximal and distal research tasks/procedures (key independent variables), as well as other factors (e.g. organizational factors, provider factors), influences providers’ willingness to be involved in research and delivery of DEBIs. Below, Figure III illustrates the connection among the four theories and the outcomes being studied.

Figure 3

Integrated Theoretical Framework Diagram



CHAPTER IV

METHODS

In this chapter, the methods for the qualitative and quantitative portions of this study will be described. Since this mixed methods study relied on a concurrent analysis of qualitative and quantitative data, the integration of the interviews with the cross-sectional survey will be demonstrated whenever possible. However, for didactic purposes, the qualitative methods will be outlined first, and the quantitative methods will follow. This order reflects the actual collection of data, which occurred sequentially. Therefore, while the present study is a concurrent mixed methods design (based upon concurrent secondary data analysis), the original study was a sequential mixed methods design (sequential data collection). In the original study, the collection of qualitative data preceded and informed the design and content of the quantitative study.

Advantages of Mixed Methods

Concurrent mixed methods procedures require that quantitative and qualitative data be integrated through concurrent examinations of both sets of data, in order to inform the analysis. The interpretation of qualitative and quantitative data inform the overall results. Consistent with concurrent mixed methods design, the qualitative interviews here were used to inform the quantitative analysis by helping to determine the key independent variables to be used in the quantitative multivariate linear regression analysis. In concurrent mixed methods research this process is known as “embedding” one question with other questions (Creswell, 2009). Thus, the question of which tasks/procedures will be used in the multivariate linear regression is embedded within the question of which tasks/procedures providers identified in their interviews.

The qualitative interviews were analyzed according to predictive content analysis. Predictive content analysis seeks not only to describe the messages under examination but to predict outcomes relative to those messages, therefore this method requires merging of additional data, usually quantitative data, in order to make inferences about the effects of the messages (Neuendorf, 2002). Consistent with predictive content analysis, the present study advances beyond simply describing the research tasks/procedures that providers use during their involvement in research (i.e., describing the messages), to predicting how involvement in specific tasks/procedures influences their DEBI delivery and willingness to be involved in research (i.e., inferring the effects of messages). In order to accomplish this goal, content analysis data is merged with statistically analyzed data, so as to examine relationships between the messages (i.e., independent variables) and the outcomes (i.e., dependent variables).

The present study employed concurrent mixed methods (Creswell, 2009; Pinto, 2010). In order to integrate qualitative and quantitative data, twenty qualitative interviews with providers who had been involved in collaborative research projects were read and analyzed. Analysis of interviews involved coding and marking text for specific research tasks/procedures, while concurrently reading the quantitative cross-sectional survey. Thus, the research tasks/procedures found in the interviews were corroborated with those in the cross-sectional survey and vice versa. Therefore, qualitative and quantitative analysis informed one another and created the basis for key independent variable selection for the final multivariate linear regression models.

Qualitative interviews offered a rich and relevant source of information because providers gave their perspectives in their own voices through the interview process. Providers' perspectives contributed the context from which key independent variables were drawn because providers prioritized those research tasks/procedures that they felt were most important to describe and discuss. Contextualizing quantitative data is an advantage of mixed methods design. By utilizing two different types of data (qualitative and quantitative) from two separate

samples to study three interrelated aims, the present study uses data triangulation for enhanced rigor and validity (Alasuutari, Bickman, & Brannen, 2008; Creswell, 2009; Maxwell & Loomis, 2003).

For this study, data triangulation through mixed methods presents an advantage over relying exclusively upon a qualitative or a quantitative design. If the author were to use only qualitative data, it would not be possible to examine the relative influence of research tasks/procedures on providers' DEBI use or on their willingness to collaborate. Also, the findings from the small, non-random sample of twenty providers would not constitute a generalizable result. Likewise, if the author were to use only quantitative data, it would not be possible to determine which tasks/procedures providers prioritized as most important. The multivariate linear regression models would contain an exhaustive list of independent variables (i.e., research tasks/procedures) selected by the author simply by virtue of their availability in the cross-sectional survey.

Community Based Participatory Research (CBPR) recommends that the voices of stakeholders (i.e., service providers) be used to the greatest extent possible in as many aspects of research as is feasible (Minkler & Wallerstein, 2008) in order to render the findings of research useful, relevant and translatable to practice settings (Bellamy et al., 2008; Layde et al., 2012; Owczarzak & Dickson-Gomez, 2011). The study that originated this data was grounded in CBPR principles and followed CBPR methodology. The Principal Investigator of the original study designed the interview protocol collaboratively with the participation of experienced service providers. Service providers contributed, through in-person meetings and consultations with the Principal Investigator, their recommendations to create an interview protocol that would be acceptable to and feasible for service providers.

The present study likewise reflects the spirit of CBPR by integrating data collected from service providers responding to an interview protocol designed collaboratively with provider input. Using qualitative interviews whose concept and content were developed according to

CBPR methodology in order to inform the selection of research tasks/procedures is consistent with the CBPR principle that advocates prioritizing locally relevant issues. In this case, providers' descriptions of research tasks/procedures depicted that which was locally relevant to providers' experiences of research collaboration. Interview protocol procedures allowed providers to describe their research experiences in their own words. Therefore, selecting research tasks/procedures based upon providers' qualitative interviews is consistent with the CBPR paradigm that guided this study.

Whereas the qualitative interviews offered a specific, discrete selection of research tasks/procedures, the quantitative survey data listed a broad, exhaustive array of tasks/procedures. Qualitative and quantitative data were examined together to arrive at the final variable selection. Each research task and procedure found in the qualitative data was used in the final models. Quantitative data were used to verify or corroborate the qualitative findings. Qualitative data were cross-referenced with quantitative data. For example, one provider in his interview discussed having participated in the research task of "specifying study aims" during the course of planning a research project. The quantitative data was then consulted to cross-reference "specifying aims" and determine that "specifying aims" was indeed endorsed by providers in the quantitative survey as well. Once this task was corroborated in the quantitative data, it was added as an independent variable for the multivariate linear models. The final variables for both models were selected based upon the integrated theoretical framework and the literature. Therefore, variable selection was grounded empirically and theoretically.

It would not have been practical or desirable to use all of the possible research task and procedure items in the quantitative survey, because this would have exceeded the statistical limit for detecting an effect as determined by the power calculation, and because such a vast number of items might yield results not theoretically grounded or relevant. Furthermore, including all possible variables might be considered "fishing" or finding associations based solely upon the statistical probability of doing so, given the abundance of variables being tested.

Therefore, the present study employed a concurrent approach, reading both qualitative and quantitative data concurrently and using both to inform the multivariate linear models in the most prudent and parsimonious manner.

Qualitative Study Design

This section describes the qualitative methods used to address the qualitative aim below. This section includes the design of the original study, a description of the data that were used, as well as the samples from which the data originated and an account of the procedures used to analyze the data. Adhering to a concurrent mixed method design for combining and integrating qualitative analysis with quantitative analysis (Creswell, 2009), the present study employs predictive content analysis (Neuendorf, 2002) and multivariate linear statistical analysis (based upon identified tasks/procedures from concurrent analysis of qualitative and quantitative data). For the purpose of organizing the text for ease of reading, the multivariate analytic methods will be described following the qualitative analytic methods. Below, the qualitative aim is presented, and analytic procedures for examining this aim are described.

Qualitative Aim

1. From the perspective of HIV prevention service providers, to identify research-related tasks/procedures in which providers are engaged and/or that they perform during the course of HIV prevention research (i.e., collaborative research projects between the providers' organization and a researcher(s) from an academic institution and/or government agency), using semi-structured in-depth interviews with ten administrators (e.g., Executive Directors) and ten direct service providers (e.g., Counselors) (N=20).

Qualitative Data

To address the Qualitative Aim, the present study uses secondary data from a study conducted by Dr. Rogério M. Pinto (Pinto, 2009). (R.M. Pinto Principal Investigator, Studying academic-CBO HIV research collaborative processes, funded by NIMH and the HIV Center for Clinical and Behavioral Studies, IRB-AAAI1945.) Dr. Pinto, the sponsor of this dissertation, has granted permission for this data to be used in the present study.

Study Population

Ten CBOs in New York City were randomly recruited from a list of fifty CBOs known to be funded by the New York City Department of Health and Mental Hygiene to provide HIV prevention services. Inclusion criteria for CBOs was as follows: 1) at least three instances of collaboration in HIV behavioral research, “three instances of collaboration” referring to a CBOs involvement in three separate research projects either concurrently or consecutively; 2) availability of the executive director (ED) or other executive-level administrator and one other provider on the CBO staff to be interviewed and; 3) ED and other provider having worked on at least one stage of the same research project(s). The ED and other provider need not have worked with one another *per se*, but must have had some experience that overlapped in the same research collaboration. For example, the ED may have been involved in designing data collection procedures while the other provider may have helped to design a survey instrument. The above criteria helped to ensure that interviews yielded robust data, and that data saturation would be achieved, because members of each ED/provider pair would each be able to describe their experiences on the same research project.

Recruitment proceeded as follows: Each ED was contacted by phone by the Principal Investigator (R.M. Pinto), and informed about the opportunity to participate in the study. Upon agreeing to participate, EDs answered brief screening questions to make certain that they met

all inclusion criteria. Each EDs was then asked to recommend a provider from the same CBO who had worked on at least one of the same research projects the ED had worked on. An appointment was then made to conduct the in-person interview with the ED. The provider was contacted by phone and invited to participate in the study. Once the provider agreed, an appointment was made with the provider for the interview.

Human Participants Protection

Human participant reviews were approved by the Institutional Review Board of Columbia University.

Data Management

Interviews were conducted in spaces that offered privacy (i.e., the P.I.'s office or the office of the participant) in order to protect the confidentiality of data. All interview transcriptions were kept in password secured computer files, to which only relevant personnel had access. Each interview transcription was identified with a corresponding ID number and contained no information identifying the CBO or the participant. Similarly, no documentation existed linking participants' assigned ID numbers to the CBO for which they worked.

Interview Procedures

Twenty informants (i.e., ten executive-level administrators and ten providers) gave semi-structured in-person interviews at their CBOs. All procedures were approved by the Columbia University IRB. Each participant gave informed consent to participate in the study and to be audio-recorded, preceding commencement of the interview protocol. Each interview lasted between 45 and 75 minutes and was audio-taped for verbatim transcription upon receiving informed consent from the participant. The interview protocol can be found in Appendix A. Interviews were conducted by the Principal Investigator of the study, Dr. Pinto. Interviews

focused on uncovering detailed information about providers' involvement in research. The interviews tapped several themes about providers' participation in research, including how researchers and providers worked together to conduct research and the specific activities undertaken by providers during research collaboration. Participants were asked to reflect upon "successful" collaborative research projects, as well as those that they deemed "less successful," in order to distinguish between characteristics of various types of partnerships. Participants reflected upon and described their roles across different phases of the research process (e.g., collecting data, designing surveys, analyzing data, and dissemination). They were asked to prioritize the relative importance of having been involved in different research tasks/procedures. For the use of their space, participants' CBOs received \$200 each as incentive.

Data Analysis

Data were analyzed using QSR NVIVO qualitative data management software, according to the approach of predictive content analysis (Neuendorf, 2002) a form of descriptive qualitative analysis driven by the analytical orientation of research questions drawn from prior research (Pinto, 2009) and professional experience. Having worked in similar CBOs and having provided many of the same services as the providers being interviewed, the author identified with the experiences providers shared in their narratives. Since many of the challenges, triumphs and frustrations described by the providers were familiar, the author was cautious in making interpretations or assumptions about the content of the interviews. She was careful to read the text closely to ensure accuracy of coding so that her own experiences did not result in changing the meaning of the responses. For example, the author worked as a provider in a CBO where research had taken place without providers' input and was disruptive to client treatment, as well as coercive to clients (i.e., through the use of cash incentives). This experience may have influenced how interviews describing research projects were understood.

Thus, rather than taking a naïve stance, the author, herself an experienced provider, drew upon her own indigenous knowledge of service provision in order to analyze providers' interviews. Acknowledging and reflecting upon the author's position as a provider throughout data analysis improved interpretative validity, because the author is an "insider" and has endemic knowledge of the professional language and work environment of providers (Sandelowski, 2000, 2010).

Conversely, according to grounded theory, the author would have assumed a naïve stance and would have viewed the data as an "outsider" lacking prior knowledge and experience of the subject matter (Charmaz, 2000). This study did not employ a grounded theory approach to the qualitative phase, because prior research and professional experience guided the author to target specifically the research tasks/procedures, which were the variables of interest. Having developed hypotheses that were informed by empirical literature and theory and that were grounded in her own professional experience, the author viewed the data from the stance of an expert. Therefore, the author had prior knowledge of the research/tasks and procedures that would be found in the data. Using a grounded theory approach, the author would not have relied upon any assumptions to help guide coding, rather she would look at the data as though nothing (or very little) were known about which research/tasks and procedures would be identified. Similarly, the concurrent mixed methods design stipulated that qualitative and quantitative data were to be read simultaneously, so as to inform the overall results (Creswell, 2009). Therefore, having read the quantitative survey, the author already knew the types of specific tasks/procedures that might be found in the qualitative data.

Data sampling and establishing themes

Given the wide variation in research experiences and perceptions thereof among the providers that gave interviews, two coders (including this author) independently read all twenty interviews to identify basic units of analysis – grammatical segments and/or chunks of text. The coders then re-read each interview to confirm that every segment pertaining to research

tasks/procedures had been coded. Coders then read each interview line-by-line, seeking text about involvement in research, opinions about providers' experiences with specific research tasks/procedures and providers' assessments of the relative importance of those tasks. Because semi-structured, open-ended questions had been used to prompt informants to describe their research involvement in detail, these variables (research tasks/procedures), were found in all twenty transcripts.

Codebook

The deductive approach to coding was consistent with the open-coding strategy used to identify research tasks/procedures and to build a codebook (Neuendorf, 2002). The codebook was created by two independent coders reading each interview line-by-line and identifying key factors (i.e., research tasks/procedures) in providers' involvement in research. Research tasks/procedures were then categorized as proximal or distal to service provision. Procedures for sorting research tasks/procedures into these categories are described in the next section, below. A grid containing the results of coding was created, including a list of the tasks/procedures discussed by providers and the number of interviews in which each task and procedure was found. The results from the analysis of content from the interviews informed the quantitative study. Predictor variables in quantitative analyses were based upon our concurrent reading of the qualitative and quantitative data.

The codebook was established after coders had read the first ten interviews. Coders identified in those interviews the research tasks/procedures mentioned by providers in the interview transcriptions, and they then refined the research tasks/procedures by categorizing each task as proximal or distal. Once the codebook was complete, coders analyzed all remaining transcripts according to the refined codebook. The codebook contains definitions of

proximal and distal research tasks/procedures, as well as quotes used to identify certain tasks/procedures as either proximal or distal. These definitions were used to guide the marking of the text of all transcripts. The codebook is presented in Table 1 on page 67, below.

Categorizing research tasks as proximal or distal.

Proximal tasks are those closely related to service provision, based upon the skills, behaviors, and knowledge necessary to carry them out. Service providers use engagement, didactics, rapport development, consultation and supervision in their work with clients and fellow providers. Most evidence-based models of clinical practice include: engagement, assessment, problem/outcome identification, intervention, follow-up/monitoring, and evaluation of practice (Bloom, Fischer, & Orne, 2009). Providers must use a variety of techniques in order to follow this basic practice model, and there are common skills and knowledge that support the use of those techniques. Relational and interpersonal skills are central to providers' completion of work-related duties (Fox, 2001). Providers must have knowledge of how to demonstrate warmth, empathy, and understanding of human development in the context of their social environments (Kemp, Whittaker, & Tracey, 1997; Longres, 2000; Newman & Newman, 2003). Providers are skilled at eliciting information from clients as well as imparting information in order to provide services. Providers' professional skills include: "active listening" and "use of self" (Lukas, 1993; Miller & Rollnick, 2002; Shea, 1998). In other words, the skills that providers employ to deliver services are primarily interpersonal, rather than mechanistic or technical. Thus, we categorize research tasks/procedures as "proximal" when the ability to carry out those tasks is dependent mainly on the use of the aforementioned skills, behaviors, and knowledge.

Distal tasks are those that are *not* closely related to service provision. Instead, distal skills are closely related to research based upon the skills, behaviors, and knowledge necessary to carry them out. Researchers are trained to follow a scientific method for developing hypotheses and procedures to address the research questions that they have posed.

Researchers use quantitative and qualitative analytic skills, scientific writing, as well as knowledge of planning and designing research projects (Alasuutari et al., 2008; Johnson & Remien, 2003). They are skilled at developing and producing fundable and publishable research. Researchers' professional skills are deployed to write grants in order to receive funding for research, execute research projects, and disseminate their findings through publications and professional conferences. Thus, research tasks/procedures are categorized as "distal" to service provision when the ability to carry them out is mainly dependent upon the use of the aforementioned skills, behaviors, and knowledge.

While individual providers' and researchers' skills may overlap, since individuals may have had diverse professional experiences, this author posits that in general, the research tasks/procedures are categorized as proximal and distal according to the accepted norms and standards held by providers and researchers. For example, while individual researchers may possess skills of active listening and may even conduct therapeutic treatment, those are not the primary skills they use in their daily work as researchers. Similarly, while providers may possess the knowledge or skills to conduct statistical analyses, this is not the main type of knowledge or skill needed to perform service provision work with clients. Therefore, broadly categorizing the research tasks/procedures as proximal and distal is useful for understanding collaborative research in general. Describing tasks/procedures in this manner allowed for the testing of this study's hypotheses. Thus, the present study advances knowledge about the types of tasks/procedures that influence providers to use DEBIs and to collaborate with researchers.

Any case where there was ambiguity regarding whether a task ought to be categorized as distal or proximal, consensus was achieved through discussion among the coders and through reviewing the qualitative data, which described how the research tasks/procedures were carried out. If the interview data was inconclusive, coders used their theoretical and practice knowledge to determine whether tasks were proximal or distal. Since coders were

experienced providers and did not take a naïve stance, they were able to use their own professional experiences to inform their interpretations of ambiguous data.

For example, coders exhibited opposing interpretations regarding presenting research findings to board members or at scientific conferences. One coder regarded this as being a proximal task, while the other coder considered it a distal task. The coder that considered this a distal task did so because both coders had established that writing manuscripts is a distal task. Therefore, the coder felt that presenting at a scientific conference was more consistent with the skills and training of a researcher rather than a provider. However, by carefully analyzing the specific skills required to make a presentation, whether at a conference targeting the scientific or practice community or whether at a staff meeting/case conference, both coders agreed that many of the skills involved in presenting are of the same as or similar to those involved practice. Presentations require didactic skills, the ability to engage and maintain a connection with an audience, and the ability to respond appropriately to verbal and nonverbal communication from that audience. Providers use these skills constantly in their work (e.g., in conducting group counseling, staff meetings, case conferences, etc.). Therefore, coders reached a consensus that presenting research findings is in fact a proximal skill.

Marking and selecting text

Once coders suspected that saturation of the data might have occurred, that is, that no other categories (i.e., proximal and distal) or codes (i.e., research tasks/procedures) would emerge, and that all data fit into categories and codes already devised (Charmaz, 2000), they undertook to confirm this by analyzing the transcripts of the remaining interviews. They marked only text that closely matched the definitions in the codebook. Once it was determined which passages in the remaining transcripts best represented the constructs in the codebook, a grid with these passages was created. These passages (“quotes”) were then reviewed and were

revised for grammatical clarity. Coders did not find long quotes because questions were posed to tap providers' recollections of their actual experiences and because of the specificity of tasks/procedures that were identified by coders. Criteria for marking text were determined by a process of consensus between coders with the present study author leading the process. The codebook (see, below) offered both inclusion and exclusion criteria for marking text, thus helping to reduce incidences of ambiguity or disagreement.

Table 1

Codebook for Qualitative Interviews

Research Task/Procedure	Definition	Sample Quote
Proximal Tasks		
Collect Data	Obtain completed surveys (written or computer assisted); obtain satisfaction surveys; conduct observations, ethnographic, mapping, etc.	<i>"It involved a lot of meeting time. Doing the survey took time, we have to find a space to implement it. We have to use a lot of staff resources. We have to pull staff who do a variety of things to help implement the survey..."</i>
Facilitate Interventions	Lead group, individual or family treatment as part of a protocol that is being tested; provide structured treatment services that are being studied (e.g., DEBIs).	<i>"We provided the staff, and we also taught and developed the curriculum with the researcher. It was a health education program for women."</i>
Interview participants	Formally gather verbal/written information from participants either by phone or in person; ask questions of participants to elicit information for the study; obtain; informed consent with participants.	<i>"The interviewers were the staff, who actually implemented a lot of workshops and did a lot of counseling, got consent from the participants, and everything else."</i>
Present research findings to agency staff, leadership or board members	Direct involvement in dissemination at scientific conferences, meetings, forums.	<i>"We submitted the project as abstracts to various conferences around the country, and it was accepted... I certainly did some presentations by myself, and we also presented together at a couple of different events."</i>
Present research findings to clients or community participants	Direct involvement in dissemination to clients or community participants through meetings, forums, discussions.	<i>"As far as the community goes, we teach them studies, we give them evidence, we give them numbers in the class. This is important for them to understand."</i>
Recruit participants	Solicit participation by verbally communicating about the research project; post flyers/announcements/ads; conduct outreach to community locales; conduct website solicitations and any other formal or informal means of bringing participants to the study using the word "recruit"; invite one's clients to participate; provide information about the study and/or researcher; vouch for the credibility of the study and/or researcher.	<i>"They were recruited from the Women's Program, from groups that they attended... but they were also recruited in a very impersonal manner, with flyers..."</i>

Supervise research staff	Provide supervision to anyone associated with the research project (staff, volunteer, peer).	<i>"I think some of the reluctance we had from the staff was, okay, you have to collect this information from the client. So instead of really saying to them, 'well this information is being collected because...' I think it's important for whatever role you're playing, that you know what the big picture is."</i>
Train interviewers or anyone assisting with project	Provide training/education to any staff, volunteer, or peer associated with the project.	<i>"And then we did widen the circle, like training people how to implement the survey. We trained staff at all levels and all parts of the agency to do that."</i>
Distal Tasks		
Code and analyze qualitative data	Take part in developing a codebook; mark text, use software to organize qualitative data; examine findings and draw conclusions; organize text based on themes/domains.	<i>"It was analyzed into themes, it was broken down into themes.. the researcher and I went through an exercise to sort of group things together."</i>
Conduct statistical analysis	Conduct statistical analysis using data (e.g., descriptive, comparing means, predicting, modeling).	<i>"It was really just running pretty simple cross-tabs, frequencies, differences of means..."</i>
Develop data collection procedures	Identify modalities to obtain data from participants; participate in planning of data collection; hire staff to collect data; identify staff members that should collect data; identify places where data collection should take place.	<i>"We need to build a relationship with the person. So maybe we need to ask the question a month later, or ask it in two weeks. Or maybe we need to ask it in a certain way. What we were able to do was to map the questions in the way we needed to ask it for our population to collect it..."</i>
Develop surveys	Add, modify or offer feedback on survey questions; refine surveys; offer advice to researchers on cultural appropriateness of survey questions.	<i>Well, I think I took a stab at the first draft, and then the researcher and I sat together with the intern, and we started to refine the questions. The questions were based really on what we wanted to find, like, the areas we truly wanted to explore and investigate."</i>
Enter coded quantitative data	Enter data into SPSS, SAS or other statistical software package prior to analysis.	<i>"...we're currently inputting the results right now, um, just doing data entry..."</i>
Evaluate programs	Participate in many aspects of program evaluation (not simply having had one's program evaluated by others).	<i>"We did kind of an agency wide evaluation. I think twice a year, just of all of the clients, kind of like, what is the satisfaction with different programs?"</i>
Develop objectives/goals of the research project	Specify aims; decide what topic should be studied; identify questions to be researched; prioritize areas of interest based on the needs of clients/agency/staff.	<i>"There was a joint desire on both the researcher's part as well as our part to build the skills and the capacity of the staff within this agency, so I think it was through mutual desire" [that research topic was identified].</i>

Publish findings	Write manuscripts, pamphlets and brochures, based upon findings.	<i>"We've written, I'd say we've collectively written a couple of papers, so that we can present at conferences."</i>
Write IRB Protocols/Informed consents	Modify, adapt, determine language on IRB protocols or consents.	<i>"Actually we went to the NIRB, and we created, and the researcher and his team actually helped us to create a consent form."</i>
Write proposals for funding	Write grants.	<i>"And we wrote a grant, and we got it, and it's funded through Ryan White."</i>

*The above codebook represents research tasks/procedures that providers may have performed during the course of collaboration with researchers. In order for activities to meet criteria for coding, providers had to cite those activities explicitly, either in reference to themselves or to the other providers working their CBO. In cases where it was not clear whether the provider was discussing having participated in a certain research task/procedure or whether he/she was discussing *wanting or hoping* to participate in such a task/procedure, the prompt was read in such a way as to examine the context. If that did not result in a clear distinction between having actually performed a task or wishing to perform the task, the text was not coded. Negative responses were not coded (e.g., "we didn't do any recruitment").

Quantitative Study Design

This section describes the analytic methods used to answer the two quantitative research aims below. It includes the design of the original study, a description of the data and the sample, and an account of the procedures. The original study followed a sequential mixed method approach to data collection. The quantitative data was collected following the qualitative interviews. However, the present study follows a concurrent model for analyzing data combining content analysis with cross-sectional survey analysis, thus involving two analytic procedures that took place at the same time. For didactic purposes, the author presents the qualitative and quantitative methods in separate phases. The integration of the data will be demonstrated to as great a degree as is feasible. This section focuses upon the analysis of the cross-sectional survey through the use of multivariate linear regression analysis, in order to address quantitative aims one and two, below.

Quantitative Aim One

1. To examine the influence of providers' previous involvement in specific research tasks/procedures (from the Qualitative Aim) on their willingness to be involved in future HIV prevention research using a cross-sectional design with data from 141 HIV service providers.

Quantitative Aim Two

2. To examine the influence of providers' performing specific tasks/procedures (from the Qualitative Aim) on self-reported *delivery* of HIV prevention effective behavioral interventions (DEBIs) using a cross-sectional design with data from 141 HIV service providers. "Delivery" represents the extent to which providers self-reported using DEBIs with their clients.

Study Design Overview

To address Quantitative Aims One and Two, the present study uses secondary cross-sectional survey data from providers working in CBOs that offer HIV prevention services in New York City. The survey is from a NIMH-funded project called Promoting Community Collaboration in Research (PCCR) (Principal Investigator: Rogério M. Pinto, Ph.D.). The PCCR was administered in 2009 to providers (n=141). (K01MH081787-02, IRB-AAAD1474)

CBPR urges researchers to involve providers in as many aspects of the research process as possible, in order to help ensure the dissemination of findings that are useful to providers and consistent with the priorities of providers working in community settings (Israel et al., 2006). The PCCR study that originated this data was grounded in CBPR principles and relied upon the participation of service providers to refine survey questions for language, clarity, and appropriateness to the study population. To determine feasibility and acceptability, the survey was pilot tested with six providers, who gave feedback on survey questions and procedures, prior to the administration of the survey to the complete sample.

In order to engage service providers in developing this research, the Principal Investigator (R.M. Pinto), guided by CBPR principles assembled The Community Collaborative Board (CCB) at Columbia University. The CCB is supported by a grant from the Columbia University Diversity Program Research Fellowship (IRB-AAAC8402). The CCB is an ethnically/racially diverse multidisciplinary group of twenty-seven providers, researchers, and community members (consumers of HIV services). The author of this study is also a member of the CCB, having been a provider and being a researcher of HIV prevention. The CCB is itself a study of the process of HIV prevention research collaboration between academic and community constituents. The group dynamic processes employed by the CCB to conduct collaborative research have been published (Pinto et al., 2011) and include dialectic processes and problem-solving. These group dynamic processes were used to oversee the development

of the PCCR survey. A group of providers from the CCB, including the author of this study, guided the elaboration of the PCCR, a multidimensional cross-sectional survey. Through phone and in-person meetings with the Principal Investigator, Dr. Pinto, providers offered feedback about survey questions and procedures for survey administration. Therefore, the PCCR survey was grounded in CBPR principles that emphasize the involvement of providers in research. Thus, the present study capitalizes upon data that is rooted in the ethos and spirit of CBPR.

Human Participants Protection

Human participant reviews have been completed by the Institutional Review Board of Columbia University and the National Institute of Mental Health.

Sampling

CBOs were recruited for the study from a list of 64 CBOs funded by the New York City Department of Health and Mental Hygiene (NYCDoHMH) to provide HIV prevention services was obtained from the NYCDoHMH. Through simple random selection, 24 CBOs were selected from the total population of 64. All 24 CBOs are located in the New York City metropolitan area and comprise one diffusion system. Therefore, according to the Theory of Diffusion of Innovations, the providers responding to the survey are connected to one another through a common diffusion network, and thus each has the capacity to promote the use of DEBIs to the others (Rogers, 2003). This supports the ecological validity of this study. Power analysis calculations were used to determine the total sample ($n = 141$) needed to pursue the research questions driving the study. Once the target sample size was reached, recruitment stopped.

CBOs were recruited by phone calls from the Principal Investigator and through the PI's mail correspondence with the Executive Director (ED). Recruitment scripts described the nature of the study, indicated the time and resources required for CBO personnel to participate, and

described the incentives being offered. Each ED was informed that participation in the study required an interview (to collect survey data) with both him/her and with another provider in the CBO. Inclusion criteria for the CBO stipulated that the ED be willing to complete the Organizational Survey and give the Provider Survey to the other provider to complete. The response rate was 100%; all recruited CBOs agreed to participate in the study.

Once CBOs were recruited, providers within each CBO were invited to complete the Provider Survey. A sample of providers was recruited from each CBO in a nonrandom purposive manner. Flyers were posted in each CBO asking for providers to volunteer to participate in the study, and the ED helped to identify providers that might be interested in participating. Four to twelve providers from each CBO volunteered to participate in the study.

Inclusion criteria for providers stipulated that they be at least 18 years of age, speak and read in English, and that their primary job responsibilities consist of direct contact with consumers of services. Providers might offer counseling, case management, education, legal help, and other types of support to individuals, couples, and families attending various programs within their CBOs. This stipulation was made to ensure that providers completing the survey had the potential to deliver DEBIs in their practice. Providers were excluded if they had no experience providing services directly to consumers. For example, staff that worked as receptionists or held exclusively administrative positions would not be eligible for the study, because they would not be able to deliver DEBIs or other evidence based interventions to consumers. Providers (n=141) from 24 CBOs volunteered to complete the survey based upon their availability at the time that data was collected.

PROCEDURES

This section details the procedures that were used to: 1) administer the PCCR Provider and Organizational Surveys; 2) construct the measures used in this study; and 3) analyze the data collected.

Survey Administration

The PCCR Provider Survey

The PCCR Provider Survey consisted of 157 questions focusing on providers' experiences, perceptions and attitudes regarding research, research collaboration, and DEBIs. The PCCR Provider Survey was self-administered on DATSTAT Illume, a computer assisted survey. All research procedures were approved by the Columbia University Morningside IRB. A trained research assistant (RA) scheduled interviews with each CBO director and service provider. Participants were provided an Information Sheet outlining study requirements, risks, and content. They were informed that the survey was confidential and that all interview content would focus on their work and would not elicit any personally sensitive information. Each participant gave informed consent to complete the survey. The RA set up the computer assisted survey and remained in the room with the ED or service provider to answer questions and offer technical support. The survey took approximately 30-60 minutes to complete. Service providers were paid a \$20 incentive upon completion of the survey.

Password-protected mobile computers were used to administer the surveys as well as to download the survey into a password-protected database, DatStat Illume 4.6 (DATSTAT Illume, 1997). All data were kept in password secured computer files, to which only relevant personnel (i.e., P.I., research coordinator, and research assistants) had access. Similarly, no documentation existed linking participants' assigned ID numbers to the CBO for which they worked.

The PCCR Organizational Survey

The organizational survey consisted of 35 questions about the CBO pertaining to funding, services offered, previous research involvement in collaborations between the CBO and academic researchers, and experience with implementing DEBIs. The Organizational Survey was administered to CBO EDs or other high-level executives in a manner similar to that of the provider survey, and it took approximately 20-25 minutes to complete. CBOs received a \$100 dollar incentive for participating. This incentive was presented to the ED upon completion of the PCCR Organizational Survey.

Measures

The PCCR survey contained questions 157 questions on five and six point Likert-type scales (e.g., 1= strongly agree, 6= strongly disagree). The survey questions asked respondents in detail to: identify research tasks/procedures in which they had been involved (e.g., specifying aims, collecting data, analyzing data, publishing findings, disseminating results); rate their attitudes, perceptions, and behaviors/practices pertaining to research, research involvement, the extent of their use of DEBIs; and describe organizational/workplace characteristics. The survey also collected demographic data, such as age, gender, race/ethnicity, education level, and years of work experience.

Below, each variable used in this analysis is described in terms of the construct that it measures and the approach taken to operationalize each construct. Variables that included composites comprised of more than a single item were computed by factor analysis and subsequent scale analysis using Cronbach's alpha coefficient. Each composite was developed based on principal components factor analysis with Varimax rotation and assessment of Cronbach's alpha. Cronbach's alpha coefficient values greater than or equal to 0.60 are

acceptable to conclude that the items comprising the composite variable are indeed measuring the same underlying construct and therefore have good internal validity (Cohen & Cohen, 1983).

The Theory of Planned Behavior and Theory of Diffusion of Innovations guided the selection of the following:

Dependent variable (Quantitative Aim 1): Willingness to collaborate in research.

This variable characterizing providers' extent of willingness to collaborate in research, was measured by three items, each measured continuously on a 6-point Likert type scale (1= strongly disagree, 6= strongly agree). Each item tapped a different dimension of providers' willingness to collaborate, including: 1) their wish to contribute to their community by collaborating with researchers; 2) their belief that collaboration would help them learn about health and research, and; 3) their belief that being involved in research would make the results of that research more useful to their communities (Cronbach's alpha= 0.71). This variable's scaling ranges from 3-18.

By combining the above three items, this measure taps into several dimensions of providers' willingness, including their attitudes toward researchers, their perceptions of research collaboration, and their belief that research collaboration can be beneficial to them and to their clients. These factors have been shown in the literature to influence providers to collaborate with researchers (Pinto, 2009), therefore this measure is grounded in empirical data.

Theoretically, these dimensions of willingness are consistent with the integrated framework, which includes the Theory of Planned Behavior, which emphasizes the importance of providers' perceptions and attitudes (e.g., their belief that collaboration is beneficial) in influencing their behavioral intentions (i.e., their willingness to collaborate).

Dependent variable (Quantitative Aim 2): Use of effective behavioral interventions (DEBIs).

This variable measures providers' implementation of DEBIs with their clients – “To what extent do you utilize DEBIs with your clients?” – measured by a single item continuously on a six point Likert type scale (1=not at all; 6=completely). The variable “Use of DEBIs” is relatively normally distributed. (Mean= 2.81, SD=1.356)

The selection of this dependent variable was guided by the integrated theoretical framework, which suggests that providers' practices are influenced by a number of provider-level and organization-level factors, including providers' experiences, knowledge, and their peers' social norms and professional practices in the organizational environment. Since this study is concerned with examining providers' use of DEBIs in general, rather than focusing on use of any one DEBI, this variable allows for providers to characterize their delivery of DEBIs according to their own understanding. This is consistent with the approach of the study, which prioritizes providers' perceptions.

Key independent variables

Theory of Balance and Coordination guided the selection of the following:

Research tasks and procedures

In order to determine whether providers were involved in proximal and/or distal research tasks they were asked, “Have you been involved in any of the following research tasks?” The list included: collecting data; facilitating interventions; interviewing participants; presenting research findings to agency staff, leaders or board members; presenting research findings to clients/participants; recruitment; supervision of research staff; training of research staff/volunteers; coding and analyzing quantitative data; conducting statistical analysis; developing data collection procedures; developing surveys; entering quantitative data;

evaluating programs; developing goals/objectives of research; publishing findings; writing IRB protocols/informed consents; and writing proposals for funding.

Each task/procedures was measured as a single item, dichotomous variable (yes/no). The research tasks/procedures that were used in the multivariate linear models were selected based upon the concurrent analysis of the qualitative interview data (as described in the section entitled, "Qualitative Methods"). Subsequently, research tasks/procedures were categorized as "proximal" or "distal," and, composites were created, by adding tasks/procedures, belonging to their respective categories (i.e., proximal and distal). Composites of research tasks/procedures were created as described below.

Proximal Research Tasks and Procedures

A composite measure for proximal research tasks/procedures was created based upon concurrent analysis of qualitative interviews that yielded eight proximal research tasks/procedures. The eight proximal research tasks/procedures identified in the qualitative interviews were corroborated by the PCCR provider survey that contained all eight items. The items that comprised proximal research tasks/procedures were added (eight items) to create a variable that characterized having completed the sum of proximal research tasks/procedures. The item was measured on a scale from zero to eight, where one indicated having completed one proximal task, two indicated having completed two proximal tasks, and so on. Principal components factor analysis with Varimax rotation and scale analysis were conducted. (Cronbach's alpha = 0.84). The range of reported proximal tasks was zero to eight (Mean = 3.47, SD = 2.54.)

Distal Research Tasks and Procedures

A composite measure for distal research tasks/procedures was created, based upon concurrent analysis of qualitative interviews that yielded 10 distal research tasks/procedures. The 10 distal research tasks/procedures identified in the qualitative interviews were corroborated by the PCCR provider survey that contained all 10 items. The items that comprised distal research tasks/procedures were added (10 items) to create a variable that characterized having completed the sum of distal research tasks/procedures. The item was measured on a scale from zero to 10, where one indicated having completed one distal task, two indicated having completed two distal tasks, and so on. Principal components factor analysis with Varimax rotation and scale analysis were conducted. (Cronbach's alpha = 0.85) The range of reported distal tasks was zero to 10 (Mean = 2.90, SD = 2.87).

Other Independent variables

Theory of Planned Behavior guided the selection of the following:

Providers' knowledge about using DEBIs was measured by a single item: "I know how to match a DEBI to my clients' demographic characteristics and to their needs." This is a continuous variable measured on a six-point Likert type scale (1 = strongly disagree, 6 = strongly agree). The range for this variable was from one to six. (Mean = 4.30, SD = 1.40).

Providers' self-efficacy or perception that they are capable of using DEBIs was measured by a single item: "I am confident that I can implement a CDC-funded DEBI with my clients." This is a continuous variable measured on a six-point Likert type scale (1 = strongly disagree, 6 = strongly agree). The range for this variable was from one to six. (Mean = 4.64, SD = 1.24).

Positive attitudes toward public health research – or belief that public health research improves knowledge and services – was measured by a composite of four items, each measured continuously, on a six-point Likert type scale (1 = strongly disagree, 6 = strongly agree), that tapped providers' attitudes toward public health research; support for more government resources being allocated for such research; providers' beliefs that such research might benefit the communities they serve; and providers' beliefs that research may improve services for clients within their communities. The four items were: 1) "Disease prevention research benefits the community"; 2) "Disease prevention research can improve the care and services clients receive"; 3) "The government should spend more money on health research"; and 4) "Community representatives should be involved in deciding what research is needed". (Cronbach's alpha = 0.61). The scale for this variable was from four to 24. Reported scores ranged from a minimum of 14 to a maximum of 24. (Mean = 21.36, SD = 2.20.)

Organizational Theory guided our selection of the following independent variables:

Organizational capacity/support for DEBIs was measured by a single item that represented the number of DEBIs that the agency had implemented at the time the survey was administered. The range of agencies' responses was from zero to six. Agencies that had not implemented any DEBIs had less capacity to do so than those that had implemented one or more. The more DEBIs that an organization had implemented, the greater their capacity to do so. Thus, according to Organizational Theory and prior research, providers working in agencies that had offered their providers training to use DEBIs, recruited clients to attend DEBIs, and encouraged DEBI delivery might be influenced to use DEBIs to a greater extent than providers working in agencies that had not demonstrated a capacity to implement DEBIs. Therefore, this organization-level variable was included in both models, as a way to account for the effect that

organizational capacity for DEBI implementation might have on service providers' practices with DEBIs and on their willingness to collaborate in research. (Mean = 2.16, SD = 2.02.)

Organizational capacity/support for research was measured by four items, each measured continuously on a six-point Likert type scale (1 = strongly disagree, 6 = strongly agree). This variable tapped providers' opinions about their organization's support for research collaboration and capacity to participate in research. These items were: 1) "This agency disseminates research information to the community we serve"; 2) "Staff members are encouraged to collaborate with researchers"; 3) "Education and continuing training are priorities for this agency"; and 4) "Physical accommodations at your agency (i.e. office space and equipment) are adequate." (Cronbach's alpha = 0.67). The scale for this variable was from four to 24. Reported scores ranged from a minimum of seven to a maximum of 24. (Mean = 16.67, SD = 3.60.)

Organizational barriers to involvement in research was measured by four items, each measured continuously on a six-point Likert type scale (1 = strongly disagree, 6 = strongly agree). This variable tapped providers' perception of their organization's concrete resources. These items are: 1) "Lack of time and human resources", 2) "Lack of physical accommodations (e.g. space, office supplies, etc.)"; 3) "Lack of funding for research and/or program evaluation"; and 4) "Organization's resistance to research collaboration." (Cronbach's alpha = 0.76). The scale for this variable was from four to 24. Reported scores ranged from a minimum of four to a maximum of 21. (Mean = 12.19, SD = 3.58.)

Demographic Characteristics Measures

Participants' ages were measured in continuous years. Race/ethnicity included four nominal categories, White, African American, Latinos/a, and Other, which comprised Native American, Asian/Pacific Islander, Bi/Multi-racial, Middle Eastern and "Unknown." White was the reference category. Gender was categorized dichotomously as male or female. Education was measured in four ordinal categories: (1) high school; (2) associate's; (3) bachelor's; (4) master's or above.

Data Analysis

Quantitative Aim One

To examine the influence of providers' previous involvement in proximal and distal research tasks/procedures (from Qualitative Aim One) on their willingness to be involved in future HIV prevention research, using a cross-sectional design with data from 141 HIV service providers.

In order to address Quantitative Aim Two, a multivariate linear regression was used to examine the influence of providers' having been involved in proximal and distal research tasks/procedures on their willingness to collaborate with researchers. The multivariate linear regression model allows the determination of the relative influence of providers' prior involvement in proximal and distal research tasks and other independent variables on those providers' willingness to be involved in research, and to determine with 95% confidence whether the influence of these factors is statistically significant. This study was able to determine the proportion of the variance explained by the model, allowing for the measurement of how well providers' willingness to collaborate with researchers can be predicted by the model. Independent variables shown in the literature to be associated with collaboration were included,

as well as providers' demographic characteristics. Multivariate linear analysis allows for the examination, for each independent observation, of the relative influence of each independent variable upon the outcome.

This study was most concerned with differences among providers rather than CBOs, because the outcome was to understand providers' willingness to collaborate in research. Provider-level data was used to shed light on factors that influence providers' willingness to collaborate, and in this study, provider-level factors having to do with prior involvement in proximal and distal research tasks/procedures were the variables of interest. The observations came directly from providers, reflecting their experiences in general, not just in the CBO where they worked at the time of the interview.

Quantitative Aim Two

To examine the influence of providers' performing proximal and distal tasks/procedures (from Qualitative Aim One) on self-reported *delivery* of HIV prevention effective behavioral interventions (DEBIs) using a cross-sectional design with data from 141 HIV service providers. "Delivery" represents the extent to which providers self-report using DEBIs with their clients.

In order to address Quantitative Aim One, a multivariate linear regression was used to examine the influence of providers' having been involved in proximal and distal research tasks/procedures on their self-reported delivery of DEBIs. The multivariate linear regression model allowed for the determination of the relative influence of providers' having been involved in proximal and distal research tasks, and other independent variables, on the extent to which providers reported using DEBIs with their clients. Multivariate linear regression also enabled the determination with 95% confidence, whether the influence of these factors was statistically significant. The study was able to determine the proportion of the variance that was explained by the model, allowing for the measurement of how well the model predicted the providers' delivery of DEBIs. Included in the model were independent variables shown in the literature to

be associated with DEBI use, as well as providers' demographic characteristics. Multivariate linear analysis allows for the examination, for each independent observation, of the relative influence of each independent variable upon the outcome.

This study was most concerned with differences among providers, rather than CBOs, because the outcome was to understand providers' practices with regard to DEBI delivery. Provider-level data was used to shed light on factors that influence providers to use DEBIs, and, in this study, provider-level factors of having been involved in proximal and distal research tasks/procedures were the variables of interest. The observations came directly from providers, reflecting their experiences in general, not just those in the CBOs where they worked at the time of the study.

Sample Size and Power

Quantitative survey data was collected from 141 providers in 24 agencies. The study's primary research questions involved tests at the level of the provider (not the agency) and hence the provider level sample size (n=141) was the main consideration in determining power (Snijders, 2005). Using two-sided tests of regression coefficients at a 0.05 alpha level, the study was determined to have adequate power ($\geq 80\%$) to detect moderate effect sizes (0.30 or more). Since, no other study has examined the effect of service providers having performed specific research tasks on their use of DEBIs or on their willingness to collaborate, this study is relying on the literature about service provider training in general to guide the acceptance of a moderate effect size as reasonable for this study.

CHAPTER V

RESULTS

This chapter contains the results from the qualitative and quantitative data that were analyzed. An innovation of this study is represented by the identification of research tasks/procedures that providers employ during collaborative research projects, using a moderately large sample of providers. This is an advancement over prior research that has not specified, while using larger samples of providers, the types of research tasks/procedures that providers performed. Data were analyzed concurrently; however, in order to properly organize the explanation of results, in this chapter the author has separated qualitative from quantitative findings. This separation is for clarity and organization. Results from the qualitative data will be described first, below.

Qualitative Findings

This section describes the findings from the qualitative data that were analyzed concurrently with the quantitative data. Findings from the qualitative data informed quantitative models, and quantitative survey data informed the development of coding strategies for the qualitative data. The cross-sectional survey was read concurrently with the interviews, in order to inform the identification of research tasks/procedures that were coded therein. The coders used the survey items regarding research tasks/procedures to guide the development of a codebook for research tasks/procedures found in the qualitative interviews. For example, the survey contained an item regarding “recruitment of participants.” Therefore, the coders coded for “recruitment” as a research task found in the qualitative interviews. The list of research tasks/procedures found in the cross-sectional survey was exhaustive, and the coders did not expect to find in the qualitative interviews every research task or procedure named in the

survey. Only those research tasks/procedures most salient to providers were found in the interviews. The author used those research tasks identified in the interviews as independent variables in the multivariate linear regression models. Therefore, the author achieved integration of the quantitative and qualitative data in a concurrent manner.

The sample of providers is described demographically. A description of providers' experiences having performed research tasks/procedures follows. A narrative then follows that explains the proximal and distal nature of each task and procedure, highlighting the professional skills providers may use in order to conduct the tasks/procedures prioritized in their interviews. Next, lies an explanation of how findings from the qualitative interviews were integrated to inform the quantitative study.

Sample Characteristics of Key Informants

Six participants were male and 14 female; ages ranged from 26 to 66 ($M = 49$; $SD = 10$); 11 identified as White, four as Hispanic/Latino, three as African American, and two as Asian/Pacific Islander. One participant had completed only high school, four held Bachelor's degrees, 12 held Master's degrees, two held J.D.'s, and one held an M.D. Participants had been employed at their CBOs for from two to 25 years ($M = 10$; $SD = 6$).

Qualitative Aim

1. Identify research-related tasks/procedures in which providers were engaged and/or perform in HIV prevention research (collaborative research projects between the providers' organizations and a researcher from an academic institution or government agency), using semi-structured in-depth interviews with administrators and providers ($N=20$).

Proximal and Distal Tasks and Procedures

The PCCR Provider Survey contains an exhaustive list of research tasks/procedures that providers may perform in the course of their involvement in research. Coders used this list as a guide for establishing the codebook; however, only those research tasks/procedures that were identified in the interviews were used to construct the codebook. Research tasks/procedures found in the interviews were compared with those in the survey, and the survey guided the identification of research tasks/procedures in the interviews. Following identification of research tasks/procedures and establishment of codes, the research tasks/procedures were categorized into “proximal” and “distal”. A detailed description of the procedure for sorting tasks into these categories follows.

Based upon line-by-line readings of the first ten interviews, after which saturation occurred and no more tasks/procedures emerged, three coders identified the research tasks/procedures that would comprise the codebook. The coders achieved 100% concordance. (The codebook is attached above as Table II). Following the concurrent mixed methods design, the research tasks/procedures that were coded originated from the quantitative survey (PCCR Provider Survey).

The **proximal** research tasks/procedures that were identified in the interviews included: 1) collecting data; 2) facilitating interventions; 3) interviewing participants; 4) presenting research findings to agency staff, leaders or board members; 5) presenting research findings to clients/participants; 6) participant recruitment; 7) supervision of research staff; and 8) training of research staff/volunteers. The **distal** research tasks/procedures that were identified in the interviews included: 1) coding and analyzing quantitative data; 2) conducting statistical analysis; 3) developing data collection procedures; 4) developing surveys; 5) entering quantitative data; 6) evaluating programs; 7) developing goals/objectives of research; 8) publishing findings; 9) writing IRB protocols/informed consents; and 10) writing research proposals for funding.

Following the codebook, the coders completed the final ten interviews after saturation had occurred. The coders achieved 100% concordance on identifying tasks/procedures in each interview. For the proximal tasks/procedures, out of 20 participants interviewed, 13 (65%) had collected data, 3 (15%) had facilitated interventions, 13 (65%) had interviewed participants, 15 (75%) had presented findings to agency staff, leadership or board members, 5 (25%) had presented findings to clients/participants, 20 (100%) had recruited participants, 5 (25%) had supervised research staff, and 11 (55%) had trained interviewers.

For the distal tasks/procedures, one participant (.5%) had coded and analyzed qualitative data, 3 (15%) had conducted statistical analysis, 8 (40%) had developed data collection procedures, 11 (55%) had developed surveys, 5 (25%) had entered/coded quantitative data, 5 (25%) had evaluated programs, 13 (65%) had helped to develop objectives/goals of the research project, 7 (35%) had published findings, 7 (35%) had written IRB protocols/informed consents, and 5 (25%) had written proposals for funding. Fifty-seven percent of the providers reported having been involved in proximal tasks and 43 percent reported having been involved in distal tasks (see Table 2, below).

Table 2

Qualitative Findings

Research Task/Procedure	Providers N=20 (x/20)(%)
Proximal Tasks:	
I have collected data.	13 (65)
I have facilitated interventions.	3 (15)
I have interviewed participants.	13 (65)
I have presented research findings to agency staff, leadership or board members.	15 (75)
I have presented research findings to clients or community participants.	5 (25)
I have recruited participants.	20 (100)
I have supervised research staff.	5 (25)
I have trained interviewers or anyone assisting with project.	11 (55)
Total	85 (57)
Distal Tasks:	
I have coded and analyzed qualitative data.	1 (0.5)
I have conducted statistical analysis.	3 (15)
I have developed data collection procedures.	8 (40)
I have developed surveys.	11 (55)
I have entered coded quantitative data.	5 (25)
I have evaluated programs.	5 (25)
I have helped to develop objectives/goals of the research project.	13 (65)
I have published findings.	7 (35)
I have written IRB Protocols/Informed consents.	7 (35)
I have written proposals for funding.	5 (25)
Total	65 (43)

Narrative Description of Qualitative Findings

This section integrates the procedure of categorizing research tasks/procedures into “proximal” and “distal” with a narrative description that details the tasks/procedures found in the qualitative interviews. After presenting an account of the frequency with which each task and procedure occurred in the interviews as a proportion of the total number of interviews (N=20), an account of the skills required to complete the aforementioned tasks/procedures is presented.

The concept of “proximal” and “distal” research tasks/procedures is novel. The narrative approach in this section highlights the skills to which providers referred, in order to demonstrate how each research task and procedure was categorized as proximal or distal. While this study’s analyses took place concurrently, it is crucial, for didactic purposes, to present first the qualitative findings vis-à-vis categorization of proximal and distal, in order to ground the quantitative findings presented in the next section in the qualitative data. Table IV, which shows proximal and distal research tasks/procedures alongside the corresponding skills used to determine their categorization, is presented following the narrative.

Proximal Tasks and Procedures

Providers are involved in both proximal and distal research tasks/procedures in HIV prevention research. Proximal tasks/procedures capitalize upon the skills most familiar to service providers, and these were prioritized in the interviews when providers discussed their involvement in research. Recruiting participants, interviewing, and collecting data from participants were reported by sixty-five percent, one hundred percent, and sixty-five percent of providers respectively (in each case, the majority of providers interviewed). The skills required to carry out these tasks included engagement, rapport building, active listening, and eliciting and offering information (e.g., informed consent). Providers employ these professional skills

routinely with clients. Thus, when it comes to research, recruiting participants, interviewing participants and collecting data from participants are skills readily borrowed from providers' professional skill sets.

Presenting findings of research to CBO staff, leadership, or board members and presenting findings to clients and community participants was reported by seventy-five and twenty-five percent of providers, respectively. Presenting findings of research to community members and clients was less frequently reported because, according to providers, it was not prioritized within the scope of the research projects. Providers most frequently reported having presented research findings at academic and scientific conferences, agency staff meetings, and to funders or board members. The skills required for making presentations include didactics, engaging a group of people, and offering information that is appropriate to the audience. Providers use the aforementioned skills at practice conferences or trainings and in staff meetings, treatment groups, case conferences, or when conducting educational outreach in their communities.

Twenty-five percent and fifty-five percent of providers, respectively, reported supervising research staff and training interviewers, or engaging anyone to assist with a research project. The skills required for supervision include mentorship, delegation of duties, processing information verbally, and providing educational opportunities. Training interviewers or engaging anyone to assist with the research project, was more frequently referenced than supervising staff. Some research projects described in the interviews were predicated upon recruiting and training participants to conduct research interviews. The skills required for training interviewers include teaching engagement, active listening, establishing rapport and eliciting information, and didactics, which are also all skills required in providing services to clients.

The most infrequently referenced proximal task was facilitating interventions, with only fifteen percent of providers reporting this task. Many of the research projects described in this study were evaluation projects or cross-sectional surveys, and they did not include the

development and/or testing of an intervention. Therefore, providers in this sample had fewer opportunities to facilitate interventions. In one interview, a provider described an intervention study where a clinician from outside of the CBO was hired by the researcher to facilitate the intervention. Facilitating interventions is well aligned with the practice skills of providers who routinely use a variety of interventions to provide services (e.g., group counseling, individual counseling).

Distal Tasks and Procedures

Distal tasks require knowledge and skills that are specialized within, and particular to, the field of research. For instance, researchers articulate research questions, specify aims and objectives, and formulate testable hypotheses. Researchers are usually responsible for developing the stated goals and objectives of a research project. Developing the objectives/goals of the research project, developing surveys, and developing data collection procedures was reported by sixty-five percent, twenty-five percent, and forty percent of providers, respectively. In this sample, providers described developing the goals and objectives alongside researchers, as key informants with contextual knowledge and experience. They discussed developing goals that were mutually beneficial, so that both researchers and providers would gain relevant knowledge or resources as outcomes of the agreed upon research. Often, this involved a negotiation or a process of building consensus.

Similarly, developing surveys and data collection procedures requires specialized research knowledge and skills in order to construct measures that are internally valid, and to design methods of data collection that are consistent with the standards and norms of research. Providers reported playing a role (i.e., consultant or advisor) in helping to develop surveys and data collection procedures that was similar to the role they reported playing in developing objectives and goals. Providers helped researchers determine language that was culturally appropriate, and they helped to edit surveys so that they would be suited to the populations

being studied. Providers contributed knowledge about research participants' scheduling constraints, literacy limitations and sensibilities, so that researchers' surveys would include appropriate, non-offensive language. Providers helped refine surveys by pilot-testing them with their own clients and soliciting their opinions. Providers reported to researchers clients' reactions toward survey questions and helped to determine how surveys could best be tailored to the populations being studied.

Publishing findings, writing IRB protocols/informed consents and writing proposals for funding was reported by thirty-five percent, thirty-five percent, and twenty-five percent of participants, respectively. Scientific writing, grant writing, and knowledge of IRB requirements are particular to the research domain and require technical knowledge and training. Providers reported having been involved in these tasks, though in each case, it was unclear in what capacities. For example, providers did not describe the roles they played in publishing findings or in writing IRB protocols or proposals, other than to say that they were involved. Therefore, it is unknown whether they were responsible for primary authorship, editing, proofreading, literature reviews, etc. Providers reported that they felt involved, and they conveyed a sense of ownership over these tasks by using the terms "we" and "us" in referring to the collaborative work.

Entering coded quantitative data, conducting statistical analysis, and coding and analyzing qualitative data was reported by twenty-five percent, fifteen percent, and one half of one percent of providers, respectively. Researchers routinely work with data and use statistical methods and analysis. These distal tasks/procedures require skills that are distinct from service provision, belonging primarily to the research domain.

Twenty-five percent of participants reported having evaluated programs. While program evaluation is a specific practice that falls within the scope of research, there were aspects of the evaluation process with which providers might already have had experience, such as assessing client satisfaction through surveys or focus groups. However, providers that reported having

been involved in program evaluation also stated that, while they worked closely with researchers to complete such necessary tasks, they also benefited from the guidance offered by the researcher in obtaining and organizing information in ways useful for agency management and for presentation to board members, funders and line staff. Providers reported being satisfied with the outcomes of program evaluations that were headed by researchers, and some noted a distinction between evaluations that had been completed internally and those that had been part of collaboration with an outside researcher. They stated that the findings obtained from the latter were useful to help improve and strengthen existing programs. According to providers, evaluations that had been completed internally tended to focus upon client satisfaction, rather than substantive programmatic issues.

Tasks that were most salient to providers and most commonly cited by them in this study were all proximal tasks.

Table 3

Research Tasks and Procedures and Required Skills

Proximal Tasks/Procedures	Skills	Distal Tasks/Procedures	Skills
Recruitment	<ul style="list-style-type: none"> ▪ Engagement/rapport ▪ Presenting information ▪ Following up 	Developing objectives and goals for research	<ul style="list-style-type: none"> ▪ Identifying areas of inquiry ▪ Operationalizing constructs
Facilitating interventions	<ul style="list-style-type: none"> ▪ Group facilitation ▪ Individual counseling ▪ Engagement/retention ▪ Assessment 	Developing surveys	<ul style="list-style-type: none"> ▪ Identifying measures for complex constructs
Interviewing participants	<ul style="list-style-type: none"> ▪ Engagement/rapport ▪ Assessment ▪ Active listening ▪ Asking structured questions 	Developing data collection procedures	<ul style="list-style-type: none"> ▪ Identifying logistically and ethically sound and culturally appropriate methods
Training interviewers/ research assistants	<ul style="list-style-type: none"> ▪ Engagement/rapport ▪ Supervision ▪ Teaching ▪ Monitoring ▪ Evaluating quality 	Coding and analyzing qualitative data	<ul style="list-style-type: none"> ▪ Qualitative research paradigms, theory, and methods
Presenting research findings to clients/ community members	<ul style="list-style-type: none"> ▪ Engagement/rapport ▪ Presentation ▪ Offering appropriate information ▪ Being sensitive to audience needs/interests 	Entering or coding quantitative data	<ul style="list-style-type: none"> ▪ Data entry/statistical software skills ▪ Quantitative skills
Presenting research findings to staff and leaders	<ul style="list-style-type: none"> ▪ Engagement ▪ Presentation of information accurately and concisely with appropriate use of technical language 	Conducting statistical analyses	<ul style="list-style-type: none"> ▪ Quantitative analysis
Supervising research staff	<ul style="list-style-type: none"> ▪ Engagement/rapport ▪ Supervision ▪ Teaching ▪ Monitoring ▪ Evaluating work 	Publishing findings	<ul style="list-style-type: none"> ▪ Literature review ▪ Scientific writing
Collecting Data	<ul style="list-style-type: none"> ▪ Engagement/rapport ▪ Soliciting information from 	Evaluation	<ul style="list-style-type: none"> ▪ Collection and interpretation and analysis

participants

- Interpersonal and active listening skills

Writing IRB protocols/
informed consents

Writing proposals

of data

- Knowledge of IRB procedures
- Knowledge of requirements of human subjects research
- Scientific writing
- Grant writing
- Scientific writing

Quantitative Findings

Using Qualitative Data to Guide Quantitative Analyses

The research tasks/procedures that were identified in the qualitative interviews were used to guide the selection of key independent variables for both statistical multivariate linear regression models. Only those research tasks/procedures named by providers in the interviews were entered into the models, in order to achieve integration of the quantitative and qualitative data. By grounding the selection of independent variables in the qualitative data, concurrent analysis of our two data sets was achieved.

Results from both multivariate regression equations are reported in this section.

Sample Characteristics

Of the 141 providers completing the survey, 65% were male and 35% were female. The sample was ethnically/racially diverse: 50 providers were African American; 36 White; 33 Hispanic/Latino(a); and 22 "others." The category "others" included: American Indian/Alaskan Native (n=2), Asian/Asian-Pacific Islander/South/East Asian (n=7), Bi/Multi-racial (n=7), Middle Eastern (n=1), and 'Unknown' (n=5). The mean age of participants was 39 (SD=13). Forty-nine participants had master's degrees; 41 had bachelor's degrees; 20 had associate's degrees; and 31 had high school diplomas. Participants had been employed for from one to 19 years (Mean = 2.5; SD = 3.4) by the same CBO. Sixty-five percent of providers had academic concentrations and/or certifications in HIV prevention. The sample had 43 (31%) program managers, 40 (28%) counselors (e.g., social workers); 37 (26%) educators (e.g., peer educators); and 21 (15%) program coordinators (e.g., prevention program coordinators).

Quantitative aims

1. To examine influence of providers' previous involvement in specific research tasks/procedures (from Qualitative Aim) on their willingness to be involved in future HIV prevention research using a cross-sectional design with data from 141 HIV service providers.

2. To examine the influence of providers' performing specific tasks/procedures (from Qualitative Aim) on self-reported *delivery* of effective HIV prevention behavioral interventions (DEBIs), using a cross-sectional design with data from 141 HIV service providers. "Delivery" represents the extent to which providers self-report using DEBIs with their clients.

Dependent variables used in multivariate regression analyses

Dependent variable (Quantitative Aim One): Willingness to collaborate in research.

This dependent variable characterizing providers' extent of willingness to collaborate in research was measured by a composite of three items (Cronbach's alpha= 0.71).

Dependent variable (Quantitative Aim Two): Use of effective behavioral interventions (DEBIs).

This dependent variable measures providers' implementation of DEBIs with their clients – "To what extent do you utilize DEBI with your clients?" – measured by a single item.

Analytic Approach Quantitative Aim One

The influence of proximal and distal tasks and procedures on providers' willingness to collaborate in research

In order to examine the relative influence of having performed different proximal and distal research tasks/procedures on providers' self-reported delivery of DEBIs, it was necessary to determine whether each observation from each provider was indeed independent, or whether providers' responses to the outcome (willingness to collaborate in research) were clustered around each CBO. In other words, ought the CBO from which providers were recruited be considered in the multivariate linear regression model, if the individual providers' responses might have been influenced by their place of employment. In order to address this concern, a bivariate correlation analysis was conducted between the organizational level variable "organizational capacity to implement DEBIs," measured by a single item (range: 0-6) that indicates how many DEBIs the organization has implemented, and the outcome variable "willingness to collaborate in research", a three-item composite variable measured on an 18-point scale. The bivariate analysis established that "organizational capacity to implement DEBIs" and "providers' use of DEBIs" are significantly correlated ($p < 0.005$) and ought to be examined further to determine if there is clustering of providers' responses around the CBO. If providers' responses are clustered around the CBO where they are employed, this suggests that the observations are not independent. Rather, providers' responses may be influenced by their organizations.

However, when the author examined the outcome variable, "willingness to be involved in research" by creating a new variable representing each agency and running a mixed effects linear regression model in STATA, it was found that, contrary to an initial impression based upon bivariate analysis, the variance for "willingness to be involved in research" is randomly distributed, and each providers' observation is in fact independent and *not* clustered according to CBO. Therefore, in the case of providers' willingness to be involved in research, a random

effect approach to data analysis is most appropriate, due as responses at the agency aggregate level did not vary greatly in response to providers' degree of willingness to be involved in research.

The reason that the bivariate analysis, which suggested that there might be clustering by CBO of providers' responses to "willingness to be involved in research," was not confirmed upon further statistical testing is discussed below. The bivariate analysis using the agency level variable "organizational capacity to implement DEBIs", while correlated with the outcome "willingness to be involved in research", is nonetheless not a conclusive way to determine clustering, since it is measured on a scale from 0-6, and "willingness to be involved in research" is measured on a scale from 3-18, comprised of three variables. Therefore, the composite outcome variable has greater variance in provider responses than the variable, "organizational capacity to implement DEBIs." Having observed a correlation on the bivariate level between "organizational capacity to implement DEBIs" and providers' "willingness to be involved in research" does not necessarily establish clustering around CBOs in providers' responses, but may simply imply that providers that have been exposed to more DEBIs at their CBOs may be more willing to be involved in research, when other independent variables (e.g., demographics, provider-level factors) are not considered.

Providers' self-reported willingness to collaborate in research

This section reports the results from the multivariate linear regression model depicted in Table V, below. The R-square for the model is 0.318; therefore, 32% of the variance in providers' willingness to be involved in research is explained by the multivariate linear regression model. Demographic variables – age, race, and gender – had no statistically significant influence upon providers' willingness to collaborate in research.

Table 4

Influence of Proximal and Distal Tasks/Procedures on Providers' Willingness to Be Involved in Research

Linear Regression Model: Providers' willingness to be involved in research (N = 141)

	Unstandardized Parameter Estimate (95% CI)	P-Values
Age (in years)	0.01 (-0.02, 0.04)	0.39
Race/Ethnicity		
White (reference)	--	
African American	-0.04 (-0.99, 0.91)	0.94
Latino/a	0.05 (-1.03, 1.14)	0.92
Other	0.18 (-0.98, 1.33)	0.76
Gender (male/female)	0.06 (-0.64, 0.76)	0.87
Provider Education Level (1-4)	0.40 (0.03, 0.77)**	0.03
Research Tasks and Procedures		
Proximal Tasks and Procedures	0.18 (-0.02, 0.39)*	0.07
Distal Tasks and Procedures	-0.08 (-0.27, 0.11)	0.39
Providers' Positive Attitudes Research	0.41 (0.24, 0.59)***	0.00
Organizational Capacity for Research	0.10 (-0.02, 0.22)*	0.09
Organizational Capacity for DEBIs	0.12 (-0.07, 0.30)	0.21
Organizational Barriers to Research	-0.01 (-0.13, 0.11)	0.84

Notes: CI = Confidence Interval; *p "trending" toward significance (for example, p<0.10), **p < .05, ***p < .01, ****p < .001

Proximal research tasks/procedures

Each additional, discrete proximal research task or procedure that providers reported having performed during their involvement in research was positively associated with, on average, a 0.18 unit increase in providers' willingness to collaborate ($B=0.185$, $p<0.10$). This finding trended toward significance with a p value of 0.07. Therefore, the greater the number of different proximal research tasks/procedures that providers report having employed during their involvement in research, the greater the extent to which they report being willing to collaborate with researchers. Providers that have not conducted any proximal research tasks/procedures report being less willing to collaborate in research than providers that have conducted one or more proximal research tasks and/or procedures. Subsequent increases in the number of different proximal research tasks/procedures that providers report having conducted are associated with corresponding increases in providers' willingness to collaborate.

Distal research tasks and procedures

Providers' involvement with distal research tasks/procedures was not significantly associated, statistically, with willingness to collaborate in research. However, it bears noting that, while not significantly associated statistically, providers' involvement in distal research tasks/procedures has a negative Beta. Involvement in distal tasks/procedures would appear to have a negative influence upon providers' willingness to collaborate, were it statistically significant.

Provider education level

Each unit increase in educational level (from high school to associate's, associate's to bachelor's, bachelor's to master's) was positively associated with, on average, a 0.40 unit increase in providers' willingness to collaborate ($B=0.40$, $p<0.05$). Therefore, providers that held master's degrees reported greater willingness to be involved in research collaboration than their peers who held bachelor's degrees. Thus, providers who had only completed high school were the least willing to collaborate with researchers.

Positive attitudes toward public health research

Each unit increase in providers' positive attitudes toward public health research was strongly positively associated with, on average, a 0.41 unit increase in providers' willingness to collaborate ($B=0.414$, $p<0.001$). Therefore, providers who reported that they supported more government resources allocated for public health research believed that research might benefit the community they served. They believed that research might help improve services for clients within the community and therefore, were more willing to collaborate with researchers than their peers. Ultimately, providers with positive attitudes toward public health research were likely to be willing to be involved in public health research themselves.

CBO capacity to support research

Each unit increase in providers' perceptions about their organizations' capacity to support research was positively associated with, on average, a 0.10 unit increase in providers' willingness to be involved in research ($B=0.098$, $p<0.10$). This finding trended toward significance, with a p-value of 0.09. Providers' beliefs that their organizations had the capacity to support research by virtue of encouraging providers to collaborate with researchers, CBO support of providers' educational goals, and dissemination of research based information were strongly positively associated with providers' willingness to be involved in research

collaboration. Therefore, providers working in CBOs that had greater capacity to support research than their peers' CBOs reported greater willingness than their peers to be involved in research.

Analytic Approach Quantitative Aim Two

The influence of proximal and distal tasks and procedures on DEBI delivery,

In order to examine the relative influence of proximal and distal tasks on providers' delivery of DEBIs, the author first conducted a bivariate correlation analysis between the organizational level variable "Organizational capacity/support for DEBIs," measured by a single item that indicated how many DEBIs the organization has implemented, and the outcome variable "Providers' use of DEBIs," measured by a single item on a six-point Likert type scale. The results of the bivariate analysis established that, indeed, the two items are correlated ($p < 0.001$) and ought to be examined further in order to determine if there is clustering of providers' responses around the organization level variable, which would suggest that observations were not independent. Rather, being employed at providers' particular organizations does influence providers' responses about their use of DEBIs.

Next, the author performed a cross-tabulation, in order to examine visually whether providers that came from agencies that had not implemented DEBIs reported that they had indeed delivered DEBIs to any extent (i.e., if any providers from agencies that reported having implemented zero DEBIs indicated a score > 2), which would suggest that the observations among providers might be independent. This cross-tabulation showed that 28 providers from organizations that had not implemented any DEBIs reported using DEBIs to some extent. This suggested that the organization is not the only determinant in whether or not providers deliver DEBIs. It is expected that, because staff turnover rates in CBOs are high (providers leave after an average of two years) (Aarons, Sommerfeld, Hecht, Silovsky, & Chaffin, 2009), providers

may have used DEBIs, or been trained to use DEBIs, at their previous CBOs, or may have worked at more than one CBO.

Most studies designed to examine factors that influence providers' behaviors have focused exclusively on provider-level factors and thus used a random effect approach to data analysis. This approach assumes that observations are independent and identically distributed and thus neglects to identify differences in providers' delivery of DEBIs that may be attributed to the CBOs from which providers were recruited and where they provided services. Thus, the author used a mixed effect approach that allowed the detection of the effect of provider-level predictors and also asked whether delivery of DEBIs was associated with the CBO where the providers delivered services. Mixed effects assumes that the data have a clustered structure, and the mixed effects model treats clustered data adequately by assuming variation within each cluster and between clusters (Demidenko, 2004). Two types of coefficients are distinguished in the mixed model: population-averaged and cluster- (or subject-) specific (i.e., provider averaged and CBO-specific).

Table 5

*Influence of Proximal and Distal Tasks/Procedures on Providers' Delivery of DEBIs**Linear Regression Model: Providers' use of effective behavioral interventions (DEBIs) (N = 141)*

	Unstandardized Parameter Estimate (95% CI)	P-Values
Age (in years)	0.01 (-0.01, 0.02)	0.40
Race/Ethnicity		
White (reference)	--	
African American	0.39 (-0.09, 0.88)	0.11
Latino/a	0.33 (-0.21, 0.87)	0.23
Other	0.06 (-0.53, 0.64)	0.85
Gender (male/female)	0.03 (-0.30, 0.37)	0.86
Provider Education Level (1-4)	0.24 (0.06, 0.42)**	0.01
Research Tasks and Procedures		
Proximal Tasks and Procedures	0.15 (0.04, 0.25)***	0.005
Distal Tasks and Procedures	-0.11 (-0.20, -0.01) **	0.03
Providers' Knowledge	0.32 (0.14, 0.49)****	0.00
Providers' Self-Efficacy	0.04 (-0.14, 0.22)	0.66
Organizational Capacity for Research	0.09 (0.03, 0.14)***	0.003
Organizational Capacity for DEBIs	0.11 (-0.01, 0.23) *	0.06
Organizational Barriers to Research	-0.01 (-0.07, 0.05)	0.79

Notes: CI = Confidence Interval; *p "trending" toward significance (for example, p<0.10), **p < .05, ***p < .01, ****p < .001

Providers' self-reported use of DEBIs

This section describes the results of the multivariate linear regression depicted in Table VI above. Only variables that are statistically significant or approaching significance ($p < 0.10$) will be discussed here. Demographic variables – age, race, and gender – had no statistically significant influence upon providers' self-reported use of DEBIs.

Model Fit

In a mixed effects model, there is no R square measure because mixed effects combines the variance of the fixed effects and the variance of the random effects for the model. The additional variance of the random effects does not allow for the calculation of the R square measure. In order to determine the overall model fit, the Prob > Chi2 shows how well the model fits the data. In this model, the Prob > Chi2=0.0000, therefore the null hypothesis may be rejected.

(H₀) = the model does not fit the data

(H_a) = the model fits the data well

Proximal research tasks and procedures

Each additional different proximal research task or procedure which providers reported having performed was positively associated with on average a 0.15 unit increase in providers' self-reported use of DEBIs ($B=0.148$, $p<0.01$). Therefore, the greater the number of different proximal research tasks/procedures that providers reported having employed during their involvement in research, the greater the extent to which they reported using DEBIs with their clients. Providers that had not conducted any proximal research tasks and/or procedures reported using DEBIs to a lesser extent than providers that had conducted one or more proximal

research tasks and/or procedures. Subsequent increases in the number of different proximal research tasks/procedures that providers report having conducted are associated with corresponding increases in providers' self-reported use of DEBIs. For example, providers that reported having engaged in recruitment *and* interviewing participants reported using DEBIs to a greater extent than providers that only engaged in interviewing participants.

Distal research tasks and procedures

Conversely, each additional different distal task or procedure with which providers reported having been involved was associated with, on average, a 0.11 unit decrease in providers' use of DEBIs ($B = -0.107$, $p < 0.05$). Therefore, the greater the number of different distal research tasks/procedures that providers reported having employed during their involvement in research, the lesser the extent to which they report using DEBIs with their clients. Providers that had not conducted any distal research tasks/procedures reported using DEBIs to a greater extent than providers that had conducted one or more distal research tasks/procedures. Subsequent increases in the number of different distal research tasks/procedures that providers reported having conducted were associated with corresponding decreases in providers' self-reported use of DEBIs. For example, providers that reported conducted statistical analyses *and* writing IRB protocols reported using DEBIs to a lesser extent than providers that had only written IRB protocols.

CBO capacity to implement DEBIs

Each unit increase in number of DEBIs implemented within a CBO (CBO capacity to implement DEBIs) trends toward significance and is associated with, on average, a 0.11 unit increase in providers' delivery of DEBIs ($B = 0.107$, $p < 0.10$). The p-value of 0.60 closely approached significance. Greater capacity to implement DEBIs at the CBO level is positively associated with providers' self-reported use of DEBIs with their clients. Therefore, providers

working in CBOs that had not implemented DEBIs were using DEBIs least when compared with their peers working at agencies that had implemented one or more DEBIs. Providers in this sample, working in CBOs that had implemented six DEBIs (the greatest number reported) reported using DEBIs to the greatest extent when compared with their peers in the sample.

CBO capacity to support research

Each unit increase in providers' rating of their organizations' capacity to support research was positively associated with, on average, a 0.09 unit increase in providers' use of DEBIs ($B = 0.088$, $p < 0.005$). Providers' beliefs that their organizations had the capacity to support research by virtue of encouraging providers to collaborate with researchers, CBO support of providers' educational goals, and dissemination of research based information are strongly positively associated with self-reported use of DEBIs. Therefore, providers working in CBOs that have greater capacity to support research than other CBOs report greater use of DEBIs with their clients.

Provider level of education

Each unit increase in educational level (i.e., from high school to associate's, from associate's to bachelor's, from bachelor's to master's) was positively associated with, on average, a 0.24 unit increase in providers' self-reported use of DEBIs ($B = 0.241$, $p < 0.05$). Providers' level of educational attainment is strongly positively associated with their self-reported use of DEBIs. For example, providers holding master's degrees reported using DEBIs to a greater extent than providers holding only bachelor's degrees.

Provider knowledge about DEBIs

Each unit increase in providers' self-reported knowledge about DEBIs was positively associated with, on average, a 0.32 unit increase in providers' use of DEBIs ($B = 0.319$,

$p < .001$). Providers' self-perception of their knowledge about DEBIs, measured by their self-reported ability to properly match DEBIs to the characteristics and demographics of their clients, was strongly positively associated with providers' self-reported use of DEBIs with clients. Therefore, providers that believed they knew how to use DEBIs appropriately with their clients reported using DEBIs with clients to a greater extent than did their peers.

CHAPTER VI

DISCUSSION

This study aimed to: 1) uncover specific research tasks/procedures that HIV service providers perform during the course of their involvement in HIV prevention research; 2a) determine the influence of having performed these research tasks/procedures on their willingness to become involved in HIV prevention research; and 2b) their use of Diffusion of Effective Behavioral Interventions (DEBIs). Provider involvement in research has been shown to improve provider use of scientific evidence to guide practice in community settings. Nonetheless, the literature lacks empirical evidence to specify which tasks/procedures performed by providers enhance their use of research findings, and how having performed those tasks/procedures might influence their day-to-day practices with clients and their attitudes toward research collaboration. By establishing this evidence base, this study helps to inform providers, researchers and policy-makers in order that they may develop: 1) best practices for research collaboration between CBOs and academic researchers; 2) funding strategies that capitalize on the involvement of providers in research; and 3) training curricula for researchers *and* providers about engaging effectively with one another to conduct research.

The study's use of mixed methods is an innovative approach to studying provider involvement in research, which integrates rich, descriptive data with cross-sectional survey data. The concurrent methods help to yield findings that have high face and external validity, and are grounded empirically as well as theoretically in this study's integrated theoretical framework. Working with a large sample of providers from a diverse group of CBOs (diverse in terms of size, budget, capacity, etc.), in a racially, ethnically and economically diverse city (New York) bolstered the external validity of the study, therefore our findings may inform similar research in other contexts (e.g., outpatient substance abuse treatment) and with other types of service providers (e.g., substance abuse treatment counselors).

The study builds on the existing literature on provider-level and organization-level factors that influence providers' willingness to be involved in research and to use evidence-based interventions in practice. By empirically demonstrating the influence of provider-level "modifiable" cognitive factors (i.e., knowledge, attitudes toward research, education level) and organization-level "modifiable" factors (i.e., support for research, capacity to implement research), this study sheds light upon areas for training providers and areas for building capacity within organizations so that they may engage in research and evidence based practice delivery. Modifiable factors are those that can be changed or altered through targeted interventions (i.e., training, capacity building, funding mechanisms). Having identified modifiable factors that influence providers can help CBOs and providers engage with researchers, thus increasing the use of evidence based interventions (e.g., DEBIs) and improving patient outcomes. Ultimately, consumers will benefit from providers' delivery of effective interventions for reducing HIV risk.

In order to provide a comprehensive treatment of this study's multivariate linear regression analyses, the discussion that follows will be framed around the independent variables that yielded or trended toward statistically significant findings. Because the study uses two distinct outcomes, for didactic purposes, the findings from the two multivariate linear models will be discussed separately. In order to ground the quantitative models in the qualitative interviews, which were analyzed concurrently, the qualitative findings will be discussed first. Second, the discussion will focus on providers' willingness to be involved in research, and third, on providers' use of DEBIs. Finally, the implications from the study will be presented concomitantly with both models discussed together.

Content Analysis

Qualitative Interviews

Consistent with this study's original hypothesis, providers reported performing proximal research tasks/procedures more frequently than they reported performing distal tasks/procedures. The Balance Theory of Coordination states that capitalizing upon providers' practice knowledge and training is crucial, because a successful partnership between a researcher and a provider relies upon a synergistic professional relationship. According to this Theory, synergy is created when each partner is practicing the skills they already possess, rather than taking on tasks/procedures in which the other will be more proficient. Therefore, providers engaged in proximal tasks/procedures are employing skills that reflect their own professional tasks/procedures, thus enhancing the synergy of their researcher-provider partnerships.

Nonetheless, translating providers' professional skills to research may require additional training. For example, providers may need to be trained on how to conduct informed consent procedures, properly administer survey questions, and explain the study to participants. Therefore, future research ought to examine the procedures researchers use to train providers to carry out proximal tasks/procedures in order to systematize such procedures and create replicable models that can be used in a variety of contexts with different types of providers.

Providers' satisfaction with their involvement in research may be amplified by their use of familiar skills. Providers that perform proximal tasks/procedures may perceive that they are enhancing their professional skills by applying their skills to a research context. Providers that receive training in proximal tasks/procedures may believe that they are gaining new, useful knowledge that can be transferred from research to their practice. Therefore, future research ought to examine the influence of provider research training in proximal tasks/procedures on providers' practices with their clients (i.e., use of evidence based interventions). Knowing how

training motivates providers' practices may help to inform the types of trainings that providers receive.

Providers that reported performing distal tasks/procedures acted as "cultural brokers," helping researchers gain access to and study populations of interest (Jezewski, 1993). As cultural brokers, providers negotiated the tenuous relationships between research requirements (e.g., IRB protocols, survey validity, and informed consent) and the populations researchers study. Providers offered their experiential knowledge of practice, of agency culture, and of the cultural norms and sensibilities of clients so as to help researchers identify goals, design surveys and data collection procedures that would be feasible and acceptable, given the CBO environment and the populations being recruited. Providers' reported their experiential knowledge of organizational culture, capacity, and everyday operations within the agency as being invaluable to researchers in developing ways of collecting data that would minimize disruption of providers' work and clients' receipt of services.

Few providers reported working with data after it had been collected. This may be due to several factors. Providers may not be willing to learn new skills that they view as not directly relevant to their practice, such as data analysis skills. Researchers may not have the time or funding to teach providers how to perform these tasks. Distal tasks/procedures may require lengthier training curricula for providers than proximal tasks/procedures, due to their divergence from providers' professional skills and knowledge. Researchers may not be able to sustain a longer turnaround time for results to be compiled and published, due to funding constraints and pressures within academia to publish in peer reviewed journals. Further research is needed to determine how distal research tasks are integrated with providers' routine practices and how providers prioritize participation in distal tasks/procedures. Perhaps there are certain types of providers more inclined to become involved in distal tasks/procedures, while others are more interested in proximal tasks/procedures.

Based upon the interviews, providers' roles in proximal tasks appeared to have been more holistic than their roles in distal tasks. Providers seemed to work independently on proximal tasks/procedures, collecting data, conducting interviews, and recruiting participants.

Least commonly reported were distal tasks that required specific knowledge of data management and analytic techniques. Providers rarely conducted statistical analysis or coded data. It is likely that researchers had already enlisted the help of research assistants for these tasks. Also, IRB compliance and other regulatory issues may have dictated how data was handled and who was able to access it and under what circumstances. It may not have been feasible to involve many providers in these aspects of research because of these limitations.

Lack of dissemination of research findings to clients and community participants is an often-cited concern in the literature (Miller & Shinn, 2005; Parker et al., 2005; Wandersman, 2003) and this study is no exception. Providers seldom reported being involved in disseminating research to community members and clients. They sometimes reported that research findings were not shared with them once the researchers left their premises, having collected data. This was reported as a negative outcome, and providers expressed adverse reactions when researchers did not "give back" to the agency. In some cases, as a result, they reported being hesitant to engage in future research collaborations. Future research ought to evaluate the practices around dissemination of findings from collaborative research projects between CBOs and researchers, in order to develop procedures to ensure that providers and community participants obtain the results of research projects. This study suggests that using CBPR principles to engage providers in identifying the gaps in dissemination may be an ideal way to study dissemination practices of collaborative research projects.

Statistical Analyses

Providers' willingness to be involved in research

According to the Theory of Planned Behavior, providers' responses to "willingness to be involved in research", a measure of attitude, would be independent, since this measure is based on multiple factors within providers' social/professional environment, life experiences, and perceptions. Also, since "willingness to be involved in research" is measured by a composite of three items, each of which measures an opinion about research collaboration, providers' opinions are influenced by multiple factors, including, but not limited to, their work environment. Therefore, providers' willingness to be involved in research is not clustered according to CBO, and so this outcome required the use of a random effect model.

Proximal and Distal Tasks/Procedures

The model for providers' willingness to be involved in research shows the influence of providers having performed proximal and distal research tasks/procedures. As hypothesized, grounded in the Balance Theory of Coordination, this study demonstrated that providers' involvement in proximal research tasks/procedures was associated with their willingness to be involved in research. The Balance Theory of Coordination suggests that providers and researchers create synergistic partnerships when they each use their own professional skills and knowledge to create new knowledge and enhance one another's contributions to the research endeavor, rather than duplicating one another's duties (Lasker & Weiss, 2003; Weiss, Anderson, & Lasker, 2002). Providers that were involved in research collaboration as interviewers, recruiters, presenters, supervisors/trainers of research staff, and facilitators of interventions reported greater willingness to collaborate with researchers than did their peers, who were not similarly involved. Each additional different proximal task and procedure was likewise associated with an increase in providers' willingness to be involved in research

collaboration. Therefore, involvement in more than one proximal task and/or procedure may increase accordingly providers' willingness to be involved in research.

Proximal research tasks/procedures mirror providers' professional tasks/procedures, requiring similar skills and professional knowledge. Providers that conducted proximal tasks/procedures, may have, as a result, valued their involvement in research because it broadened the range of their knowledge and skills in a manner that was pertinent to their practice. Having experienced direct benefits from their involvement in research, providers that have performed proximal tasks/procedures may be willing to continue to be involved in research. Providers that have been involved in different types of proximal tasks/procedures may be most willing, because, via their involvement in research, they may have received training and/or developed skills that they find beneficial in their practice. For example, providers that conducted research interviews with participants may have received training about informed consent procedures and eliciting specific types of information, skills that are transferable to practice. This study, therefore, suggests that providers that are willing to become involved in research exhibit a behavioral intention, which according to the Theory of Planned Behavior is necessary to becoming involved (Godin, Belanger-Gravel, Eccles, & Grimshaw, 2008).

Future research ought to examine, longitudinally, whether providers' willingness to be involved in research actually predicts involvement. Temporal associations may be established so that we may understand the trajectory of provider involvement in research, which is not captured through cross-sectional methods. Longitudinal quantitative and qualitative data is necessary to depict provider-researcher collaboration over time. Providers' willingness may be influenced by complex factors that change over time, as well as by dynamic professional relationships with researchers (Pinto, 2009). Researchers also exhibit behavioral intentions, such as willingness to be involved with providers. Longitudinal studies may be able to capture researchers' perceptions, attitudes, and behaviors toward collaboration with providers over time. Since researchers' willingness has not been well studied (Thompson et al., 2009), qualitative

work (e.g., ethnography, grounded theory) may help add richness to and guide the development of quantitative surveys aimed at researchers. These surveys may be used longitudinally as researchers engage in collaboration with providers, in order to understand the process from the standpoint of the researcher.

The author acknowledges that one must not involve every provider in research at all times, as a CBO's primary function is to provide services. Recruiting all providers in a CBO would not be feasible, acceptable, or ethical. Future studies ought to develop instruments (i.e., questionnaires, surveys) to identify, engage, and retain those providers that are best suited to being involved in research. Instruments may be developed through engaging providers using CBPR principles to guide the collection of cross-sectional data, in order to understand how best to identify, engage and retain certain providers in collaboration.

Contrary to this study's hypothesis, distal tasks/procedures were not statistically significantly associated with providers' willingness to be involved in collaborative research. However, it bears noting that the slope of the coefficient for distal tasks/procedures was negative, suggesting that distal tasks/procedures, had they been significantly associated with willingness, would have been negatively associated. This indicates that having been involved in distal tasks and/or procedures may diminish providers' willingness to be involved in research.

The CBPR paradigm suggests that providers ought to be involved in as many aspects of research as is feasible. However, this study elaborates on CBPR principles to suggest that, rather than involving providers in *every* aspect of research, partners ought to consider that involving providers in proximal tasks/procedures may be most useful and mutually beneficial. Indeed, the feasibility of involving providers in all aspects of research is not the question. Rather, we must ask, "What is the desirability of doing so?" This study suggests that it is more desirable to involve providers in those aspects of research to which they are drawn and are for which they are best equipped by virtue of their skills, interests and professional knowledge.

Based upon the integrated framework that guided this study, modifiable factors (provider-level cognitive factors and organization-level factors) associated with providers' willingness to be involved in research collaboration were identified through multivariate linear regression. Below, each modifiable factor is discussed.

Organizational Support for Research

Providers' perceptions of their organizations' capacity to support research was shown to influence their willingness to be involved in research. Consistent with Organizational Theory, which emphasizes the influence of organizational culture on providers' attitudes toward innovations (Glisson, 2007), providers who perceived that their CBOs encouraged the use and dissemination of research findings, encouraged them to collaborate with researchers, and offered education and training support were more likely to be willing to be involved in research. The Theory of Planned Behavior posits that providers' behavioral intentions (i.e., willingness) are influenced by peer norms and behaviors (Ajzen, 1985). Therefore, providers' perceptions of CBOs' support for research may be linked to peer norms and behaviors that bolster this perception.

Positive Attitudes Toward Public Health Research

Providers' attitudes toward public health research were shown to be associated with their willingness to collaborate with researchers. Providers exhibiting favorable attitudes toward public health research also expressed greater willingness than did their peers to be involved in collaborative research. This finding is consistent with the Theory of Planned Behavior, which contends that positive attitudes among providers lead to behavioral intentions such as willingness to be involved in research, which permeates the organizational culture through knowledge-sharing among providers. (Bock, Zmud, Kim, & Lee, 2005). This suggests that future targets of provider training may include providers' attitudes toward research. By

improving providers' attitudes toward public health research, willingness to become involved in research may likewise increase. Therefore providers' sharing of their knowledge of, and interest in, research with one another, may, in turn, influence the organizational culture of the CBO to become more supportive toward research and use of DEBIs.

Providers' Educational Level

Educational attainment appears to encourage providers' willingness to participate in collaborative research. Educational attainment was shown to be positively associated with providers' willingness to be involved in research collaboration. Providers with only a high school education reported being less willing to be involved in research than those with a college or graduate level of education. In addition to having had more exposure to research and researchers through their academic training, providers with higher education levels may simply feel more empowered or capable of participating in collaborative research. Providers with lower educational attainment may find that the barriers between themselves and researchers (e.g., social status, communication styles, differences in education levels) are exceedingly difficult to overcome, and they may thus shy away from research collaboration.

Future studies ought to focus on gathering qualitative data, in order to understand descriptively which facilitators and challenges providers with lower education levels experience when engaging with researchers. Differences in provider willingness due to education level ought to be addressed by first establishing why providers with lower education levels are less willing to collaborate with researchers, then devising strategies to close the gaps between providers with lower education levels and those with higher education levels, so that researcher-provider collaborations can benefit from educationally and socially diverse participation.

Strategies may include trainings, peer consultation, and exposure to researchers in order to familiarize providers with the research process.

Providers' use of DEBIs

Providers' use of DEBIs is a self-reported measure of providers' behavior, comprised of only one item that is intrinsically linked to providers' work environments. It is entirely plausible that providers' use of DEBIs is either facilitated or hampered by their CBO, depending on whether or not the CBO has implemented or is able to implement DEBIs. Consistent with the Theory of Diffusion of Innovations, which states that work environment and peer support for DEBIs influences providers' practices, providers' use of DEBIs is clustered according to CBO, requiring a mixed effects model.

Proximal and Distal Tasks/Procedures

The model for which the outcome was providers' use of DEBIs demonstrates the relative influence of providers having performed proximal and distal research tasks/procedures. As hypothesized, this study demonstrated that providers' involvement in proximal research task and procedures is associated with their use of DEBIs with their clients. Providers involved in research collaboration as data collectors, interviewers, recruiters, presenters, supervisors/trainers of staff, and facilitators of interventions report using DEBIs to a greater extent than do their peers who are not involved in research. Each additional different proximal task and procedure was likewise associated with an increase in providers' use of DEBIs. Therefore, involvement in additional proximal tasks and/or procedures may inspire providers to increase their use of DEBIs.

Proximal research tasks/procedures mirror providers' professional tasks/procedures. Proximal tasks emphasize the use of skills and professional knowledge similar to those involved in the provision of services (e.g., counseling). Providers that are involved in research, conducting proximal tasks/procedures, capitalize on their professional repertoire and interests by engaging with research participants, supervising research staff, and making presentations to

peers, colleagues, and community members (Spector, 2012). Thus, providers may perceive the performance of proximal tasks as enhancing their current knowledge and skills by providing opportunities to practice those skills in research. Having had the opportunity to be involved in research in ways consistent with their needs, values, and interests, and having experienced involvement in research as mutually beneficial, providers may develop an understanding and appreciation for research-based knowledge and practice.

Providers that have participated in the development, testing, and/or dissemination of evidence based interventions may be better equipped than their peers to use such practices, including DEBIs. Providers that have been involved in numerous different proximal tasks/procedures may be best equipped to use DEBIs, because they may have received supplemental training and/or may have developed specialized skills that assist them in delivering DEBIs to clients. Provider training in research, as well as evidence based practice, is indeed crucial to delivery of evidence based interventions (Beidas & Kendall, 2010; Nelson & Steele, 2007a; Pravikoff, Tanner, & Pierce, 2005). This study's finding builds upon the literature by identifying the proximal research tasks/procedures in which providers ought to be trained.

Consistent with this study's hypothesis, which suggests that providers' involvement in distal tasks/procedures would not influence providers to use DEBIs, this study demonstrated that providers' involvement in distal tasks/procedures does not necessarily inspire providers to use DEBIs. Providers' involvement in each additional distal task and/or procedure was associated with a decrease in the extent to which they reported using DEBIs. Therefore, providers' involvement in more than one distal task and/or procedure may increasingly impede their use of DEBIs. Likewise, it is plausible that providers who reported having performed distal tasks/procedures were already predisposed not to use DEBIs because counseling is not considered part of their job description. However, given that the sample of providers was selected based upon their experience providing services directly to consumers, this concern ought to be considered with caution.

The Balance Theory of Coordination emphasizes the importance of creating partnership synergy between researchers and providers by engaging providers in tasks/procedures that are familiar, rather than duplicating what researchers are trained to do (Lasker & Weiss, 2003). Thus, partnerships may thrive by capitalizing on each partner's unique skills and knowledge. Distal research tasks/procedures require providers to use skills and professional knowledge unrelated to service provision. Providers that conduct distal tasks/procedures must learn and practice skills (e.g., conducting statistical analyses, coding and entering data, writing manuscripts, IRB protocols and grant proposals) different from their professional training and interests. Providers may, as a result, view their involvement in distal tasks as both challenging and irrelevant to their professional roles, and therefore un-rewarding. They may not perceive a benefit from acquiring and practicing skills that would be used predominantly by researchers. Distal tasks/procedures may not be transferable to provider practice. Once the research collaboration concludes, providers will ostensibly continue working with clients as human service professionals, rather than assuming researcher roles. It may not be clear to providers how to transfer to their work with clients the skills and knowledge that they have developed through having been trained to perform distal tasks/procedures for research.

Based upon the Balance Theory of Coordination, having been involved in research in ways inconsistent with their needs and interests, and having not realized any direct benefit from research involvement, providers may not develop understanding or appreciation for research-based knowledge and practice. Therefore, providers that have participated in the development, testing, and/or dissemination of evidence based practices through involvement in distal research tasks/procedures may be less well-equipped to use research based practices, including DEBIs, in their work with clients than their peers who have performed proximal research tasks/procedures. Providers that have been involved in numerous different types of distal tasks/procedures may be least well equipped to use DEBIs because they may have received

training (e.g., SPSS) and/or developed skills (e.g., statistical analysis) that are not pertinent to delivering DEBIs.

Future research ought to focus on determining how best to engage and retain providers in research by involving them in proximal tasks/procedures. Methods for systematically evaluating providers' involvement in proximal tasks/procedures ought to take into account provider-level and organization level modifiable factors that have been shown to influence providers' use of DEBIs (e.g., knowledge, attitudes toward research, CBO capacity to implement DEBIs). Research collaboration between providers and researchers working in other service areas such as substance abuse, mental health and child welfare ought likewise to be studied to determine if the results of this study might be applied to other practice arenas. Doing so would help develop strategic methods for engaging and retaining providers in research collaboration and promoting the use of evidence based interventions in myriad health and social service fields.

Based upon the integrated framework that guided this study, modifiable factors (provider-level cognitive factors and organization-level factors) associated with providers' use of DEBIs were identified through multivariate linear regression. Below, each modifiable factor is discussed.

Organizational Capacity to Implement DEBIs

CBO capacity to implement DEBIs was shown to be associated with providers' use of DEBIs. Providers employed by CBOs that had implemented DEBIs reported using DEBIs to a greater extent than did their peers employed by CBOs that had not implemented DEBIs. This finding is consistent with Organizational Theory and the Theory of Diffusion of Innovations, as well as with the literature, which suggests that organizational factors (e.g., capacity) influence providers to use evidence based interventions (Aarons & Sawitzky, 2006; Fuller et al., 2007; Glisson, 2007).

Providers in CBOs equipped to implement DEBIs by virtue of adequate funding, human resources, and clients available to attend DEBI interventions have access to concrete resources and social support that will promote the use of DEBIs. Some CBOs offer training for providers to learn, adapt and deliver DEBIs. Social support that promotes use of DEBIs among providers includes the creation of a culture in which evidence based practice is valued and mandated whenever possible. Based on the Theory of Diffusion of Innovations and the Theory of Planned Behavior, a culture that emphasizes evidence based practice may be created by providers that perceive their peers as supportive to evidence based practices, like DEBIs.

Thus, through communication with their peers, particularly peers they deem influential, providers that have not yet adopted evidence based practices or are unfamiliar with evidence based practices are likely to develop similar positive attitudes. Peer norms are therefore transmitted throughout the diffusion system or CBO or group of CBOs by communication between influential providers that have already begun to implement DEBIs and those that have not yet done so. When concrete resources and social support are available, providers that hold positive attitudes toward DEBIs will deliver DEBIs to their clients.

According to the Theory of Planned Behavior, as providers use DEBIs, they improve their knowledge of them and their belief that they have the skills necessary to deliver them. As they continue to practice using DEBIs, providers realize the benefits of doing so, including optimizing patient outcomes, which in turn influences them to continue to use DEBIs. The integration of these theories demonstrates how a culture that favors evidence based practice may be established and maintained among providers.

This study shows that, as CBOs increase their capacity to implement DEBIs, providers increasingly report using DEBIs. This finding supports the importance of organizational factors in promoting evidence based practice among providers. CBOs that have implemented DEBIs may thus be able to offer providers the necessary tools to facilitate the interventions. Future research ought to target the development of strategies to bolster CBOs' capacity to implement

DEBIs, in order to promote DEBI use by providers. Strategies to enhance CBO capacity should include developing reliable assessment tools to evaluate such capacity, in order to efficiently tailor organization-level interventions aimed at enhancing implementation of DEBIs. Assessment tools should include measures of CBO concrete resources and social support for DEBIs, dimensions that have been shown to influence organizational capacity for evidence based intervention implementation (Lehman et al., 2002).

Assessment tools ought to be developed collaboratively with providers, according to the principles of CBPR, in order to: 1) enhance the face validity of assessment instruments; 2) help researchers tap into dimensions of organizational culture well understood by providers; and 3) help establish researcher-provider partnerships that can be leveraged for further studies of DEBI implementation, as well as of consumer outcomes. Assessments can then be used to guide the development of interventions tailored to the needs to each CBO. For example, some CBOs may lack concrete resources such as physical space and/or funding for DEBIs, while others may lack social support for DEBIs among staff despite having the concrete resources to offer DEBIs to consumers. Depending on the needs of the CBO, a plan for organizational change may be developed. CBOs' implementation of DEBIs have been criticized for their "top-down" approach, which privileges hierarchical CBO structures and makes DEBIs seem like impositions to providers (Dworkin et al., 2008). Engaging providers in developing plans to enhance CBO capacity may augment social support by enhancing provider "buy-in" (Johnson & Austin, 2006) for DEBIs. Therefore, CBPR principles ought to be followed.

This study's sample included CBOs that implemented anywhere from zero to six DEBIs. It bears noting that CBOs vary in terms of their capacity to implement DEBIs. Consistent with the Theory of Diffusion of Innovations, insofar as peer support for evidence based practice among providers *within* a CBO is associated with providers' delivery of DEBIs, provider peer support *across* CBOs may also help promote the delivery of DEBIs. CBOs that offer HIV prevention services in one service area, such as New York City, comprise a diffusion system

across which DEBIs may be transmitted through providers' professional networks. CBOs that have implemented six DEBIs may already have acquired and developed tools for training their providers, recruitment methods to secure clients, and sources of funding to obtain concrete resources to implement DEBIs. CBOs that have implemented fewer DEBIs may benefit from forming interagency collaborative partnerships with more experienced organizations to gain knowledge and access to resources, so that they may likewise enhance their capacity to implement DEBIs. Therefore, interagency collaboration (Alkema, Shannon, & Wilber, 2003; Bloxham, 1997; Bronstein, 2003; Friedman et al., 2007) (collaboration across CBOs) ought to be further studied as a strategy to help improve CBO capacity to implement DEBIs.

Organizational Support for Research

Providers' perceptions of their organizations' capacity to support research was likewise shown to influence use of DEBIs. Unlike CBO capacity to implement DEBIs (measured by the number of DEBIs implemented), organizations' capacity to support research was based on providers' perceptions about their CBOs. Therefore, this finding corroborates the interpretation that organizational factors, particularly capacity for delivering evidence based practices and a culture that favors research, is central to promoting the use of DEBIs.

Organizational Theory and the Theory of Diffusion of Innovations suggest that factors like organizational culture and resources promote the use of DEBIs through peer norms established by influential providers, who encourage other providers to use evidence based practices (Hatch & Cunliffe, 2006; Panzano, Roth, Crane-Ross, Massatti, & Carstens, 2002). Thus, providers who perceive that their CBO encourages the use and dissemination of research based evidence, encourages providers to collaborate with researchers, and offers support for providers to gain education and training are more likely to deliver DEBIs for several reasons. Providers who deem their CBO to be a place where evidence based practices are favored will strive to exhibit the social norms established by their peers. Providers working in CBOs that

offer educational advancement may be incented to behave in a manner that is consistent with their professional work environment so that they may retain job security and achieve their personal and professional goals. Therefore, if the professional work environment is supportive of research and encourages the use of evidence based interventions, providers will display attitudes and practices that reflect these values.

Grounded in the findings from this study, future research aimed at developing organizational-level interventions to promote use of evidence based interventions ought to take into account providers' perceptions of their CBO's support for research. An awareness of providers' perceptions may help to guide the development of trainings, workshops and conferences that bring providers together to create a culture that favors research. Knowing how providers view their CBOs' support for research may enable researchers to engage providers in developing trainings and workshops by using a CBPR approach. Incentives, shown to be effective for behavioral interventions (Petry, Alessi, Marx, Austin, & Tardif, 2005), may be offered to providers for using or disseminating research-based knowledge to colleagues and consumers. Thus, CBO culture and providers' perceptions thereof may be influenced by researchers engaging providers in identifying gaps in their CBOs and rewarding them for developing and implementing practices that help close these gaps.

Providers' Education Level and Providers' Knowledge

Providers' educational attainment influences their use of DEBIs. Providers with only a high school level of education reported using DEBIs to a lesser extent than those with a college or graduate level of education. This finding is consistent with the literature showing that academic training in general is associated with more favorable attitudes toward evidence-based practices (Aarons, 2005; Borntreger et al., 2009; Cochran, Peavy, & Cauce, 2007). College and graduate education programs expose students to knowledge about evidence-based practices

that may help promote the use of DEBIs once students graduate and join the work force. Along with enhancing providers' knowledge, having completed graduate (i.e., college) and post-graduate (i.e., master's) education programs may equip providers to obtain positions in CBOs, where they will be selected for training about DEBIs and where they will be selected to facilitate DEBIs more often than those providers with only a high school education (for example, clinical social workers versus case managers).

Accordingly, knowledge about DEBIs was shown to influence providers to use DEBIs. Providers' that reported being able to match DEBIs to their client's needs used DEBIs to a greater extent than their peers who could not do so. The finding that knowledge about DEBIs is associated with providers' delivery of DEBIs is consistent with the Theory of Planned Behavior, suggesting that it is necessary, but not sufficient, for providers to know how to deliver DEBIs in order to do so. This study contributes to the literature about development of trainings for DEBIs and other evidence-based provider interventions. The finding that knowledge and education level are influential in providers' use of DEBIs suggests that trainings for providers that focus on increasing providers' knowledge of DEBIs ought to be developed with an awareness that providers with lower education levels may require enhanced training. For example, providers with only a high school education may require DEBI trainings supplemented with additional educational material about research in order to augment their exposure to, and acceptance of research, prior to instruction on how to facilitate DEBIs with clients.

Conclusions

This study demonstrated that performing proximal tasks/procedures might influence providers to use DEBIs and might augment their willingness to be involved in research collaborations. Conversely, performing distal tasks/procedures may hamper providers' use of DEBIs, while no effect of performing these tasks was detected on providers' willingness to collaborate. However, further examination of the influence of having performed distal

tasks/procedures ought to be undertaken to determine whether differences among CBOs' cultures around research may help account for the negative effect distal tasks/procedures appeared to have in this study. For example, are some CBOs so entrenched in research that they contribute to staff "burnout" by mandating the involvement of providers in distal tasks/procedures? Do some CBOs permit researchers to occupy their space and grant researchers the authority to require their staff to assist researchers in distal tasks/procedures with or without providers' expressed interest? In order to uncover the nature of the relationship between distal tasks/procedures and collaborative research, one must delve further into such questions about the CBOs.

This study may improve upon the effectiveness and efficiency of CBPR by specifying the types of tasks/procedures that researchers and providers ought to consider when they engage in collaborative research projects. The CBPR paradigm suggests that providers ought to be involved in as many aspects of research as is feasible, yet this may not be realistic or desirable. Rather, this study suggests that involving providers in proximal tasks/procedures is ideal. Doing so requires that researchers and providers plan and negotiate their duties in advance, so as to maximize the realized benefits for both parties. Setting clear expectations and goals that take into account providers' characteristics (e.g., knowledge, education level, attitudes toward research) and agency characteristics (e.g., capacity, support for research) may help to inspire providers to collaborate with researchers and to use DEBIs and other evidence based interventions.

IMPLICATIONS FOR POLICY, PRACTICE, AND RESEARCH

Professional providers of HIV services and other human services, strive to offer the highest quality of care to consumers, by applying current scientific knowledge to their practice (National Association of Social Workers, 1996). Consumers that do not receive effective HIV prevention interventions (e.g., DEBIs) may be at risk for HIV transmission, jeopardizing their own health and the health of their communities. The study of how to bridge the gap between research and practice in HIV prevention is in its nascent stages. Evidence suggests that successful collaborations can help bridge this gap, yet we are only beginning to study how to initiate, develop, and sustain collaborative partnerships between researchers and providers working in community settings. This study contributes to the literature identifying which aspects of collaboration between providers and researchers are most salient for ensuring providers' subsequent use of science-based knowledge to guide practice. By uncovering how providers' involvement in proximal and distal research tasks/procedures influences their willingness to collaborate in HIV prevention research and their use of DEBIs, this study offers insight to enhance our understanding of best practices in collaborative research, as well as the implementation of DEBIs. Ultimately, this understanding may improve the quality of services received by clients at risk for HIV.

Policy

Having an empirical base for asserting that proximal research tasks/procedures are influential in promoting collaboration in research as well as the utilization of DEBIs has significant policy implications. Funders, particularly those that emphasize collaborative research like the Kellogg Foundation, National Institutes of Health (NIH), and the CDC (Centers for Disease Control and Prevention, 2007b; Kellogg Foundation, 2010; National Institute of Health, 2010), may be able to specify the types of involvement that providers will have in research. By

requiring that researchers seeking funding from these institutions demonstrate that they are using collaborative practices shown to promote evidence based practices and promote willingness to be involved in research, policy makers may improve the cost-benefit ratio of collaborative research. The CDC has already spent millions of dollars on the development and testing of DEBIs that are not consistently used by providers. Knowing that involving providers in proximal research tasks/procedures influences them to use DEBIs may inspire CDC officials to invest in collaborative research projects that capitalize upon such provider involvement. Such targeted investments in collaborative research may likewise be made by the NIH, Kellogg, and other funders seeking to increase the use of evidence based interventions for various public health challenges and concerns (e.g., substance abuse, mental health).

This study demonstrated that CBO capacity for implementing DEBIs and CBO support for research both influence providers' use of DEBIs and their willingness to collaborate with researchers. While it is not feasible for every provider to be involved in research, it is possible to influence the culture within CBOs to become receptive toward research partnerships, which may improve the extent to which CBOs implement DEBIs. Providers working in CBOs that offer opportunities for research involvement may use current scientific findings that improve delivery of services. Thus, policy makers may recommend that researchers evaluate CBO capacity prior to initiating partnerships and that funding for capacity building (e.g., training, resource allocation, work force development) become available for research partnerships that involve CBOs demonstrating this need. This way, CBOs may bolster their capacity to implement and sustain DEBIs and other evidence based interventions beyond the termination of a research project. Otherwise, involving providers in proximal tasks/procedures may not result in consumers receiving DEBIs and other evidence based interventions over time, if CBOs do not have the capacity or support to continue these practices once the research concludes. This study points to both organization and provider cognitive factors that are modifiable through funding aimed at developing interventions to help CBOs meet the demands of both practice and research.

Policy-makers ought to consider these factors when they structure funding resources and requests for proposals (RFPs).

Practice

This study holds implications for the practice arena by identifying modifiable factors that influence providers to collaborate in research and to use DEBIs. This study's finding that providers' involvement in proximal research tasks/procedures, positive attitudes toward research, knowledge, and CBO capacity and support for research, all may ultimately result in consumers receiving evidence based interventions, thereby optimizing patient outcomes, is crucial.

Based upon this study, CBO administrators may negotiate mutually beneficial agreements with researchers and with funders (e.g., the CDC) that include capacity building (e.g., funding for space and staff) and skills enhancement for providers (i.e., training) that not only teaches how to implement DEBIs, but improves providers' knowledge about research. The evidence herein shows that CBOs' capacity, support for research, providers' knowledge and education level, and providers' attitudes toward research all influence DEBI implementation and providers' willingness to collaborate with researchers. Therefore, collaborative research projects ought to address these factors, in order to ensure that consumers benefit from DEBIs and other evidence based interventions. Otherwise, consumers may continue to receive interventions that have little or no empirical evidence, and the implementation of DEBIs will continue to lag.

This study provides empirical support for CBPR. CBOs may use this evidence to advocate for involvement in collaborative research on the grounds that it may improve patient outcomes by encouraging providers to use DEBIs and other evidence based interventions. Providers may likewise negotiate their involvement with researchers to include proximal tasks/procedures, so that they may capitalize upon and enhance those skills that they find most useful and relevant to practice. Providers have limited time, and CBOs struggle with budgetary

restrictions that curtail their involvement in research (Schulz, 2005). Providers need to balance their involvement in research with other job duties. Using their existing arsenal of professional knowledge and skills to perform research tasks/procedures is less time consuming and less burdensome than requiring providers to acquire new skills and knowledge. Thus, the results from this study may be used to help providers and researchers use their time and funding most efficiently.

Research

Researchers may use this study's findings to inform their approaches to provider involvement in community-based research. Researchers often have little time and budget constraints, particularly when doing community based collaborative research (Spector, 2012; Thompson et al., 2009). It is therefore important to identify areas where providers can feasibly be involved and minimize the costs and time associated with additional training. Until now, no empirical evidence was available to help guide researchers' strategies to leverage the participation of providers in collaborative research partnerships. Knowing that proximal tasks/procedures may be most useful and salient to providers may encourage researchers to use a targeted approach to involving providers.

Future research ought to examine other types of providers' (e.g., substance abuse treatment, child welfare services, mental health) involvement in research on other health issues and determine how involvement may increase the use of other evidence based interventions (e.g., cognitive behavior therapy, trauma-focused therapy). Future research also ought to focus on examining the complex relationships among organizational, provider, cognitive, and researcher characteristics to identify models for collaborative research partnerships that enhance providers' use of evidence based interventions.

Examining complex factors that exist within dynamic diffusion systems (i.e., networks of CBOs, the academic community) requires longitudinal study in order to understand changes over time. CBOs, universities, and funding bodies go through administrative and historical changes due to myriad socio-cultural influences (e.g, changes in political administrations). Even local changes in neighborhood demographics such as gentrification influence the populations that are served by CBOs. As diffusion systems respond to changes in funding, staffing, legislation, maturation, etc., research partnerships may likewise change. Randomized control trials (RCTs) and cross-sectional study designs may contribute, for example, knowledge of the efficacy of trainings for providers and provider practices under certain conditions, and therefore such studies may be used to test interventions aimed at helping providers implement evidence based practices. Nonetheless, future research ought to go beyond cross-sectional studies to capture changes in CBOs, providers and researchers as they initiate, develop, and sustain collaborative research projects. Doing so would help inform sophisticated, evidence based guidelines for bridging the gap between science and practice.

Future research ought to aim to develop, test, and implement interventions within CBOs. Interventions should be developed keeping in mind the modifiable factors identified in this study that were associated with providers' use of evidence based practices. Therefore, it is crucial that intervention research target the CBO and the provider level. CBO capacity to implement DEBIs and capacity for research were shown to influence providers' use of DEBIs, as well as their willingness to collaborate, therefore researchers ought to prioritize assessment of CBO capacity and capacity building within CBOs prior to, or concurrently while, initiating research or dissemination of DEBIs. Otherwise, providers' use of DEBIs and their willingness to collaborate may be diminished. Providers' knowledge, education level, and attitudes toward research were also shown to influence their use of DEBIs and willingness to collaborate. Interventions that are developed for providers must therefore include training (e.g., instructional, experiential, online, etc.) aimed at elevating providers' knowledge and familiarity with research, DEBIs, and

improving their attitudes toward research and researchers. In addition to providing formal training, researchers may enhance providers' knowledge and positive attitudes by providing opportunities for interactions between researchers and providers (e.g., networking meetings, forums, and seminars), where both can highlight their skills, exchange information, and engage with one another through jargon-free dialogue. Doing so may enhance the effectiveness of formal trainings by demonstrating researchers' availability and positive social manners to skeptical providers.

To this point, CBPR with providers has been practiced in a variety of ways all over the world, guided by a set of principles, yet lacking systematization. This study provides a step toward building a literature base aimed at connecting CBPR principles to guidelines that may be followed, replicated and evaluated. Advancing knowledge of CBPR through longitudinal, mixed method design research may further guide the development of systematized processes for engaging service providers in collaborative research, in order to deliver state-of-the-art services to improve health outcomes for members of vulnerable communities. By showing that providers involvement in specific types of research tasks/procedures indeed matters, this study intimates that CBPR need not adhere tenaciously to the notion that all providers ought to be involved in every research process at every level. Rather, researchers and providers must plan and delineate providers' roles in research to optimize the benefits for CBOs and for their clients.

LIMITATIONS

This study's limitations will be discussed in this section. There is a potential for measurement error with the outcome variable for Quantitative Aim Two (to what extent providers use DEBIs with clients). Since this measure relies on single-item self-report, it is subjective and may vary according to providers' idiosyncratic interpretations. For example, providers may report that they use DEBIs to a great extent based upon the number of core components they implement, the number of sessions of a DEBI that they complete, or even the extent to which their interventions embody the spirit or conceptual framework of a DEBI. It cannot be determined, based upon the question, whether "to a great extent" has equal meaning among all providers. However, since this study is concerned with providers' understandings of their own practices, rather than with seeking to measure those practices objectively, the measure does exhibit face validity.

Any measure that relies upon a single item may be vulnerable to measurement error. Therefore, independent variables, such as providers' self-efficacy and knowledge of DEBIs may be subject to error, based upon the reading and interpretation of the question. Measures describing CBO level variables (e.g., capacity for research) are also vulnerable to error through bias since they were measured at the level of the providers' perceptions of their CBO. Therefore, providers working in CBOs for varying lengths of time and with varying degrees of satisfaction, access to resources, and supervision, for example, may rate their CBO's capacity differently. Future research ought to develop models that include CBO level data, collected at the CBO level.

Also, this study does not specify which DEBI(s), are being utilized by providers, since the variable is non-specific to any particular DEBI. However, there are at least 26 DEBIs that have been diffused, and more are being added. Therefore it would not have been feasible to ask

providers about each individual DEBI because of logistical constraints and burden on the participants. Also, it was not imperative for this particular study to know which DEBI(s) had been implemented and to what extent. Because this field of inquiry is so new, and this approach so novel, examining providers delivery of DEBIs in general represents a unique contribution to the literature. Future research may examine this in order to determine if certain DEBIs are used more frequently or to a greater extent than others.

The original study's design has limitations that ought to be noted. DEBIs are diffused in different ways, based upon funding, organization size, budget, and the type of DEBI that is being offered. Theory of Diffusion of Innovations states that DEBIs and other evidence based interventions are diffused in stages, therefore it is not possible, using a cross sectional design, to observe or measure each stage of diffusion as it occurs. Instead, this study offers a snapshot of each provider's experience, without the benefit of examining how experiences change over time. Lacking fidelity measures, it was not feasible to measure providers' fidelity to core components, or to measure how well the DEBIs were implemented. Future research ought to include longitudinal data to examine stages of DEBI implementation over time and measures of fidelity in order to understand how providers' experiences in research shape their actual use of DEBIs.

Using the concurrent mixed methods approach to secondary data analysis contains some limitations. There is a potential for interpretative bias of the qualitative interviews based on the coders' perspectives from having worked in CBOs. While endemic knowledge of CBO cultures and work environments informed the coders' reading of qualitative texts, it might also have biased their interpretations of providers' experiences, since they may have been drawing on their own experiences as providers to make inferences. For example, coders may have worked in CBOs that mandated the use of DEBIs, actively participated in research projects, and encouraged providers to develop research skills. Conversely, coders may have worked in CBOs that eschew research and rely instead upon homegrown or untested interventions in

order to guide services offered to clients. Depending upon their experience, coders may read texts slightly differently, viewing providers' interviews through the lens of having been in similar or dissimilar work environments. In order to mitigate bias, coders were guided by an integrated framework and by the literature, and they developed a codebook grounded in the quantitative data.

The concurrent approach is limited because, while the analysis was conducted concurrently, the original studies' data were collected sequentially. Therefore, the original qualitative interviews helped to inform the design of the cross-sectional survey. Analyzing the cross-sectional survey concurrently neglected the fact that cross-sectional data was collected several years after the qualitative data were collected, and temporal changes (e.g., history) were not accounted for in the analysis. A longitudinal approach would help address this limitation. Secondary analysis holds limitations, since the author only had access to the data that had already been collected. It would not have been feasible to ask further questions of the interview participants, nor would it have been feasible to add questions to the cross-sectional survey. Therefore, the data that were available were the only data used.

Secondary analysis itself may be critiqued as inconsistent with CBPR. The very nature of working with data that have already been collected, suggests that one may have difficulty adhering to the guiding principle of community involvement in research, since the initial studies have concluded. However, inasmuch as the data cannot be re-collected, they can in fact be analyzed with the involvement of community, in this case, providers. CBPR recognizes the overlapping identities and life experiences of many individuals who may, at once, be researchers, providers, and consumers (Pinto et al., 2011). Therefore secondary analysis can be guided by CBPR principles. In this study, the author identifies both as a researcher and a provider, having worked in CBOs and provided services. Coders for the qualitative interviews in this study, also identify as researchers and providers, having had many years of combined experience providing direct services. Future CBPR using secondary analysis ought to ensure

community involvement in research by capitalizing upon the multiple identities, skills, and experiences of providers and researchers alike.

The study's spirit and aims were aligned with the principles of CBPR, which prioritizes locally relevant issues, involves stakeholders (i.e., providers) in ownership of research, and defines the direction of research aims, processes, and procedures. While the original studies (qualitative and quantitative) were grounded in CBPR and involved providers in the conceptualization of the study aims, interview protocol, survey design, data collection, analysis and interpretation of findings, the present study's procedures diverged somewhat from CBPR methodology because of the nature of secondary data analysis. The study's procedures and analysis were guided by the author, since all of the data were already present. Despite this limitation, the present study contributes substantively to the CBPR literature.

REFERENCES

- Aarons, G. A. (2005). Measuring provider attitudes toward evidence-based practice: Consideration of organizational context and individual differences. *Child & Adolescent Psychiatric Clinics of North America*, 14(2), 255-vii.
- Aarons, G. A., & Sawitzky, A. C. (2006). Organizational culture and climate and mental health provider attitudes toward evidence-based practice. *Psychological Services*, 3(1), 61-72.
- Aarons, G. A., Sommerfeld, D. H., Hecht, D. B., Silovsky, J. F., & Chaffin, M. J. (2009). The impact of evidence-based practice implementation and fidelity monitoring on staff turnover: Evidence for a protective effect. *Journal of Consulting and Clinical Psychology*, 77(2), 270-280.
- Addis, M. E. (2002). Methods for disseminating research products and increasing evidence-based practice: Promises, obstacles, and future directions. *American Psychological Association*, 9(4), 367-378.
- Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. In J. K. J. Beckmann (Ed.), *Action-control: From cognition to behavior* (pp. 11-39). Heidelberg: Springer.
- Alasuutari, P., Bickman, L., & Brannen, J. (Eds.). (2008). *The SAGE Handbook of Social Research Methods*. Thousand Oaks, CA: SAGE Publications.
- Alkema, G. E., Shannon, G. R., & Wilber, K. H. (2003). Using Interagency collaboration to serve older adults with chronic care needs: The Care Advocate Program. *Family and Community Health*, 26, 221-229.
- Bauermeister, J. A., Tross, S., & Ehrhardt, A. A. (2008). A review of HIV/AIDS Systems-level interventions. *AIDS and Behavior*.
- Baumbusch, J. L., Kirkham, S. R., Khan, K. B., McDonald, H., Semeniuk, P., Tan, E., et al. (2008). Pursuing common agendas: A collaborative model for knowledge translation between research and practice in clinical settings. *Research in Nursing and Health*, 31, 130-140.
- Beidas, R., & Kendall, P. C. (2010). Training therapists in evidence based practice: A critical review of studies from a systems contextual perspective. *Clinical Psychology: Science and Practice*, 17, 1-30.
- Bellamy, J., Bledsoe, S. E., Mullen, E. J., Fang, L., & Manuel, J. (2008). Agency- university partnership for evidence-based practice in social work. *Journal of Social Work Education*, 44(3), 55-76.
- Bloom, M., Fischer, J., & Orne, J. G. (2009). *Evaluating Practice: Guidelines for the Accountable Professional (6th Ed.)*: Allyn & Bacon.
- Bloxham, S. (1997). The contribution of interagency collaboration to the promotion of young people's sexual health. *Health Education Research*, 12, 91-101.
- Bock, G., Zmud, R. W., Kim, G., & Lee, J. (2005). Behavioral intention formation in knowledge sharing: examining the roles of extrinsic motivators, social-psychological forces, and organizational climate. *MIS Quarterly*, 29(1), 87-111.
- Bogart, L. M., & Thorburn, S. (2005). Are HIV/AIDS conspiracy beliefs a barrier to HIV prevention among African Americans? *JAIDS*, 38(2), 213-218.

- Borntrager, C. F., Chorpita, B. F., Higa-McMillan, C., & Weisz, J. R. (2009). Provider attitudes toward evidence-based practices: Are the concerns with the evidence or with the manuals? . *Psychiatric Services*, *60*, 677-681.
- Bowser, B. P., Mishra, S. I., Reback, C. J., & Lemp, G. F. (Eds.). (2004). *Preventing AIDS: Community-science collaborations*. New York, NY: The Haworth Press.
- Bronstein, L. R. (2003). A model for interdisciplinary collaboration. *Social Work*, *48*(3), 297-306.
- Cargo, M., Delormier, T., Levesque, L., Horn-Miller, K., McComber, A., & Macaulay, A. C. (2008). Can the democratic ideal of participatory research be achieved? An inside look at an academic-indigenous community partnership. *Health Education Research*, *23*(5), 904-914.
- Cashman, S. B., Adeky, S., Allen, A. J., Corburn, J., Israel, B. A., Montano, J., et al. (2008). The power and the promise: Working with communities to analyze data, interpret findings, and get to outcomes. *American Journal of Public Health*, *98*(8), 1-11.
- Center for Disease Control and Prevention. (2003). African-Americans disproportionately affected by STD. Retrieved March 01, 2003, from http://www.cdc.gov/ncstp/dstd/Press_Release/AfAmericans.htm
- Centers for Disease Control and Prevention. (2006). Diffusion of Effective Behavioral Interventions Project. Retrieved March 22, 2006, from <https://www.effectiveinterventions.org/documents/DEBI-Overview.pdf>
- Centers for Disease Control and Prevention. (2007a). A glance at the HIV/AIDS epidemic. Retrieved January 5, 2007, from <https://www.cdc.gov/hiv/resources/factsheets/At-A-Glance.html>
- Centers for Disease Control and Prevention. (2007b). Strategic Plan: HIV prevention through 2010. from <http://www.cdc.gov/hiv/resources/reports/psp/pdf/psp.pdf>
- Centers for Disease Control and Prevention. (2009a). Compendium of HIV prevention interventions with evidence of effectiveness. Retrieved April 28, 2010, 2009, from <http://www.cdc.gov/hiv/pubs/HIVcompendium/toc.htm>.
- Centers for Disease Control and Prevention. (2009b). Core elements, key characteristics, and procedures. Retrieved February 28, 2011, from http://www.cdc.gov/hiv/topics/prev_prog/AHP/resources/guidelines/pro_guidance/healthy-relationships.htm#link2
- Centers for Disease Control and Prevention. (2009c). HIV statistics and surveillance. Retrieved December 11, 2009, from <http://www.cdc.gov/hiv/topics/surveillance/index.htm>
- Chagnon, F., Pouliot, L., Malo, C., Gervais, M. J., & Pigeon, M. E. (2010). Knowledge utilization by practitioners and administrators in the field of child and family social services. *Implementation Science*, *5*(41).
- Champeau, D. A., & Shaw, S. M. (2002). Power, Empowerment, and Critical Consciousness in Community Collaboration: Lessons from an Advisory Panel for an HIV Awareness Media Campaign for Women. *Women & Health*, *36*(3), 31-50.
- Charmaz, K. (2000). Grounded Theory: Objectivist and constructivist methods In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of Qualitative Research* (2nd ed., pp. 509-535). Thousand Oaks, CA: Sage Publications, Inc.

- Chillag, K., Bartholow, K., Cordeiro, J., Swanson, S., Patterson, J., Stebbins, S., et al. (2002). Factors affecting the delivery of HIV/AIDS Prevention programs by community-based organizations. *AIDS Education and Prevention*, 14(3 Supplement), 27-37.
- Cochran, B. N., Peavy, M. K., & Cauce, A. (2007). Substance abuse treatment providers' explicit and implicit attitudes regarding sexual minorities. *Journal of Homosexuality*, 53(3).
- Cohen, J., & Cohen, P. (1983). *Applied multiple Regression/Correlation Analysis for the Behavioral Sciences. Second Edition*. New Jersey: Lawrence Erlbaum.
- Collins, C., Harshbarger, C., Sawyer, R., & Hamdallah, M. (2006). The Diffusion of Effective Behavioral Interventions Project: Development, implementation and lessons learned. *AIDS Education and Prevention*, 18(Supplement A), 5-20.
- Corbie-Smith, G., Thomas, S. B., & St. George, D. M. (2002). Distrust, race, and research. *Archives of Internal Medicine*, 162, 2458-2463.
- Corbie-Smith, G., Thomas, S. B., Williams, M. V., & Moody-Ayers, S. (1999). Attitudes and beliefs of African Americans toward participation in medical research. *Journal of General Internal Medicine*, 14, 537-546.
- Creswell, J. W. (2009). *Research design: Qualitative, quantitative and mixed methods approach* (2nd Ed. ed.). Thousand Oaks, CA: Sage Publications.
- DATSTAT Illume. (1997). DATSTAT (data management software). Seattle, Washington.
- Demidenko, E. (2004). *Mixed Models: Theory and Applications*: Wiley Interscience.
- Djomand, G., Katzman, J., DiTommaso, D., Hudgens, M. G., Counts, G. W., Koblin, B. A., et al. (2005). Enrollment of Racial/Ethnic minorities in NIAID-funded networks of HIV vaccine trials in the United States, 1988-2002. *Public Health Reports*, 120, 543-548.
- Dovidio, J. F., Penner, L. A., Albrecht, T. L., Norton, W. E., Gaertner, S. L., & Shelton, N. (2008). Disparities and distrust: The implications of psychological processes for understanding racial disparities in health and health care. *Social Science & Medicine*, 67(3), 478.
- Dworkin, S. L., Pinto, R. M., Hunter, J., Rapkin, B., & Remien, R. H. (2008). Keeping the spirit of community partnerships alive in the scale up of HIV/AIDS prevention: Critical reflections on the roll out of DEBI (Diffusion of Effective Behavioral Interventions). *American Journal of Community Psychology*, 42, 51-59.
- Eccles, M. P., Armstrong, D., Baker, R., Cleary, K., Davies, H., Davies, S., et al. (2006). An implementation research agenda. *Implementation Science*, 4(18), 4-18.
- Fixsen, D. L., Naoom, S. F., Blase, K. A., Friedman, R. M., & Wallace, F. (2005). *Implementation Research: A Synthesis of the Literature*. Tampa, Florida: University of South Florida.
- Flicker, S. (2006). Who benefits from community-based participatory research? A case study of the Positive Youth Project. *Health Education & Behavior*, 35.
- Fox, R. (2001). *Elements of the Helping Process (2nd Ed.)*: Haworth Social Work Practice Press.
- Franklin, C., & Hopson, L. M. (2007). Special Section: promoting and sustaining evidence-based practice; facilitating the use of evidence based practice in community organizations. *Journal of Social Work Education* 43(3), 377-404.
- Friedman, S. R., Reynolds, J., Quan, M. A., Call, S., Crusto, C. A., & Kaufman, J. S. (2007). Measuring changes in interagency collaboration: An examination of the Bridgeport Safe Start Initiative *Evaluation and Program Planning*, 30, 294-306.

- Fuller, B. E., Rieckmann, T., Nunes, E. V., Miller, M., Arfken, C., Edmundson, E., et al. (2007). Organizational Readiness for Change and opinions toward treatment innovations. *Journal of Substance Abuse Treatment, 33*(2), 183-192.
- Fullilove III, R. E. (2001). HIV prevention in the African-American community: Why isn't anybody talking about the elephant in the room? . *AIDS Science, 1*(7), 1-7.
- Galea, S., Factor, S., Bonner, S., Foley, M., Freudenberg, N., Latka, M., et al. (2001). Collaboration Among Community Members, Local Health Services Providers, and Researchers in an Urban Research Center in Harlem, New York. *Public Health Reports, 116*, 530-538.
- Gandelman, A. A., DeSantis, L. M., & Rietmeijer, C. A. (2006). Assessing community needs and agency capacity- an integral part of implementing effective evidence based interventions. *AIDS Education and Prevention, 18*(Supplement A), 32-43.
- Glisson, C. (2007). Assessing and changing organizational culture and climate for effective services. *Research on Social Work Practice, 17*(6).
- Godin, G., Belanger-Gravel, A., Eccles, M. P., & Grimshaw, J. (2008). Healthcare professionals' intentions and behaviours: A systematic review of studies based on social cognitive theories. *Implementation Science, 3*(36), 1-12.
- Gomez, C. A., & Goldstein, E. (1996). The HIV prevention evaluation initiative: A model for collaborative and empowerment evaluation. In D. M. Fetterman, S. J. Kaftarian & A. Wandersman (Eds.), *Empowerment Evaluation: Knowledge and tools for self-assessment and accountability* (pp. 100-122). Thousand Oaks, CA: Sage Publications.
- Granello, D. H., Kindsvatter, A., Granello, P. F., Underfer-Babalis, J., & Moorhead, H. J. H. (2008). Multiple perspectives in supervision: Using a peer consultation model to enhance supervisor development. *Counselor Education and Supervision, 48*(1), 32-47.
- Hatch, M. J., & Cunliffe, A. (2006). *Organization theory: Modern, postmodern and symbolic perspectives*. Oxford: Blackwell.
- Israel, B. A., Krieger, J. W., Vlahov, D., Ciske, S. J., Foley, M., & Fortin, P. (2006). Challenges and facilitating factors in sustaining community-based participatory research partnerships: Lessons learned from the Detroit, New York City, and Seattle Urban Research Centers. *Journal of Urban Health, 83*(6), 1022-1040.
- Israel, B. A., Schulz, A. J., Parker, E. A., & Becker, A. B. (1998). Review of community-based research: Assessing partnership approaches to improve public health. *Annual Review of Public Health, 19*, 173-202.
- Jezewski, M. A. (1993). Cultural brokering as a model for advocacy. *Nursing and Health Care, 14*(2).
- Johnson, M., & Austin, M. J. (2006). Evidence-based practice in the social services: implications for organizational change. *Administration in Social Work, 30*(3), pp. 75-104.
- Johnson, M. O., & Remien, R. H. (2003). Adherence to Research Protocols in a Clinical Context: Challenges and Recommendations from Behavioral Intervention Trials. *American Journal of Psychotherapy, 57*(3), 348-360.
- Kaiser Reports. (2010). Fact Sheet: the HIV/AIDS epidemic in the United States. from <http://www.kff.org/hiv/aids/3029.cfm>

- Kalichman, S. C., Hudd, K., & DiBerto, G. (2010). Operational fidelity to an evidence-based HIV prevention intervention for people living with HIV/AIDS. *Journal of Primary Prevention, 31*(4), 235-245.
- Kellogg Foundation. (2010). Civic Engagement. Retrieved January 21, 2010, from <http://www.wkkf.org/what-we-support/civic-engagement.aspx>
- Kelly, J. A., Sogolow, E. D., & Neumann, M. S. (2000). Future Directions and Emerging Issues in Technology Transfer Between HIV Prevention Researchers and Community-based Service Providers. *AIDS Education and Prevention, 12*(Suppl A), 126-141.
- Kelly, J. A., Somlai, A. M., DiFranciesco, W. J., Otto-Salaj, L. L., McAuliffe, T. L., Hackl, K. L., et al. (2000). Bridging the gap between the science and service of HIV prevention: Transferring effective research-based HIV prevention interventions to community AIDS service providers. *American Journal of Public Health, 90*, 1082-1088.
- Kemp, S. P., Whittaker, J. K., & Tracey, E. M. (Eds.). (1997). *Person-Environment Practice: The Social Ecology of Interpersonal Helping*. New York: Aldine de Gruyter.
- Kraft, J. M., Mezzoff, J. S., Sogolow, E. D., Neumann, M. S., & Thomas, P. (2000). A Technology Transfer model for effective HIV interventions: Science and practice. *AIDS Education and Prevention, 12*(Suppl A), 7-20.
- Ksobiech, K. (2003). A meta-analysis of needle sharing, lending, and borrowing behaviors of needle exchange program attenders. *AIDS Education and Prevention, 15*(3).
- Lantz, P. M., Viruell-Fuentes, E., Israel, B. A., Softley, D., & Guzman, R. (2001). Can Communities and Academia Work Together on Public Health Research? Evaluation Results from Community-based Participatory Research Partnership in Detroit. *Journal of Urban Health, 78*(3), 495-507.
- Lasker, R. D., & Weiss, E. S. (2003). Creating partnership synergy: The critical role of community stakeholders. *Journal of Health and Human Services Administration, 26*(1/2), 119-139.
- Lasker, R. D., Weiss, E. S., & Miller, R. (2001). Partnership synergy: A practical framework for studying and strengthening the collaborative advantage. *The Milbank Quarterly, 79*, 179-205.
- Layde, P. M., Christiansen, A. L., Peterson, D. J., Guse, C. E., Maurana, C. A., & Brandenburg, T. (2012). A model to translate evidence-based interventions into community practice *American Journal of Public Health 102*(4), 617-624.
- Lehman, W., Greener, J. M., & Simpson, D. (2002). Assessing organizational readiness for change. *Journal of Substance Abuse Treatment, 22*, 197-209.
- Lincoln, M. A., & McAllister, L. L. (1993). Peer learning in clinical education. *Medical Teacher, 15*(1), 17-26.
- Litwak, E., & Meyer, H. (1966). A Balance Theory of Coordination Between Bureaucratic Organizations and Community Primary Groups. *Administrative Science Quarterly, 11*, 31-58.
- Longres, J. F. (2000). *Human Behavior in the Social Environment*. Itasca, Illinois: E.E. Peacock Publishers.
- Lukas, S. (1993). *Where to Start and What to Ask: An Assessment Handbook*: Norton.
- Maxwell, J. A., & Loomis, D. M. (2003). Mixed Methods Design: An Alternative Approach. In A. Tashakkori & C. Teddie (Eds.), *Handbook of Mixed Methods in Social and Behavioral Research* (pp. 241-272). Thousand Oaks, CA: Sage Publications.

- Miller, R. L. (2001). Innovation in HIV prevention: Organizational and intervention characteristics affecting program adoption. *American Journal of Community Psychology, 29*(4), 621.
- Miller, R. L., & Shinn, M. (2005). Learning from communities: Overcoming in difficulties in dissemination of prevention and promotion efforts. *American Journal of Community Psychology, 35*, 169-193.
- Miller, W. R., & Rollnick, S. (2002). *Motivational Interviewing: Preparing People for Change*. New York, NY: Guilford.
- Mills, E., Cooper, C., Guyatt, G., Gilchrist, A., Rachlis, B., Sulway, C., et al. (2004). Barriers to participating in an HIV vaccine trial: a systematic review. *AIDS, 18*, 2235-2242.
- Minkler, M., & Wallerstein, N. (2008). *Community Based Participatory Research for Health: From Process to Outcomes*. San Francisco: Jossey Bass.
- Montaño, D. E., Kasprzyk, D., & Taplin, S. H. (1997). The theory of reasoned action; the theory of planned behavior (2nd Ed.). In K. Glanz, F. M. Lewis & B. K. Rimer (Eds.), *Health Behavior Education: Theory, Research, Practice* (pp. 85-112). San Francisco, CA: Jossey-Bass.
- Moulding, N. T., Silagy, C. A., & Weller, D. P. (1999). A framework for effective management of change in clinical practice: dissemination and implementation of clinical practice guidelines. *Quality in Health Care, 8*, 177-183.
- National Association of Social Workers. (1996). *Code of Ethics*. Washington, DC: Author.
- National Institute of Health. (2010). Public Involvement. Retrieved January 21, 2010, from <http://www.nih.gov/about/publicinvolvement.htm>
- Nelson, T. D., & Steele, R. G. (2007a). Predictors of practitioner self-reported use of evidence-based practices: practitioner training, clinical setting, and attitudes toward research. *Administration and Policy in Mental Health and Mental Health Services Research, 34*(4), 319-330.
- Nelson, T. D., & Steele, R. G. (2007b). Predictors of practitioner self-reported use of evidence-based practices: practitioner training, clinical setting, and attitudes toward research. *Administration Policy Mental Health and Mental Health Service Research, 34*, 319-330.
- Neuendorf, K. A. (2002). *The content analysis guidebook*. Thousand Oaks, CA: Sage Publications.
- New York City Department of Health and Mental Hygiene. (2009). New York City HIV/AIDS Annual Surveillance Statistics 2009. Retrieved January 27, 2011, from http://www.nyc.gov/html/doh/downloads/pdf/ah/surveillance2009_tables_all.pdf
- Newman, B. M., & Newman, P. R. (2003). *Development through Life: A Psychosocial Approach*. Belmont, CA: Wadsworth Thomson.
- Norton, W. E., Amico, R., Cornman, D. H., Fisher, W. A., & Fisher, J. D. (2009). An agenda for advancing the science of implementation. *AIDS and Behavior, 13*, 424-429.
- Owczarzak, J., & Dickson-Gomez, J. (2011). Providers' Perceptions of and Receptivity Toward Evidence-Based HIV Prevention interventions. *AIDS Education and Prevention, 23*(2), 105-117.
- Pagoto, S. L., Spring, B., Coups, E. J., Mulvaney, S., Coutu, M. F., & Ozakinci, G. (2007). Barriers and facilitators of evidence-based practice perceived by behavioral science health professionals. *Journal of Clinical Psychology, 63*(7), 695-705.

- Panzano, P. C., Roth, D., Crane-Ross, D., Massatti, R., & Carstens, C. (2002). The innovation diffusion and adoption research project (IDARP): Moving from the diffusion of research results to promoting the adoption of evidence-based innovations in the Ohio mental health system. In D. R. (Ed.) (Ed.), *New Research in Mental Health* (Vol. 15, pp. 149-156). Columbus, OH: Ohio Department of Mental Health.
- Parker, E. A., Robins, T. G., Israel, B. A., Brakefield-Caldwell, W., Edgren, K. K., & Wilkins, D. J. (2005). Developing and Implementing Guidelines for Dissemination: The Experience of the Community Action Against Asthma Project. In B. A. Israel, E. Eng, A. J. Schulz & E. A. Parker (Eds.), *Methods in Community-based Participatory Research for Health* (pp. 285-306). San Francisco, CA: John Wiley & Sons, Inc.
- Pemberton, G., Andía, J., Robles, R., Collins, C., Colón-Cartagena, N., Pérez Del Pilar, O., et al. (2009). From research to community-based practice- working with Latino researchers to translate and diffuse a culturally relevant evidence-based intervention: The Modelo De Intervencion Psicomedica (MIP) Experience. *AIDS Education and Prevention*, 21(Supplement B), 171-185.
- Perkins, M. B., Jensen, P. S., Jaccard, J., Gollwitzer, P., Oettingen, G., Pappadopulos, E., et al. (2007). Applying Theory-Driven Approaches to Understanding and Modifying Clinicians' Behavior: What Do We Know? . *Psychiatric Services*, 58, 342-348.
- Petry, N. M., Alessi, S. M., Marx, J., Austin, M., & Tardif, M. (2005). Vouchers versus prizes: contingency management treatment of substance abusers in community settings. *Journal of Consulting and Clinical Psychology*, 73(6), 1005-1014.
- Pinto, R. M. (2009). Community perspectives on factors that influence collaboration in public health research. . *Health Education & Behavior*, 36, 930-947.
- Pinto, R. M. (2010). Mixed Methods Design. In N. J. Salkind (Ed.), *Encyclopedia of Research Design*: SAGE Publications.
- Pinto, R. M., Spector, A. Y., & Valera, P. A. (2011). Exploring group dynamics for integrating scientific and experiential knowledge in Community Advisory Boards for HIV research. *AIDS Care*.
- Pinto, R. M., Valera, P. A., & Jones, C. (submitted). "We had to implement EBIs because that was all that was going to be funded."
- Reconciling facilitators and barriers to implementing CDC's Effective Behavioral Interventions.
- Pinto, R. M., Yu, G., & Spector, A. Y. (2010). Providers' involvement in research associated with willingness to use findings: The impact of NIDA-funded Clinical Trial Network on substance abuse counselors. *Journal of Substance Abuse Treatment*.
- Pinto, R. M., Yu, G., Spector, A. Y., Gorroochurn, P., & McCarty, D. (2010). Substance abuse treatment providers' involvement in research is associated with willingness to use findings in practice. *Journal of substance abuse treatment*, 39(2), 188-194.
- Pravikoff, D. S., Tanner, A. B., & Pierce, S. T. (2005). Readiness of US nurses for evidence-based practice: many don't understand or value research and have had little or no training to help them find evidence on which to base their practice. *AJN The American Journal of Nursing*, 105(9), 40-51.
- Proctor, E. K. (2004). Leverage points for the implementation of evidence-based practice. *Brief Treatment and Crisis Intervention*, 4(3), 227-242.
- Rashid, J. R., Spengler, R. F., Wagner, R. M., Melanson, C., Skillen, E. L., Mays, R. A., et al. (2009). Eliminating health disparities through transdisciplinary research, cross-

- agency collaboration, and public participation. . *American Journal of Public Health*, 99(11).
- Richardson, J. L., Milam, J., McCutchan, A., Stoyanoff, S., Bolan, R., Weiss, J., et al. (2004). Effect of brief safer-sex counseling by medical providers to HIV-1 seropositive patients: a multi-clinic assessment. *AIDS*, 18(8), 1179-1186.
- Rogers, E. M. (1995). *Diffusion of Innovations, 4th Ed.* New York, NY: Simon & Schuster.
- Rogers, E. M. (2003). *Diffusion of Innovations, 5th Edition.* New York: Free Press.
- Sandelowski, M. (2000). Whatever happened to qualitative description? *Research in Nursing and Health*, 23, 334-340.
- Sandelowski, M. (2010). What's in a name? Qualitative description revisited. *Research in Nursing and Health*, 33(1), 77-84.
- Schulz, A. J., Krieger, J., & Galea, S. (2002). Addressing social determinants of health: Community-based participatory approaches to research and practice. *Health Education & Behavior*, 29(3), 287-295.
- Schulz, A. J., Zenk, S.N., Kannan, S., Israel, B.A., Koch, M.A., Stokes, C.A. (2005). CBPR Approach to Survey Design and Implementation: The Healthy Environments Partnership Survey. In B. A. Israel, E. Eng, A. J. Schulz & E. A. Parker (Eds.), *Methods in Community-based Participatory Research for Health*. San Francisco: John Wiley & Sons, Inc.
- Shea, S. C. (1998). *Psychiatric Interviewing: The Art of Understanding (2nd Ed.)*. Philadelphia, PA: Saunders.
- Snijders, T. A. B. (2005). Power and Sample Size in Multilevel Linear Models. In B. S. Everitt & D. C. Howell (Eds.), *Encyclopedia of Statistics in Behavioral Science* (Vol. volume 3, pp. 1570-1573). Chicester: Wiley.
- Spector, A. Y. (2012). CBPR with Service Providers: Arguing a case for engaging practitioners in all phases of research. *Health Promotion Practice*, 13(2), 252-258.
- Spector, A. Y., & Pinto, R. M. (2011). Let's talk about sex: helping substance abuse counsellors address HIV prevention with men who have sex with men *Culture, Health and Sexuality*, 1-15.
- Stoecker, R. (1999). Are academics irrelevant? Roles for scholars in participatory research. *American Behavioral Scientist*, 42(5), 840-854.
- The White House. (2010). *The National HIV/AIDS Strategy*. Retrieved from <http://www.aids.gov/federal-resources/policies/national-hiv-aids-strategy/>.
- Thompson, J., Barber, R., Ward, P. R., Boote, J. D., Cooper, C. L., Armitage, C. J., et al. (2009). Health researchers attitudes towards public involvement in health research. *Health Expectations*, 12, 209-220.
- Valdiserri, R. O. (2002). HIV/AIDS Stigma: An impediment to public health. *American Journal of Public Health* 92(3), 341-342.
- Vega, M. Y. (2009). The CHANGE approach to capacity-building assistance. *AiDS Education and Prevention*, 21(Supplement B), 137-151.
- Viswanathan, M., Ammerman, A., Eng, E., Gartlehner, G., Lohr, K. N., Griffith, D., et al. (2004). *Community-based participatory research: Assessing the evidence. Evidence Report/ Technology Assessment No. 99* (AHRQ Publication No. 04-E022-2). Rockville, MD: U.S. Department of Health and Human Services,.

- Wallerstein, N. (1999). Power Between Evaluator and Community: Research Relationships within New Mexico's Healthier Communities. *Social Science & Medicine*, 49, 39-52.
- Wandersman, A. (2003). Community Science: Bridging the Gap Between Science and Practice with Community-Centered Models. *American Journal of Community Psychology*, 31(3/4), 227-242.
- Wandersman, A., Duffy, J., Flaspohler, P., Noonan, R., Lubell, K., Stillman, L., et al. (2008). Bridging the gap between prevention research and practice: The interactive systems framework for dissemination and implementation. *American Journal of Community Psychology*, 41(3-4), 171-181.
- Weiner, B. J. (2009). A theory of organizational readiness for change. *Implementation Science*, 4(67).
- Weinhardt, L. S., Carey, M. P., Johnson, B. T., & Bickham, N. L. (1999). Effects of HIV counseling and testing on sexual risk behavior: a meta-analytic review of published research: 1985-1997. *Am J Public Health*, 89, 1397-1405.
- Weiss, E. S., Anderson, R. M., & Lasker, R. D. (2002). Making the most of collaboration: Exploring the relationship between partnership synergy and partnership functioning. *Health Education & Behavior*, 29(6), 683-698.
- Wells, K.B., Staunton, A., Norris, K. C., Bluthenthal, R., Chung, B., Gelberg, L., et al. (2006). Building an Academic-Community Partnered Network for Clinical Services Research: The Community Health Improvement Collaborative (CHIC). *Ethnicity and Disease*, 16, 3-17.
- Wolitski, R. J., Stall, R., & Valdiserri, R. O. (2007). *Unequal opportunity: health disparities affecting gay and bisexual men in the United States*. US: Oxford University Press.

APPENDIX A
INTERVIEW PROTOCOL

INTERVIEW PROTOCOL

This interview will start by explaining to participants the length of the interview, what will be learned from the interview, the definition of community-academic collaborations, the stages of the research process, and by letting them know that they can stop the interview at any time.

Participants will then be asked to read and sign a Consent Form describing to them in more detail the purposes of this study, and their rights and responsibilities as participants.

Participants will be asked rapport forming questions (i.e., demographic questions), followed by descriptive, analytic and experiential questions related to their experiences in community-academic collaborations. Each section typically starts with an open-ended question about participants' experiences in collaborations, and that question is followed by prompts to tap each stage of the research process. Participants will be asked to describe the "most successful" and the "the least successful" collaboration that they have engaged in, to explore their agencies' missions, their beliefs and priorities at each stage of the research process, and to provide recommendations for successful community-academic collaborations in HIV prevention research.

Prompts will aim to uncover themes not fully explored in the literature on community-academic collaborations in HIV research, including ethical issues and public health challenges of research in HIV prevention. More specifically, the interview will address the following: 1) concerns around minority communities' denial of the HIV epidemic; 2) mistrust of researchers on issues of interpretation of sexual practices, confidentiality and consent to participation; 3) the cultural fit between CBO and academia; 4) issues around the sustainability of HIV prevention interventions after research trials are completed, or of programs deemed to be effective after their evaluations; 5) how CBOs could be conduits for dissemination of research findings; 6) the directionality of initiation of community-academic collaborations (who approaches whom?); 7) CBOs' needs, missions and the extent of their involvement in HIV prevention research; and CBOs' concerns about money available to them as they participate in research and/or evaluation projects, ownership of these projects, the rigor involved in the research methodology, and the time commitments in research projects.

Interview Protocol

Study ID: _____

Interviewer: _____

Date of interview: ___/___/___

Starting time: _____ End: _____

Introduction

1.) Before we start the interview, I'd like to thank you for participating in this project. This interview will take about 60 to 90 minutes, but you may request a break at any time.

2.) Your answers to my questions will help us 1) outline a detailed description of the process of collaboration in HIV prevention research, 2) catalog both guiding principles (how collaborations ought to be), and 3) formulate specific guidelines (what collaborators should do) for successful community-academic collaboration in HIV prevention research.

For the purpose of our study, "community-academic collaboration" refers to the work done by collaborative partnerships between community partners such as your agency and university researchers. These collaborations may include large research projects and also evaluations of programs and services done in collaboration between your agency and university-based researchers.

The interview will follow the seven stages of research projects already described in the literature. They are: 1) Study aims; 2) Research design and sampling; 3) Measurements and outcomes; 4) Procedures; 5) Implementation; 6) Evaluation; and 7) Dissemination.

Note: Here participants will be shown a graphic representation of these stages as it appears in Section B.5 of the proposal. The probes will be keyed to the same stages.

3.) If at any time during the interview you feel tired, or feel uncomfortable about the themes we are talking about, you may decline to answer, and we'll move on to the next topic, or, if you'd like, end the interview. Is that okay with you?

2.) Is there anything at all you'd like clarified? If not, let's start the interview.

Demographics

To start the interview, I'd like to ask you a few questions about your background.

- 1.) How old are you?
- 2.) How would you describe your race and/or ethnicity?
- 3.) What is the highest level of education you have achieved?
- 4.) Do you live near your job? How long have you lived there? Would your home be considered to be in the same community as your job?
- 5.) How long have you worked for this agency? Have you had the same position since you started?
- 6.) What is your position in the agency? Could you describe your responsibilities in a few words?
- 9.) How much money do you make from your job before taxes?
 - A- 10k to 30k
 - B- 30k to 50k
 - C- 50k to 70k
 - D- 70k and up

I. Assessing CBO's history of collaboration

Prompt Question A.

I have read the Directory of CBOs funded by the NYCDHMH and have learned that your agency provide myriad services to target populations in several locations. In order to further characterize your agency, could you please answer the following questions.

- 1) What is the mission of your agency?
- 2) Is collaboration in research projects part of that mission? Please explain.
- 3) How many people work in the agency? How many volunteers? How many are involved in research projects at any given time?
- 4) How are staff members chosen to participate in research projects? If you involve volunteers in research project, how are they chosen?

Prompt Question B.

Could you describe how your agency became involved in collaborative HIV prevention research and/or evaluation of programs and services?

Follow-up probes.

- 1) How long have these collaborations been in place?
- 2) In how many collaborations has your agency been involved?
- 3) Have these projects involved the same researchers? The same universities?
- 4) What are the credentials of the researchers with whom you collaborate? Do you know what disciplines they represent? For example, social work, psychology, public health?
- 5) How did your agency choose to work with university researchers? How did it choose these particular researchers? If, on the other hand, the researchers approached your agency first, how did your agency make the decision to work with them? Had there been a history of working together on other community-based projects?

Prompt Question C.

How would you describe your personal involvement in these collaborations?

Follow-up probes.

- 1) How many times have you been directly involved in these collaborations?
- 2) Have all collaborations been with the same researchers?
- 3) In what capacities have you been involved?

Note: If participant has been involved in collaborations in different capacities, for example, as the Executive Director in one collaboration and as a line worker in another, he/she may have different answers for the following questions. If so, he/she will be asked to explore these questions as they relate to his/her involvement in different capacities.)

II- Assessing successful collaboration from the perspective of community-based collaborators

Prompt Question A.

Could you please describe the most successful collaboration you have experienced between your agency and university-based researchers?

The following topics will be used selectively to probe participants to explore specific issues they did not address in answering the question above.

- What about this collaboration made it stand out
- The social and leadership style of the PI of the grant
- The university where the researcher(s) came from
- The specific subject of the research
- Resources received and given
- Participants' satisfaction
- Needs and issues that helped community galvanize around HIV prevention
- Denial around the epidemic
- Clarification of sexual and drug use practices within the community
- CBO's roles in safeguarding confidentiality
- CBOs responsibilities in helping participants understand the process of consent
- Sustainability of HIV prevention programs and community-focused efforts
- CBOs as conduit for dissemination of research results. What outlets? What forms? How long after the research had finished?
- Issues of directionality. Who approach whom? How did it work?
- Research reflected agency's mission, needs and interests. How?
- Involvement of the board of directors in this project. What stages? In what capacity?
- Involvement of service consumers in this project. What stages? In what capacity?

Prompt Question B.

Could you please describe your agency's role in each stage of the research process?

Note: In order to achieve uniformity in the answers, participants will be reminded what these stages are, grounded in Hatch et al.'s (1993) theoretical model. The stages are: 1) Study aims; 2) Research design and sampling; 3) Measurements and outcomes; 4) Procedures; 5) Implementation;

6) Evaluation; and 7) Dissemination. The probes will be keyed to the same stages.

The following questions will be used to probe participants to explore specific issues they did not address when asked to describe their agencies' roles in each stage of the research process.

Study or Evaluation aims

1) How have you and/or your agency been involved in developing the objectives of this research project? How aligned were these objectives with your agency's mission and priorities?

2) How would you describe the questions you researched together? Did you identify these questions in collaboration with the researchers? How was this done?

Research or Evaluation design and sampling

- 3) To what extent and in what ways were you/your agency involved in determining how the research should proceed, and who should be the participants in the study?
- 4) Have you or any member in the agency staff received any training/education on methods and research design? Please describe.

Measurements and outcomes

- 5) How were you/your agency involved in determining the questions to ask participants? Were questions in line with your agency's mission and priorities?
- 6) Have you and/or your agency staff received training on measurements? Please describe.
- 7) Did you and/or your agency staff choose specific surveys or instruments to be used in the research?

Procedures

- 8) How were you and/or your agency staff involved in determining research procedures?
- 9) How were recruitment decisions made? Who recruited participants?
- 10) How would you describe the process of data collection? Where did it occur? In community-based sites? Please give examples.
- 11) Who interviewed participants and collected data? How were interviewers recruited? Did they come from the community? Did they receive any training?

Implementation

Note: This part of the interview will only be used if the person being interviewed, and his/her agency, has collaborated in implementing an intervention.

- 12) What specifically constituted your and/or your agency's involvement in implementing interventions in your community?
- 13) Were interventions co-directed by your agency and the university?
- 14) Who facilitated the intervention? Were community members trained to facilitate the intervention? How were they chosen and trained? How was the decision to use community members made?
- 15) Please describe any plans for sustaining the intervention in the community.

Evaluation/Analysis

- 16) Describe your and/or your agency's involvement in the evaluation of data collected in the collaborative project?
- 17) Describe any plans for analyzing the questions your agency chose to ask participants.
- 18) Did community members assist in the interpretation of the data, or in making recommendations? Please describe how the community members were chosen, and the process for analyzing the data.

Dissemination of results

- 19) Describe your and/or your agency's involvement in disseminating the results of the research.
- 20) Did you and/or your agency help to determine dissemination outlets? How?
- 21) Have you or has anyone in your agency co-authored any publication about the results? Have the results been published in any community-based outlet, such as a newsletter or local paper?
- 22) Have community members presented results to the community, and/or appeared as co-presenters at any conferences? Please describe any such events.

III- Assessing less successful collaboration from the perspective of community-based collaborators

Prompt Question A.

Could you please describe the least successful collaboration you have experienced between your agency and university-based researchers?

The following topics will be used selectively to probe participants to explore specific issues they did not address in answering the question above.

- Specific issues that made this collaboration the least successful. Examples?
- The social and leadership style of the PI of the grant
- The university where the researcher(s) came from
- The specific subject of the research
- Resources received and given
- Participants' satisfaction
- Needs and issues that helped community galvanize around HIV prevention
- Denial around the epidemic
- Clarification of sexual and drug use practices within the community
- CBO's roles in safeguarding confidentiality
- CBOs responsibilities in helping participants understand the process of consent
- Sustainability of HIV prevention programs and community-focused efforts
- CBOs as conduit for dissemination of research results. What outlets? What forms? How long after the research had finished?
- Issues of directionality. Who approach whom? How did it work?
- Research reflected agency's mission, needs and interests. How?
- Involvement of the board of directors in this project. What stages? In what capacity?
- Involvement of service consumers in this project. What stages? In what capacity?

Prompt Question B.

Could you please describe your agency's role in each stage of the research process?

Note: In order to achieve uniformity in the answers, participants will be reminded what these stages are, grounded in Hatch et al.'s (1993) theoretical model. The stages are: 1) Study aims; 2) Research design and sampling; 3) Measurements and outcomes; 4) Procedures; 5) Implementation; 6) Evaluation; and 7) Dissemination. The probes will be keyed to the same stages.

The following questions will be used to probe participants to explore specific issues they did not address when asked to describe their agency's roles in each stage of the research process.

Study or Evaluation aims

- 1) How have you and/or your agency been involved in developing the objectives of this research project? How aligned were these objectives with your agencies' mission and priorities?
- 2) How would you describe the questions you researched together? Did you identify these questions in collaboration with the researchers? How was this done?

Research or Evaluation design and sampling

- 3) To what extent and in what ways were you/your agency involved in determining how the research should proceed, and who should be the participants in the study?
- 4) Have you or any member in the agency staff received any training/education on methods and research design? Please describe.

Measurements and outcomes

- 5) How were you/your agency involved in determining the questions to ask participants? Were questions in line with your agency's mission and priorities?
- 6) Have you and/or your agency staff received training on measurements? Please describe.
- 7) Did you and/or your agency staff choose specific surveys or instruments to be used in the research?

Procedures

- 8) How were you and/or your agency staff involved in determining research procedures?
- 9) How were recruitment decisions made? Who recruited participants?
- 10) How would you describe the process of data collection? Where did it occur? In community-based sites? Please give examples.
- 11) Who interviewed participants and collected data? How were interviewers recruited? Did they come from the community? Did they receive any training?

Implementation

Note: This part of the interview will only be used if the person being interviewed, and his/her agency, has collaborated in implementing an intervention.

- 12) What specifically constituted your and/or your agency's involvement in implementing interventions in your community?
- 13) Were interventions co-directed by your agency and the university?
- 14) Who facilitated the intervention? Were community members trained to facilitate the intervention? How were they chosen and trained? How was the decision to use community members made?
- 15) Please describe any plans for sustaining the intervention in the community.

Evaluation/Analysis

- 16) Describe your and/or your agency's involvement in the evaluation of data collected in the collaborative project?
- 17) Describe any plans for analyzing the questions your agency chose to ask participants.
- 18) Did community members assist in the interpretation of the data, or in making recommendations? Please describe how the community members were chosen, and the process for analyzing the data.

Dissemination of results

- 19) Describe your and/or your agency's involvement in disseminating the results of the research.
- 20) Did you and/or your agency help to determine dissemination outlets? How?
- 21) Have you or has anyone in your agency co-authored any publication about the results? Have the results been published in any community-based outlet, such as a newsletter or local paper?
- 22) Have community members presented results to the community, and/or appeared as co-presenters at any conferences? Please describe any such events.

I- Assessing the extent to which current general principles of health research collaboration apply to successful HIV prevention research with CBOs

1) Given your experiences in research collaboration, would you consider your agency's role in the research process that of equal partner in the research team? Please explain and give examples to illustrate your points.

2) When your agency became involved in HIV prevention research projects, did you feel that this was a health problem relevant to your agency's mission? How so? Was this issue a priority to your agency? To community residents? How did you assess this relevance?

3) Were the objectives of these projects and the study aims driven by the needs of your agency? Were they driven by the needs of your community? If yes, explain how and give examples to illustrate these points. If not, what drove the objectives and study aims for these projects?

4) In developing the designs for answering the research questions (specific aims) in the projects you were involved, how well did such designs/methodologies reflect the mission of your agency? Did you and other staff involved clearly understand the designs? How appropriate were the chosen methods for addressing the specific aims?

5) At the end of these projects, were results disseminated? How? Were they disseminated in both academic and community-based outlets? Do you know which ones? Were you involved? Were community residents involved in this process?

6) Once a specific collaborative project comes to an end, has the knowledge gathered been used to develop programmatic responses to address your community's HIV prevention needs? Could you describe how? Who were involved in developing programs? Did researchers help in this process? How? Did community members help in this process? How?

7) Did your agency have access to the budget for these projects? Who in the agency had access? Was money allocated for your agency? Was it enough? Please explain. Did you have any concern related to how money was spent? Did you feel you could talk openly about money issues with your collaborators? Any particular issue you would like to tell us to illustrate this point?

8) Did you feel that as a collaborator your agency had ownership over the project and the findings that arose from the projects? Please explain and give examples to illustrate how you perceived your agency's ownership over these projects.

9) How was it for you and your agency to understand and follow the methods used to fulfill the aims of the research projects in which your agency was involved? Were they rigorous? How so? Were they hard or easy to follow? Please explain.

10) How much time did you personally and your agency as whole spent in these projects? Was it worth it? How so? Did it interfere with the daily routines of the agency? How? Did it interfere with the agency's ability to provide services to clients during the research project? How? If it interfered, what could be done to resolve this issue?

II- Assessing further principles specific to HIV prevention collaborative research

Note: In order to further capture the perspective of participants, they will be asked the following question.

1) Based on your experience in collaborative research, the mission of your agency, and the priorities of both your agency and your community, what are the key elements and/or procedures that must be in place in order to establish a successful collaboration in HIV prevention research?

I- Assessing guidelines for future meaningful collaborations.

Prompt Question 1.

Based on your experiences, how would you describe the ideal research collaboration between a community partner like yourself and a university-based researcher?

Follow-up probes.

- 1) What needs to be present in the partnership in order best to serve a CBO and its community?
- 2) What steps must be taken – and in what order – to assure success in a collaboration between university-based researchers and a community partner?
- 3) In which of the above steps must the agency be most deeply involved? How should the partners create this involvement? Why and how should the agency be deeply involved in certain steps?
- 4) In which stages of the overall research process should the agency be most deeply involved? (Again, these stages are: study aims; research design and sampling; measurements and outcomes; procedures; implementation; evaluation; and dissemination.) How should the partners create this involvement? Why and how should the agency be deeply involved at certain stages?
- 5) How could community-academic collaborations help address minority communities' possible rejection of the severity of the HIV epidemic?
- 6) How could community-academic collaborations help address minority communities' mistrust of researchers on issues of misinterpretation of their sexual practices?
- 7) How could community-academic collaborations address issues of confidentiality and consent to participation?
- 8) How could academics work toward closing the gap between the university setting and community partners working in CBOs? What could be done to achieve a more meaningful cultural fit between academics and community partners?
- 9) What strategies do you think ought to be in place so that interventions after research trials, and programs after evaluations, can be sustained in your community?
- 10) How could CBOs become conduits for dissemination of research findings? Any specific strategies?

Prompt Question 2

Is there any other recommendation you wish to make that would help to build meaningful collaborations?

End of Interview

APPENDIX B
ORGANIZATIONAL SURVEY

Organizational Survey

Environmental Domain

Section 1: Organizational Description

Please check one answer that best describes your agency.

1. What category best describes your type of agency: (Check one)

- Private not for profit organization
- Private for-profit organization
- Unit of state government
- Unit of the local county or community government
- Unit of tribal government
- Federal Department of Veteran Affairs
- Other federal agency
- Other public corporation

2. What categories best describes your primary agency setting: (Check two that best apply)

- Religious
- Alcohol and Drug Abuse Treatment or Prevention Program
- Family/Children's Service Agency
- Social Service Agency
- Hospital
- Mental Health System/Community Mental Health Clinic
- Corrections /Criminal Justice-related Agency
- AIDS Service Organization
- Other (please specify) _____

3. On average, what category best describes your agency's annual budget. (Check one)

- \$50,000 to \$99,999
- \$100,000 to \$499,999
- \$500,000 to \$999,999
- \$1 million to \$5 million
- \$5 million to \$10 million
- More than \$10 million
- Don't Know

4. Where does your agency provide HIV prevention programs? (Check all that apply)

- Bronx
- Brooklyn
- Manhattan
- Queens
- Staten Island
- Other (*please specify*) _____

5. To what extent does the staff in your agency receive training using the following means:

5a. Formal mentoring

- Not at All To a little extent To some extent To a great extent Completely

5b. Individual or group supervision

- Not at All To a little extent To some extent To a great extent Completely

5c. In-service trainings

- Not at All To a little extent To some extent To a great extent Completely

5d. Computer-based trainings

- Not at All To a little extent To some extent To a great extent Completely

6. To what extent do staff in your agency read and discuss literature on the following topics:

6a. HIV prevention

- Not at All To a little extent To some extent To a great extent Completely

6b. Substance abuse prevention

- Not at All To a little extent To some extent To a great extent Completely

6c. Incarceration prevention

- Not at All To a little extent To some extent To a great extent Completely

6d. Suicide prevention

- Not at All To a little extent To some extent To a great extent Completely

7. To what extent are staff given opportunities (e.g. funded) to attend seminars and workshops?

- Not at All To a little extent To some extent To a great extent Completely

8. To what extent does staff receive encouragement/support for continuing education (e.g. taking courses and getting degrees)?

- Not at All To a little extent To some extent To a great extent Completely

9. To what extent does your agency make family-related resources to clients such as child care available?

- Not at All To a little extent To some extent To a great extent Completely

10. To what extent does your agency provide evening hours to accommodate clients?

- Not at All To a little extent To some extent To a great extent Completely

11. To what extent does your agency carry liability/insurance coverage for clients whom participate in your programs?

- Not at All To a little extent To some extent To a great extent Completely

12. To what extent does competition for funding affects your agency's *ability* to add or expand services.

- Not at All To a little extent To some extent To a great extent Completely

13. What type of interventions does your agency provide for HIV prevention? (Check all that apply)

- | | |
|---|--|
| <p>❖ <u>Outreach</u></p> <p><input type="checkbox"/> Educational seminars</p> <p><input type="checkbox"/> Condom distribution</p> | <p>❖ <u>Interpersonal Interventions</u></p> <p><input type="checkbox"/> Support Groups</p> <p><input type="checkbox"/> Family Level</p> |
| <p>❖ <u>Community Intervention</u></p> <p><input type="checkbox"/> Health fairs</p> <p><input type="checkbox"/> Needle exchange</p> <p><input type="checkbox"/> Food pantry</p> | <p><input type="checkbox"/> Couples Level</p> <p><input type="checkbox"/> Individual Level</p> <p><input type="checkbox"/> Case Management</p> |

14. On average, how many volunteers typically work at your agency?

- Fewer than 10 volunteers
- 10 to 50 volunteers
- 51 to 75 volunteers
- More than 75 volunteers

15. How many people are employed at your agency?

- Fewer than 25 staff members
- 26 to 100 staff members
- More than 100 staff members

16. What languages are spoken by staff at your agency? (Check all that apply)

- | | | |
|----------------------------------|----------------------------------|---|
| <input type="checkbox"/> English | <input type="checkbox"/> Arabic | <input type="checkbox"/> Other (please specify) |
| <input type="checkbox"/> Spanish | <input type="checkbox"/> Chinese | |
| <input type="checkbox"/> French | <input type="checkbox"/> Creole | |

17. What type of populations does your agency target for HIV prevention? (Check all that apply)

- Youth (ages 13-24)
- Aged (age 60 and over)
- Immigrants
- Substance Users
- Individuals involved in the criminal justice system
- Homeless Persons
- Sex Workers
- Transgender Persons
- HIV Seropositives

18. In your estimation, clients receiving HIV services from your agency comprise:

- Less than 10% of the client population
- 10% to 25% of the client population
- 26% to 50% of the client population
- 51% to 75% of the client population
- More than 75% of the client population

Section 2: Organizational Readiness

The following questions assess your agency's overall willingness to conduct HIV-related research projects and/or HIV-related program evaluations. Please answer all questions to the best of your ability.

1. Has your agency been involved in any of the following: (Check all that apply)

- HIV-related program evaluation: **(If checked complete questions below)**

1a. How long has your agency been involved in HIV-related program evaluation?

1b. In how many HIV-related program evaluations has your agency been involved?

1c. At any given time, what is the average percentage of staff involved in HIV-related program evaluation?

- HIV-related research projects: **(If checked complete questions below)**

1d. How long has your agency been involved in HIV-related research projects?

1e. In how many HIV-related research projects has your agency been involved?

1f. At any given time, what is the average percentage of staff involved in HIV-related research projects?

- No my agency has not been involved in HIV-related program evaluation and/or research projects. **(If checked please proceed to section 3)**

2. Based on what staff members are chosen to participate in research and/or program evaluation projects? (Check all that apply)

- Position Job Assignment Departmental Affiliation
 Education Work
 Seniority Specialization

3. Does your agency's program evaluation and/or research projects typically involve outside researchers?

- Yes No

4. To what extent does research and/or program evaluation occur with the same researchers?

- Not at All To a little extent To some extent To a great extent Completely

5. Do you involve members of your board of directors in research projects and/or program evaluation?

Yes No

6. Do you recruit service consumers for research projects and/or program evaluation?

Yes No

7. What are the credentials of the researchers with whom you collaborate?

PhDs

MDs

Doctoral Students

Masters

Don't Know

Other (*please specify*) _____

Section 3: Organization Readiness for HIV-related Diffusion of Effective Behavioral Interventions (DEBI)

The following questions assess your agency's willingness to utilize HIV-related DEBIs. Please check one answer that best describes the extent to which you agree with the following statements about your agency.

- 1. Has your agency ever implemented an Effective Behavioral Intervention (EBI) funded by the Centers for Disease Control and Prevention (CDC)?**

Yes No

- 2. How many? (Only answer if checked "yes" for question 1 of Section 3)**

() EBIs

- 3. Your agency is successful at matching client needs with HIV-related Evidenced-based Behavioral Interventions (EBI).**

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

- 4. Your agency is successful at increasing client participation within its HIV programs.**

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

- 5. Your agency actively measures client performance within its HIV programs.**

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

- 7. Your agency needs to develop more effective HIV group sessions.**

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

- 8. Your agency utilizes client assessments to guide program decisions.**

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

- 9. Your agency regularly evaluates its HIV prevention programs.**

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

- 10. Your agency uses research findings to document program effectiveness.**

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

APPENDIX C
PROVIDER SURVEY

Provider Survey

Personal Domain

Section 1: Demographic Information

1. What gender do you identify as: (*Check one*)

- Male
- Female
- Transgender – Male to female
- Transgender – Female to male

2. Please indicate your age in years:

() Years

3. What race/ethnicity best describes you? (*Check one*)

- American Indian or Alaskan Native
- Asian/Asian-Pacific Islander/South Asian
- Bi/Multi-racial
- Black Non-Hispanic/African American
- Hispanic or Latino
- Middle Eastern
- White Non-Hispanic
- Other (*please specify*) _____

4. What language(s) do you speak? (*Check all that apply*)

- English
- Spanish
- French
- Arabic
- Chinese
- Creole
- Other (*please specify*) _____

5. What category best describes your relationship status? (Check one)

- Single
- Domestic Partner
- Legally Married
- Separated
- Divorced
- Widowed

6. What category best describes your gross annual income? (Check one)

- Less than \$10,000
- \$10,000 to \$24,999
- \$25,000 to \$49,999
- \$50,000 to \$74,999
- \$75,000 to \$100,000
- More than \$100,000

7. What is the highest degree or schooling you have completed? (Check one)

- Junior high school
- High school diploma/GED
- Associates Degree
- Bachelors Degree
- Masters Degree
- Doctorate Degree

8. Do you live in close proximity to your job?

Yes No

9. In your estimation, how long is your commute to your job?

() Minutes

Section 2: Work-related Information

1. How long have you worked in your present agency?

() Years () Months

2. How many hours per week do you typically work in this agency?

() Hours/week

3. In a typical week, how many hours do you work directly with clients?

() Hours/week

4. What category best describes your primary job position: (Check one)

Assistant Counselor

Counselor

Intake Administrator

Supervisor/Administrator

Research Investigator

Training Coordinator

Clinical Social Work

Case Manager

Other (*please specify*) _____

5. **Have you had the same position since you started at your present agency?**

Yes No

6. **How long have you held your current position with this agency?**

() Years () Months

7. **If any, what type of professional licensure do you hold?**

- Alcohol/Drug Counselor
 Nurse
 Nurse Practitioner
 Physician
 Psychologist
 Social Worker
 None
 Other (*please specify*) _____

8. **Do you have any specialization in HIV prevention (e.g. academic concentration, and/or certifications)?**

Yes No

9. **Do you have any specialization in drug/substance abuse prevention (e.g. academic concentration, and/or certifications)?**

Yes No

10. **Do you have any specialization in the criminal justice system (e.g. academic concentration, and/or certifications)?**

Yes No

11. **Do you have any specialization in suicide prevention (e.g. academic concentration, and/or certifications)?**

Yes No

12. **To what extent do you incorporate HIV prevention into the regular services you provide to your clients?**

Not at all To a little extent To some extent To a great extent Completely

13. **To what extent do you incorporate substance abuse prevention into the regular services you provide to your clients?**

Not at all To a little extent To some extent To a great extent Completely

14. **To what extent do you incorporate in incarceration prevention into the regular services you provide to your clients?**

Not at all To a little extent To some extent To a great extent Completely

15. **To what extent do you incorporate suicide prevention into the regular services you provide to your clients?**

Not at all To a little extent To some extent To a great extent Completely

16. You have been employed in the field of health promotion and disease prevention for how many years?

Section 3: Research Experience

1. Do you have any prior involvement in research projects and/or program evaluation?

- No (If checked proceed to question 3b)
 Yes (If checked complete questions 3a1 & 3a2)

1a. Which areas of research have you had previous involvement? (Check all that apply)

- HIV prevention
 Substance abuse prevention
 Suicide prevention
 Incarceration prevention

1b. Have you been involved in any of the following research tasks? (Check all that apply)

- | | |
|---|--|
| <input type="checkbox"/> I was interviewed as part of a research project. | <input type="checkbox"/> I have coded and analyzed qualitative data |
| <input type="checkbox"/> I have attended sessions of an intervention. | <input type="checkbox"/> I have conducted statistical analysis |
| <input type="checkbox"/> I have provided blood and/or other biological markers. | <input type="checkbox"/> I have entered/coded quantitative data |
| <input type="checkbox"/> I have recruited participants | <input type="checkbox"/> I have trained interviewers or anyone assisting with a research project |
| <input type="checkbox"/> I helped to develop objectives/goals of the research project | <input type="checkbox"/> I have presented research findings to clients or community participants |
| <input type="checkbox"/> I have facilitated interventions | <input type="checkbox"/> I have supervised research staff |
| <input type="checkbox"/> I have developed surveys | <input type="checkbox"/> I have presented research findings to agency staff, leadership or board members |
| <input type="checkbox"/> I have developed services for participants that were evaluated | <input type="checkbox"/> I have written proposals for funding |
| <input type="checkbox"/> I have developed data collection procedures | <input type="checkbox"/> I have written IRB Protocols/Informed consents |
| <input type="checkbox"/> I have interviewed participants | <input type="checkbox"/> I have published findings |
| <input type="checkbox"/> I have collected data | <input type="checkbox"/> I have evaluated programs |
| | <input type="checkbox"/> Other (please specify) |

2. In your estimation, how many research projects and/or program evaluations have you helped conduct? Including any project you may be currently involved.

() Projects and/or evaluations

3. I am willing to share with other agencies the results for research/evaluations taking place in my agency. (Check one)

Not at all To a little extent To some extent To a great extent Completely

4. Have you received any formal training in research?

No

Yes (If checked complete questions 3e1 & 3e2)

4a. How did you receive this formal training? (Check all that apply)

- Workshops/Seminars
 Academic course work
 In-job training
 The collaborating researcher had trained staff
 Other (please specify) _____

4b. In what aspects of research have you been trained? (Check all that apply)

- | | |
|---|--|
| <input type="checkbox"/> Recruiting participants | <input type="checkbox"/> Training interviewers or anyone assisting with the study |
| <input type="checkbox"/> Specifying objectives/goals | <input type="checkbox"/> Presenting research findings to clients or community participants |
| <input type="checkbox"/> Facilitation of interventions | <input type="checkbox"/> Supervising research staff |
| <input type="checkbox"/> Developing surveys | <input type="checkbox"/> Presenting research findings to agency staff, leadership or board members |
| <input type="checkbox"/> Developing services for participants that were evaluated | <input type="checkbox"/> Writing proposals for funding |
| <input type="checkbox"/> Developing data collection procedures | <input type="checkbox"/> Writing Institutional Review Board (IRB) Protocols/Informed consents |
| <input type="checkbox"/> Interviewing participants | <input type="checkbox"/> Publishing findings |
| <input type="checkbox"/> Data collection | <input type="checkbox"/> Evaluation of programs |
| <input type="checkbox"/> Qualitative data coding & analysis | <input type="checkbox"/> Other (please specify) |
| <input type="checkbox"/> Statistical analysis | |
| <input type="checkbox"/> Data coding/data entry of quantitative data | |

Section 4: Attitudes toward HIV Prevention Interventions and DEBIs

The following questions focus on attitudes about HIV prevention interventions. Please indicate the answer that comes closest to how you think.

1. Clients in HIV prevention intervention studies should receive better care.

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

2. Client confidentiality is difficult to maintain in HIV prevention interventions.

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

3. Assigning some clients to a group that will receive an intervention and others to a group that will not is a bad thing?

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

4. Paying clients for their involvement in HIV prevention research undermine the research.

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

5. I know that the Diffusion of Effective Behavioral Interventions (DEBI) refers to the Centers for Disease Control and Prevention's (CDC) dissemination of HIV prevention interventions to health departments and community agencies.

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

6. My agency regularly implements effective HIV behavioral Interventions (EBIs) funded by the Centers for Disease Control and Prevention (CDC).

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

7. I am willing and capable of implementing effective HIV behavioral interventions (EBIs).

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

8. I am confident that I can implement a CDC-funded DEBI with my clients.

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

9. I do not know how to match a DEBI to my clients' demographic characteristic and to their needs.

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

10. Effective behavioral interventions (EBIs) are useful in HIV prevention.

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

11. DEBI manuals are easy to understand.

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

12. My agency has the resources available to monitor what happens when a DEBI is implemented.

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

13. DEBIs cannot be modified to fit the individual needs of each of my clients.

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

14. EBIs encourage over-simplified “cookbook” prevention programs.

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

15. I have access to any information necessary to address my clients’ needs.

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

Section 5: Attitudes toward Public Health Research

The following questions focus on attitudes about health research. For the following questions please indicate the answer that comes closest to how you think.

1. Disease prevention research benefits the community.

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

2. Disease prevention research can improve the care and services clients receive.

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

3. Disease prevention research is an invasion of privacy.

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

4. Participating in health research is a way to get clients treatment for free.

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

5. The government should spend more money on health research.

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

6. Health research results can be used to promote negative stereotypes and create more discrimination.

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

7. Disease prevention research should not focus on the health of minority communities.

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

8. Researchers do not always inform participants about the risks involved in health research.

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

9. Community representatives should not be involved in deciding what research is needed.

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

10. Any information I give to researchers about my clients can be used against me.

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

11. Any information I give to researchers can be used against clients.

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

12. Being a research participant takes too much valuable time and is a waste of time.

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

13. Clients participating in health research clearly understand what will take place.

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

14. I think that the following areas of research are a waste of time:

14a. HIV prevention

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

14b. Substance abuse prevention

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

14c. Suicide prevention

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

14d. Incarceration prevention

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

Interpersonal Domain

Section 6: Attitudes toward Research Collaboration

The following questions focus on attitudes about HIV-related research collaboration. For the following questions please indicate the answer that comes closest to how you think.

1. I would enjoy getting to know the researcher with whom my agency is collaborating.

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

2. Solving professional issues with researchers may be difficult.

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

3. Collaboration between this agency and researchers is most successful when the researcher is an expert in his or her field.

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

4. Collaboration is most successful when researchers are available to provide training for Community-Based Organization (CBO) staff.

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

5. Collaboration is least successful when researchers display positive social manners.

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

6. In order to resolve tensions and conflicts, it is important to use the following processes:

6a. Problem solving

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

6b. Decision-making

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

6c. Power-sharing

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

6d. Conflict resolution

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

6e. Negotiation

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

6f. Mediation

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

7. My desire to share my experiences would help me decide to collaborate in research.

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

8. My willingness to make a contribution to my community has no impact on my decision to collaborate in research.

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

9. My desire to learn more about HIV/AIDS would influence my decision to collaborate in research.

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

10. I want to learn about research.

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

11. I want to share with researchers what I know about my community and my clients.

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

12. Research ought to have a purpose defined solely by the researcher.

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

13. Involving community in research makes the results more useful to the community.

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

14. My agency should get involved in research to improve the knowledge base of the staff.

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

15. Research must help improve HIV services delivered in CBOs.

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

16. Research must enhance the lives of participants.

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

17. In order for research to be successful, all collaborators need to be committed to improving the infrastructure of community based organizations.

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

18. Participating in research collaboration with academic researchers is a waste of my time.

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

Environmental Domain

Section 7: Workplace Experience

The following questions focus on your workplace experience. Please indicate the answer that comes closest to how you think. Please don't spend too long on any single item.

1. On average, physical accommodations at your agency (i.e. office space and equipment) are adequate.

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

2. Staff members often need to be reminded of your agency's main goals.

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

3. Staff members within your agency typically work well together.

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

4. Staff training and continuing education are priorities at your agency.

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

5. The leadership here fully trusts your professional judgment.

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

6. There is too much friction among staff members.

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

7. My agency reflects the values of the communities we serve.

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

8. Some staff members here resist any type of change.

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

9. Ideas and suggestions from staff get fair consideration by agency leaders.

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

10. Agency staff have an adequate understanding of how prevention services can best fit into the community context.

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

11. Your coworkers often show signs of stress.

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

12. Our agency disseminates research information to the community we serve.

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

13. Staff members are encouraged to collaborate with researchers.

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

Section 8: Type of Research

If a researcher approaches your agency and proposes to do research, how willing would you be to collaborate in that research?

1. If the research that requires data collection in only one point in time, compared to research that collects data several times.

Very Unlikely Unlikely Somewhat Likely Likely Very Likely

2. If the research requires the researcher to observe clients where they live or work.

Very Unlikely Unlikely Somewhat Likely Likely Very Likely

3. If the research brings clients together to talk in a group about their problems.

Very Unlikely Unlikely Somewhat Likely Likely Very Likely

4. If the research assigns one group of people to receive an intervention (experimental group) while another group only receives regular services (control group).

Very Unlikely Unlikely Somewhat Likely Likely Very Likely

5. If the research engages community partners equally in all phases of research.

Very Unlikely Unlikely Somewhat Likely Likely Very Likely

6. If the research that focuses on several health problems (e.g. HIV prevention and substance abuse).

Very Unlikely Unlikely Somewhat Likely Likely Very Likely

Section 9: Research Collaboration: Outcome Measures

The following are descriptions of three different research collaboration scenarios in which the roles and responsibilities assumed by the researchers and the CBOs differ. Please read all three scenarios before you answer the questions, and let us know how inclined you would be to collaborate with a researcher on each scenario.

Scenario A: In this HIV prevention research project, the researcher has defined the main objectives, methods and procedures of the study, and will analyze, interpret, and disseminate the data collected via scientific journals and conferences. Your CBO would simply implement the procedures – recruitment, interviewing, etc.

1. How inclined would you be to collaborate on this project?

- Very inclined to collaborate
- Inclined to collaborate
- Somewhat inclined to collaborate
- Only slightly inclined to collaborate
- Not inclined to collaborate

Scenario B: In this project, the researcher will define the main objectives, methods, and procedures of the study, but will seek advice from your CBO. The researcher will help train the CBO staff to implement the study. The researcher and your CBO will jointly analyze and interpret the results, and will – to the degree possible – jointly disseminate the results via scientific journals and conferences.

2. How inclined would you be to collaborate on this project?

- Very inclined to collaborate
- Inclined to collaborate
- Somewhat inclined to collaborate
- Only slightly inclined to collaborate
- Not inclined to collaborate

Scenario C: In this project, the researcher and the CBO together will define the main objectives, methods, and procedures. Researcher and CBO together will implement the study and analyze and interpret the data collected. Researcher and CBO will – to the degree possible – jointly disseminate results via scientific journals and conferences. They will also jointly disseminate results via community-based publications and conferences.

3. How inclined would you be to collaborate on this project?

- Very inclined to collaborate
 Inclined to collaborate
 Somewhat inclined to collaborate
 Only slightly inclined to collaborate
 Not inclined to collaborate

Section 10: Training Needs

Would you agree that you need training in the following areas:

1. Assessing client needs -

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

2. *Matching clients' needs with an HIV Evidence-based Interventions (EBI) -*

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

3. Increasing participation and retention in programs -

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

4. Measuring client performance -

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

5. Using clients' assessments to guide program decisions -

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

6. Evaluating programs -

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

7. Using research findings to document program effectiveness -

Strongly Agree Agree Tend to Agree Tend to Disagree Disagree Strongly Disagree

Section 11: Organizational Barriers

The following questions consider various organizational barriers that may be impacting your agency's ability to collaborate. Unless otherwise specified, please check one answer that best describes the extent to which these barriers affect you and/or your agency's ability to pursue research.

- 1. Lack of time and human resources**
 Not at all To a little extent To some extent To a great extent Completely
- 2. Management has no interest in research**
 Not at all To a little extent To some extent To a great extent Completely
- 3. Lack of research experience**
 Not at all To a little extent To some extent To a great extent Completely
- 4. Organization's resistance to research collaboration**
 Not at all To a little extent To some extent To a great extent Completely
- 5. Lack of physical accommodations (i.e. space, supplies, etc.)**
 Not at all To a little extent To some extent To a great extent Completely
- 6. Lack of funding for research and/or program evaluation**
 Not at all To a little extent To some extent To a great extent Completely
- 7. Lack of information sharing between the researcher and us**
 Not at all To a little extent To some extent To a great extent Completely
- 8. Disconnect between CBO reality and expectations of researchers**
 Not at all To a little extent To some extent To a great extent Completely
- 9. Competing interests between the researcher and us**
 Not at all To a little extent To some extent To a great extent Completely
- 10. What is the most effective way by which these barriers can be improved? (Check all that apply)**
 More funding and/or funding opportunities.
 More training for staff, the organization, or both.
 More networking initiatives

