Training and Quality Assurance in Agencies Delivering an Evidence-Based Intervention: A Case Study

by
Justin Henry Washburn Harris

A THESIS

submitted to

Oregon State University

Honors College

in partial fulfillment of
the requirements for the
degree of

Honors Baccalaureate of Science in Biology
(Honors Associate)

Honors Baccalaureate of Arts in International Studies
(Honors Associate)

Presented June 5, 2018
Commencement June 2019

AN ABSTRACT OF THE THESIS OF

Justin Harris for the degree of Honors Baccalaureate of Science in Biology and Honors Baccalaureate of Arts in International Studies presented on June 5, 2018. Title: Training and Quality Assurance in Agencies Delivering an Evidence-Based Intervention: A Case Study.

Abstract approved:_____
M. Margaret Dolcini

Background Training and quality assurance (QA) are important to high fidelity program implementation in practice settings but are rarely the focus of translation research. Thus, it is important to conduct studies that specifically address training and QA.

Methods Using the maximum variation case study method, we examined training and QA in 2 public health agencies with high vs. low fidelity for RESPECT, a widely disseminated evidence-based program. Data were obtained through interviews with agency personnel and administrators. Program fidelity scores were derived from client exit surveys.

Results We identified four themes that distinguished the two agencies regarding training and QA: 1. Approach to training; 2. QA strategies; 3. Proactive inhibition; 4. Mismatch between training and program adaptations. The high-fidelity agency utilized a "team" approach, inclusive of management in training, and incorporated effective QA strategies. During training, staff from the low fidelity agency experienced proactive inhibition, believing RESPECT was synonymous with an existing program. Additionally, program adaptations differed significantly from the RESPECT training received.

Conclusion Investment in training a wide range of personnel, avoiding proactive inhibition, ensuring that training and program adaptations align, and employing effective QA strategies may contribute to high-quality implementation of innovative programs.

Key Words: Quality assurance, training, implementation science, evidence-based intervention, fidelity

Corresponding e-mail address: justinhwharris@gmail.com

Training and Quality Assurance in Agencies Delivering an Evidence-Based Intervention: A Case Study

by
Justin Henry Washburn Harris

A THESIS

submitted to

Oregon State University

Honors College

in partial fulfillment of
the requirements for the
degree of

Honors Baccalaureate of Science in Biology
(Honors Associate)

Honors Baccalaureate of Arts in International Studies
(Honors Associate)

Presented June 5, 2018
Commencement June 2019

Honors Baccalaureate of Science in Biology and Honors Baccalaureate of Arts in International Studies project of Justin Henry Washburn Harris presented on June 5, 2018.

APPROVED:

_____

M. Margaret Dolcini, Mentor, representing the School of Social and Behavioral Health Sciences

_____

Joseph Catania, Committee Member, representing the School of Social and Behavioral Health Sciences

_____

Rebekah Lancelin, Committee Member, representing the International Studies Degree Program

_____

Ryan Singh, Committee Member, representing the School of Social and Behavioral Health Sciences

_____

Toni Doolen, Dean, Oregon State University Honors College

I understand that my project will become part of the permanent collection of Oregon State University, Honors College. My signature below authorizes release of my project to any reader upon request.

_____

Justin Henry Washburn Harris, Author

Acknowledgements

This research was supported in part by the National Institute of Mental Health, grant number R01 MH085502, awarded to M. Margaret Dolcini. I would like to acknowledge and thank the National Institute of Mental Health for this support. I would like to thank Peggy Dolcini for the hard work, patience, and confidence she showed me throughout this process. Without her, I could not have completed this thesis. I'd like to thank Joe Catania for his support and commentary on my writing, his efforts improved my understanding of the literature and the thesis overall. I'd like to thank Ryan Singh for his constant support, guidance, hard work, kindness, and knowledge which I greatly needed in the completion of this thesis. I'd like to thank Melissa Davey-Rothwell for her support and encouragement, as well as her willingness to provide feedback to improve my work. I'd like to thank Rebekah Lancelin for her guidance in the final processes and her participation as a committee member. I'd like to thank Carlos Taloyo for his counsel, persistence, and fervor which instilled in me a confidence that I could not find. Lastly, I'd like to thank my parents, Lorri and Hank, and my brother, Chad, who believed I could accomplish anything even when I didn't think I could.

Introduction

Addressing community health is of importance in both domestic and international domains. In the realm of public health and healthcare, community health issues must be recognized and addressed accordingly to improve health outcomes. Evidence-based interventions (EBIs) that can be implemented in a variety of settings (e.g., domestic, international), represent one avenue available to public health practitioners for addressing common health problems. It is necessary to implement these interventions with high fidelity so that new programs can successfully impact the target population. Implementation is a process of organizational adjustments requiring extensive preparation for applying an intervention from research to a real-world environment. Full implementation unfolds over the course of 2–4 years (Bertram, Blase, Shern, Shea, & Fixsen, 2011; Fixsen, Blase, Naoom, & Wallace, 2009).

The study of how a program proceeds from research to practice and its effects is one area of interest in implementation science. Implementation science is utilized to address the research-to-practice gap as it has proven difficult to apply research in an accessible and relevant program. Approximately 14% of research has been translated into medical practice, with a timeframe of approximately 17 years to effectively implement those programs (Green, Ottoson, García, & Hiatt, 2009). Research on implementation aims to decrease the time between publication of literature concerning an intervention and its subsequent implementation. It also works to efficiently streamline the process through a better understanding of the barriers and facilitators of high-quality implementation.

One of the goals of public health is to encourage agencies to implement programs with evidence of efficacy. With EBIs, agencies use evidence-based practices to guide their interactions (Fixsen, 2005). This ensures a higher likelihood of success for the intervention when delivered.

According to Bertram, Blase, and Fixsen (2014), certain infrastructure elements are required for agencies to deliver programs with high fidelity. These elements, known as implementation drivers, form the infrastructure for successful implementation and include competency drivers, organization drivers, and leadership drivers. For effective implementation, agencies should strive to balance implementation drivers. However, implementation drivers are compensatory, meaning that stronger drivers can compensate for weaker areas in an agency. Agencies can still implement with high fidelity despite poor performance in other drivers. For example, if training is particularly strong in an agency, yet resources for staff selection are lacking, agencies can adjust by utilizing training and coaching to counteract these weaknesses. Competency drivers are particularly important because the staff is a critical aspect of high fidelity implementation. Staff selection, training, and coaching are all important aspects of competency drivers. The focus of our study was implementation as it relates to training and quality assurance (QA), two types of competency drivers which contribute to implementation efforts.

The Center for Disease Control and Prevention (CDC) requires EBI-specific training during implementation which must be available to agencies for improving translation from research to practice. The CDC also considers QA as one of the core components for implementation of EBIs. Both training and QA are shown to be

supporting factors in maintaining high fidelity across agencies (Dolcini, Catania, Gandelman, & Ozer, 2014). Kamb et al. (1998) consider staff competency in HIV counseling and quality-control measures as key factors for improving program fidelity. Dolcini et al. (2010) suggest that well-trained staff and low turnover can further the implementation process, noting that training and supervision are central to implementation. Existing research identifies key training and QA components. These include pre-service training (Fixsen, 2005), didactic training, active learning, role-playing (Burke & Hutchins, 2007), academic detailing (Lyon, Stirman, Kerns, & Bruns, 2011), extended coaching, a written coaching plan (Bertram et al., 2014), and mechanisms for evaluation and feedback (Lyon et al., 2011). However, literature related to training and QA prior to and during implementation is limited. These methods should be investigated to enhance implementation efforts.

Project RESPECT was a randomized controlled trial used to test the efficacy of an evidence-based intervention for HIV/STI prevention. RESPECT consists of a brief, one-on-one counseling session and HIV/STD testing between client and provider (Kamb et al., 1998), which may make it easier to facilitate implementation with high fidelity due to accessibility (Dolcini et al., 2014). RESPECT was originally designed as a two or four session counseling program. However, the CDC adopted and diffused the two-session program, which was widely adopted across the United States. The CDC's policies and training methods regarding program delivery appeared to disseminate successfully among counselors and agencies as well (Dolcini et al., 2014).

During counseling sessions, providers assessed risk factors for the spread of HIV. Providers then addressed and advised against participating in these risk factors to help

reduce risky behaviors (Kamb et al., 1998). RESPECT was delivered in full based on the following factors: sex and drug use, ethnicity, and purpose of visit (Dolcini et al., 2014).

RESPECT has proven effective in reducing the prevalence of HIV and other STIs as well as maintaining client participation. Out of all clients in the Kamb et al. (1998) study, 82% completed all sessions required by the intervention. Client-based HIV/STI counseling reduced STI incidence by 30% after 6 months. In a more recent study, RESPECT reduced the prevalence of bacterial STIs by 15% for injection drug users and 22% for non-injection users over a period of 12 months (Semaan, Neumann, Hutchins, D'Anna, & Kamb, 2010).

The current study examined RESPECT implementation through the "Translation Into Practice" (TIP) study (Dolcini et al., 2014). Although risks were accounted for, portions of the study population did not receive all critical parts of RESPECT. For a program to influence the target populace, at-risk clients must receive the full program. However, this is difficult because agencies must decipher which clients are high-risk and low-risk. The literature shows proper training and supervision could improve the efficiency and affordability of RESPECT (Dolcini et al., 2014).

RESPECT training and QA activities were examined. Data on RESPECT were obtained as part of a larger mixed methods investigation, the TIP study (Dolcini et al., 2014). The TIP study assessed compliance fidelity and diffusion success of RESPECT among adopting agencies. The involved agencies included community-based organizations and public health departments, located in both urban and non-urban areas throughout the United States. Utilizing a maximum variation case study method, we compared two of these agencies. One agency exhibited low-fidelity implementation,

where the other was a high-fidelity agency. In-depth examination of cases provided insight into how differences in training and QA impacted program delivery. Maximum variation provided rich data corresponding to training and QA which improved our understanding of what influences fidelity. The goal of this study was to identify any agency training and QA characteristics which may contribute to the difference in fidelity between agencies exhibiting high fidelity implementation and those exhibiting low fidelity.

Training and QA are important to high fidelity program implementation in practice settings but are rarely the focus of translation research. We hypothesized that agencies delivering EBIs which exhibited high fidelity would be utilizing more effective training and QA methods than that of agencies with low fidelity. The case study elicited sufficient evidence to show that effective training and QA methods contribute to high fidelity implementation. In addition, there is some evidence to show that aspects unrelated to training and QA could contribute to differences in fidelity between the agencies.

Methods

Comparative case studies are effective in determining differences and similarities between separate entities, allowing for the extraction of data dependent on differential contexts and environments. We conducted a maximum variation case study with two agencies providing public health services to their surrounding communities. Both agencies were delivering the evidence-based intervention RESPECT at the time the parent study was conducted (2010). The two agencies were chosen to provide maximum variation in the outcome of interest – program fidelity. The maximum variation method

allowed for evaluating the two opposing extremes to better understand the factors, specifically regarding aspects of training and QA, that affect fidelity. One agency with high fidelity was selected along with another agency exhibiting low fidelity. We assessed staff training and QA methods used by each agency, and their influence on program fidelity as they implemented the RESPECT intervention.

TIP Study

The total number of agencies sampled was 30, selected in categories: urban vs. non-urban and CBO vs. DPH (Dolcini et al., 2014). The goal of sampling was to evenly represent each category. Twenty-six of the agencies provided client exit surveys which were used for assessing program fidelity. In this case study, the goal was to determine the training and QA factors that differed between a non-urban community-based organization (CBO) in the Northeast region of the United States and a non-urban department of public health (DPH) in the Southeast region.

Agency Staff

Agency staff at the two selected agencies included executive directors (ED), supervisors (SUP), program delivery staff (PD), and one combined executive director/supervisor (ED/SUP). The ED/SUP acted as both the executive director of the program and the supervisor for program delivery staff. An ED, a SUP, and two PD's were interviewed at the agency exhibiting high fidelity, the non-urban CBO. An ED/SUP and one PD were interviewed at the low fidelity agency, the non-urban DPH.

Client Exit Survey

Client exit surveys from the TIP study provided data to determine RESPECT fidelity at each agency. Designed to be practical for real-world settings, the surveys,

which were used to assess fidelity, were completed by clients after the first RESPECT session. Client-level fidelity was measured on a scale ranging from 0, where no elements of RESPECT were delivered, to 6, where all elements of RESPECT were delivered. A high-fidelity client is defined as a score of 6. Agency-level fidelity was equal to the percentage of high-fidelity clients for each agency. Agency-level fidelity served as the outcome of interest for this study. Any agency with a fidelity score of 80 percent or more was labeled high fidelity, and any agency with a fidelity score less than 60 percent were considered low fidelity. The two agencies in the case study were selected based upon their agency-level fidelity score. Agency 28, the non-urban CBO, exhibited a high-fidelity score (≥ 80) while Agency 43, the non-urban DPH, exhibited a low fidelity score (≤ 60).

Staff Interviews

During the TIP study, agency staff were interviewed via telephone or in-person, and the interviews were recorded, transcribed, and reviewed to ensure accuracy (Dolcini et al., 2014). The semi-structured interviews consisted of detailed questions intended to elicit agency-specific information related to RESPECT implementation. The interviews included agency overview questions as well as position-specific questions to better understand the interactions between staff roles and their influence on fidelity. In relation to training and QA, questions were asked regarding training methods, prior training, and QA methods. For the case study analysis, we utilized the interview transcripts from the selected agencies. We examined interview transcripts to elucidate the differences in training and QA methods between the two agencies, and how those differences contributed to program fidelity.

Data Analysis

The purpose of a maximum variation case study analysis is to select upper and lower extremes from a population and draw comparisons between them. From these comparisons, conclusions can be made about what may contribute to high fidelity implementation for agencies between extremes on the spectrum. This method required several phases. First, we thoroughly evaluated interview transcripts taken from the TIP study for both agencies. We examined data from all types of agency personnel including program delivery staff, executive directors, supervisors, and those having dual roles within the agency. Each transcript of the case study was read and thoroughly studied multiple times. Once the transcripts had been evaluated, we began comparing transcripts from one agency to the other based upon staff positions (i.e., supervisor).

The transcripts were analyzed using a side-by-side comparison method corresponding to the position held by the staff member (i.e. PD, ED, or SUP). Due to the duality of the ED/SUP's position with Agency 43, the transcript was compared to both the ED and SUP transcripts of Agency 28. Third, we elucidated positive and negative differences pertaining to training and QA. These themes were used as a framework to reassess each transcript. Our research team then interpreted the emerging themes, discussing the way each training or QA discrepancy may have influenced fidelity. Themes are useful for categorizing repeating ideas in the data into specific topics for further analysis (Auerbach & Silverstein, 2003). Thematic analysis allows for identification of overarching or integrative themes that encompass similar ideas into a "coherent narrative." It requires comparison of participant statements and reflection on

their meanings and outcomes (Saldana, 2009). The transcripts were then revisited for supporting quotations and secondary comparisons.

Results

Agency Characteristics

High fidelity agency, Agency 28. Agency 28 exhibited high fidelity in providing RESPECT. Agency 28, a non-urban CBO, employed 12 to 19 staff members, of which 3 were responsible for implementing RESPECT. RESPECT was provided by the HIV/AIDS Prevention Services department, which was responsible for educating clients on reducing the transmission of HIV/AIDS and other STIs. The agency primarily served high-risk women, injection drug users, and men-who-have-sex-with-men (MSM). They did not target a specific racial/ethnic population.

Low fidelity agency, Agency 43. Agency 43 exhibited low fidelity in providing RESPECT. The agency was a non-urban health department, employing numerous employees with 40 staff members working in the HIV/AIDS and STI department. Only one employee was responsible for implementing RESPECT. The agency primarily served HIV positive individuals including injection drug users, MSM, and homeless persons. They served a variety of racial and ethnic backgrounds.

Data

The case analysis revealed 4 themes related to training/QA and fidelity. The four themes are as follows: agency approach to training: “team” versus individual; 2) QA methods; 3) proactive inhibition; 4) training as it relates to program adaptations. Together these findings support the hypothesis that agencies utilizing more effective training and

QA methods will exhibit higher fidelity. Below we discuss how these themes are reflected in each agency.

Approach to training.

High fidelity agency, Agency 28. Agency 28 utilized a "team" approach to training in which both the staff and supervisors attended formal RESPECT training at an external site. A team approach allows for horizontal communication and may lead to higher levels of staff buy-in. The executive director (ED) and supervisor (SUP) of Agency 28 were asked about how they adopted RESPECT. The supervisor replied with "…when we were offered to go to the RESPECT training, we went as a whole department, and we all agreed upon that this was a real easy fit." It appeared that the entire agency was dedicated to RESPECT and, in turn, chose to attend training as a whole. Intervention-specific training improves staff buy-in and understanding as well as promotes skill development, however, it is most effectively applied when paired with coaching. Coaching and QA methods are more effective when supervisors are themselves well trained (Bertram et al., 2014).

Low fidelity agency, Agency 43. In contrast, the supervisors in Agency 43 did not participate in RESPECT training. When asked about the types of RESPECT-specific training received, the ED/SUP said, "The staff person responsible for conducting RESPECT intervention attended a training, a two-day training…" and later stated, "I guess just a clarification that we weren't participating in the training... but the PEMS Administrator and myself, we were – and so we didn't receive a certificate…" The ED/SUP of Agency 43 observed the formal RESPECT training at an external site but did not participate. The program delivery staff member of Agency 43 (PD) did participate in

the formal training. It appeared that the ED/SUP believed merely observing the training would be preparation enough. However, the literature shows that attempting to absorb information through presentation alone is ineffective in producing the provider behavior changes necessary for high fidelity implementation (Lyon et al., 2011). Role-playing and active rehearsal are key components to modifying provider conduct (Burke & Hutchins, 2007). Supervisor training also contributes to improved staff buy-in and better support for delivery staff at the agency (Bertram et al., 2014).

Quality assurance methods.

High fidelity agency, Agency 28. QA procedures utilized at Agency 28 were thorough and included a written protocol. Bertram et al. (2014) discuss the importance of having and adhering to a written coaching protocol. The agency's protocol consisted of a risk reduction form, listing all necessary client information in the case that the overseeing staff was replaced, as well as ongoing training and education, evaluation of program delivery staff with feedback mechanisms, and intermittent case conferences between supervisors and delivery staff.

> …we have written protocol, because we have our risk reduction form, we have several forms that we go over with someone when we're counseling and testing. So that even if one of my colleagues was out sick and the client came back for the second session, based on the paperwork that they already did, I'd be able to pick it right up because they would already have what the risk was, you know, what issues need to be addressed, if they needed a retest, they, if there was any referrals. Everything would be listed. (SUP)

Both delivery staff members stated there was a written protocol, however, the second program delivery staff member (PD2) had not been following the protocol. "PD2: I use the Provider Cards, so the Provider Cards, you know, are pretty much an outline. The quality assurance form is pretty much an outline of what's in the cards so therefore I do lack."

As noted earlier, continued education in collaboration with coaching (Bertram et al., 2014) as well as direct observation and feedback (Lyon et al., 2011) are important QA components for high fidelity implementation. Agency 28 provided ongoing training and education, evaluation of program delivery staff with feedback mechanisms, and intermittent case conferences between supervisors and delivery staff.

> We actually do everything you just said. Ongoing training, each client has their individual file… You know, if we have any additional paper, it's just added into their file. Then we have observation. So we really do all of that and, of course, always continuing education. (SUP)

The agency's QA also included case and program record reviews.

Low fidelity agency, Agency 43. Unlike that of Agency 28, Agency 43 appeared to lack effective QA methods. Bertram et al. (2014) stressed that for coaching to be successful, a written plan must exist, be well-organized, and be correctly followed. Agency 43 did not have a written protocol, had limited QA methods included in the unwritten protocol, and did not provide extensive coaching. In response to the

interviewer's statement, "You said that your QA procedures are unwritten" the ED/SUP replied, "Right." However, the PD did not believe there was a written or unwritten protocol. When asked if there was an unwritten protocol, PD responded, "Not that I'm aware of. No." The statements made by the PD and ED/SUP differed in other areas as well. The ED/SUP said the unwritten plan contained training and education for delivery staff and supervisors and case conferences between supervisors and delivery staff. Conversely, it did not include overview of case and program records, observation of delivery staff with feedback mechanisms, an important factor for coaching (Lyon et al., 2011), or a method of evaluating the ED/SUP's oversight of RESPECT, an important factor for supervisor accountability and provider skill development (Bertram et al., 2014). The PD stated there were no case conferences between supervisors and program delivery staff, but that case and program records were reviewed. The PD's statements were contradictory to that of the ED/SUP, suggesting that effective QA procedures were not utilized. However, these inconsistencies may be due to memory difficulties for the PD or the ED/SUP, or outside interactions between the ED/SUP and other PDs who were not interviewed.

Proactive inhibition. Proactive inhibition occurs when the ability to acquire new information is hindered because of preexisting knowledge. Congruence with existing experiences can alter the perspective of providers at agencies and "frame their expectations" to fit the new intervention (Lyon et al., 2011).

High fidelity agency, Agency 28. There was no evidence suggesting Agency 28 experienced proactive inhibition. Agency 28 utilized RESPECT as a supplement to current grant services. This became their primary intervention due to the overwhelmingly

positive outlook experienced by the staff. The SUP stated, “When our next grant cycle comes along we’ll probably be writing this into the grant.”

Low fidelity agency, Agency 43. Evidence suggests that Agency 43 experienced proactive inhibition among staff. The ED/SUP stated RESPECT was integrated into the existing program, suggesting that it would remain in place. “ED/SUP: It became part of the set curriculum for our CRCS [Comprehensive Risk Counseling Services] program, so it was integrated into the CRCS program—and implemented as a separate piece of what that prevention specialist was doing.” The PD also mentions utilizing both the existing CRCS program mentioned above as well as the RESPECT counseling sessions.

> With the ones that I’m doing Rapid testing. The ones that I’m doing testing – HOWEVER there’s clients that I will SEE for a second session if they’re part of another program I work with which is Comprehensive Risk Counseling Services. THEY will get two sessions. (PD)

Due to the presumed similarities between RESPECT and the existing program, the agency staff viewed RESPECT as synonymous with the existing program.

> The overlap between the RESPECT intervention itself, and what’s just a regular counseling and testing session and the training for the RESPECT intervention and the training that we locally provide for the HIV prevention and behavior change course are pretty similar, and it’s kind of confusing to provide, to separate the two. (ED/SUP)

While attempting to provide RESPECT and CRCS simultaneously, the staff likely delivered the existing program rather than RESPECT. This would account for a low fidelity score as the clients would not receive the full RESPECT program.

Training as it relates to program adaptations.

High fidelity agency, Agency 28. Agency 28 did not experience a mismatch between training received and the adaptations to RESPECT. The RESPECT program allowed for an adaptation if an agency wanted to provide Rapid HIV Testing. This adaptation required that RESPECT is provided in a single session instead of the regular two counseling sessions. Agency 28 did not provide Rapid HIV Testing, and therefore delivered RESPECT consistent with training received.

Low fidelity agency, Agency 43. Agency 43 did experience a mismatch between RESPECT adaptations and the received training. The agency adapted RESPECT to fit the rapid testing format. Prior to the adaptation, the PD had not been trained to do any HIV testing. None of the HIV testing was done at the agency.

> So the person implementing RESPECT has just began doing testing as a part of RESPECT. That's brand new. Prior to that, none of our staff had done any HIV testing but we contract agencies to provide testing… [PD] just got trained in rapid testing maybe a month ago… Our [agency] staff didn't do any direct testing. (ED/SUP)

The following excerpts from the interview with the PD show the lack of training for the adaptation:

> I think a major – I think for me it was like a leap – a big leap when – when I started actually uh, providing uh, the Rapid test and looking at one session… I think that was the most difficult um, thing to conceptualize… because I don't remember in the training or I don't remember in the training from [the external site] where they talked about – the training was for two sessions... so this whole thing about – uh, doing the Rapid testing and um, in the – the one session was kind of just kind of remarkably um, surprising to me. I mean, you know, it – it's WORKING but it's, "Hum…how well?" (PD)

> So, that's – that's kind of remained a – a question in my mind. "How do you, how do you maintain the fidelity of the intervention when there's no follow-up with the client regarding short-term goals or – and/or seeing if they – what behavior change they HAD when you're doing a one-session Rapid?"…It doesn't make any sense if it's a one-session testing model, how do you measure behavior change if you don't see them again? (PD)

> I: …have there been any barriers to implementing RESPECT?
> PD: Um, I think it was that transition to be – being trained in two sessions. Now it's, you know, being utilized in one session for Rapid testing.

Because the PD was trained in the two-session method of RESPECT and had no formal training for the one session rapid testing method, this mismatch likely diminished fidelity during implementation.

Management training and experience. Although thematic analysis revealed evidence that agencies utilizing effective training and QA methods exhibit higher fidelity, some evidence indicated both agencies utilized similar training and QA methods and would be perceived as prepared to provide respect with high fidelity.

High fidelity agency, Agency 28. The ED of Agency 28 had recently begun working in HIV Prevention (3 months) and had not yet been trained in RESPECT. The ED of Agency 28 did have formal management training and had extensive training in interventions. PD1 and PD2 had worked 1 year and 3 years at the agency, respectively.

Low fidelity agency, Agency 43. The ED/SUP of Agency 43 was also formally trained in management and well trained in interventions. This suggests both the ED/SUP of Agency 43 and the ED of Agency 28 would be equally capable for the position. The ED/SUP of Agency 43 had been working for the department for 2 years and as the ED for 4 months. With more experience, the ED/SUP would seem better prepared for implementing RESPECT in comparison to the ED at Agency 28. The PD at Agency 43 had been working with the agency for 5 years and had been a social worker for 20 years. The PD for Agency 43 had much more experience working with clients and providing public health services than that of the Agency 28 PD's. Despite higher levels of experience at Agency 43, which could indicate higher fidelity, the agency exhibited low fidelity.

Staff training and resources. Training received by program delivery staff and perceived staff confidence in providing RESPECT differed between agencies. The CDC also provided guidance materials for RESPECT implementation to agencies, and both the PDs at Agency 28 and the PD at Agency 43 used these materials to guide counseling sessions. Because both agencies utilized the CDC-sanctioned RESPECT guidance materials, both agencies should exhibit similar levels of fidelity. However, Agency 43 exhibited low fidelity.

High fidelity agency, Agency 28.

PD1 of Agency 28 did not receive external training on RESPECT but was internally trained by a colleague. This training, although RESPECT-specific, might not have been as thorough or as beneficial as that of external training from a RESPECT training facility. PD2 of Agency 28 did receive RESPECT-specific training at a formal training center.

During the TIP study interviews, each PD was asked several questions related to the need for more training. These questions were meant to elicit responses that reflect providers' confidence in their abilities or the efficacy of the implementation process. Both PD's at Agency 28 stated they would like more training in one or more areas. This suggests the delivery staff at Agency 28 were not completely confident in their ability to provide RESPECT with high fidelity.

Low fidelity agency, Agency 43. PD of Agency 43 received RESPECT-specific training at a formal training center. This suggests that PD of Agency 43 would be well-equipped and well-trained to provide RESPECT at high fidelity. PD at Agency 43 would

be perceived as better trained in RESPECT than PD1 at Agency 28. The average level of formal external training per PD would, therefore, be higher at Agency 43.

The PD at Agency 43 did not mention a need for more training in any area and was confident in counseling ability. This suggests the Agency 43 delivery staff would be perceived as more confident and more efficient in providing RESPECT.

Alternative Hypothesis

We found evidence suggesting an alternative hypothesis about the influences on program fidelity. The alternative hypothesis suggests that discrepancies in fidelity measurements are related to the use of RESPECT pilot sessions. Pilot sessions were not considered as part of training and quality assurance for this study as they occur prior to implementation. Pilot sessions present an opportunity for delivery staff and supervisors to practice providing the full program prior to implementation. Acting as trials, pilot sessions allow staff to become more familiar with RESPECT, and in turn, provide RESPECT with higher fidelity.

High fidelity agency, Agency 28. When asked if the agency utilized pilot sessions prior to implementation, the SUP of Agency 28 stated, “There was a couple of practice runs.” The SUP then said the agency learned, “that [RESPECT] was just a natural fit, and we didn’t need to make adaptations.”

Low fidelity agency, Agency 43. When the ED/SUP at Agency 43 was asked the same question, the ED/SUP replied, “I don’t believe so. No… [PD] practiced through the role-playing at the training. Outside of that, no. I think [PD] just directly went into doing it in practice with the clients.” The lack of pre-implementation pilot sessions may have

contributed to lower fidelity. This suggests that holding pilot sessions for RESPECT prior to implementation could improve agency-level fidelity.

Discussion

Our case study examined the methods of training and QA used by two agencies, one high and one low fidelity, implementing RESPECT. Our purpose was to explore the ways in which training and QA related to overall agency-level fidelity. Prior research shows that training and QA methods, such as role-playing and coaching, improve implementation efforts for EBIs. The current study provides evidence supporting the need for adequate training and QA to implement an intervention with high fidelity and highlights how deficiencies in these areas are detrimental to fidelity. Our findings suggest that team-based training and a written QA protocol that includes several effective QA methods are key components for high fidelity implementation, whereas proactive inhibition and failure to train for adaptations induce low fidelity implementation. By directly comparing Agency 28 (high fidelity) and Agency 43 (low fidelity), our study allowed us to closely examine implementation factors that were specific to training and QA.

In this case study, a theme of team-oriented implementation versus a more individual approach emerged as a leading factor in training and QA contributing to the fidelity of RESPECT. Interactions and communication between administrators, supervisors, and providers may impact an agency's training and QA approach and in turn, are important to discuss as a possible factor which impacts fidelity. Many agencies operate with a top-down approach where top-level staff make decisions and decide the

agency's direction with a new intervention. These decisions are then passed on and enforced by lower level staff with direct or indirect oversight. Administrators and directors lead the intervention process including selection, adoption, pre-implementation planning (i.e. the method of training and measures for QA), and post-implementation oversight (i.e. adaptations, adjustments, future training, and adherence to in-place QA methods). Directors may or may not be directly influencing or adjusting staff behavior and receiving feedback about intervention progress. Program delivery staff provide the intervention to the community, acting as the primary contact with clients and the target population. These interactions have the highest influence on client health outcomes and are the source of fidelity measurements. Providers act as the liaison between the intervention guidelines and administrative direction and client behavior change. Supervisors act as the middle layer of oversight, with both direct communication to directors and providing staff, suggesting the importance of their role.

These findings may indicate that a strong sense of unity and buy-in, as well as collaboration between administrators and delivery staff, would improve implementation fidelity in the early and later stages. The focus for administration and staff should be around facilitating multilevel interactions and improving the methods for administrative and staff assessment and feedback. As fidelity is a strong predictor of intervention success, this research indicates that collaboration may be influential to program fidelity and is an important aspect of the implementation process to achieve improved community health outcomes. Further research into the mechanisms behind team culture and collaboration in implementation science may elicit more information into developing this approach.

QA practices did appear to correlate with higher fidelity, particularly related to having a strong, integrated protocol, ubiquitous throughout the agency with documentation and clear methods and goals. A well-defined QA protocol appears to positively impact the fidelity of program implementation, and therefore, is likely a key component of interest for improving public health outcomes. Further research into the utilization of a standardized QA protocol with clearly outlined procedures and goals could aid in the development of a protocol which improves implementation fidelity.

The theme of proactive inhibition developed through this study, revealing a negative impact on the fidelity of RESPECT implementation. Defining the new program with respect to the prior program and acknowledging the similarities and differences between the competing programs may aid in implementation to attain higher levels of fidelity. It may be important to acknowledge and appreciate the impact of contending program elements and provide extended resources in order to better assist agencies in maintaining desirable fidelity measures. Improved understanding of program guidelines and new versus old ideologies may allow agencies to better serve the communities they work with. Agencies may benefit by focusing training and QA efforts into building staff confidence for delivering the new program versus the old program. Further research into program identification and separation of new program goals from prior programs may illuminate specific areas of inhibition leading to deficient fidelity measures.

Another theme which emerged from the case study corresponded to training related to program adaptation. This primarily relates to agencies utilizing Rapid HIV and STD Testing, a specified adaptation noted in the original RESPECT guidelines. Insufficient training in accordance with this adaptation appeared to negativity affect

implementation fidelity. Therefore, attention to training and QA methods as they relate to program adaptations may improve fidelity measures and ultimately enhance efforts to improve health outcomes. Further study into the training methods and continued QA may allow for the development of better training and QA strategies which mitigate program adaptation difficulties.

Implications for International Implementation

The current study examined agencies delivering a counseling and testing intervention (i.e., RESPECT) in the U.S., however, voluntary counseling and testing interventions have been disseminated worldwide. Implementation of EBIs internationally requires consideration of context and populations. It is important to consider aspects of training and QA for implementing EBIs to ensure the programs can be implemented effectively in international settings. Cultural barriers have the potential to affect intervention outcomes if not accounted for early in the implementation stages. According to Packel et al. (2012), intervention failure appears to be due in part to barriers to behavioral change that stem from the economic or social environment in which an individual lives (e.g., social determinants).

International implementation of counseling and testing programs have revealed how social and cultural factors may create barriers that will impact program effectiveness. Packel et al. (2012) note studies done in Tanzania and Kenya revealed that married women sometimes avoid discussing their HIV status with their partners due to fear of abandonment, accusations, physical violence, and loss of confidentiality. Two studies from Tanzania showed that only 17% of women in the first study and 40% in the second chose to disclose their HIV status, even after time spent in follow-up. Reasons for

nondisclosure appeared to be multifaceted, including fear of stigma and divorce, loss of confidentiality, lack of decision-making power in relationships, lack of communication between partners, and the attitudes of their male partners towards voluntary HIV counseling and testing. Thus, agencies that implement counseling and testing programs in African countries may need to adapt the program to address social and cultural factors that inhibit participation and disclosure. Corresponding changes to training and QA will be required.

According to Mckleroy et al. (2006), pre-testing interventions and creating materials for implementation can help to ensure that staff is culturally competent and responsive to the needs of the target population. It specifies that this should include multiple areas of consideration such as reading level, community values and norms, and the likelihood of population interest. Health messages and intervention activities should be pre-tested to determine if instructions and messages are understood and well received by the new target population. Training practices should, therefore, be adapted to instruct staff how to address cultural barriers and what adaptations to the intervention are necessary. As mentioned earlier, pilot studies may enhance implementation efforts domestically, and likely in international settings as well. Like pre-testing, pilot studies allow agencies to introduce the intervention prior to implementation, which may be particularly advantageous in an international location. This could also allow for pre-implementation coaching and role-playing exercises, two examples of training methods shown to improve fidelity during implementation.

When EBIs are translated into practice, it is important to consider the need for adaptations (Zayas, Bellamy, & Proctor, 2012) This is equally true in domestic and

international settings. Thus, maintaining the structural fidelity of adapted interventions requires adaptation-specific training and QA. Mckleroy et al. (2006) emphasize the importance of maintaining fidelity to core elements when adapting an EBI to fit the needs of the target population and/or agency. It is suggested that agencies be trained by experts of the intervention to improve understanding and ultimately implementation fidelity. Adaptation-specific training, as noted earlier, appears to be a crucial factor in program fidelity, particularly in international implementation. QA also appears to be important in maintaining the fidelity of an internationally adapted intervention. Mckleroy et al. (2006) note that agencies should maintain strong QA methods when interventions are adapted. This may allow for higher fidelity implementation and ensure adaptations are not detrimental to the core structure of the intervention.

A team approach to training may be advantageous in international settings to allow for consistent understanding among staff. McKay, Dolcini, and Catania (2017) note agencies most successful at implementing RESPECT maintained individual staff with "innovation-specific" skills, including RESPECT-specific training, and general skills, such as general counseling experience. Agencies with the correct number of staff with these skills had a higher capacity to deliver RESPECT. Thus, by leveraging a team approach, agencies could improve capacity for delivery and fidelity of implementation by training staff as a whole. Higher levels of staff buy-in could enhance training and QA efforts, and as noted earlier, allow for higher fidelity implementation. Staff origin may be a factor in implementation fidelity as well. Team-specific training could indicate directly training local agency staff in an international environment or training a team of domestic staff to deliver an intervention internationally. Team-oriented training could facilitate

improved understanding and implementation fidelity. However, further research into staff origin may elucidate which method of training for international implementation produces the highest level of intervention fidelity and overall improved community health.

Cultural competency and understanding barriers to implementation would be necessary to implement an intervention internationally. These barriers would require training specific to the area of interest to improve upon implementation efforts and facilitate cultural barriers. QA would allow for agencies to maintain fidelity throughout the implementation process, accounting for international adaptations. This demonstrates the importance of training and QA, both domestically and internationally. Thus, the current study could aid in international implementation. Further research into these findings in an international setting is warranted to better understand the influence on fidelity, both internationally and domestically.

Limitations

The maximum variation case study did have limitations, including the inability to generalize to other programs or agencies. Additionally, we did not examine agencies with moderate levels of fidelity. Prior literature does, however, led us to believe training and QA practices are important to high fidelity implementation, and our findings appear to underscore elements for further study within the training and QA framework.

Resources

Auerbach, C. F., & Silverstein, L. B. (2003). *Qualitative data: An introduction to coding and analysis*. New York: New York University.

Bertram, R., Blase, K., Shern, D., Shea, P., & Fixsen, D. (2011). Policy research brief: Implementation opportunities and challenges for prevention and promotion initiatives. *Center for Mental Health Services, Substance Abuse and Mental Health Services Administration*.

Bertram, R. M., Blase, K. A., & Fixsen, D. L. (2014). Improving Programs and Outcomes. *Research on Social Work Practice, 25*(4), 477-487.

Burke, L. A., & Hutchins, H. M. (2007). Training Transfer: An Integrative Literature Review. *Human Resource Development Review, 6*(3), 263-296.

Dolcini, M. M., Gandelman, A. A., Vogan, S. A., Kong, C., Leak, T.-N., King, A. J., … O'Leary, A. (2010). Translating HIV interventions into practice: Community-based organizations' experiences with the diffusion of effective behavioral interventions (DEBIs). *Social Science & Medicine, 71*(10), 1839–1846.

Dolcini, M. M., Catania, J. A., Gandelman, A., & Ozer, E. M. (2014). Implementing a brief evidence-based HIV intervention: a mixed methods examination of compliance fidelity. *Translational Behavioral Medicine, 4*(4), 424–433.

Fixsen, D. L. (2005). *Implementation research: A synthesis of the literature*. Tampa, FL: National Implementation Research Network.

Fixsen, D. L., Blase, K. A., Naoom, S. F., & Wallace, F. (2009). Core Implementation Components. *Research on Social Work Practice*, *19*(5), 531–540.

Green, L. W., Ottoson, J. M., García, C., & Hiatt, R. A. (2009). Diffusion Theory and Knowledge Dissemination, Utilization, and Integration in Public Health. *Annual Review of Public Health, 30*(1), 151–174.

Kamb, M. L., Fishbein, M., Douglas, J. J., Rhodes, F., Rogers, J., Bolan, G., . . . Peterman, T. A. (1998). Efficacy of Risk-Reduction Counseling to Prevent Human Immunodeficiency Virus and Sexually Transmitted Diseases. *Jama,280*(13), 1161.

Lyon, A. R., Stirman, S. W., Kerns, S. E. U., & Bruns, E. J. (2011). Developing the Mental Health Workforce: Review and Application of Training Approaches from Multiple Disciplines. *Administration and Policy in Mental Health and Mental Health Services Research, 38*(4), 238–253.

Mckay, V. R., Dolcini, M. M., & Catania, J. A. (2016). Impact of Human Resources on Implementing an Evidence-Based HIV Prevention Intervention. *AIDS and Behavior, 21*(5), 1394-1406.

Mckleroy, V. S., Galbraith, J. S., Cummings, B., Jones, P., Harshbarger, C., Collins, C., . . . ADAPT team (2006). Adapting Evidence-Based Behavioral Interventions for New Settings and Target Populations. *AIDS Education and Prevention,18*(Supp), 59-73.

Packel, L., Keller, A., Dow, W. H., Walque, D. D., Nathan, R., & Mtenga, S. (2012). Evolving Strategies, Opportunistic Implementation: HIV Risk Reduction in Tanzania in the Context of an Incentive-Based HIV Prevention Intervention. *PLoS ONE,7*(8).

Saldana, J. (2009). Coding Manual for Qualitative Researchers. SAGE Publications.

Semaan, S., Neumann, M. S., Hutchins, K., D'Anna, L. H., & Kamb, M. L. (2010). Brief counseling for reducing sexual risk and bacterial STIs among drug users—Results from project RESPECT. *Drug and Alcohol Dependence*, *106*(1), 7–15.

Zayas, L. H., Bellamy, J. L., & Proctor, E. K. (2012). Considering the Multiple Service Contexts in Cultural Adaptations of Evidence-Based Practice. *Dissemination and Implementation Research in Health: Translating Science to Practice,* 483-497