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Article in *Journal of Evidence-Based Social Work* · November 2019

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To cite this article: Hanni B. Flaherty, Lindsay A. Bornheimer, Emily Hamovitch, Elene Garay, Maria L. Mini De Zitella, Mary Acri & Mary Mckay (2019): Examining Provider Factors Supporting the Adoption and Use of Research-Supported Interventions, Journal of Evidence-Based Social Work, DOI: [10.1080/26408066.2019.1666768](https://doi.org/10.1080/26408066.2019.1666768)

To link to this article: <https://doi.org/10.1080/26408066.2019.1666768>



Published online: 24 Nov 2019.



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Examining Provider Factors Supporting the Adoption and Use of Research-Supported Interventions

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ABSTRACT

Purpose: The purpose of this study was to examine the factors associated with the adoption of research-supported interventions (RSIs) in outpatient mental health clinics serving youth in order to inform implementation efforts and ultimately improve treatment outcomes. **Method:** This explanatory cross-sectional study includes secondary data from a clinical trial of an innovative group-based RSI in public mental health clinics for youth in New York City. Structural Equation Modeling examined the relationships between attitudes toward and beliefs of RSIs and uptake/use of RSIs in practice among providers in mental health settings. **Results:** As providers attitudes toward and beliefs about RSIs became more favorable, on average, RSIs were used more in practice in mental health settings serving youth. **Conclusion:** These findings indicate attitudes toward, and beliefs about innovation can be a precursor to the decision whether or not to use an innovative RSI in clinical practice in these settings. Implications and future directions are discussed.

KEYWORDS

Research-supported interventions (RSI); provider beliefs; attitudes; implementation; Structural Equation Modeling (SEM)

A significant barrier to effective mental health care is the low rate of the adoption and implementation of research-supported interventions (RSI) in outpatient mental health settings. Despite the growing body of literature of effective interventions (Chorpita et al., 2011; Glisson, Williams, Hemmelgarn, Proctor, & Green, 2016; Weisz & Gray, 2008; Weisz et al., 2013), these innovations are not being implemented. The benefits of incorporating research-supported interventions in mental health settings is well documented (Aarons, Fettes, Flores, & Sommerfeld, 2009; Aarons & Sommerfeld, 2012; Baer et al., 2009; Evans, Koch, Brady, Meszaros, & Sadler, 2013; Garland et al., 2010; Hoagwood, Kelleher, Feil, & Comer, 2000; Wonderlich et al., 2011). However, the poor uptake of research-supported interventions in mental health care settings, with conventional estimates suggesting that it takes between 15 to 20 years before new practices are adopted in community-based mental health settings (Mohr, Riper, & Schueller, 2018), continues to be one of the major barriers to providing safe, effective and efficient care (Novins, Green, Legha, & Aarons, 2013). This gap between knowledge and practice results in decreased quality care for the youth and families who utilize the public mental health system.

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Evidence-based intervention is a clinical practice that is informed by evidence about interventions, clinical expertise, and patient needs, values, and preferences and the integration of this information in decision making about individual care. An evidence-based intervention involves complex and conscientious decision-making by the service provider based not only on the available evidence but also on patient characteristics, situations, and preferences (Kazdin, 2011). Evidence-based intervention in health care settings recognizes health care as individualized and ever-changing, but treatment should be grounded in scientifically proven effective interventions whenever possible.

Attitudes and beliefs about innovations can be a precursor to the decision of whether or not to try an innovation (Aarons, 2004). However, little is known about the impact of mental health service provider attitudes and beliefs on the adoption of research-supported interventions (Borntrager, Chorpita, Higa-McMillan, & Weisz, 2009). The attitudes and beliefs of clinical service providers toward organizational change have been minimally studied, and these studies have limited generalizability due to their sample size. Most of the previous studies examining provider attitudes and beliefs of innovations in mental health systems have focused on psychologists' attitudes regarding the use of treatment manuals and research-based information (Addis & Krasnow, 2000; Addis, Wade, & Hatgis, 1999; Morrow-Bradley & Elliott, 1986; Prochaska & Norcross, 1983). Further, these studies have not specifically focused on the use of research-supported interventions. This research also focused on examining highly educated providers (i.e., doctoral level). As a result, these studies may not be generalizable. The majority of providers in outpatient mental health settings do not have doctoral-level training. Further, providers' attitudes and beliefs may not be the same among the large population of master level providers and may differ across disciplines (e.g., psychology vs. social work) (Aarons, 2004). The attitudes and beliefs of master level providers have not been well studied.

Literature indicates some specific factors may impact provider attitudes and beliefs toward the adoption of research-supported interventions. These factors include the education, training, and professional and personal experience of the providers (Aarons, 2004; Aarons, Hurlburt, & Horwitz, 2011; Birlleson, 1999; Damanpour, 1991; Glisson, 2002; Loy, 1969). Previous research has found that educational attainment has been positively correlated with positive attitudes and beliefs toward research-supported interventions and the adoption of such practices. A pivotal study conducted by Ogborne, Wild, Braun, and Newton-Taylor (1998) found that non-certified counselors were more likely to adhere to traditional concepts and treatment of substance abuse disorders than their more highly educated and certified counterparts. These findings indicate that providers with higher educational attainment but with less clinical experience are more likely to have positive feelings and beliefs related to the use of clinical innovations and RSI use as compared to less educated but more experienced providers. Aarons (2004) also indicated that practitioners who are still completing their education and transitioning into professional roles (e.g., interns in the practicum experience phase) might be more adaptable to learning the most recent and effective innovations and practices. Clinical interns are thought to be less influenced by a long history of clinical practice, as their training is still in progress. As a result, it is likely that interns will be more open to the adoption of research-supported interventions as compared to providers who have been practicing for longer periods (Aarons, 2004).

The purpose of this study was to develop a greater understanding of the factors influencing the adoption and implementation of research-supported interventions in outpatient mental health clinics serving youth. As such, this study aimed to explore the relationship between provider beliefs and the adoption of research-supported interventions among outpatient mental health providers.

Method

This study is a secondary data analysis of a larger NIMH-funded project entitled the *4 Rs and 2 Ss for Strengthening Families* (4 Rs and 2 Ss), an evidence-informed, family-centered, group delivered, manualized intervention. The 4 Rs and 2 Ss intervention targets families of youth between 7 and 11 years of age with disruptive behavior disorders (see Chacko et al., 2015; Gopalan et al., 2015 for more information).

Participants

Data were obtained for 52 providers from 134 New York City licensed child mental health clinics that participated in the original study (see Acri, Hamovitch, Garay, & McKay, 2017) for a description of the larger trial).

Measures

Provider demographic characteristics, including age, race and ethnicity, education and employment, caseload, license and payment type, and years in practice were captured via a demographic form used in previous studies.

Innovation adoption is the decision to proceed with a full or partial implementation of the latest evidence-based intervention. In this study, the implementation of the 4Rs and 2Ss intervention, evidence-based intervention by outpatient mental health clinics in New York City, is used as a proxy for innovation adoption. In short, the 4rs and 2s intervention is an evidence-based, family-centered, group delivered, manualized intervention that targets youth oppositional defiance and conduct disorders. The process of innovation adoption consists of two major phases: the initiation and the implementation phases representing the pre-and post-adoption decision activities of the innovation adoption process (Damanpour & Schneider, 2009). This study focused on the implementation phase because the 4Rs and 2Ss is currently being implemented in the outpatient mental health clinics included in the study. The adoption and implementation of the 4Rs and 2Ss in outpatient mental health settings was evaluated in this study in the discussion of innovation adoption.

Innovation adoption was evaluated as the implementation of the 4Rs and 2Ss intervention, an evidence-based intervention, and was measured with the Training Exposure and Utilization Scale (TEU). The Training Exposure and Utilization scale measures adoption (e.g., frequency of attendance and adoption of new techniques) by using a scale of 6 questions made up of a 5-point Likert scale (1 *Never*; 5 *Almost Always*). Scoring procedures are based on previous research, and all scoring procedures are psychometrically validated reporting a Cronbach's alphas range from .72 to .92 (Lehman, Greener, & Simpson, 2002; Saldana, Chapman, Henggeler, & Rowland, 2007).

The beliefs and attitudes of mental health providers toward research-supported interventions are the most important factors in the adoption and implementation of innovation (Aarons & Sommerfeld, 2012). Provider attitudes toward innovation can be a precursor to the decision whether or not to implement a new evidence-based intervention. Provider beliefs and attitudes are defined as the “four distinct constructs involving a willingness to adopt research-supported interventions” (Aarons, 2004, p. 71). These constructs include (1) their intuitive appeal, (2) willingness to adopt new interventions if required, (3) general openness toward new or innovative practices, and (4) perceived divergence of usual practice with academically developed or research-based practices.

Provider beliefs are measured with the use of the Evidence-Based Practice Attitude Scale (EBPAS) and the Measure of Beliefs about Participation in Family Centered Service Delivery (MBP-FCS). The Evidence-Based Practice Attitude Scale measures attitudes toward research-supported interventions among social service providers who specialize in child and adolescent mental health (Aarons, 2004). The Evidence-Based Practice Attitudes Scale Total scale score represents the provider’s global attitude toward the adoption of research-supported interventions. The Appeal Subscale, which represents the extent to which the provider would adopt research-supported interventions if intuitively appealing, perceived with ease of use by providers and/or by colleagues who were satisfied with it. The Requirements Subscale assesses the extent to which the provider would adopt research-supported interventions if they were required by an agency, supervisor, or state. The Openness Subscale assesses the extent to which the provider is generally open to trying new interventions and would be willing to try or adopt research-supported interventions. The Divergence Subscale assesses the extent to which the provider perceives research-supported interventions as not clinically useful and less important than clinical experience (Aarons & Sawitzky, 2006). The measure is a 15-item 5-point Likert scale (ranging from *not at all* to *a very great extent*) with a total score and four subscales (requirements, appeal, openness, and divergence). The Evidence-Based Practice Attitude Scale is reported to have strong psychometric properties. The overall Cronbach’s alpha reliability for the Evidence-Based Practice Attitudes Scale is good ($\alpha = .77$) and subscale alphas range from .90 to .59 (The Appeal Subscale $\alpha = .80$, the Requirements Subscale $\alpha = .90$, the Openness Subscale $\alpha = .78$, and the Divergence Subscale $\alpha = .59$). The Evidence-Based Practice Attitudes Scale validity is supported by associations of Evidence-Based Practice Attitudes Scale with both individual provider-level attributes and organizational characteristics (Aarons, 2004).

Analysis

Preliminary analyses, including descriptive and bivariate statistics, were conducted using SPSS 24. Structural Equation Modeling (SEM) was used with MPlus 8 to evaluate the study aim at baseline with Huber-White estimation algorithms and Full Information Maximum Likelihood (FIML) methods. The SEM model, as evaluated for goodness of fit using global and focused fit indices. The model included a summed score of provider beliefs as the exogenous variable and use of RSI as the endogenous variable. The following covariates were included in the model: provider age, number of years in the field, license type (family Development Credentials, PEP Certificate, Social Work Licensing, Psychology Licensing, Board Certified MD, or other), and status of the current use of an evidence-based intervention (yes/no).

Results

All demographic characteristics of participants are presented in Table 1. Of the 52 participants in the sample, the mean age was 41.74 (± 15.18); the mean years in practice was 13.06 (± 11.40); the mean years in current clinic was 4.61 (± 6.29). The majority of the sample identified as White/Caucasian (54%) and non-Hispanic/Latino (56%). Eighty-eight percent held a graduate degree, 83 percent had a social work license (LCSW or LMSW), 62 percent were employed full time, and 62 percent were salaried. One

Table 1. Demographic characteristics of the 4Rs and 2Ss provider sample (n = 52).

Characteristic	n	%
Age (M \pm SD)	46	41.74 \pm 15.18
Number of Years in Practice (M \pm SD)	50	13.06 \pm 11.40
Number of Months in Practice (M \pm SD)	51	2.86 \pm 3.35
Number of Years in Clinic (M \pm SD)	51	4.61 \pm 6.29
Number of Months in Clinic (M \pm SD)	51	3.18 \pm 3.31
Race		
American Indian or Alaska Native	1	1.9
Asian	1	1.9
Black or African American	11	21.2
Native Hawaiian or Pacific Islander	1	1.9
White	28	53.8
Ethnicity		
Hispanic/Latino/Spanish	17	32.7
Non-Hispanic/Latino/Spanish	29	55.8
Education		
College Graduate	1	1.9
Graduate School	46	88.5
PhD or MD	4	7.7
Other	1	1.9
License		
Social Work LCSW or LMSW	43	82.7
Psychology License	1	1.9
Board Certified MD	2	3.8
Other	6	11.5
Employment		
Full Time	32	61.5
Part Time	20	38.5
Payment Type		
Salary	32	61.5
Fee For Service	18	34.6
Other	1	1.9
Direct Contact with Clients		
Yes	52	100
No	0	0
Caseload		
No	1	1.9
Yes, Individuals	31	59.6
Individuals and Groups	20	38.5
Role		
Therapist or Clinician	47	90.4
Parent Advocate	1	1.9
Other	3	5.8
EBP Training		
Yes	39	75.0
No	13	25.0
Using EBP		
Yes	36	69.2
No	16	30.8

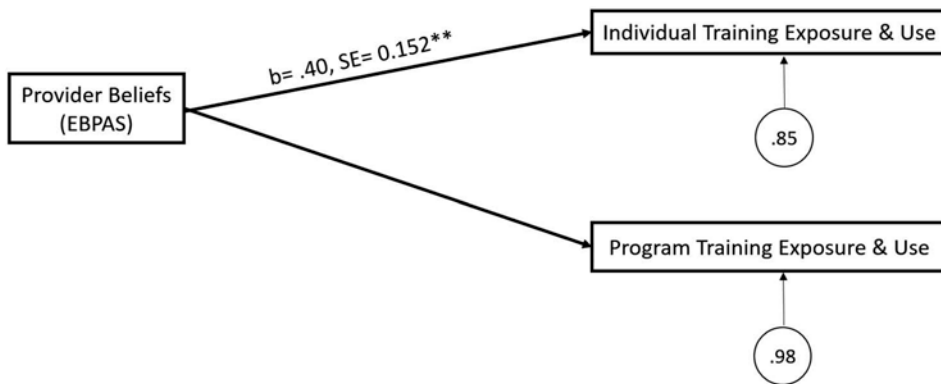


Figure 1. Model 1 provider beliefs and use of EBPs.

hundred percent of the sample had direct contact with clients with 90 percent in the role of therapist or clinician. Seventy-five percent of participants had received training in RSI, and 69 percent reported using an RSI currently.

Significant differences were found in RSI use by provider age and number of years in practice. Providers who endorsed using RSIs currently in practice were significantly younger ($M = 37.94, SD = 13.36$) than those who did not report using RSIs currently in practice ($M = 51.38, SD = 15.75; t(44) = 2.93, p < .01$). Providers who endorsed using RSIs currently in practice were significantly in practice for fewer years ($M = 10.50, SD = 10.21$) than those who did not report using RSIs currently in practice ($M = 18.50, SD = 12.19; t(48) = 2.43, p < .05$).

Figure 1 presents The SEM Model findings of the relationship between provider belief sum scores and use of RSIs. Global fit indices pointed toward good model fit ($\chi^2 = .001, p < .05, df = 0, CFI = 1.000, RMSEA = 0.001, \text{standardized } RMR = 0.001$). Findings indicated that provider beliefs significantly related to the adoption of research-supported interventions. Specifically, as providers reported more positive attitudes toward and beliefs of RSI adoption and implementation, on average, there was an associated increase in the use of research-supported interventions ($b = 0.2, SE = 0.9, p < .05$).

Discussion

A significant barrier to effective mental health care for children, adolescents, and families is the low rate of the adoption and implementation of research-supported interventions in outpatient mental health settings. The main findings of this study report that provider beliefs directly related to the adoption of research-supported interventions in outpatient mental health clinics serving youth. Providers who reported more positive attitudes and beliefs of RSI adoption and implementation also reported increased use of research-supported interventions, emphasizing the importance of provider beliefs on the adoption and implementation of RSIs.

Previous research supports the findings of this study (Aarons, 2004; Addis & Krasnow, 2000; Addis et al., 1999; Morrow-Bradley & Elliott, 1986; Prochaska & Norcross, 1983)

including some investigations of specific factors of provider beliefs, including education, training, and personal experience (Aarons, 2004; Birlleson, 1999; Damanpour, 1991; Glisson, 2002; Loy, 1969; Ogborne et al., 1998). These findings further highlight the impact of provider attitudes and beliefs on the adoption and implementation of RSIs. To increase adoption, implementation and sustained use of RSIs, there is a need for programs focused on improving provider attitudes and beliefs, with a specific goal of increasing providers' desire to use RSI through choice and supervisory requirement (Aarons, 2004; Addis, 2002; Proctor et al., 2009).

Interestingly, significant differences were found in RSI use by provider age and number of years in practice. Younger providers reported more RSI use, and providers with less time in practice reported more RSI use. It could be hypothesized that the younger, less experienced providers more recently experienced education and/or training, which highlighted the value and positive impact of incorporating RSIs in practice.

This study is supported by previous research that has found that practitioners who are still completing their education and transitioning into professional roles (e.g., interns in the practicum phase) are more adaptable to learning the most recent and effective innovations and practices and are thought to be less influenced by a long history of clinical practice (Aarons, 2004). As a result, interns might be more willing to adopt evidence-based practices as compared to providers who have been practicing for longer periods of time. This difference could also be explained in relation to the increased discussion and education around the importance of RSIs in graduate school programs. As graduate programs increasingly educate about the importance of EBP, graduates will have more positive beliefs related to the benefits of RSIs and are more likely to adopt and implements RSIs in their work.

This study further highlights the impact of provider attitudes and beliefs on the adoption and use of research-supported interventions with an implication that changes in attitudes and beliefs at the provider level may increase the adoption and sustained use of research-supported interventions, thus improving services (Aarons, 2004; Aarons et al., 2009; Addis & Krasnow, 2000; Proctor et al., 2009).

Research-supported interventions and interventions are being researched and published around the world. However, these innovations are being implemented at a low and slow rate in outpatient mental health settings. A significant barrier to effective mental health care for children, adolescents, and families is the low rate of the adoption and implementation of research-supported interventions in outpatient mental health settings. This study further highlights the impact of provider attitudes and beliefs on the adoption and use of research-supported interventions and implies that changes made starting on the provider level can increase the adoption and sustained use of research-supported interventions, thus improving services (Aarons, 2004; Aarons et al., 2009; Addis & Krasnow, 2000; Proctor et al., 2009). More specifically, the providers are more likely to use the RSI if the providers enjoy trying new types of interventions. The positive feeling of professional efficacy can be fostered beginning in the graduate education of future social workers. It should also be taken into account during the development of new RSIs.

As findings from this study indicate, providers' positive attitudes and beliefs about RSIs and RSI use can be fostered through education. This should be considered when developing bachelors, and master's level social work programs. Also, as social work practitioners are now mandated state and countrywide to attend continuing education to retain their licensing, there is an opportunity to highlight the benefits of RSI use and thus foster

more positive beliefs of RSIs and increase adoption and implementation of RSIs by providers already in the field. Furthermore, findings from this study indicated that providers who were required to use RSIs by the supervisors were more likely to do so. This pattern suggests that by mandating supervisors to require the use of RSIs through mental healthcare and agencies, policies will increase the use of RSIs in outpatient mental health setting serving youth.

Limitations

As with all studies, there are limitations to this study. There are certainly benefits to conducting a secondary data analysis with the data from the Family Groups for Urban Youth with Disruptive Disorders (R01 MH106771; PI: McKay) study, including access to data, large sample size, longitudinal nature of the data, and limited investigation of innovation adoption within data to date). However, it is important to consider the potential limitations of the data set since it was not collected to specifically meet the aims of this study. It is important to note that the use of secondary data can be considered a limitation as it constrains the ability to control and/or modify variables since the data has already been collected. For example, the questions around the use of research-supported interventions are in a yes/no format, thus limiting the answer to baseline knowledge of use. However, these constraints have minimal impact on the study as the measures used in the study, although not chosen by the Primary Investigator of the present study, this study formally measured the variables of interest with well documented psychometric validation.

It is also important to consider the extent to which generalizations can be made from the findings of this study to other clinical settings and populations due to the small sample size. It was clear that the researchers who designed the larger study aimed to collect data from a variety of outpatient mental health clinics serving youth. Although the study is limited to the five boroughs of New York City, incorporating outpatient mental health clinics from the New York area is beneficial due to the quantity and diversity of outpatient mental health clinics serving youth in this area. It should also be noted that the majority of the sample is social workers and as a result the findings may not be generalizable to other professions. Furthermore, the following covariates were included in analyses to control for potential confounds: provider age, provider gender, number of years in the field, license type, and status of current use of an evidence-based practice (yes/no). Additionally, potential moderating effects of all covariates were explored during the modeling process to identify if any of the proposed relationships vary as a function of age, gender, field duration, licensure, and current use of an evidence-based practice.

Despite the limitations noted, this study provides important perspectives on the relationship between provider attitudes and the adoption of research-supported interventions among outpatient mental health providers. This study also highlights the impact of, and need for, educational programs highlighting the positive effects of EBP as to promote the use of RSIs. The greater understanding of these factors can improve efforts to ensure effective adoption, implementation, and sustainment of research-supported interventions and thus, improve treatment for youth in mental health settings.

Conclusion

This study examined the relationship between provider attitudes and beliefs of RSIs and use of RSIs in mental health settings serving youth. Further research with the focus of education is indicated to explore the nuances of this relationship to increase the understanding of the role of provider attitudes and beliefs leading to the development of implementation strategies tailored specifically for mental health organizations for the provision of best practices.

Acknowledgments

Data used in this study were obtained through NIMH R01MH106771 Principal Investigator: McKay. The content is solely the responsibility of the author and does not necessarily represent the official views of the NIMH or NIH.

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