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The relationship between consumer, clinician, and organizational characteristics and use of evidence-based and non-evidence-based therapy strategies in a public mental health system

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Abstract

We investigated the relationship between consumer, clinician, and organizational factors and clinician use of therapy strategies within a system-wide effort to increase the use of cognitive-behavioral therapy. Data from 247 clinicians in 28 child-serving organizations were collected. Clinicians participating in evidence-based practice training initiatives were more likely to report using cognitive-behavioral therapy when they endorsed more clinical experience, being salaried clinicians, and more openness to evidence-based practice. Clinicians participating in evidence-based practice initiatives were more likely to use psychodynamic techniques when they had older clients, less knowledge about evidence-based practice, more divergent attitudes toward EBP, higher financial strain, and worked in larger organizations. In clinicians not participating in evidence-based training initiatives; depersonalization was associated with higher use of cognitive-behavioral; whereas clinicians with less knowledge of evidence-based practices were more likely

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to use psychodynamic techniques. This study suggests that clinician characteristics are important when implementing evidence-based practices; and that consumer, clinician, and organizational characteristics are important when de-implementing non evidence-based practices. This work posits potential characteristics at multiple levels to target with implementation and deimplementation strategies.

Keywords

Evidence-based practice; implementation; cognitive-behavioral therapy

Introduction

Most people do not have access to evidence-based mental health care (McHugh & Barlow, 2010; Bruns et al., 2016). While there are many evidence-based practices (EBP; Butler, Chapman, Forman, & Beck, 2006; Chorpita et al., 2011), efforts to translate efficacious treatments from research to practice have been slow (Stewart & Chambless, 2007; Weissman et al., 2006). In the past decade, large behavioral health systems have invested substantial resources in support of implementation of EBP (Bruns et al., 2008; Bruns et al., 2016; Ganju, 2003; Lau & Brookman-Frazee, 2016; Powell et al., 2016). These resources have primarily supported training the existing workforce in EBP. However, the field of implementation science – the scientific study of methods to promote the systematic uptake of research findings into routine practice (Eccles & Mittman, 2006) – suggests that training clinicians in EBP alone is unlikely to result in behavior change (Beidas & Kendall, 2010). Rather, multiple strategies targeting consumers, clinicians, and organizations are needed to routinize the use of EBP in usual care (Proctor et al., 2011). In order to successfully tailor strategies to increase the implementation and sustainment of EBP, it is necessary to understand the mutable characteristics that can be intervened upon at each of these levels (Powell, Beidas, et al., 2015).

Many factors beyond the clinician can affect clinician behavior within a clinical encounter. Implementation frameworks (Tabak, Khoong, Chambers, & Brownson, 2012) posit that consumer, clinician, and organizational factors all affect care (Aarons, Hurlburt, & Horwitz, 2011; Damschroder et al., 2009). Clinician knowledge, attitudes, and organizational factors such as organizational culture (i.e., expectations and norms of how things are done in an organization) are associated with successful implementation (Beidas et al., 2015; Wolk et al., 2016). Consumer diagnoses can also influence which practices clinicians deliver (Garland et al., 2010; Wolk et al., 2016). Previous research has largely examined singular relationships between characteristics of consumers, clinicians, or organizational factors and EBP use. For example, studies have focused on the relationship between clinician characteristics and EBP use without examining organizational and consumer characteristics (Nakamura, Higa-McMillan, Okamura, & Shimabukuro, 2011; Nelson & Steele, 2007). It is important to examine these constructs collectively in order to identify targets for comprehensive implementation strategies to support clinicians in the delivery of EBP.

In this study, we investigate the relationship between consumer, clinician, and organizational factors and clinicians' use of cognitive-behavioral (CBT; an EBP) and psychodynamic (non-EBP) therapy techniques with youth receiving behavioral health services in a large public system. We specifically investigated this questions in clinicians participating in EBP training initiatives and clinicians not participating in EBP training initiatives within a system-wide effort to increase the use of CBT in an urban public behavioral health system. CBT has amassed a large body of evidence supporting its effectiveness as a treatment for a wide range of youth psychiatric disorders (Hofmann et al., 2012; Weisz et al., 2017; Zhou et al., 2015; Higa-McMillan et al. 2016, McCart et al., 2016; Dorsey et al., 2017). To date, there is not yet adequate data from well controlled studies to support psychodynamic interventions for children (Abbass et al., 2013; De Nidai & Storch, 2013), making these two groups of therapeutic strategies of particular interest. Based on prior work (Beidas et al., 2015), we anticipated that, when controlling for client and clinician variables, organizational factors would be the primary predictors of CBT use, whereas clinician variables would be the primary predictors of psychodynamic use after controlling for the associations between clinician and organizational variables. The purpose of this work is to understand empirical relationships between each of the constructs of interest and use of evidence-based practice in order to target implementation strategies to increase use of EBP and decrease use of non-EBP in future studies.

Methods

Setting

The Philadelphia Department of Behavioral Health and Intellectual disAbility Services (DBHIDS) has supported four EBP initiatives. The department began widespread implementation of CBT in 2007 (Stirman et al., 2010; Stirman et al., 2012; Creed et al., 2016), prolonged exposure in 2011, trauma-focused CBT in 2011 (Beidas, Adams, et al., 2016), and dialectical behavior therapy in 2012. These four initiatives have supported and financed training, expert consultation, and ongoing technical assistance in more than 60 organizations and in over 500 clinicians (Powell et al., 2016). Two of the initiatives, CBT and trauma-focused CBT, were implemented in child outpatient settings.

Agencies and Participants

We used purposive sampling to identify the 29 child-serving organizations from the approximately 100 in Philadelphia that serve more than 80% of all youth in outpatient behavioral health programs. Of these 29 organizations, 22 (76%) agreed to participate. Several agencies had multiple locations, resulting in a sample of 28 sites and 247 clinicians. All clinicians employed by the organizations providing outpatient behavioral health services to youth were eligible to participate. Approximately 58% of clinicians employed by the 22 organizations participated in the study. They were predominantly female (77.7%) and self-identified as Asian (4.5%), African American/Black (30.0%), White (40.9%), Hispanic/Latino (16.2%), Multiracial (4.0%), and Other (2.0%); 2.4% did not provide data on race/ethnicity.

Procedure

This study was approved by the University of Pennsylvania and City of Philadelphia Institutional Review Boards. The leader of each organization was approached to solicit participation. A one-time meeting was scheduled with potential participants. During this meeting, the research team presented the study, obtained informed consent, and collected measures. Clinicians completed the measures in one location and were compensated \$50; measures were completed between January and June of 2015.

Measures

Client-level

Client demographics: Clinicians provided information about a representative client they were working with including his/her age, gender (male, female), and primary DSM-IV diagnosis (primary internalizing disorder, primary externalizing disorder, or primary other disorder). Clinicians were asked to think about this representative client when reporting on use of therapy strategies.

Clinician-level

Clinician demographics: Participants completed a brief demographics questionnaire that assessed age, gender, race/ethnicity, years of experience, years at current agency, weekly caseload, weekly supervision hours, worker status (independent contractor or salaried), and formal participation in DBHIDS EBP initiatives (Weisz, 1997).

Knowledge: The Knowledge of Evidence-Based Service Questionnaire (KEBSQ; Stumpf, Higa-McMillan, & Chorpita, 2009) is a 40-item self-report instrument that measures knowledge of EBP techniques. The 2013 KEBSQ scoring key was used in this investigation to correspond with the timing of data collection (the scoring key changes based on the knowledge base over time). Knowledge is measured on a continuum from 0–160. Higher scores are indicative of more knowledge of EBP. Psychometric data suggests temporal stability, discriminant validity, and sensitivity to training (Stumpf et al., 2009). As items are considered orthogonal (Stumpf et al., 2009), no internal consistency value was calculated.

Attitudes: The Evidence-Based Practice Attitude Scale (EBPAS; Aarons, 2004) is a 15-item self-report measure assessing attitudes toward adoption of EBP. Four subscales represent dimensions of attitudes toward EBP adoption: appeal (is EBP intuitively appealing), requirements (would EBP be used if required by organization, supervisor, or state), openness (general openness to innovation), and divergence (perceived divergence between EBP and current practices). Items are rated on a 0 (Not at all) to 4 (Very great extent) scale. Higher scores indicate more positive attitudes, with the exception of divergence, which is reverse coded. The EBPAS has national norms, and has demonstrated validity and good internal consistency with subscale alphas ranging from .67–.91 (Aarons et al., 2010). All subscale alphas were greater than .70 (α range = .72–.89), with the exception of the divergence subscale (α = .60). This is consistent with previous psychometric reports of this measure (Aarons et al., 2010).

Burnout: The Maslach Burnout Inventory Human Services Survey (MBI; Maslach, Jackson, & Leiter, 1996) is a 22-item self-report measure of therapist burnout that measures emotional exhaustion, depersonalization, and reduced personal accomplishment. Items are rated on a 0 (Never) to 6 (Every day) scale. Higher scores on emotional exhaustion and depersonalization and lower scores on personal accomplishment (reverse scored) indicate higher levels of burnout. The MBI is the most widely used instrument to assess burnout and has shown satisfactory internal consistency and discriminant and factorial validity (Glass & Mcknight, 1996; Maslach, Schaufeli, & Leiter, 2001; Schaufeli, Bakker, Hoogduin, Schaap, & Kladler, 2001). Internal consistency in this sample was acceptable for all three subscales (α range = .76–.93)

Financial Strain: The InCharge Financial Distress/Financial Well-Being Scale (IFDFW) (Prawitz, 2006) is an 8-item measure that evaluates an individual's financial strain. Items are rated on a 1 (Overwhelming financial distress/lowest level of financial well-being) to 10 (No financial distress/highest level of financial well-being) scale. The IFDFW has national norms, demonstrated strong internal consistency, and evidence of criterion validity and factorial validity (Prawitz, 2006). Internal consistency for this measure in this sample was excellent (α = .94).

Organizational-level

Organizational demographics: DBHIDS provided a list of the organizations that participated in city-sponsored EBP initiatives, the year they began participating, and their completion year. Organizations were categorized as small or large using a median split based on the number of unique child clients seen at each agency in 2014 as reported in claims data.

Organizational culture and climate: The Organizational Social Context Measurement System (OSC; Glisson et al., 2008) includes 105 items measuring 6 dimensions that assess organization culture (proficiency, rigidity, and resistance) and climate (engagement, functionality, and stress) in mental health and social service organizations. Organizational culture and climate scores are profiled with T scores (mean $\pm$ SD = 50 $\pm$ 10) established from a national sample of 100 mental health organizations (Glisson et al., 2008). The measurement model, within-system agreement, reliability, and between-system differences are strong (Glisson, Green, & Williams, 2012). OSC profiles for each organization are created by calculating an average score by agency composed of responses from front line clinicians. We used the proficiency, engagement, and functionality subscales, as theoretically, they are most associated with EBP use and determinants of EBP use such as attitudes (Aarons et al., 2012; Glisson, Williams, Hemmelgarn, Proctor, & Green, 2016; Williams, 2016; Williams, Glisson, Hemmelgarn, & Green, 2017). Internal consistency values for these subscales in this sample were acceptable (α range = .70–.91).

Implementation climate: The Implementation Climate Scale (ICS; Ehrhart, Aarons, & Farahnak, 2014) is an 18-item measure of multiple factors that contribute to successful implementation including: organizational focus on EBP; educational support for EBP; recognition for using EBP; rewards for using EBP; selection of staff for EBP; and selection of staff for openness. The ICS produces subscale scores for each of these factors in addition

to a total score. Given high inter-correlations across ICS subscales, we used the total score only. Items are rated on a 0 (Not at all) to 4 (Very great extent) scale; higher scores indicate more favorable organizational value and support of EBP. Psychometric evaluation suggests good reliability and validity (Ehrhart et al., 2014). Internal consistency for the total score in the current sample was excellent ($\alpha = .94$).

Dependent variable

Use of therapy strategies: Clinicians' use of therapy strategies with clients was measured using the cognitive-behavioral and psychodynamic subscales of the Therapy Procedures Checklist-Family Revised (TPC-FR; Weersing, Weisz, & Donenberg, 2002). This measure asks clinicians to consider the specific, representative client for whom they provided demographic information (see above) and to endorse specific techniques they use with that client from a list of strategies. Items were developed and validated by a panel of youth psychotherapy experts and represent three well-established schools of psychotherapy including cognitive-behavioral therapy, family therapy, and psychodynamic therapy. Clinicians could endorse techniques from all three treatment models using a continuum ranging from 1 (*rarely*) to 5 (*most of the time*). Because of the strong empirical support for CBT and the less robust evidence for psychodynamic strategies, we used the cognitive behavioral and psychodynamic subscales of the TPC-FR as the criterion variables in this study. Prior studies support the measure's test-retest reliability, sensitivity to change, and criterion-related validity (Weersing et al., 2002; Kolko, Cohen, Mannarino, Baumann, & Knudsen, 2009). Internal consistency in this sample was excellent (CBT subscale $\alpha = .92$, Psychodynamic subscale $\alpha = .87$).

Data Analytic Plan

Missing data for predictor variables were less than 10%; means were imputed for missing predictor variables. Preliminary analyses examined bivariate correlations across all examined variables to screen for multicollinearity. We ran four mixed-effects linear regression models. Our mixed-effects model included random intercepts for organization to account for nesting of clinicians within organizations and fixed effects for clinician factors. Analyses were conducted using PROC MIXED in SAS 9.0. Each model estimated the relationship between consumer, clinician, and organizational factors and clinician use of therapy strategies (i.e., CBT or psychodynamic), while holding all other variables constant. We also ran regression diagnostics using the Variance Inflation Factor (VIF) to ensure the stability of the models we tested. For each predictor in the model, we report the unstandardized estimate (*b*), a standardized regression coefficient representing the magnitude of the effect (i.e., effect size), and *p*-value.

We split the sample into two groups to identify if there were differential predictors of strategy use in clinicians who participated in DBHIDS-sponsored EBP initiatives ($n = 115$) and clinicians who had not participated in DBHIDS-sponsored EBP initiatives ($n = 128$). In the first model, we measured the relationship between each variable and use of CBT strategies in clinicians participating in EBP initiatives. In the second model, we measured the relationship between each variable and use of CBT strategies in clinicians not participating in EBP initiatives. We repeated these models to see the effect of these factors

on use of psychodynamic strategies in clinicians participating and not participating in EBP initiatives. In a final step, we calculated a z-score to compare the magnitude of the difference between the unstandardized beta estimates produced in each group and reported the p-value associated with that z-score.

$$z = \frac{|b_{\text{EBP initiative therapists}} - b_{\text{therapists not participating in EBP initiatives}}|}{\sqrt{(\text{Standard Error}_{\text{EBP initiative therapists}}^2 + \text{Standard Error}_{\text{therapists not participating in EBP initiatives}}^2)}}$$

Results

Diagnostic analyses

Correlations were $< .4$ for the majority of predictors, with the exception of the correlations between four organizational constructs: organizational culture (OSC proficiency), organizational climate (OSC engagement and functionality), and implementation climate (ICS Total). Because these constructs were all conceptually of interest, we elected to retain them as predictors but handled them separately in regression analyses. Specifically, we re-ran each regression model separately for each of these four constructs, including only one of these predictors at a time (with all other consumer, clinician, and organization variables). This provided the independent adjusted associations of each of these four predictors with the dependent variable. Regression diagnostics indicated that VIF values were all < 4 , indicating little concern for multicollinearity (Craney & Surles, 2002). There was a significant correlation between the use of CBT and psychodynamic strategies ($r = .55, p < .001$). See Table 1 for descriptive statistics for predictor and dependent variables. Table 2 presents the parameter estimates of the analyses predicting use of CBT strategies. Table 3 presents the parameter estimates of the analyses predicting use of psychodynamic strategies.

Clinician Use of Evidence-Based CBT Strategies

Clinicians participating in EBP initiatives

Consumer Variables: In clinicians participating in EBP initiatives, consumer variables did not predict use of CBT strategies.

Clinician Variables: In clinicians participating in EBP initiatives, a number of clinician variables predicted use of CBT strategies. Clinicians reporting more clinical experience, salaried clinicians, and clinicians endorsing more openness to EBP, were more likely to report using CBT strategies. Controlling for all other variables in the model, a one standard deviation increase in clinical experience was associated with a .27 standard deviation increase in CBT strategy use ($b = .02, p < .01$). Controlling for all other variables in the model, contractors reported CBT strategy use scores that were .02 standard deviations lower than salaried therapists ($b = -.30, p < .01$). Controlling for all other variables in the model, a one standard deviation increase in openness to EBP was associated with a .23 standard deviation increase in CBT strategy use ($b = .02, p < .01$).

Organizational Variables: In clinicians participating in EBP initiatives, organizational variables did not predict use of CBT strategies.

Clinicians not participating in EBP initiatives

Consumer Variables: In clinicians not participating in EBP initiatives, consumer variables did not predict use of CBT strategies.

Clinician Variables: In clinicians not participating in EBP initiatives, one clinician variable predicted use of CBT strategies. Clinicians reporting higher depersonalization were more likely to report using CBT strategies. Controlling for all other variables in the model, a one standard deviation increase in depersonalization was associated with a .21 standard deviation increase in CBT strategy use ($b = .03$, $p < .05$).

Organizational Variables: In clinicians not participating in EBP initiatives, organizational variables did not predict use of CBT strategies.

Magnitude of difference in parameter estimates across the two groups—The magnitude of the difference in parameter estimates between the clinicians participating in EBP initiatives and those not participating in EBP initiatives was not statistically significant for any predictors.

Clinician Use of Non-Evidence-Based Psychodynamic Strategies

Clinicians participating in EBP initiatives

Consumer Variables: In clinicians participating in EBP initiatives, one consumer variable predicted use of psychodynamic strategies. As consumer age increased, clinicians were more likely to report using psychodynamic strategies. Controlling for all other variables in the model, a one standard deviation increase in client age was associated with a .18 standard deviation increase in psychodynamic strategy use ($b = .03$, $p < .05$).

Clinician Variables: In clinicians participating in EBP initiatives, a number of clinician variables predicted use of psychodynamic strategies. Clinicians reporting less knowledge about EBP, more divergent attitudes toward EBP, and higher financial strain were more likely to use psychodynamic techniques. Controlling for all other variables in the model, a one standard deviation increase in knowledge of EBP was associated with a .27 standard deviation decrease in psychodynamic strategy use ($b = -.02$, $p < .01$). Controlling for all other variables in the model, a one standard deviation increase in EBP divergence was associated with a .18 standard deviation increase in psychodynamic strategy use ($b = .15$, $p < .05$). Controlling for all other variables in the model, a one standard deviation increase in financial strain was associated with a .22 standard deviation increase in psychodynamic strategy use ($b = .01$, $p < .05$).

Organizational Variables: In clinicians participating in EBP initiatives, one organizational variable predicted use of psychodynamic strategies. Therapists at larger organizations were more likely to use psychodynamic strategies. Controlling for all other variables in the model,

therapists at large organizations reported psychodynamic strategy use scores that were .04 standard higher increase than those in small organizations ($b = .25$, $p < .05$).

Clinicians not participating in EBP initiatives

Consumer Variables: In clinicians not participating in EBP initiatives, consumer variables did not predict use of psychodynamic strategies.

Clinician Variables: In clinicians not participating in EBP initiatives, one clinician variable predicted use of psychodynamic strategies. Clinicians reporting less knowledge about EBP were more likely to use psychodynamic techniques. Controlling for all other variables in the model, a one standard deviation increase in knowledge of EBP was associated with a .43 standard deviation decrease in psychodynamic strategy use ($b = -.04$, $p < .01$).

Organizational Variables: In clinicians not participating in EBP initiatives, organizational variables did not predict use of psychodynamic strategies.

Magnitude of difference in parameter estimates across the two groups—The magnitude of the difference in parameter estimates between the clinicians participating in EBP initiatives and those not participating in EBP initiatives with regard to psychodynamic strategy use was statistically significant for the following predictors: weekly caseload (initiative participants $b = .01$, initiative non-participants $b = -.01$, $z = 2.02$, $p < .05$), financial strain (initiative participants $b = -.01$, initiative non-participants $b = .01$, $z = 2.13$, $p < .05$), and functionality (initiative participants $b = -.01$, initiative non-participants $b = .02$, $z = 2.05$, $p < .05$).

Discussion

This study investigates the relationship between consumer, clinician, and organizational factors and clinician use of therapy strategies within the context of a large public behavioral health system implementing EBP. We explored these relationships in clinicians participating in EBP initiatives and clinicians not participating in these initiatives given that the transformation activities ongoing in this system presented a unique opportunity to explore this question. Clinician factors were related to use of CBT in both clinicians participating and not participating in EBP initiatives, suggesting the importance of targeting clinicians when designing and testing implementation strategies aiming to increase the use of EBP in a large system supporting EBP implementation. Consumer, clinician, and organizational factors were related to use of psychodynamic strategies in clinicians participating in EBP initiatives; whereas only clinician factors were related to use of psychodynamic strategies in clinicians not participating in EBP initiatives. This suggests the importance of attending to multiple levels when targeting deimplementation strategies, particularly in clinicians who are actively participating in EBP implementation initiatives.

Contrary to previous research (Beidas et al., 2015) and implementation frameworks (Aarons et al., 2011), only clinician factors were significantly related to use of evidence-based CBT strategies in clinicians participating in EBP initiatives. Specifically, clinicians with more clinical experience were more likely to endorse using CBT strategies, which contrasts with

literature finding that more experienced clinicians are less likely to endorse using CBT (Aarons, 2004). One explanation for this finding is that clinicians are employed in a system where CBT implementation has been ongoing for a decade; thus they may have had more exposure to CBT. Alternatively, clinicians working longer within the system may be more attuned to social desirability and may endorse using CBT because they perceive it as the preferred modality either from the perspective of researchers, system-leaders, clinicians, administrators, or consumers (Beidas et al., 2015). Corroborating the literature, clinicians with attitudes indicative of more openness to EBP were more likely to endorse using CBT strategies (Aarons & Sawitzky, 2006; Beidas et al., 2015). Also supported by preliminary research (Beidas, Stewart, et al., 2016), independent contractor clinicians were less likely to use CBT strategies. Nationally, a growing number of community mental health clinics are relying on independent contractors due to the financial challenges experienced in community mental health (Stewart et al., 2016). Our research suggests that contractors may have less knowledge about EBP and poorer attitudes towards EBP because administrators are less likely to invest in sending contractors to trainings on EBP (Beidas, Stewart, et al., 2016), suggesting the importance of attending to this segment of the workforce. All of the factors described suggest potential clinician-level targets to increase implementation of EBP by clinicians participating in EBP initiatives, including improving attitudes (Morse, Salyers, Rollins, Monroe-DeVita, & Pfahler, 2012), employing workforce models that do not marginalize a segment of the workforce in professional development (Beidas, Stewart, et al., 2016), and attending to issues related to the workforce (i.e., pre-service training for less experienced clinicians).

Interestingly and consistent with implementation science frameworks (Aarons et al., 2011), consumer, clinician, and organizational factors were related to use of non-EBP (e.g., psychodynamic) strategies by clinicians participating in EBP initiatives. Consistent with previous work, clinicians participating in EBP initiatives were more likely to use insight-oriented psychodynamic strategies with older youth (Wolk et al., 2016). Also corroborating previous literature, clinicians in EBP training initiatives with less knowledge of EBP and more divergent attitudes towards EBP were more likely to endorse using psychodynamic strategies (Higa-McMillan, Nakamura, Morris, Jackson, & Slavin, 2015). Clinicians experiencing more financial strain were more likely to report using psychodynamic strategies. Clinicians using psychodynamic strategies, particularly in an environment employing high numbers of independent contractors (Beidas, Stewart, et al., 2016), may be less likely to be assigned cases, which may potentially lead to financial strain. Interestingly, clinicians at larger organizations were more likely to use psychodynamic strategies. One potential explanation for this finding is that clinicians at larger agencies have less oversight from clinical supervisors and may be more autonomous in which strategies they implement. These findings suggest a number of potential mutable targets at the consumer, clinician, and organizational level to de-implement non-EBP strategies (Prasad & Ioannidis, 2014), which likely should be different than the targets for increasing use of EBP strategies (Montini & Graham, 2015; Niven et al., 2015).

Only clinician factors predicted use of therapy strategies in clinicians not participating in EBP initiatives. Depersonalization, a component of burnout, predicted higher use of CBT strategies in therapists not participating in EBP initiatives. One potential explanation for this

finding is that therapists trying to use CBT outside of the support of the initiatives may result in more difficulties, leading to higher burnout. Alternatively, clinicians experiencing high levels of burnout may seek out tools such as CBT to make their work go more smoothly. More research is needed to understand differences in burnout in clinicians attempting EBP implementation on their own versus within the context of organizational support. Clinicians who were less knowledgeable about EBP were more likely to implement psychodynamic strategies, consistent with previous work (Higa-McMillan et al., 2015).

Of note, there was a sizeable association between therapist use of CBT and psychodynamic strategies, suggesting many therapists endorse using both CBT and psychodynamic strategies with the same clients. This is consistent with the larger literature suggesting eclecticism is the rule in community settings (e.g., Garland et al., 2010) and raises the question of whether it is always appropriate to interpret greater use of CBT as indicative of evidence-based practice if it is accompanied by non-evidence-based interventions. This may speak to the need for de-implementation strategies concurrent to implementation efforts to phase out non-evidence-based practices, rather than layering EBP interventions on top of existing practices, although more work is needed to further examine this question. Alternatively, this may point to the need for more nuanced examination and better self-report measurement of CBT (e.g., identifying profiles of clinician practice use) to better tease out those clinicians using a primary EBP vs. an eclectic approach.

There are limitations to the current study. Most importantly, all measures relied upon self-report, which is particularly a limitation for measuring use of therapy strategies (Hurlburt, Garland, Nguyen, & Brookman-Frazee, 2010). Studies on the concordance of therapist self-report with observation are equivocal. A study conducted by Hurlburt and colleagues (2010) raises questions about concordance, but examination of this paper suggests that the demand characteristics of the task differed for observers and therapists, calling into question the applicability of these findings to our work. Specifically, therapists reported on their behavior several days after the session, whereas observers scored every minute of treatment sessions. Furthermore, therapists were not trained in how to make ratings of the intensity of their behavior whereas coders had intensive training and detailed instructions on how to score intensity of behavior. On the other hand, a study in which therapists, youth, caregivers, trained raters, and treatment experts rated therapist adherence to a substance abuse treatment protocol found high concordance between self-reported therapist ratings and trained raters. In this study, the methodology was more similar to ours in that therapists were asked to reflect on the overall techniques used in treatment over a larger period of time (1 month; Chapman et al., 2013). Other studies corroborate this finding (Hogue et al., 2014). The study is cross-sectional; thus no causal inferences can be made. Consumer factors should be measured in a more granular manner in future studies. Not all clinicians and organizations participated in the survey; however, the response rate for a survey of this kind is quite high (Cunningham et al., 2015).

The findings from this study have a number of implications for research. The first and most important implication is with regard to identification of mutable factors to serve as future targets for strategies to improve implementation of EBP within cohorts of clinicians participating in EBP initiatives. We identified a number of factors including clinician

knowledge, attitudes, and employment status that could be targets for implementation strategies (Powell, Beidas, et al., 2015; Powell, Waltz, et al., 2015; Proctor, Powell, & McMillen, 2013). Second, predictors of therapy strategy use were largely only significant when clinician participated in EBP training efforts. In large systems, even when an organization is implementing an EBP, the practice seldom reaches all staff (Powell et al., 2016). This suggests that it is important to conceptualize these two groups of clinicians as heterogeneous with different factors driving their behavior (and potentially different targets for strategies to change behavior). With large systems increasingly implementing EBP, understanding service quality for those participating in EBP efforts versus those who do not participate in such efforts is important. These findings speak to the importance of looking at characteristics of consumers, clinicians, and organizations implementing EBP in more nuanced ways, both in subgroups of populations (i.e., those actively participating in EBP implementation efforts vs. those not) and in different stages of the implementation process. For example, clinician factors may be more important later in the implementation process, whereas organizational factors may be important earlier during the exploration and preparation stages (Aarons et al., 2011; Damschroder et al., 2009). Third, there is a growing recognition for the need to focus on de-implementation (Montini & Graham, 2015; Niven et al., 2015).

Many systems are moving towards implementation of EBP (Bruns et al., 2008; Bruns et al., 2016; Ganju, 2003; Lau & Brookman-Frazee, 2016; Powell et al., 2016). Understanding how to increase implementation, and sustainment in these systems is critical to the success of these efforts. This study provides insights with regard to targets at the consumer, clinician, or organizational level which may be leveraged to improve implementation; and points to the importance of understanding subgroups within implementation efforts.

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Highlights

- The City of Philadelphia is implementing cognitive-behavioral therapy (CBT).
- We investigate the contribution of contextual factors on therapist use of CBT.
- Clinician and organizational factors predicted use of CBT.
- Targets for future strategies to improve the implementation of CBT are suggested.

Table 1

Descriptive Statistics for Dependent and Independent Variable

	Total Sample (<i>N</i> = 243)	Participated in EBP Initiative (<i>n</i> = 115)	Did not Participate in EBP Initiative (<i>n</i> = 128)
Dependent Variables:			
Use of CBT, <i>M</i> (<i>SD</i>)	3.32 (.63)	3.31 (.62)	3.33 (.64)
Use of Psychodynamic, <i>M</i> (<i>SD</i>)	3.38 (.68)	3.38 (.64)	3.38 (.71)
Client Factors			
Client Age, <i>M</i> (<i>SD</i>)	10.77 (3.51)	11.04 (3.47)	10.52 (3.55)
Client Gender, <i>n</i> (%):			
Female	95 (39.1%)	44 (38.3%)	51 (39.8%)
Client Primary Diagnosis, <i>n</i> (%):			
Internalizing	57 (23.5%)	38 (33.0%)	19 (14.8%)
Other	34 (14.0%)	17 (14.8%)	17 (13.3%)
Externalizing	152 (32.6%)	60 (52.2%)	92 (71.9%)
Clinician Factors, <i>M</i> (<i>SD</i>):			
Clinical experience	10.04 (8.56)	10.87 (8.70)	9.29 (8.40)
Weekly caseload	28.60 (20.45)	30.46 (21.87)	26.93 (19.01)
Hours weekly supervision	1.17 (.84)	1.29 (.92)	1.06 (.73)
Worker Status, <i>n</i> (%):			
Contractor	192 (79.0%)	90 (78.3%)	102 (79.7%)
Salaried	51 (21.0%)	25 (21.7%)	26 (20.3%)
Knowledge, <i>M</i> (<i>SD</i>)	96.23 (8.52)	97.21 (8.30)	95.36 (8.66)
Attitudes, <i>M</i> (<i>SD</i>):			
Requirements	2.87 (.98)	2.95 (.95)	2.79 (1.01)
Appeal	3.18 (.68)	3.14 (.70)	3.22 (.67)
Openness	3.08 (.71)	3.14 (.71)	3.02 (.70)
Divergence	1.26 (.73)	1.28 (.75)	1.25 (.72)
Burnout, <i>M</i> (<i>SD</i>):			
Emotional exhaustion	19.02 (12.47)	19.12 (12.15)	18.93 (12.79)
Depersonalization	4.01 (4.58)	4.14 (4.64)	3.89 (4.54)
Professional accomplishment	38.86 (6.57)	38.54 (6.86)	39.15 (6.32)
Financial Strain, <i>M</i> (<i>SD</i>)	37.45 (16.72)	37.22 (16.64)	37.65 (16.84)
Organizational Factors			
Number of Child Consumers, <i>n</i> (%)			
>466 (large)	142 (58.4)	77 (67.00)	65 (50.8)
<466 (small)	101 (41.6)	38 (33.00)	63 (49.2)
Years organization has been in EBP initiative, <i>M</i> (<i>SD</i>)	4.60 (3.31)	5.23 (3.44)	4.02 (3.10)
Organizational Culture, <i>M</i> (<i>SD</i>):			
Proficiency	52.69 (8.57)	52.99 (9.60)	52.43 (7.56)

	Total Sample (<i>N</i> = 243)	Participated in EBP Initiative (<i>n</i> = 115)	Did not Participate in EBP Initiative (<i>n</i> = 128)
Organizational Climate, <i>M</i> (<i>SD</i>):			
Engagement	52.26 (8.21)	51.96 (8.67)	52.53 (7.79)
Functionality	62.39 (9.85)	62.41 (10.90)	62.37 (8.85)
Implementation Climate, <i>M</i> (<i>SD</i>):			
Total Score	2.05 (0.47)	2.12 (0.49)	2.00 (0.46)

Note. CBT – Cognitive behavioral therapy; EBP – Evidence-based Practice.

Table 2

Models Predicting Use of Cognitive-Behavioral Strategies

	Model 1			Model 2			Z score <i>p</i>
	<i>b</i> (<i>n</i> = 115)	SE	Effect Size	<i>b</i> (<i>n</i> = 128)	SE	Effect Size	
Client Factors							
Client Age	0.01	0.01	0.07	-0.01	0.02	-0.01	0.50
Gender							
Male	-0.17	0.11	-0.01	-0.18	0.11	-0.01	0.97
Female	0 (ref)	0 (ref)	0 (ref)	0 (ref)	0 (ref)	0 (ref)	0 (ref)
Primary Diagnosis							
Internalizing	-0.23	0.14	-0.02	-0.25	0.17	-0.01	0.93
Other	-0.29	0.17	-0.02	-0.30	0.16	-0.01	0.97
Externalizing	0 (ref)	0 (ref)	0 (ref)	0 (ref)	0 (ref)	0 (ref)	0 (ref)
Clinician Factors							
Clinical experience	0.02**	0.01	0.27	0.01	0.01	0.13	0.29
Weekly caseload	0.01	0.01	0.05	0.01	0.01	0.10	0.62
Weekly supervision	-0.05	0.06	-0.08	-0.03	0.08	-0.04	0.82
Worker Status							
Contractor	-0.30**	0.12	-0.02	0.02	0.14	0.00	0.09
Salaried	0 (ref)	0 (ref)	0 (ref)	0 (ref)	0 (ref)	0 (ref)	0 (ref)
Knowledge	0.01	0.01	0.03	-0.01	0.01	-0.10	0.34
Attitudes							
Requirements	-0.05	0.06	-0.08	0.05	0.05	0.08	0.20
Appeal	0.02	0.09	0.02	-0.02	0.09	-0.03	0.72
Openness	0.20**	0.08	0.23	0.11	0.09	0.12	0.44
Divergence	0.14	0.07	0.17	0.04	0.08	0.04	0.35
Burnout							
Emotional exhaustion	-0.01	0.01	-0.11	-0.01	0.01	-0.15	0.78
Depersonalization	0.02	0.01	0.14	0.03*	0.01	0.21	0.59

	Model 1				Model 2				Z score	p
	b (n = 115)	SE	Effect Size	b (n = 128)	SE	Effect Size				
Professional accomplishment	-0.01	0.01	0.00	0.01	0.01	0.08			0.50	
Financial Strain	0.01	0.01	0.03	0.01	0.01	0.04			0.94	
Organizational Factors										
Organizational Size										
>466 (large)	0.14	0.12	0.02	0.21	0.11	0.03			0.71	
<466 (small)	0 (ref)	0 (ref)	0 (ref)	0 (ref)	0 (ref)	0 (ref)			0 (ref)	
Organizational EBP participation	-0.02	0.02	-0.11	-0.02	0.02	-0.11			0.88	
Organizational Culture										
Proficiency [^]	0.02	0.01	0.16	0.01	0.01	0.10			0.70	
Organizational Climate										
Engagement [^]	0.01	0.01	0.10	-0.01	0.01	0.02			0.64	
Functionality [^]	-0.01	0.01	-0.01	0.00	0.01	0.09			0.36	
Implementation Climate [^]	0.11	0.17	0.05	0.21	0.15	0.17			0.64	

Note. Model 1 measures the effect of consumer, clinician, and organizational factors on use of CBT strategies in clinicians participating in evidence-based practice initiatives sponsored by the City of Philadelphia. Model 2 measures the effect of consumer, clinician, and organizational factors on use of CBT strategies in clinicians not participating in evidence-based practice initiatives sponsored by the City of Philadelphia.

[^] the parameter estimates for these variables were derived from separate models. Specifically, we re-ran each regression model separately for each of these four constructs, including only one of these predictors at a time while controlling for all other variables noted in the table.

* p < .05;

** p < .001.

SE = standard error.

Table 3

Models Predicting Use of Psychodynamic Strategies

	Model 1			Model 2			Z score <i>p</i>
	<i>b</i> (<i>n</i> = 115)	SE	Effect Size	<i>b</i> (<i>n</i> = 128)	SE	Effect Size	
Client Factors							
Client Age	0.03 *	0.02	0.18	0.03	0.02	0.16	0.96
Gender							
Male	-0.04	0.11	0.00	-0.15	0.11	-0.01	0.50
Female	0 (ref)	0 (ref)	0 (ref)	0 (ref)	0 (ref)	0 (ref)	0 (ref)
Primary Diagnosis							
Internalizing	0.03	0.15	0.00	-0.08	0.17	0.00	0.62
Other	-0.20	0.18	-0.01	-0.02	0.16	0.00	0.45
Externalizing	0 (ref)	0 (ref)	0 (ref)	0 (ref)	0 (ref)	0 (ref)	0 (ref)
Therapist Factors							
Clinical experience	0.01	0.01	0.11	0.01	0.01	0.03	0.59
Weekly caseload	-0.01	0.00	-0.17	0.01	0.01	0.10	0.04 *
Weekly supervision	-0.02	0.07	-0.03	-0.08	0.08	-0.08	0.60
Worker Status							
Contractor	-0.17	0.13	-0.01	0.13	0.14	0.01	0.12
Salaried	0 (ref)	0 (ref)	0 (ref)	0 (ref)	0 (ref)	0 (ref)	0 (ref)
Knowledge	-0.02 **	0.01	-0.27	-0.04 **	0.01	-0.43	0.16
Attitudes							
Requirements	0.06	0.06	0.09	0.07	0.06	0.09	0.92
Appeal	-0.04	0.09	-0.05	-0.11	0.10	-0.11	0.61
Openness	0.16	0.09	0.18	0.17	0.09	0.17	0.96
Divergence	0.15 *	0.08	0.18	0.01	0.08	0.00	0.17
Burnout							
Emotional exhaustion	0.01	0.01	0.11	0.01	0.01	0.11	0.98
Depersonalization	0.01	0.01	0.06	0.02	0.01	0.14	0.55

	Model 1				Model 2				Z score p
	b (n = 115)	SE	Effect Size	b (n = 128)	SE	Effect Size	Effect Size		
Professional accomplishment	0.01	0.01	0.04	0.02	0.01	0.14	0.39		
Financial Strain	0.01*	0.00	0.22	-0.01	0.01	-0.05	0.03*		
Organizational Factors									
Organizational Size									
>466 (large)	0.25*	0.13	0.04	0.06	0.12	0.01	0.27		
<466 (small)	0 (ref)	0 (ref)	0 (ref)	0 (ref)	0 (ref)	0 (ref)	0 (ref)		
Organizational EBP Participation	0.01	0.02	0.04	0.01	0.02	0.01	0.87		
Organizational Culture									
Proficiency^	-0.01	0.01	0.00	0.01	0.01	0.15	0.41		
Organizational Climate									
Engagement^	0.01	0.01	0.09	-0.01	0.01	0.09	0.17		
Functionality^	-0.01	0.01	-0.05	0.02	0.01	0.21	0.04*		
Implementation Climate^	0.18	0.19	0.01	-0.19	0.15	0.02	0.13		

Note. Model 1 measures the effect of consumer, clinician, and organizational factors on use of psychodynamic strategies in clinicians participating in evidence-based practice initiatives sponsored by the City of Philadelphia. Model 2 measures the effect of consumer, clinician, and organizational factors on use of psychodynamic strategies in clinicians not participating in evidence-based practice initiatives sponsored by the City of Philadelphia.

[^] the parameter estimates for these variables were derived from separate models. Specifically, we re-ran each regression model separately for each of these four constructs, including only one of these predictors at a time while controlling for all other variables noted in the table.

* p < .05;

** p < .001.

SE = standard error.