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Peers and Co-Occurring Research-Supported Interventions

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ABSTRACT

Objective: Adults with co-occurring mental illness and substance use disorders have poor outcomes in important quality of life areas, including hospitalization, incarceration, employment, and community housing. Integrated dual disorder treatment (IDDT) is a research-supported intervention for individuals with co-occurring disorders associated with improvements in outcome measures when implemented with high fidelity. Research-supported intervention IDDT was not designed with peer services, provided by people with lived experience with mental illness, but the practice has been altered to include peers. ***Methods:*** IDDT fidelity data were evaluated from 20 teams that also reported on peer services on their team in one state over a 7 year period, and paired with their fidelity data for the most recent review to analyze the relationship between peers and IDDT fidelity. Analysis of variance was utilized to determine a dose effect peers on fidelity. ***Results:*** Of these IDDT teams, 85% of teams incorporated a peer and 40% of teams had a full-time peer. Having a full-time peer ($M = 4.22$, $SD = .41$) was associated with significantly higher fidelity compared to teams with a part-time ($M = 3.68$, $SD = .56$) or no peer ($M = 3.21$, $SD = .18$, $F(2, 17) = 5.88$, $p = .01$). ***Conclusions:*** Peers on IDDT teams are associated with higher fidelity, leading to important possibilities about the incorporation of those with lived experience into research-supported interventions. Implications for team composition, implementation measurement, policy, and funding are discussed.

KEYWORDS

Peers; lived experience; co-occurring disorders; fidelity; integrated dual disorder treatment

Introduction

Co-occurring mental illness and substance use disorders

Mental illness and substance use disorder are two types of chronic relapsing and remitting behavioral health illnesses with early lifetime onset, frequent occurrence, and association with significant lifetime disability (Hunt, Siegfried, Morley, Sitharthan, & Cleary, 2013; Institute of Medicine, 2006). Mental illness and substance use disorder often occur together, affecting 7.7 million American adults in 2013 (Karg et al., 2014; Substance Abuse and Mental Health Services Administration [SAMHSA], 2014). Outcomes for adults with co-occurring disorders (COD) are worse compared to adults with mental illness or substance use disorders alone, and include higher rates of hospitalization, incarceration, unemployment, homelessness, suicide, and HIV and Hepatitis C infection (Green, Drake, Brunette, & Noordsy, 2007; Hunt et al., 2013; Schmidt,

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Hesse, & Lykke, 2011). These poor outcomes impact not only the individual with COD, but their families, communities, and systems of care (Drake, Mercer-McFadden, Mueser, McHugo, & Bond, 1998; Drake, O'Neal, & Wallach, 2008). People living with COD, referred to as peers, have been increasingly active in policy development and advocacy for effective treatments to impact these poor outcomes (Campbell et al., 2006; Farkas, Gagne, Anthony, & Chamberlin, 2005; SAMHSA, 2012).

Peer services

The mental health and substance use disorders system has seen substantial activism on the part of peers to change the system of care not only to be responsive to them as consumers, but to involve them as treatment providers (Campbell et al., 2006; Farkas et al., 2005; InterNational Association of Peer Supporters, 2014; Mead, Hilton & Curtis, 2001; National Association of Peer Specialists, 2014; SAMHSA, 2012). Services oriented toward recovery have long been associated with those including or delivered by peers, people who themselves have experience with mental illness and/or substance use disorders (Davidson et al., 1999; White, 2009). Although peer services have been part of the informal system for substance use since colonial times, in mutual aid/self-help groups for 90 years (White, 1998), the literature about peer services before the 1990s is primarily limited to 12-step and mutual aid communities (White, 2009). Formal peer services have been studied only in the last 25 years (Campbell et al., 2006; Mead et al., 2001). This corresponds to the deinstitutionalization movement when many state psychiatric institutions were closed and the expectation became that individuals with mental illness were treated in their communities instead of hospital settings (Faulkner & Basset, 2012).

At the onset of the 21st century, the President's New Freedom Commission on Mental Health (2003) addressed this absence of a peer voice in treatment design and delivery and advocated for a shift in the policy and practice discussion in behavioral health to include peers. Convening stakeholders in mental health, including consumers, providers, and policy makers, SAMHSA operationalized 10 components to recovery-oriented mental health: self-direction, individualized and person-centered, empowerment, holistic, nonlinear, strengths-based, peer support, respect, responsibility, and hope (SAMHSA, 2008), and further defined recovery in 2012 in part as "supported by peers and allies" (SAMHSA, 2012, p. 5). It was clear to the field at that point that research on the efficacy of peers and involving peers in the research agenda would be an important focus in the subsequent generation.

Research on peer services has been limited to primarily qualitative or descriptive studies (Cook, 2011; Davidson et al., 1999). Exploratory qualitative studies with consumers of mental health services that included peer services reported that peers offered positive relationships, a sense of belonging, increased connection to the mental health system (MacNeal & Mead, 2005; Proudfoot et al., 2012), and differences in the perception of importance of natural or peer support in recovery between case managers and consumers of mental health (Crane-Ross, Roth, & Lauber, 2000).

Interestingly, for COD, views about recovery among peers can be quite varied, with stability, hope, and process being key indicators rather than the recovery product of abstinence from alcohol or drugs (Watson & Rollins, 2015). The primary quantitative outcome studied with peer services in mental health has been a relationship with psychiatric hospitalization, both prospectively and retrospectively (Klein, Cnaan, & Whitecraft, 1998; Sledge et al., 2011). In a small pilot study (Klein et al., 1998), 10 participants in a peer support group

had significantly fewer psychiatric hospital stays and days in the hospital than those who did not have peer support. In a randomized control trial (Sledge et al., 2011), participants who were assigned peer services had significantly fewer psychiatric hospital admissions (partial $\eta^2 = .04$) and hospital days ($\eta^2 = .05$) than those assigned to usual care in the subsequent 9 months, with a small effect size. In a retrospective claims review examining the relationship of peer services and outcomes for individuals with COD following a hospitalization (Min, Whitecraft, Rothbard, & Salzer, 2007), participants in a peer support group had significantly fewer re-hospitalizations within 3 years compared to people who were not involved in a peer support group. This analysis was particularly useful in establishing a correlation between peer group services and re-hospitalization rate given the large sample size, use of a matched control and experimental group with mental illness and a recent psychiatric hospitalization, and longer time period of analysis. Despite these two high-quality studies of peer services and psychiatric hospitalization, the research that provides evidence of a relationship between peer services and improved outcomes is still in its early stages. Like the research on specific interventions for adults with COD, peer research is still developing and is often measuring a wide variety of interventions, rather than one set of agreed upon treatments. See Figure 1 for a representation of the current evidence for peer services and integrated co-occurring services.

Research-supported interventions: Assertive community treatment and integrated dual disorder treatment

Research-supported interventions are developed and promulgated to assure that the best of what we know works finds its way into practice, and that the practice can be well-defined and measured using research methods including randomized controlled trials and systematic reviews (Fixsen, Naoom, Blasé, Friedman, & Wallace, 2005). Both assertive community treatment (ACT) and integrated dual disorder treatment (IDDT) are examples of complex and team-based research-supported interventions developed in public mental health. ACT,

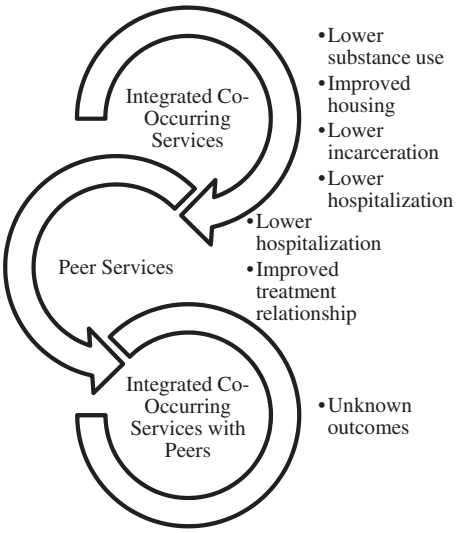

Figure 1. Evidence for peer services and integrated co-occurring services.

developed for adults with mental illness with the closure of state psychiatric institutions (Dietrich, Irving, Park, & Marshall, 2009; van Vugt, Kroon, Delespaul, & Mulder, 2012), has been associated with decreased hospitalization duration and frequency, increased service engagement, and client satisfaction for adults with serious mental illness when compared to treatment as usual (Dietrich et al., 2009). There is some evidence of improved outcomes with adding peers to ACT. In a prospective longitudinal study in the Netherlands with 20 ACT teams, individuals who served on teams with peers had significantly fewer hospital stays and episodes of homelessness compared to those who served on teams without peers (van Vugt et al., 2012). In a randomized trial of individuals assigned to ACT teams with or without peers, individuals served by ACT with peers had a significantly longer time to first arrest, but no difference in hospitalization, homelessness, or emergency room visits (Clarke et al., 2000; Paulson et al., 1999).

In the mid- and late-1990s, the differential outcomes for individuals with COD compared to mental illness alone on ACT teams began receiving attention. The New Hampshire Dual Disorders study used a randomized controlled trial and demonstrated that individuals with COD served with ACT had lower hospitalization, alcohol and drug use rates, and increased remission rates of their substance use disorder compared to individuals served by treatment as usual (McHugo, Drake, Teague, & Xie, 1999). IDDT grew out of ACT (Mueser, Noordsy, Drake, & Fox, 2003), and SAMHSA developed IDDT as a similar practice to ACT but with additional components to address the needs of adults with COD (McHugo et al., 1999, 2007). In 2007, SAMHSA listed IDDT as a research-supported intervention and published an implementation toolkit, which is currently in revisions (McHugo et al., 2007; SAMHSA, 2008, 2010). This toolkit included sections on practice components, staff training, organizational buy-in, and measurement of implementation. The IDDT model contains 26 different components, including multidisciplinary team, stage-matched interventions, motivational interviewing, family education, and active outreach to self-help (Mueser et al., 2003; SAMHSA, 2008, 2010). Peers are not explicitly included in the research-supported intervention (McHugo et al., 2007). Clients served by IDDT teams practicing at high fidelity have decreased hospitalization compared to clients served by low fidelity teams (Chandler, 2011), as well as significant decreases in both hospital days and days of substance use (Barrowclough et al., 2001; Drake et al., 2006; Mueser et al., 2003). Unlike ACT, IDDT, to our knowledge, has not been evaluated quantitatively with the addition of peers to the practice. The "partnership with consumers" (Devitt, Davis, Kinley, & Smyth, 2009, p. 93) is cited as a facilitator in long-term implementation of IDDT, but the specific inclusion of peers on IDDT teams in the research is novel. There is a need for both the implementation of research-supported interventions based upon the established and tested evidence, and an openness to local adaptation, and measurement of the same, so practices can continue to evolve with new evidence (Ogden & Fixsen, 2014).

IDDT fidelity and measurement

Fidelity for IDDT is measured by a 26-item fidelity tool that represents the earlier mentioned components among others, each scored at a point in time on a 5-point Likert scale. The scores of each individual item are then averaged for subscale scores and a total fidelity score (Mueser et al., 2003). High IDDT fidelity compared to low or moderate fidelity of a program has been associated with significant decreases in hospital days and days of substance use (Barrowclough et al., 2001; Drake et al., 2006; Mueser et al., 2003).

IDDT implementation and adaptation studies are primarily qualitative in nature. In Indiana, six IDDT teams struggled with difficulty transitioning to an integrated approach and issues with state commitment and on-going funding (Isett et al., 2007; Magnabosco, 2006; Moser, Deluca, Bond, & Rollins, 2004). One IDDT team in Michigan noted similar barriers (Blakely & Dziadosz, 2007). High staff turnover and supervisory understanding of the research-supported intervention were noted in IDDT implementation studies in Kansas and Ohio (Peterson et al., 2013; Rapp et al., 2010; Wieder & Kruzynski, 2007; Woltman & Whitley, 2007). Even with high fidelity being associated with improved outcomes with IDDT, the implementation process is far from simple and requires significant study to assure that the practice is actually provided to those with COD who qualify (Boyle & Kroon, 2006; Chandler, 2011; Peterson et al., 2013). Implementation of IDDT and its individual components are crucial factors to consider in terms of how a best practice starts and maintains services.

Despite this lack of published evidence, in 2007, Michigan began to systematically incorporate peer support specialists, along with the existing multi-disciplinary team members of physicians, nurses, social workers, and substance abuse clinicians, as members of IDDT teams (MDCH, 2010). In 2005, Michigan had received a federal block grant to implement and measure the implementation of integrated care for adults with COD in the form of IDDT (MDCH, 2007a, 2007b). The unique inclusion of peers to IDDT throughout this state as a statewide adaptation of an existing research-supported intervention offers an opportunity to add to the literature on the implementation of IDDT with peer services. This opportunity to study the results of adaptations of research-supported interventions based upon local needs or circumstances is an important aspect of translational research (Ogden & Fixsen, 2014). As such, determining how IDDT fidelity differs when peers are added compared to when peers are not part of the team was the focus of this study.

Methods

Design

This study is a retrospective, secondary analysis of all 68 IDDT teams reviewed in Michigan by the Michigan Fidelity Assessment and Support Team (MiFAST, 2013) between 2006 and 2012 with a focus on the 20 teams that reported on peer use. These 20 teams represent a 29.4% response rate of the 68 total teams reviewed by MiFAST over the study period, which included IDDT teams throughout the state with the exception of Wayne County and Detroit, which used a different fidelity process.

Measures

Fidelity

IDDT is made up of 26 individual components, each of which is measured during fidelity review on an ordinal Likert scale with a score of 1–5, 5 being the highest. The IDDT toolkit provides clarity on scoring of 1–5 for each item to anchor the tool. Some anchor items are based on a percentage of activity, while others use more numbers of sources from the team that are using a particular part of the practice. Total fidelity was a continuous variable with possible values of 1.00–5.00, the mean of all 26 individual item scores. Averaged to arrive at organizational and

treatment subscale scores—a continuous variable with possible values of 1.00–5.00, scores were used for the 12 organizational scale items (organizational philosophy; eligibility or consumer identification; penetration; assessment; individualized treatment plan; individualized treatment; training; supervision; process monitoring; outcome monitoring; quality assurance; and personal choice regarding service provision) and 14 treatment scale items (multidisciplinary team; integrated treatment specialist; stage-wise interventions; access to comprehensive services; time-unlimited services; outreach; motivational interventions; substance abuse counseling; group treatment for COD; family interventions for COD; alcohol and drug self-help groups; pharmacological treatment; interventions to promote health; and secondary interventions for non-responders). The mean was used for all 26 fidelity scale items, referred to as the total fidelity, also a continuous variable with possible values 1.00–5.00. A dichotomous variable was developed for high fidelity defined as total fidelity score of 4.00 or above. This measure, although not empirically established, has been previously utilized in analysis of IDDT fidelity, and has been associated with improved outcomes for IDDT recipients (Barrowclough et al., 2001; Chandler, 2009, 2011; Drake et al., 2006; Mueser et al., 2003).

Prior to IDDT fidelity reviews beginning, MIFAST reviewers were trained on the reliable administration of the IDDT fidelity tool (Mueser et al., 2003), and MiFAST reviewers shadowed existing review teams in Ohio or Michigan. Once MiFAST reviewers were trained, fidelity reviews were completed with IDDT teams on-site using two or three MiFAST reviewers, one lead reviewer, and one or two assistant reviewers (MiFAST, 2013). All 26 items from the IDDT fidelity tool were scored, and a report provided to the IDDT team with scores, narrative summaries, and recommendations for implementation going forward within 2–3 weeks of each fidelity review (MiFAST, 2013).

One concern relates to review reliability. To analyze this, tests were completed on the baseline and subsequent reviews. Six of seven possible lead reviewers completed baseline reviews, with no one reviewer completing more than 30% of total reviews, and one reviewer completing only one review. The lead reviewer that completed the baseline IDDT fidelity review was significantly related to total fidelity ($F(4, 58) = 4.84$, $p < .01$) with no concerns of heterogeneity of variance. When the one reviewer that only had one review completed at baseline was removed from the model, Bonferroni post-hoc tests demonstrated that a single reviewer's scores were significantly variant from the other four reviewers (M difference = –1.04, $SE = .26$, $p < .01$). Five of seven possible lead reviewers completed second and third reviews, with no one reviewer completing more than 30% of total reviews, and one reviewer completing only one review, indicating that third reviews were even more evenly distributed than second reviews. The lead reviewer that completed the second and third IDDT fidelity review was not significantly related to total fidelity ($F(3, 34) = 1.07$, $p = .38$), indicating adequate inner rater reliability by the second review point. For this study, reviewer reliability was determined to be adequate for analysis since it was completed primarily on second and third reviews.

Peers

Data on peer membership on IDDT teams was obtained from IDDT team leaders' self-report. IDDT team leaders were asked in an e-mail communication with two subsequent reminders to report on the following questions for each fiscal year from FY 2006–FY 2012: Did you have a peer specialist on the IDDT team? Was the peer specialist certified on the IDDT team? Was the peer specialist working full-time on the IDDT team? Did you have more than one peer specialist on the IDDT team?

IDDT teams

Teams were classified dichotomously as non-rural or rural. Rural was defined as a team that operated in a county of less than 100,000 residents in the 2010 U.S. Census (Bureau of the Census, 2012). Teams were also classified as additionally offering ACT as another multi-disciplinary team approach to treat adults with mental illness (Dietrich et al., 2009), yes or no. Year of review was measured for baseline, second, and third reviews, with all reviews occurring between 2006 and 2012. To determine the relationship between the time period of initial IDDT implementation and fidelity, teams were categorized based on when they had their baseline review: in the first 2 years of statewide implementation (2006–2007), the second 2 years (2008–2009), or the last 3 years (2010–2012), referred to as early, mid, and late adopters, respectively.

Analytic strategy

A descriptive univariate and bivariate analysis and analysis of variance (ANOVA) utilizing SPSS v. 20 (IBM Corporation, 2011) was used in this study to determine the overall relationship between peer status on IDDT teams and mean fidelity in the most recent fidelity review for each IDDT team. Frequency measures of team variables, ACT and rural, and peer variables, having a peer, having a certified peer, having a full-time peer, and having more than one peer at IDDT review, were used to describe the IDDT teams in the sample, and the presence of peers on those teams. Means and standard deviations of fidelity subscale and total fidelity outcomes were used to describe fidelity. To determine if teams that reported on peer variables and teams that did not report on peer variables were significantly different, chi-square analysis of ACT and rural teams by teams reporting on peer variables were completed, and independent sample *t* tests were used to compare fidelity for teams reporting on peer variables or not in their baseline review. Then, using only those teams that reported on peer variables, the relationship between having a peer or not and fidelity was completed using an independent *t* test. Finally, ANOVA was employed to examine the relationship between peer status (no peer, part-time peer, or full-time peer) and fidelity scores at most recent review, and between year of review and fidelity scores for most recent review. Alpha levels were set at .05 throughout.

Results

Comparison of initial and final sample

The first task was to determine if the sample of those reporting on peer variables differed from the sample of those not reporting on peer variables. If the smaller sample of teams that reported on peer characteristics is similar to the larger group of teams that did not report on peer variables, the results can be more confidently generalized to the larger sample. Descriptive analysis of the initial sample of all teams reviewed (68) and the samples of teams that did (20) and did not (40) report on peer variables are included in Table 1. Teams that reported on peer variables (20) and did not report on peer variables were compared to determine if they were different groups. A similar percentage of teams were rural that reported on peer variables (45.0%) as did not (45.8%), a similar percentage reported as also providing ACT for teams that reported on peer variables (90.0%) as not reporting (72.9%). The same was true for teams that were either early- or mid-adopters for teams reporting on peer variables (70.0%) as not reporting on peer variables (64.6%). Total fidelity was also not significantly different for teams reporting

Table 1. IDDT Fidelity for Baseline Review for Teams in Michigan.

	All teams (68)	Teams reporting for peers (20)	Teams NOT reporting for peers (48)	Test of difference (independent *t*-test or x^2 with *df* and *p*-value)
% rural	45.6%	45%	45.8%	x^2 (1) = .004, p = .95
% also offering ACT	77.9%	90.0%	72.9%	x^2 (1) = 2.40, p = .122
% early or mid-adopters (2006–2010)	66.1%	64.6%	70.0%	x^2 (2) = .67, p = .71
Organizational subscale fidelity mean (*SD*)	3.24 (.85)	3.36 (.74)	3.19 (.89)	t (63) = –.71, p = .487
Treatment subscale fidelity mean (*SD*)	3.52 (.65)	3.58 (.61)	3.49 (.67)	t (64) = –.46, p = .654
Total fidelity mean (*SD*)	3.38 (.71)	3.48 (.58)	3.34 (.76)	t (62) = –.75, p = .463

Source. MiFAST (2013). *Note.* N = 68.

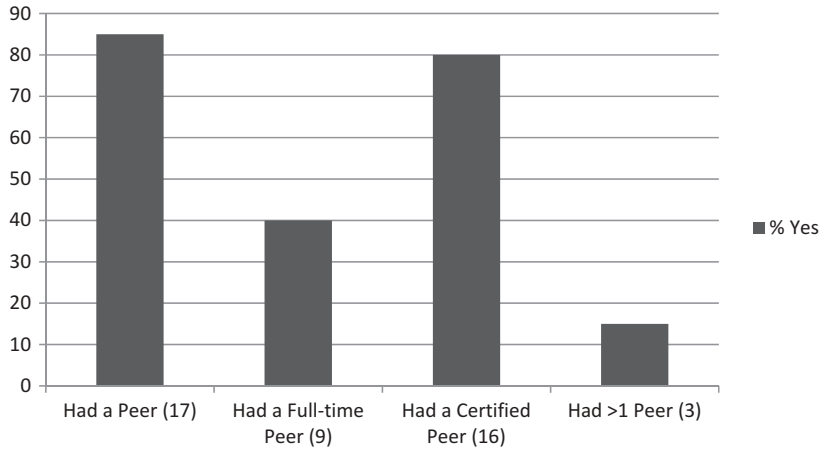

Figure 2. Peer variables of IDDT Team at most recent fidelity review (N = 20). *Note.* Each bar indicates the percentage of teams who responded "yes" for each of the questions about peers. Each of the 20 teams is represented in each bar (MiFAST, 2013).

on peer variables (M = 3.48, SD = .58) and not reporting on peer variables (M = 3.34, SD = .76) using an independent t test.

Peers on IDDT teams

Of the final sample of 20 teams reporting on peer variables in their most recent review, a majority of teams, 85.0%, had a peer on their team. Of those 17 teams with a peer, nine (52.9%) had a part-time peer and eight (47.1%) a full-time peer. Those teams whose peer staff was a certified peer support specialist by Michigan Department of Community Health represented 80.0% of teams; and three teams, or 15.0%, had more than one peer serving on the IDDT team at their most recent fidelity review. See Figure 2.

Peers and IDDT fidelity

When comparing teams with and without peers at the most recent review, teams that had a peer (17) had significantly higher total fidelity (M = 3.93, SD = .55), than teams without

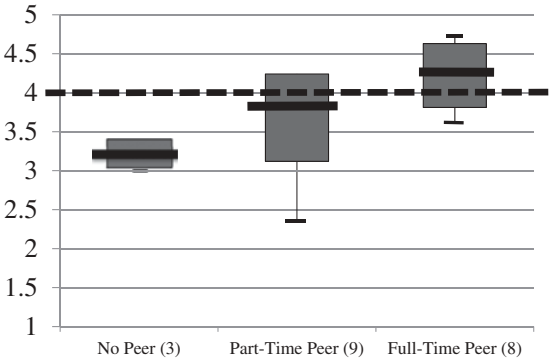

Figure 3. One-way ANOVA of peer status and IDDT total fidelity. *Note*. Total fidelity is a mean of all 26 fidelity items, with a total possible value of 1.00–5.00. Total fidelity above 4.00 indicates high fidelity range associated with improved clinical outcomes for clients served of that team, $F(2, 17) = 5.88$, $p = .01$ (MiFAST, 2013).

a peer ($M = 3.21$, $SD = .18$, $t(18) = -2.21$, $p = .041$), but the real distinction in fidelity was not clear until the staffing level of peers was evaluated. Teams that had a full-time peer (8) also had significantly higher total fidelity ($M = 4.22$, $SD = .41$), than teams without a peer ($t(9) = -4.08$, $p = .003$). Furthermore, teams that had a certified peer (16) also had significantly higher total fidelity ($M = 3.95$, $SD = .57$), than teams without a peer ($t(17) = -2.22$, $p = .04$), as did teams with more than one peer (3) on total fidelity ($M = 3.97$, $SD = .25$), compared to teams with no peer ($t(4) = -4.32$, $p = .01$). On every bivariate measure of peer variables, teams with peers, whether full-time, certified, more than one, or simply present on the IDDT team, were significantly associated with higher total fidelity than teams with no peer.

Full-time peers and IDDT fidelity

The mean fidelity score for most recent reviews with no peer (3) was 3.21 ($SD = .18$), a part-time peer (9) was 3.68 ($SD = .56$), and a full-time peer (8) was 4.22 ($SD = .41$). The mean score for those teams with full-time peers was also clinically significant because a total score of 4.00 or above indicates that teams are high fidelity. See Figure 3 for a depiction of these results.

To determine if the full-time equivalent (FTE) of peers on IDDT teams (no peer, part-time peer, and full-time peer) was associated with fidelity, an ANOVA was completed. Having a FTE peer was significantly associated with review total fidelity score ($F(2, 17) = 5.88$, $p = .01$). A Bonferroni post-hoc test revealed that the total fidelity for teams with a full-time peer ($M = 4.22$, $SD = .41$) had significantly higher fidelity than those teams with no peer ($M = 3.21$, $SD = .18$, Mean Difference $= -1.01$, $p = .016$). There was not a significant different between teams with no peer and a part-time peer ($M = 3.68$, $SD = .56$, Mean Difference $= .47$, $p = .45$), or a part-time peer and a full-time peer (Mean Difference $= -.54$, $p = .09$). The amount of peer services on IDDT teams is related in a linear fashion to improved IDDT fidelity.

Conclusion

Main findings

Research-supported intervention implementation and fidelity measurement gives the field valuable information about how services are actually delivered in clinical practice. When research-supported interventions are initially designed, they are static, even when it is recognized that implementation of these practices is dynamic. Practices are often altered to accommodate new trends in service delivery, policy, or funding. Such is the case for this analysis of IDDT fidelity with the systematic addition of peer services to the practice throughout one state. In this first study (to our knowledge) of IDDT with peers compared to IDDT without use of peers, IDDT teams with peers had higher fidelity than IDDT teams without peers. In fact, the addition of a full-time peer to the multi-disciplinary team of social workers, nurses, counselors, and physicians was associated with high fidelity at team's most recent review, among the subset of teams that reported peer status, compared to teams that had no peer. There also appeared to be a dose response or linear pattern between peer FTE and IDDT total fidelity.

Although this is the first analysis of peer services and IDDT fidelity, previous studies of IDDT and ACT fidelity and outcomes, and ACT services with peers, help to situate this finding in the existing literature. IDDT and ACT fidelity and inclusion of peers in other areas of mental health is a proximal measure associated with improved outcomes. There is some evidence of improved outcomes with adding peers to ACT teams, a characteristic associated with lower rates of hospitalization, homelessness, and arrests (Clarke et al., 2000; Paulson et al., 1999; van Vugt et al., 2012). Clients with COD served by ACT or IDDT teams practiced at a high fidelity have decreased hospitalization, substance use, and remission of substance use disorders compared to clients served on low fidelity teams (Barrowclough et al., 2001; Chandler, 2011; Dietrich et al., 2009; Drake et al., 2006; McHugo et al., 1999; Mueser et al., 2003). Peers on ACT teams are associated with similarly positive outcomes compared to teams without peers (Clarke et al., 2000; Paulson et al., 1999; van Vugt et al., 2012). IDDT and ACT fidelity, and peers on ACT, are associated with improved outcomes, yet there was no evidence regarding peers on IDDT previously. Consequently, this study's finding that peers are associated with improved fidelity indirectly supports the previous literature.

This finding that peers on IDDT teams are associated with improved fidelity, which in turn has been associated with improved outcomes for individuals served by IDDT, and indeed that having a full-time peer is associated with high fidelity, can help administrators in making staffing decisions in limited resource situations. Clients served on IDDT teams, as stated previously, have at least two chronic relapsing and remitting conditions, and have worse outcomes and higher costs compared to clients with only a mental illness or substance use disorder. Systems of care that recognize this association, and develop staffing plans to address the best combination of practitioners to serve clients on IDDT have promise of positively impacting those outcomes, and if not reducing costs, at least providing services that are cost effective. The question of why this association between peers and higher fidelity exists is not answered here, however. Some of the possible explanations include the presence of a hopeful model for recovery that a peer represents, or the engagement with peer staff that assists people served on IDDT to better engage with the rest of the IDDT team. It is also possible that this association is spurious, or that the

causation is reversed, and in fact that high fidelity teams hire peers, rather than teams that hire full-time peers become high fidelity.

Limitations

Even though this evaluation of the relationship between peers and IDDT fidelity adds significantly to the literature by establishing the correlation between peers and high fidelity, there are limitations to this exploratory analysis. First, the fidelity evaluations reviewed did not include the largest metropolitan area in Michigan, Detroit and Wayne County, since they used a different fidelity review process from the MiFAST process. Although several of the suburban counties surrounding center city Detroit were included in the analysis (Oakland, Macomb, Washtenaw, and Monroe), Wayne County was not included. Given that Detroit is the largest metropolitan area in Michigan, the lack of available data from that area is significant, and may make generalizability to other states with a large population center more difficult.

The most significant limitation of this study was the low response rate of 29.4% for the peer data. Given that 17 of the 20 teams that reported on teams had a peer in their most recent review, there is a clear question of response bias in teams that had peers being more likely to report on peer variables than teams without peers. There was no significant difference of the examined predictor or outcome variables within this study between teams that responded on peer variables and those that did not, which provided increased confidence in the generalizability of the results to the larger sample of IDDT teams reviewed in Michigan. For example, even though the teams that reported on peer variables and those that did not report did not significantly differ in also offering ACT services, a larger sample might have made that distinction significant, so it is possible that the group that reported on peer variables and did not were different. And, there are many variables that could have differentiated teams that reported on peer variables and teams that did not, which would then raise questions about the generalizability of the final sample results to the initial sample of all IDDT teams reviewed in Michigan, or generalizability to other systems of care that are systematically incorporating peers into IDDT. In Peterson et al. (2013), supervisor turnover was significantly negatively associated with research-supported intervention fidelity scores, but supervisor variables were not measured in this analysis, only peer variables. Perhaps teams with newer team leaders responded in lower levels than those with longstanding team leaders, which could have confounded the relationship between peers and fidelity.

A third significant limitation is that even though the results establish a positive correlation between having a full-time peer and IDDT team fidelity, they do not establish causality. Teams with full-time peers could have higher staffing rates overall, which is associated with higher fidelity. Or, high fidelity teams might simply hire peers. Lastly, although data about FTE of peers on IDDT teams by review were collected, more sensitive measures of peer status on IDDT was not. A continuous variable of hours employed was not obtained, nor were any data on peer specialist activities or quality of services on IDDT teams and the data on peers were self-reported. Additional research on this practice alteration will help further explore the relationship between peers and IDDT or other complex research-supported interventions.

Further research

This study was the first to analyze the inclusion of peers on IDDT, and the relationship between peers and IDDT total fidelity. However, there is significant research on the statewide implementation of IDDT over time, particularly with this widespread practice alteration, yet to be completed. In this study, subscale and total fidelity, a mean of 12–26 fidelity items (Mueser et al., 2003) was used as the outcome variable of interest. The relationship of peers serving on IDDT teams to individual fidelity items, particularly self-help liaising, outreach, and consumer choice, would offer additional insight into the relationship between peer services and IDDT fidelity. In addition, since data are available for all 68 teams with full fidelity reviews in Michigan from 2006–2012, the growth trajectories of IDDT fidelity based upon other team variables, including geographic location, team size, and use of additional research-supported interventions along with IDDT, would provide additional information on moving a state system of care toward higher fidelity.

Implications for practice

Research-supported intervention implementation in behavioral health offers barriers and opportunities for systems of care. The cost and benefit of training, incentivizing, and supporting best practices are significant considerations for systems of care. And, when best practices are altered in systematic ways, whether the practice will still be able to be fully implemented with high fidelity is a question with significant implications for all stakeholders in behavioral health. Fidelity to IDDT is of interest because previous research has shown significant decreases in number of hospitalizations (Chandler, 2011), hospital days and substance use (Barrowclough et al., 2001; Drake et al., 2006; Mueser et al., 2003), and loss from treatment (Hunt et al., 2013). The finding that full-time peers serving on IDDT teams is associated with higher fidelity than teams with no peer is important because one state chose to pursue such extensive incorporation of peers to the IDDT model prior to evidence regarding its potential impact. Although this analysis found preliminary positive findings between peers and fidelity, further exploration of the relationship between peers and quality of life, as well as recovery outcomes for people served by IDDT is needed. An analysis of data across the state and over time on the association of peers on IDDT and outcomes of hospitalization, housing status, employment, and criminal justice involvement could not only determine a correlation, but also have further policy and staffing implications.

Full-time peer services on IDDT teams were associated with improved program fidelity in Michigan compared to teams with no peers. The experiment of adding this component to an existing research-supported intervention appears positive for fidelity and serves as a first step in examining the use of peers in IDDT on recovery outcomes.

References

Barrowclough, C., Haddock, G., Tarrier, N., Lewis, S. W., Moring, J., O'Brien, R., … McGovern, J. (2001). Randomized controlled trial of motivational interviewing, cognitive behavior therapy, and family intervention for patients with comorbid schizophrenia and substance use disorders. *American Journal of Psychiatry*, *158*, 1706–1713.

Blakely, T. J. & Dziadosz, G. M. (2007). Social functioning: A sociological common base for social work practice. *Journal of Sociology and Social Welfare*, *34*(4), 151–168.

Boyle, P. E., & Kroon, H. (2006). Integrated dual disorder treatment: Comparing facilitators and challenges of implementation for Ohio and the Netherlands. *International Journal of Mental Health*, *35*(2), 70–88.

Bureau of the Census. (2012). Qualifying urban areas for the 2010 Census. *Federal Register*, *77*(59), 1–19. Washington, DC: Author.

Campbell, J., Johnson, M., Lichtenstein, C., Noel, J. G., Sonnefeld, J., Yates, B., … Teague, G. (2006). *The Consumer-Operated Services Program Multisite Research Initiative (COSP-MRI): Final report*. St. Louis, MO: Coordinating Center at the Missouri Institute of Mental Health.

Chandler, D. W. (2009). Implementation of integrated dual disorders treatment in eight California programs. *America Journal of Psychiatric Rehabilitation*, *12*, 330–351.

Chandler, D. W. (2011). Fidelity and outcomes in six integrated dual disorders treatment programs. *Community Mental Health Journal*, *47*(1), 82–89.

Clarke, G. N., Herinckx, H. A., Kinney, R. F., Paulson, R. I., Cutler, D. L., Lewis, K., & Oxman, E. (2000). Psychiatric hospitalizations, arrests, emergency room visits and homelessness of clients with serious and persistent mental illness: Findings from a randomized trial of two ACT programs vs. usual care. *Mental Health Services Research*, *2*(3), 155–164.

Cook, J. A. (2011). Peer-delivered wellness recovery services: From evidence to widespread implementation. *Psychiatric Rehabilitation Journal*, *35*(2), 87–89.

Crane-Ross, D., Roth, D., & Lauber, B. G. (2000). Consumers' and case managers' perceptions of mental health and community support service needs. *Community Mental Health Journal*, *36*(2), 161–178.

Davidson, L., Chinman, M., Kloos, B., Weingarten, R., Stayner, D., & Tebes, J. K. (1999). Peer support among individuals with severe mental illness: A review of the evidence. *Clinical Psychology: Science and Practice*, *6*(2), 165–187.

Devitt, T. S., Davis, K. E., Kinley, M., & Smyth, J. (2009). The evolution of integrated dual disorders treatment at Thresholds: Lessons learned. *American Journal of Psychiatric Rehabilitation*, *12*, 93–107.

Dietrich, M., Irving, C. B., Park, B., & Marshall, M. (2009). Intensive case management for severe mental illness (review). *Cochrane Database of Systematic Reviews*, *3*, CD007906.

Drake, R. E., McHugo, G. J., Xie, H., Fox, M., Packard, J., & Helmsetter, B. (2006). Ten-year recovery outcomes for clients with co-occurring schizophrenia and substance use disorders. *Schizophrenia Bulletin*, *32*(3), 464–473.

Drake, R. E., Mercer-McFadden, C., Mueser, K. T., McHugo, G. J., & Bond, G. R. (1998). Review of integrated mental health and substance abuse treatment for patients with dual disorders. *Schizophrenia Bulletin*, *24*, 589–608.

Drake, R. E., O'Neal, E. L., & Wallach, M. A. (2008). A systematic review of psychosocial research on psychosocial interventions for people with co-occurring mental and substance use disorders. *Journal of Substance Abuse Treatment*, *34*, 123–138.

Farkas, M., Gagne, C., Anthony, W., & Chamberlin, J. (2005). Implementing recovery oriented evidence based programs: Identifying the critical dimensions. *Community Mental Health Journal*, *41*(2), 141–158.

Faulkner, A., & Basset, T. (2012). A helping hand: Taking peer support into the 21st century. *Mental Health and Social Inclusion*, *16*(1), 41–47.

Fixsen, D. L., Naoom, S. F., Blasé, K. A., Friedman, R. M., & Wallace, F. (2005). *Implementation research: A synthesis of the literature* (FMHI Publication #231). Tampa, FL: University of South Florida, Louis de la Parte Florida Mental Health Institute, The National Implementation Research Network.

Green, A. I., Drake, R. E., Brunette, M. F., & Noordsy, D. L. (2007). Schizophrenia and co-occurring substance use disorder. *American Journal of Psychiatry*, *164*(3), 402–408.

Hunt, G. E., Siegfried, N., Morley, K., Sitharthan, T., & Cleary, M. (2013). Psychosocial interventions for people with both severe mental illness and substance misuse. *Cochrane Database of Systematic Reviews*, *10*, 1–258.

IBM Corporation. (2011). *IBM SPSS Statistics for Windows, Version 20.0*. Armonk, NY: Author.

Institute of Medicine (IOM). (2006). *Improving the quality of health care for mental and substance-use conditions*. Washington, DC: National Academies Press.

InterNational Association of Peer Supporters. (2014). *National practice guidelines for peer supporters (US)*. Retrieved from http://inaops.org/national-standards/

Isett, K. R., Burman, M. A., Coleman-Beattie, B., Hyde, P. S., Morrissey, J. P., Magnabosco, J., … Goldman, H. H. (2007). The state policy context of implementation issues for evidence-based practice in mental health. *Psychiatric Services*, *58*(7), 197–209

Karg, R. S., Bose, J., Batts, K. J., Forman-Hoffman, V. L., Liao, D., Hirsch, E., … Hedden, S. L. (2014). *Past year mental disorders among adults in the United States: Results from the 2008–2012 mental health surveillance study*. Rockville, MD: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration.

Klein, A. R., Cnaan, R. A., & Whitecraft, J. (1998). Significance of peer social support with dually diagnosed clients: Findings from a pilot study. *Research in Social Work Practice*, *8*, 529–551.

MacNeal, C., & Mead, S. (2005). A narrative approach to developing standards for trauma-informed peer support. *American Journal of Evaluation*, *26*(2), 231–244.

Magnabosco, J. L. (2006). Innovations in mental health services implementation: A report form the U.S. Evidence-Based Practices Project. *Implementation Sciences 1*(13), 1–11.

McHugo G. J., Drake, R. E., Teague, G. B., & Xie, H. (1999). Fidelity to assertive community treatment and client outcomes in the New Hampshire dual disorders study. *Psychiatric Services*, *50*, 818–824.

McHugo, G. J., Drake, R. E., Whitley, R., Bond, G. R., Campbell, K., Rapp, C. A., & Finnerty, M. T. (2007). Fidelity outcomes in the national implementing evidence-based practices project. *Psychiatric Services*, *58*(10), 1279–1284.

Mead, S., Hilton, D., & Curtis, L. (2001). Peer support: A theoretical perspective. *Psychiatric Rehabilitation Journal*, *25*, 134–141.

Michigan Department of Community Health. (2007a). *Medical services administration bulletin MSA 07–52*. Lansing, MI: Author.

Michigan Department of Community Health. (2007b). *Michigan Department of Community Health (MDCH) recovery policy and the role of peer support specialists*. Lansing, MI: Author.

Michigan Department of Community Health. (2010). *Michigan PIHP/CMHSP provider qualifications per Medicaid services and HCPCS/CPT codes*. Lansing MI: Author.

Michigan Fidelity Assessment and Support Team. (2013). *Integrated dual disorder treatment fidelity scores*. Lansing, MI: Author.

Min, S. Y., Whitecraft, J., Rothbard, A. B., & Salzer, M. S. (2007). Peer support for persons with co-occurring disorders and community tenure: A survival analysis. *Psychiatric Rehabilitation*, *30*(3), 207–213.

Moser, L. L., Deluca, N. L., Bond, G. R., Rollins, A. L. (2004). Implementing evidence-based psychosocial practices: Lessons learned from statewide implementation of two practices. *Central Nervous System Spectrum*, *9*, 926–936.

Mueser, K. T., Noordsy, D. L., Drake, R. E., & Fox, L. (2003). *Integrated treatment for dual disorders: A guide to effective practice*. New York, NY: The Guilford Press.

National Association of Peer Specialists. (2014). *Peer services*. Retrieved from http://www.viahope.org/resources/view/national-association-of-peer-specialists-naps

Ogden, T. A., & Fixsen, D. L. (2014). Implementation science: A brief overview and a look ahead. *Journal of Psychology*, *222*(1), 4–11.

Paulson, R., Herinckx, H., Demmler, J., Clarke, G., Cutler, D., & Birecree, E. (1999). Comparing practice patterns of consumer and non-consumer mental health service providers. *Community Mental Health Journal*, *35*(3), 251–269.

Peterson, A. E., Bond, G. R., Drake, R. E., McHugo, G. J., Jones, A. M., & Williams, J. R. (2013). Predicting the long-term sustainability of research-supported interventions in mental health care: An 8-year longitudinal study. *Journal of Behavioral Health Services and Research, 41*(3), 337–346.

President's New Freedom Commission on Mental Health. (2003). *Achieving the promise: Transforming mental health care in America*. Washington, DC: Department of Health and Human Services.

Proudfoot, J. G., Javawant, A. E., Whitton, A. E., Parker, G., Manicavasagar, V., Smith, M., & Nicholas, J. (2012). Mechanisms underpinning effective peer support: A qualitative analysis of

interactions between expert peers and patients newly-diagnosed with bipolar disorder. *BMC Psychiatry*, *12*, 1–11. Retrieved from http://www.biomedcentral.com/1471-244X/12/19

Rapp, C., Etzel-Wise, D., Marty, D., Coffman, M., Carlson, L., Asher, D., … Holter, M. (2010). Barriers to evidence-based practice implementation: Results of a qualitative study. *Journal of Community Mental Health*, *46*, 112–118.

Schmidt, L. M., Hesse, M., & Lykke, J. (2011). The impact of substance use disorders on the course of schizophrenia—A 15-year follow-up study: Dual diagnosis over 15 years. *Schizophrenia Research*, *130*(3), 228–233.

Sledge, W. H., Lawless, M., Sells, D., Wieland, M., O'Connell, M. J., & Davidson, L. (2011). Effectiveness of peer support in reducing readmissions of persons with multiple psychiatric hospitalizations. *Psychiatric Services*, *62*(5), 541–544.

Substance Abuse and Mental Health Services Administration. (2008). *Evidence-based practices: Shaping mental health services toward recovery*. Rockville, MD: Author.

Substance Abuse and Mental Health Services Administration. (2010). *Integrated treatment for co-occurring disorders evidence-based practice (EBT) kit*. Rockville, MD: Author.

Substance Abuse and Mental Health Services Administration. (2012). *SAMHSA's working definition of recovery*. Rockville, MD: U.S. Department of Health and Human Services.

Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality. (2014). *The NSDUH report: Substance use and mental health estimates from the 2013 National Survey on Drug Use and Health: Overview of findings*. Rockville, MD: Author.

van Vugt, M. D., Kroon, H., Delespaul, P., & Mulder, C. L. (2012). Consumer-providers in assertive community treatment programs: Associations with client outcomes. *Psychiatric Services*, *6*, 477–481.

Watson, D. P., & Rollins, A. L. (2015). The meaning of recovery from co-occurring disorder: Views from consumers and staff members living and working in housing first programming. *International Journal of Mental Health and Addiction*, *13*(5), 635–649.

White, W. (1998). *Slaying the dragon: The history of addiction treatment and recovery in America*. Bloomington, IL: Chestnut Health Systems.

White, W. (2009). *Peer-based addiction recovery support: History, theory, practice, and scientific evaluation*. Chicago, IL: Great Lakes Addiction Technology Transfer Center.

Wieder, B. L., Boyle, P. E., & Hrounda, D. R. (2007). Able, willing, and ready: Practitioner selection as a core component of Integrated Dual Disorder Treatment implementation. *Journal of Social Work Practice in the Addictions*, *7*(1–2), 139–165.

Woltman, E. M. & Whitley, R. (2007). The role of staffing stability in the implementation of Integrated Dual Disorder Treatment: An exploratory study. *Journal of Mental Health*, *16*(6), 757–769.