REVIEW ARTICLE

Studying Implementation of Dual Diagnosis Services: A Review

Chantal Sylvain, PhD, and Lise Lamothe, PhD

Objective: Over the past 15 years, considerable time and energy has been devoted to implementing integrated services for individuals with dual disorders. While the key factors in the successful implementation of such services have been documented, applying them remains a challenge. What are we missing? In this article we attempt to answer this question by examining how implementation studies of integrated services have been carried out. The aim is to identify possible avenues for future implementation research. Methods: We updated a recent literature review of published studies on service implementation. Articles written in English and addressing organization-level factors were included. The reviewed articles were categorized based on two aspects of their methodology: their approach to the implementation process (content- or process-centered) and their objective (descriptive or explanatory). Results: In the 15 studies reviewed, we observed a tendency toward a content-centered approach (n = 9) with a majority having an explanatory objective. Studies that reflected this trend identified the most common determining factors in order to explain the level of implementation achieved within a given period of time. These studies did not examine the sequencing and transformation of the implementation process over time. Such a process-centered approach was used in only six studies. Conclusions: Research exploring the evolutive dynamics of implementation projects should be prioritized to counter the lack of knowledge on the subject. Such studies have the potential to greatly enhance our understanding as well as our capacity to master the implementation of integrated services. (Journal of Dual Diagnosis, 9:195–207, 2013)

Keywords: integrated services, implementation, dual diagnosis, dual disorders, methods

Mental health and substance abuse disorders are frequently diagnosed together. In the past 15 years, there has been growing evidence for the advantages of treating these dual disorders in an integrated way, that is, by treating both problems simultaneously while taking into account their mutual influences (Drake, Mercer-McFadden, Mueser, McHugo, & Bond, 1998; Drake, O’Neal, & Wallach, 2008; RachBeisel, Scott, & Dixon, 1999; Rush, Fogg, Nadeau, & Furlong, 2008; Substance Abuse and Mental Health Services Administration [SAMHSA], 2002; Siegfried, 1998). At the clinical level, this has resulted in integrated services for screening, assessment, and treatment.

Various organizational models have been developed in the wake of these different clinical developments. Some models propose that all patient services be provided in the same place by an integrated team of psychiatric and substance abuse professionals and other staff. The integrated dual disorders treatment (IDDT) model is a good example of this (Drake et al., 2001). This specialized model is considered an evidence-based practice for individuals struggling with the most serious disorders (Center for Substance Abuse Treatment, 2006, Drake, Mueser, Brunette, & McHugo, 2004; Mueser, Noordsy, Drake, & Fox, 2003). Other organizational models rely instead on functional integration, with professionals providing interwoven mental health and substance abuse interventions in either a common or separate setting. This universal model (Minkoff, 2007) requires that providers develop capacities to deal with dual disorders and mechanisms to ensure organized teamwork.

In recent years, numerous efforts have been devoted to implementing integrated services based on varying degrees of either one of these two organizational models. This has opened the door for an emergent field of research that focuses specifically on ways to achieve such implementation (Drake et al., 2001; Minkoff & Cline, 2004; Torrey et al., 2002). A recent review of the literature showed a convergence among factors found to be associated with successful implementation. These key factors are committed leaders, management of staff turnover, and financial, technical, and political institutional support (Torrey, Tepper, & Greenwold, 2011). This review of studies also showed that the implementation process required considerable effort over a long period of time. According to the researchers, this was due to the complexities involved,
including the changing of work cultures and the development of new competencies (Torrey et al., 2011). It is therefore not surprising that difficulties in evolving practices toward better integration persist, and this is despite current knowledge of the key factors associated with successful implementation (Drake & Bond, 2010; Hogan, 2011). This brings us to wonder about the approaches currently being used to study the implementation of integrated services in mental health and substance use disorders and about the ability of these approaches to fully grasp the complexity of the process. Are we missing something? In this article, we attempt to answer this question by looking closely at how the implementation of integrated services for dual disorders is studied. Our analysis is based on a characterization of implementation studies from a methodological standpoint. After identifying the main issues arising from the way implementation is studied, we suggest research priorities for the future.

**METHODS**

The 12 articles listed by Torrey et al. (2011) in their recent literature review served as our starting point. These articles met the following selection criteria: (a) published in English, (b) used quantitative and/or qualitative methods, and (c) focused on organization-level factors related to the implementation of integrated dual disorders services. They were found through a search of the PubMed database for articles published after 2001 and through a careful review of the reference lists of selected articles. The following keywords were used: “Diagnosis, Dual (Psychiatry),” “Substance-related disorders/rehabilitation,” “Community Mental Health Services/organization & administration,” and “Substance Abuse Treatment Centers/organization & administration.”

We updated this database to include articles published until March 2012. We used three strategies. The first was replicating the search strategy of Torrey et al. (2011) for the new period. However, this did not locate any new articles. The second strategy was manually searching the tables of contents of journals in which listed articles were published. We were able to find two articles this way: Carlson, Rapp, and Eichler (2012) and Rapp et al. (2008). Finally, we conducted a PubMed database search with the last name of the first author of each article already listed. This yielded one new article: Torrey, Bond, McHugo, and Swain (2012). At the end of our search, our database consisted of 15 articles: the 12 articles already listed by Torrey et al. (2011) and the 3 new articles that we found.

We systematically extracted from each article data relevant to the research objective and the main methodological choices (case selection criteria, number of cases selected, data collection methods, implementation outcomes, length of study). We also categorized the analytic approach as either variable-oriented or case-oriented and the analytic method as either quantitative, qualitative, or mixed. The variable-oriented approach focuses on patterns in variables across all cases, whereas the case-oriented approach first examines patterns in variables in each individual case and then compares these patterns between cases (Miles & Huberman, 1994).

We used this information to identify the research focus of each article and then categorize each article into one of the four categories of the typology created by Thiétart (2007). There are two general approaches in this typology: content-centered and process-centered. The fundamental difference between them lies in the extent to which they consider the dimension of time. Thus, the content-centered approach focuses on the nature of the object studied, either to reveal its components (descriptive objective) or to show how the components are associated with each other (explanatory objective). In this case, the time dimension is not explicitly taken into account. By contrast, the process-centered approach specifically examines the behavior of the object at study through time, either to reveal the sequence of its components (descriptive objective) or to show how the components operate depending on the evolution of other components (explanatory objective). Table 1 summarizes these four approaches, which we have adapted to our study of the implementation process. The categorization of articles was done by the first author and then revised independently by the second author. We then discussed points of disagreement until a consensus was reached.

**RESULTS**

**General Description of the Reviewed Articles**

The main characteristics of the articles are presented in detail in the appendix. Our first finding is that of the 15 articles

<table>
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<tr>
<th>Research objective</th>
<th>Content-centered</th>
<th>Process-centered</th>
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<tbody>
<tr>
<td>Descriptive</td>
<td>Describes the components of the implementation process</td>
<td>Describes the evolution through time of components of the implementation process</td>
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<tr>
<td>Explanatory</td>
<td>Explains the relationships between the different components of the implementation process</td>
<td>Explains the evolution through time of components of the implementation process as a function of the evolution of other components</td>
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**Journal of Dual Diagnosis**
listed, 12 were related directly or indirectly to the same implementation project: the National Implementing Evidence-Based Practices Project, which adopts the specialized model for its organizational strategy. The general objective of this project was to test the effectiveness of an implementation model for five evidence-based practices, including IDDT (Torrey et al., 2001). Of the three articles not related to the Evidence-Based Practices Project, two were part of a SAMHSA-funded Co-occurring State Incentive Grant Project (COGIS Project2), the organizational strategy of which was based on the universal model. These two studies focused on the capacity of mental health and addiction teams to address dual disorders. Finally, the last study focused on two integration experiences: one inspired by the specialized model and the other by the universal model. This study was not structured around any particular implementation model.

Our second finding is that 13 of the 15 articles reported a formal measure of implementation outcome. The most frequently documented outcome was fidelity to IDDT, which was reported in 10 articles. Eight of these articles reported fidelity to IDDT only, while two also examined penetration rate (number of people served divided by number of eligible people) in conjunction with fidelity. Three articles reported on measures of implementation other than fidelity to IDDT. One study examined sustainability of IDDT and two examined capacity of mental health or addiction teams to provide co-occurring disorders treatment. Of the two remaining articles, which did not report any formal measure of implementation outcome, one relied on close observations to evaluate how integration was achieved along dimensions (normative, functional, and systemic). The other article did not directly document implementation, but rather relied on the opinion of experts, which explains the absence of any implementation outcome.

A third finding is that the most frequent time period used in the study (9 articles) was 2 years. Two articles used a shorter period (15 months and 18 months), whereas two other articles studied the implementation process over 3 years. In one article, the initial 2-year implementation period was followed by a 2-year post-initial implementation. Only one article did not use a longitudinal design; rather, it relied on data collected from experts in implementation.

Our fourth finding is that of the 14 articles that used the organizational level for their analysis, 12 had a sample size of 5 organizational units or more. More specifically, eight of these studies had a sample size of between 5 and 14, while the other four studies have a sample size of more than 40. Note that for three of these four articles, the number of cases that specifically related to the implementation of integrated dual disorders services represented about one-quarter of all cases studied, with the rest examining the implementation of other evidence-based practices in mental health.

Our fifth and final finding concerns the analysis strategy used in the 13 articles whereby more than one organizational unit was sampled. In 11 of these articles, the authors carried out a variable-oriented analysis; that is, they concentrated on identifying variables and the relationships between these variables across cases. By contrast, in the other two articles, the authors carried out a case-oriented analysis, examining patterns in variables within each case and then comparing these patterns between cases.

The Implementation Approach Used

Based on the previous findings, we categorized the articles according to their approach to the implementation process using the typology of Thiétart (2007). We found that a majority of the articles reviewed were content-centered (9 of 15), while the remaining six articles adopted a process-centered approach. Within these two categories, we distinguished between articles with a primarily descriptive objective and those with an explanatory objective. The following sections present the specifics for each of the four subgroups.

Content-Centered Implementation Studies With a Descriptive Objective

This group includes two articles. As shown in Table 2, both aimed to describe the components of the implementation process, whether it was the relative importance of factors associated with implementation (Carlson et al., 2012) or the key factors in implementation success (Moser, Deluca, Bond, & Rollins, 2004). In both cases, the outcomes did not account for the evolutionary nature of the phenomenon. In the first article, for example, experts were surveyed on the importance they attributed to various strategies, without reference to any particular phase of implementation. With regard to the second article, the authors documented the evolution of implementation in real time. However, they then aggregated the data at the analysis stage, an analytical choice that identified the most important and common factors in the cases for the full study period. In sum, both studies revealed what matters in terms of overall strategies and barriers in implementing integrated services. Moser et al. (2004) also analyzed these factors in relation to the wider political environment, which allowed for some contextualization of IDDT implementation. However, the ways in which

<table>
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<th>Authors</th>
<th>Research focus</th>
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<tr>
<td>Carlson et al. (2012)</td>
<td>The relative importance of different implementation strategies as estimated by experts (cross-sectional study)</td>
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<tr>
<td>Moser et al. (2004)</td>
<td>The most important and common strategies and barriers to implementation across all cases studied (research period: 15 months)</td>
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the identified factors evolved over time and how this affected implementation were not explored.

**Content-Centered Implementation Studies With an Explanatory Objective**

Seven articles are part of this group (see Table 3). Unlike the previous group, these studies aimed to both describe and explain. They examined the outcomes of implementation based on a number of factors. In order to document these explanatory factors, four studies collected data at different times and in real time (Brunette et al., 2008; Chandler, 2009; van Wamel, Kroon, & van Rooijen, 2009; Woltmann et al., 2008). For the other three studies, one used baseline data only (Gotham, Claus, Selig, & Homer, 2010) and two used retrospective data (McGovern, Lambert-Harris, McHugo, Giard, & Mangrum, 2010; Swain, Whitley, McHugo, & Drake, 2010).

Whatever the approach, however, the authors used data aggregated in time to identify the main implementation factors. They then examined these factors in relation to implementation outcomes. Thus, the results provide general information on which factors are associated with which outcomes after a specific period of time. For example, Brunette et al. (2008) were able to identify implementation factors common to organizations that had achieved a moderate-to-high level of fidelity to IDDT, such as committed mid-level leaders and active engagement of consultant-trainers. However, this type of study does not account for either temporal dimension of the phenomenon or its dynamic character; for example, the possibility that factors change gradually and interact with each other and that their influence varies over time.

**Process-Centered Implementation Studies With a Descriptive Objective**

Four articles are part of this group: Wieder and Kruszynski (2007), Rapp et al. (2008), Rapp et al. (2010), and Torrey et al. (2012). They are presented in Table 4. All four share the common aim of showing the evolution over time of the various components of implementation. In the case of Wieder and Kruszynski (2007), the characteristics of staffing processes were the focus, while in the Rapp et al. (2010; 2008) articles, the focus was barriers to implementation: in the first, identifying and describing them, and in the second, strategies to overcome them. Finally, Torrey et al. (2012) focused more on the relative significance of five categories of barriers, facilitators, and strategies to implementation.

In all four cases, the authors collected data in real time and on several occasions. Unlike content-centered implementation studies, the researchers used an analysis strategy that enabled them to study the evolution of the studied variables over time. In Wieder and Kruszynski (2007), this resulted in a detailed description of the evolution of staffing process characteristics perceived to influence the implementation of IDDT within an organization over a period of 3 years. Rapp et al. (2010) identified barriers to implementation and described them by showing how they changed over time. Rapp et al. (2008) focused on the strategies used to overcome these barriers. The perspective of Torrey et al. (2012) was more general due to their large sample

### Table 3

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<th>Authors</th>
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<tr>
<td>Brunette et al. (2008)</td>
<td>The most important/common facilitators and barriers to implementation that explained a significant level of IDDT fidelity at the end of the study period (2 years) across all cases studied</td>
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<tr>
<td>Chandler (2009)</td>
<td>The factors influencing implementation and associated with level of IDDT fidelity at the end of the study period (2 years) on a per-case basis</td>
</tr>
<tr>
<td>Gotham et al. (2010)</td>
<td>The strength of association between initial organizational characteristics and increased capacity to provide integrated treatment at the end of the study period (2 years)</td>
</tr>
<tr>
<td>McGovern et al. (2010)</td>
<td>The strength of association between implementation factors and increased capacity to provide integrated treatment at the end of the study period (1.5 years)</td>
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<tr>
<td>Swain et al. (2010)</td>
<td>The most important/common implementation factors in cases that had sustained the evidence-based practices 2 years after the initial implementation period (2 years), in comparison to cases not successful at maintaining the evidence-based practices</td>
</tr>
<tr>
<td>Van Wamel et al. (2009)</td>
<td>The most important/common facilitators and barriers to implementation that explained a significant level of IDDT fidelity at the end of the study period (2 years) across all cases studied (non-detailed analytical approach)</td>
</tr>
<tr>
<td>Woltmann et al. (2008)</td>
<td>The strength of association between staff turnover patterns and (1) IDDT fidelity level and (2) IDDT penetration rate, at the end of the study period (2 years)</td>
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Note. IDDT = integrated dual disorders treatment.

### Table 4

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<th>Authors</th>
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<tr>
<td>Rapp et al. (2008)</td>
<td>The most important/common strategies to overcome barriers to implementation and their evolution over time across all cases studied (2 years)</td>
</tr>
<tr>
<td>Rapp et al. (2010)</td>
<td>The most important/common barriers to implementation and their evolution over time across all cases studied (2 years)</td>
</tr>
<tr>
<td>Torrey et al. (2012)</td>
<td>The relative importance of barriers, facilitators and strategies to implementation after 1 and 2 years, by activity sector and by level of IDDT fidelity achieved after 2 years</td>
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<tr>
<td>Wieder and Kruszynski (2007)</td>
<td>The evolution of staffing process characteristics perceived to influence implementation during the study period (3 years)</td>
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Note. IDDT = integrated dual disorders treatment.
size \((n = 49)\). However, it generated an account of how the relative importance of different factor categories evolved between the first and second year following the beginning of implementation. Overall, these four articles provide significant insight on how components of the implementation process evolve over time. With the exception of Torrey et al. (2012), even though the analysis remained variable-oriented, contextual information was integrated into the presentation of the results (e.g., the particular conditions in which some factors emerged over time). This provided information on the evolutionary dynamics at work, even though it was not reported in a systematic way.

**Process-Centered Implementation Studies With an Explanatory Objective**

As shown in Table 5, only two articles were categorized in this group: Wolmann and Whitley (2007) and Brousselle, Lamothe, Sylvain, Foro, and Perreault (2010). Both articles aimed to show how different components of the implementation process change over time depending on the evolution of other components. In both articles, a case-oriented analysis was carried out.

Wolmann and Whitley (2007) analyzed graphically the co-evolution of three variables (staff turnover patterns, fidelity to IDDT model, and penetration of IDDT model) in each of the 11 cases studied. The most common patterns across all cases were examined in light of contextual variables to explain the observed variations. Brousselle et al. (2010) used a narrative strategy to illustrate the evolutionary dynamics identified in the two cases studied in relation to both contextual factors and integration dimensions and mechanisms. The resulting cross-sectional analysis revealed specific patterns, not within the factors themselves but in the ways in which they were interconnected. In these two articles, data were collected in real time and on several occasions and the analysis process emphasized the temporal dimension. This allowed for a greater understanding of the evolutive dynamics of the patterns observed. However, these types of outcomes have the disadvantage of being more difficult to summarize.

**Assessing Implementation Outcomes**

We discern three main issues related to the assessment of implementation outcomes. These issues stem from our observation that implementation studies of integrated services usually formally measure outcomes for about 2 years following the initial implementation efforts, most often using a fidelity scale. The first issue is that a scale developed to measure fidelity in one context may not be applicable to all contexts. This is because scales are developed with a particular organizational model in mind; for example, the IDDT fidelity scale is closely based on the specialized model. Yet, current knowledge suggests that there are a variety of different ways of organizing services to deliver integrated dual disorders services (Brousselle, Lamothe, Mercier, & Perreault, 2007; Rush, Fogg, Nadeau, & Furlong, 2008). It is therefore possible that a given model, and consequently a particular measuring tool, is only applicable to certain contexts. In some contexts, for example, an observed lack of fidelity may be attributable less to an implementation gap than to a lack of compatibility between a particular context and the organizational model on which the measuring tool is based. One interesting development in this area is the creation of tools specific to a given implementation context. For example, there are presently two tools for measuring a program’s capacity to provide services for individuals with co-occurring disorders: one adapted to mental health programs, the Dual Diagnosis Capability in Mental Health Treatment (DDCMHT) index, and another adapted to addiction programs, the Dual Diagnosis Capability in Addiction Treatment (DDCAT) index (McGovern, Matzkin, & Giard, 2007; Gotham et al., 2011).

The second issue concerns the period of time that has elapsed between the beginning of implementation and the assessment of implementation outcomes. This period must be long enough to allow for a full appreciation of the dynamic nature of the implementation process. This contention is supported by numerous studies showing the importance of time in creating and stabilizing new practices after a major organizational change (e.g., Fixsen, Naom, Blasé, Friedman, & Wallace, 2005; Glouberman & Zimmerman, 2004). In fact, this was noted in several implementation studies listed by Torrey et al. (2011). According to Durlak and DuPre (2008), it is plausible that complicated interventions take longer to

**TABLE 5**

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<tr>
<td>Brousselle et al. (2010)</td>
<td>The evolution of contextual factors, integration dimensions and mechanisms as well as their interactions by case, then cross-sectionally, during the study period (3 years)</td>
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<tr>
<td>Wolmann and Whitley (2007)</td>
<td>The evolution of the relationship between staff turnover patterns and outcome measures (IDDT fidelity level and IDDT penetration rate) by case during the study period (2 years); strategies to overcome barriers</td>
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*Note. IDDT = integrated dual disorders treatment.*
implement, and integrated services certainly qualify as complicated interventions. This is an important consideration to keep in mind when interpreting the results of an implementation assessment, particularly when the assessment has been carried out only a year or two following implementation.

The third issue is conceptual: Is it essential to assess implementation outcomes in order to better understand the implementation process? Based on the literature in the field of evaluation, we can say that it is not absolutely essential; rather, it depends on the objective. Research on implementation evaluation supports our position. Although there is presently no consensus among authors on how to define implementation evaluation, there is general agreement that process analysis should be included. According to Patton (1997), this type of evaluation “focuses on the internal dynamics and actual operations of a program in an attempt to understand its strengths and weaknesses. Process evaluation asks: what’s happening and why?” (p. 206). Champagne, Brousselle, Hartz, Contandriopoulos, and Denis (2009) distinguish two types of process analysis. The first aims to explain the discrepancies between the planned intervention and the intervention that is implemented. In this case, the degree of implementation is similar to a fidelity measure and constitutes the dependent variable to be explained. This is typical of content-centered implementation studies with an explanatory objective.

The second type of process analysis identified by Champagne et al. (2009) is that of how an intervention is transformed. This type of evaluation is based on a dynamic conceptualization of the intervention and context; it recognizes that interventions change over time in contexts marked by the meeting of individuals whose interests rarely coincide. The evaluation thus seeks to explain how the context gradually shapes the intervention. In this case, it is not necessary to know the exact implementation outcome in order to better understand the process. This type of questioning is important for understanding the implementation of integrated services because of the significant changes involved. In fact, these changes go far beyond the personnel’s acquisition of new clinical skills; they affect the values, beliefs, and professional identity of individuals who are now asked to collaborate within new organizational arrangements (Sylvain & Lamothe, 2012). A greater understanding of the dynamics linking the context and the intervention is therefore essential. This would complement what is learned from the more common type of study focusing on identifying gaps in implementation and the reasons for these gaps (which requires, of course, an assessment of implementation outcome). However, this has implications for how the implementation process is approached as a research object, bringing to light a new set of issues and challenges.

Ways of Approaching the Implementation Process

The issue we discuss in this section stems from the trend in implementation studies to favor a content-centered approach, usually with an explanatory objective. Typically, researchers seek to identify the determining factors that explain the level of implementation achieved within a given period of time. This approach presents implementation factors as well-defined objects. This has the advantage of producing knowledge that can be summarized easily and lends itself to modeling. There is, however, the risk of adopting too reductionist a conception of the phenomenon. In the course of events, implementation factors are probably actually “moving” and do not act independently; rather, they interact to produce synergistic and/or antagonistic effects (Champagne & Denis, 1992). Moreover, it is possible that the influence of these factors fluctuates, either favorably or unfavorably, depending on the context. By neglecting these dynamics, we withhold access to the implementation process’ “black box.” Yet this is crucial in order to fully understand the phenomenon and to eventually master it. Indeed, to change practices, decision makers need knowledge that goes beyond “what works to reduce problem x” (i.e., implementation factors); they need to understand how this can work and in which context (i.e., the implementation process; Lomas, 2005).

The Tendency Toward Large Samples

The last issue we discuss is related to the observed tendency in implementation studies to favor large samples. This is consistent with the adoption of standardized procedures for collecting and analyzing data in the cases studied. This trend is indicative of the emphasis placed on external validity over all other types of validity; for example, construct validity (are the concepts representative?), descriptive or contextual validity (is the record of events complete?), and interpretive validity (is the analytical report true to the lived experiences shared by those interviewed?; Miles & Huberman, 1994).

More generally, this approach seems to align itself with the logic of causal research: namely, better understanding the causes of a problem is necessary to developing solutions that can later be implemented. This is not unexpected given that the majority of the studies listed were part of a research program to test an implementation model. However, implementation contexts vary widely, so much so that generic solutions are not easily applicable. As social systems, these implementation contexts are also characterized by internal dynamics that are hardly negligible. As underscored by Hackman (2012), “Groups are not mere assemblies of multiple cause-effect relationships; instead they exhibit emergent and dynamic properties that are not well captured by standard causal models” (p. 433). Finally, the decision to implement integration in a particular context is subject to many influences. According to Lomas (2005), knowledge that is useful to implementing changes in an organization must go beyond information limited to solving problems (e.g., what works for successful implementation of integrated services?). The required knowledge must facilitate a better
understanding of the problem (e.g., what do we know about the difficulties in implementing integrated services? What causes these difficulties? Who is affected? What are the possible options to address them?) and a better understanding of the issues that arise (e.g., what are the issues related to such actions? Who is likely to support and oppose these actions and why? Who will be affected and how?; Lomas, 2005, p. 57–58). By favoring large samples, this type of detailed knowledge of the context is neglected. In the inevitable compromise between breadth and depth faced by researchers (Patton, 2002), it would seem that breadth is winning out in implementation studies. Surely there is room for more in-depth implementation research focused on a limited number of cases. This change would require, however, that editors be open to considering articles based on standards of scientific rigor adapted to this type of research. In the current state of knowledge, it is difficult to determine the extent to which such articles exist but are not being published.

The article by Sicotte and Paré (2010) is a good example of a process-centered study with a small-sample design. It is a comparative longitudinal case study of the implementation process for two projects in the area of health information exchange, which is defined as the integration and electronic transfer of clinical information across organizations. Both projects had the same objectives, but one failed to reach them while the other one was very successful. Data were collected in real time through face-to-face interviews and non-participant observations over more than 2 years. The authors analyzed the data using a mixed coding strategy: predetermined codes based on an analytical framework and complementary codes that emerged empirically. They then used a process perspective, focusing on sequences of events over time to explain how and why particular outcomes were reached in each case. Finally, a cross-case analysis was performed in order to identify patterns between cases.

This analysis strategy enabled the researchers to make some interesting observations about the dynamics of the overall implementation process. For example, they noted an interdependence among the different factors influencing the implementation process, with this interdependence growing over time via a snowball effect and becoming more and more difficult to alter. The analysis showed, among other things, that this cumulative effect directly impacted the project outcome. This enabled the researchers to uncover priorities for action in the management of the process.

Although this study is not without limitations, it does lead to a deeper understanding and contextualization of the implementation process. We believe that more studies of this type are needed in the field of implementation studies of integrated services. According to Tsoukas (2009), such small-sample research designs provide a valuable theoretical contribution, helping to refine conceptualization of general processes. In this case, it is less an analytical generalization than an analytical refinement that is sought.

Limitations

The fact that our sample contained such a large number of articles on the same implementation project raises the issue of a potential bias in our results. Certainly, there is little doubt that this would accentuate certain trends that we found, in particular, those related to general parameters of the studies, such as type of outcome, period of time before outcomes are measured, and sample size. However, the possible overestimation of trends for such variables does not in any way reduce the relevance of the points and the resulting cautions that we have raised in our discussion. In short, these methodological choices are very real, as are the issues that they raise.

Furthermore, we believe that the possibility of a significant bias is even less for our results on the type of implementation process used (content-centered versus process-centered). Although we cannot rule out the possibility completely, we believe that it is limited for two reasons. First, many of the articles reviewed were produced by research teams that analyzed the data independently from each other. Thus, the classification of articles into one of the four subgroups of the typology depended primarily on the particular analytical approach used for this classification. In addition, our results show that articles related to the Evidence-Based Practices Project fall into all four of the different categories in the typology, evidence that each research team oriented its project based on its own particular vision of implementation, despite the common starting point. Consequently, we are confident in the conclusions that we have drawn.

Implications for Research

What direction should future studies on the implementation of integrated dual disorders services take? We conclude this article with two major recommendations that emerge from our analysis.

Recommendation 1: Encourage More Process-Centered Implementation Studies

In the future, priority should be given to research that focuses on the evolutive dynamics of implementation projects. By definition, such studies adopt a process-centered approach. Our critical analysis of implementation studies reveals a major lack of knowledge in this area. This, in fact, has already been denounced: Gold, Glynn, and Mueser (2006) lamented that "virtually no studies have intensively examined, in real time, what potent micro processes might account for implementation success or failure of any kind of mental health service, especially interactions among persons, organizations, and their local environments" (p. 208).
This recommendation has three main implications. The first is methodological. In this regard, some choices seem indispensable when studying the implementation process, including collecting data in real time over an extended period and analyzing the data processually. This analytical strategy produces results and temporally ordered explanations. It is frequently used in organizational studies when attempting to understand how and why events play out over time (Langley, 1999, 2009). This means adopting a case-oriented approach, that is, giving first priority to in-depth case analyses, then to inter-case comparisons.

The second implication relates to the assessment of implementation outcomes, in particular, the use of fidelity scales. Such scales all reflect a particular organizational model that has varying degrees of fit depending on the context. A relevant strategy might be to combine fidelity assessment with the evaluation of another implementation outcome. Among those commonly reported are feasibility, innovation-organizational fit, penetration, acceptability, sustainability, uptake, and costs (Meyers, Durlak, & Wandersman, 2012; Proctor et al., 2009). This strategy would capture the effects of the implementation in a richer and more nuanced way than using just one type of outcome. Also, measurements should be for an extended study period, probably 2 or more years, so as to cover the implementation dynamics at play.

The final implication is that we need more analyses focusing on the personal and interpersonal dynamics involved in the implementation process. According to Rouleau (2007), these kinds of studies acknowledge the ability of individuals to negotiate their relationships, to promote values, and to create meaning. This would lead to greater attention being paid to the actions of individuals collectively involved in the implementation of integrated services and to how they are able (or not) to agree, establish priorities, and adjust to unexpected events. This knowledge is likely to enrich theories surrounding the implementation dynamics of integrated dual disorders services.

Recommendation 2: Synthesize Useful Knowledge for Decision Making on Implementation

This recommendation is based on the finding that current knowledge synthesis models remain focused on solutions. The synthesis by Torrey et al. (2011) of the strategies and factors associated with successful implementation is an excellent example. However, some syntheses are less informative with regard to better understanding the problem and the influences of context. This type of questioning requires a different type of synthesis; for example, realist synthesis. This model of knowledge synthesis, based on a “realist” approach to evaluation, offers a method for studying what works for whom, how, and under what circumstances (Pawson, Greenhalgh, Harvey, & Walsh, 2005, p. 24). This method would be most appropriate for complex interventions the effects of which are largely dependent on the context and the implementation. Dual disorders integration projects fit these conditions. As knowledge about the implementation process is still poorly developed, carrying out a realist synthesis would require some adaptation. It would be beneficial to widen the field to include implementation studies of integrated services for the treatment of other types of comorbidities; for example, the integration process of services for patients with chronic conditions, for which there is a growing literature (e.g., De Stampa et al., 2010; Hrosvikoski et al., 2006). It would also be beneficial to consider knowledge about integration from the field of management. This proposal is based on Brousselle et al. (2007), which illustrated the strong convergence between the integrated services model proposed by Mueser et al. (2003) and generic organizational models. Doing this type of synthesis seems a desirable next step in the search for ways to reduce the gap between scientific knowledge and current practice. Combined with the changes we propose related to how we study the implementation of integrated services, we believe such approaches will allow us to move forward in our collective goal of improving the quality and effectiveness of integrated dual disorders services.

NOTES

1. The implementation model used integrated three elements: educational material (written documents, videos, etc.), access to a specialized consultant’s services for 2 years, and feedback to teams every 6 months on their level of fidelity to the intervention model.
2. COSIG projects provide funding for initiatives related to capacity building, e.g., implementing standardized screening and assessment, supporting training, and paying for some services that enhance co-occurring disorders treatment. Funds are also dedicated to infrastructure development at the state level.
3. The Carlson et al. (2012) study could not be included because their sample was made up of implementation experts.

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DISCLOSURES

All authors report no financial relationships with commercial interests.
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APPENDIX
Description of the Studies Used in the Analysis

<table>
<thead>
<tr>
<th>Authors (year)</th>
<th>Study objective</th>
<th>Organizational model</th>
<th>Context</th>
<th>D: Data collection methods</th>
<th>Outcome measure</th>
<th>Study duration</th>
<th>A: Analysis approach</th>
<th>M: Analysis methods</th>
</tr>
</thead>
</table>
| Brousselle et al. (2010)| To identify key factors in integrating services for patients with co-occurring disorders | Specialized model and universal model | Not part of any specific project | D: interviews, observations, documents  
C: contrast in the organizational model of integrated services  
S: 2 (2) | None | 3 years | A: case-oriented | M: qualitative |
| Brunette et al. (2008) | To elucidate concomitant facilitators and barriers to implementing IDDT         | Specialized model    | EBP Project                     | D: interviews, observations, documents  
C: sites participating in the implementation of IDDT in 3 states within the EBP Project  
S: 11 (11) | Fidelity to IDDT | 2 years | A: variable-oriented | M: mixed |
| Carlson et al. (2012)  | To identify supervisory behaviors critical to the successful implementation of EBPs in adult mental health | n/a                  | Experts from the EBP Project    | D: survey  
C: experts in the implementation of EBPs (recruited among experts involved in the EBP Project, but not restricted to them)  
S: 37 | None | n/a | A: variable-oriented | M: quantitative |
| Chandler (2009)        | (1) How helpful are approach-materials? (2) Are group processes useful? (3) Do levels of organizational functioning predict fidelity? | Specialized model    | EBP Project                     | D: interviews, observations, documents, questionnaires  
C: Sites participating in the implementation of IDDT in 1 state; adaptation of the EBP Project  
S: 8 (8) | Fidelity to IDDT | 2 years | A: variable-oriented | M: mixed |
| Gotham et al. (2010)   | To examine if organizational structure, characteristics and readiness to change predict change in co-occurring disorders capability           | Universal model      | COSIG Project in 1 state        | D: interviews, observations, documents, questionnaire  
C: COSIG Project in 1 state  
S: 14 (14) | Dual diagnosis capability | 2 years | A: variable-oriented | M: quantitative |
| McGovern et al. (2011) | To examine what implementation factors are associated with increased co-occurring disorders capability and if these factors are similar/different between mental health and addiction programs | Universal model      | COSIG Project in 5 states       | D: interviews, observations, documents, questionnaire  
C: COSIG project in 5 states  
S: 86 (86) | Dual diagnosis capability | 1.5 years | A: variable-oriented | M: quantitative |

(Continued)
## APPENDIX

### Description of the Studies Used in the Analysis (Continued)

<table>
<thead>
<tr>
<th>Authors (year)</th>
<th>Study objective</th>
<th>Organizational model</th>
<th>Context</th>
<th>D: Data collection methods</th>
<th>C: Criteria for selecting cases</th>
<th>Outcome measure</th>
<th>Study duration</th>
<th>A: Analysis approach</th>
<th>M: Analysis methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moser et al. (2004)</td>
<td>To examine barriers and strategies to the implementation of 2 EBPs (IDDT and Assertive Community Treatment)</td>
<td>Specialized model</td>
<td>EBP Project</td>
<td>D: interviews, observations, documents</td>
<td>C: Sites participating in the implementation of IDDT or ACT in 1 state within the EBP Project</td>
<td>Fidelity to IDDT</td>
<td>15 months</td>
<td>A: variable-oriented</td>
<td>M: mixed</td>
</tr>
<tr>
<td>Rapp et al. (2008)</td>
<td>To describe strategies employed by agencies to overcome barriers to successful implementation of 2 EBPs (IDDT and Supported Employment)</td>
<td>Specialized model</td>
<td>EBP Project</td>
<td>D: interviews, observations, documents</td>
<td>C: Sites participating in the implementation of IDDT or SE in 1 state within the EBP Project</td>
<td>Fidelity to IDDT</td>
<td>2 years</td>
<td>A: variable-oriented</td>
<td>M: qualitative</td>
</tr>
<tr>
<td>Rapp et al. (2010)</td>
<td>To describe major challenges experienced by agencies implementing 2 EBPs (IDDT and Support Employment)</td>
<td>Specialized model</td>
<td>EBP Project</td>
<td>D: interviews, observations, documents</td>
<td>C: Sites participating in the implementation of IDDT or SE in 1 state within the EBP Project</td>
<td>Fidelity to IDDT</td>
<td>2 years</td>
<td>A: variable-oriented</td>
<td>M: qualitative</td>
</tr>
<tr>
<td>Swain et al. (2009)</td>
<td>To determine the number of sites that sustained 5 EBPs 2 years after implementation; the reasons for sustaining or not and the characteristics that differentiate the two groups; and the extent/ nature of adaptations</td>
<td>Specialized model</td>
<td>EBP Project</td>
<td>D: interviews, telephone survey</td>
<td>C: Sites that completed the initial implementation period of 2 years of one of 5 EBPs, including IDDT, in 8 states within the EBP Project</td>
<td>Sustainability of IDDT</td>
<td>2 years post initial implementation period (2 years)</td>
<td>A: variable-oriented</td>
<td>M: mixed</td>
</tr>
<tr>
<td>Torrey et al. (2012)</td>
<td>To investigate domains of implementation activities and correlate them with implementation success (5 EBPs included)</td>
<td>Specialized model</td>
<td>EBP Project</td>
<td>D: interviews, observations, documents</td>
<td>C: Sites participating in the implementation of one of 5 EBPs, including IDDT, in 8 states within the EBP Project</td>
<td>Fidelity to IDDT</td>
<td>2 years</td>
<td>A: variable-oriented</td>
<td>M: mixed</td>
</tr>
<tr>
<td>Study Source</td>
<td>Objectives</td>
<td>Specialized Model</td>
<td>Project Model</td>
<td>Design (D)</td>
<td>Setting (C)</td>
<td>Sample Size (S)</td>
<td>Fidelity Measures</td>
<td>Time Frame</td>
<td>Data Collection Methods</td>
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<tr>
<td>Van Wamel et al. (2009)</td>
<td>To determine whether IDDT could successfully be implemented in the Netherlands</td>
<td>Specialized model</td>
<td>Adaptation of the EBP Project in the Netherlands</td>
<td>D: interviews, observations, documents C: Sites participating in the implementation of IDDT within an adaptation of the EBP Project in the Netherlands</td>
<td>S: 5 (5)</td>
<td>Fidelity to IDDT</td>
<td>2 years</td>
<td>A: variable-oriented M: mixed</td>
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<tr>
<td>Wieder and Kruszynski (2007)</td>
<td>To illustrate the impact of the staffing process during the implementation of IDDT</td>
<td>Specialized model</td>
<td>EBP Project</td>
<td>D: not explicitly described, but most likely qualitative C: Site participating in the implementation of IDDT in 1 state within the EBP Project</td>
<td>S: 1 (1)</td>
<td>Fidelity to IDDT</td>
<td>3 years</td>
<td>A: n/a M: qualitative</td>
<td></td>
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<tr>
<td>Woltmann and Whitley (2007)</td>
<td>To investigate the relationship between staffing stability and the implementation of IDDT; to examine strategies undertaken by agencies to overcome staffing barriers during implementation</td>
<td>Specialized model</td>
<td>EBP Project</td>
<td>D: interviews, observations, documents C: Sites participating in the implementation of IDDT in 3 states within the EBP Project</td>
<td>S: 11 (11)</td>
<td>Fidelity to IDDT; penetration of IDDT</td>
<td>2 years</td>
<td>A: case-oriented M: mixed</td>
<td></td>
</tr>
<tr>
<td>Woltmann et al. (2008)</td>
<td>To examine team turnover and its relationship to implementation processes and outcomes for 5 EBPs</td>
<td>Specialized model</td>
<td>EBP Project</td>
<td>D: interviews, observations, documents C: Sites participating to the implementation of one of 5 EBP, including IDDT, in 8 states within the EBP Project</td>
<td>S: 42 (9)</td>
<td>Fidelity to IDDT; penetration of IDDT</td>
<td>2 years</td>
<td>A: variable-oriented M: mixed</td>
<td></td>
</tr>
</tbody>
</table>

*Note. IDDT = integrated dual disorders treatment; EBP = evidence-based practices; EBP Project = Evidence-Based Practices Project; COSIG Project = Co-occurring State Incentive Grant Project; ACT = assertive community treatment; SE = supported employment.*