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Responding to the Challenge of Co-Occurring Disorders: Suggestions for Future Research

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Abstract

This special issue consolidates some recent research findings and scientific thought on co-occurring disorders from both the substance abuse and mental health fields. This summary article recaps and synthesizes the main findings and themes, then considers additional issues in the field today to arrive at an agenda for future co-occurring disorders research. Future plans must: (1) encourage and assist further development of treatment programs that respond to the array of types and severities of co-occurring disorders, while taking into account the limited resources typically available; (2) continue development and testing of continuing care models, exploring strategies that will sustain the recovery of treated individuals who remain vulnerable to relapse; and (3) contribute to our understanding of the mechanisms and processes that enable new interventions and practices to be adopted, implemented, and sustained. Co-occurring disorders is a relatively new area of research; this special issue illustrates the productivity of the work to date, and indicates the potential for advances to come.

Keywords

co-occurring disorders; research findings; research synthesis; severity of mental disorder; research agenda

1.0 Introduction

According to recent definitions, the term *co-occurring disorders* “refers to co-occurring substance use (abuse or dependence) and mental disorders. Clients said to have co-occurring disorders have one or more disorders relating to the use of alcohol and/or other drugs as well as one or more mental disorder” (Center for Substance Abuse Treatment, 2005). Research over the past two decades in the area of co-occurring disorders has focused on several objectives,

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notably: (1) determining the extent to which mental disorders and substance use disorders co-occur; (2) understanding how the presence of one disorder increases vulnerability for developing the other; (3) development and testing of a substantial number of treatment models and strategies responsive to the concerns of clients with co-occurring substance use and mental disorders; (4) investigating the ways in which the mental health and substance abuse treatment systems have adapted to co-occurring disorders; and (5) examining novel treatment protocols, with a particular emphasis on integrated models of care, that seek to treat multiple needs related to mental health, substance use and abuse, behavioral problems, and health concerns.

The diversity of scientific inquiry and ideas contained within these pages is representative of the complex nature of co-occurring disorders. Publishing a group of articles that otherwise would appear as stand-alone pieces in a variety of journals focused on either substance use or mental health affords an opportunity to appreciate the breadth of research related to co-occurring disorders. As a collection, these articles permit a synthesis of recent advances in research in the area of co-occurring disorders, support an examination of the implications of scientific advances for practice and policy, and suggest directions for future research.

2.0 Synthesis of Research Findings and Themes

This section presents a synthesis of the main research themes in several areas (epidemiology, treatment models and strategies, treatment systems and settings, continuity of care) that are described in individual manuscripts contained in this issue.

2.1 Epidemiology

The papers collected in this journal explicate that, while the term “co-occurring disorders” embraces a variety of substance use and mental disorders in a multiplicity of combinations. Clark, Power, LeFauve, and Lopez (*this issue*) examined data from three well-known national surveys, the National Epidemiological Survey of Alcohol and Related Conditions (NESARC), the National Survey of Drug Use and Health (NSDUH), and the Replication of the National Comorbidity Survey (NCS-R), summarizing selected findings and discussing implications for treatment. Specifically, NESARC states that 60% of adults seeking treatment for substance use disorders have mild to moderate mood or anxiety disorders, the NSDUH found that, among the 11.3% adult Americans who reported serious psychological distress associated with a mental problem in the past year, the use of illegal drugs was higher (26.9%) than among their peers who did not report a high level of distress, and the NCS-R concluded that, in their lifetime, nearly half of US adults (46.4%) will meet criteria for a DSM-IV disorder, while almost a third will have two or more disorders. In other words, the services of the mental health and substance abuse treatment systems will be needed by a substantial number of Americans at one time or another in their lifetime.

Chan and colleagues (*this issue*) examined adolescents and adults presenting for substance abuse treatment and found that, broadly defined, internalizing and externalizing mental problems, as well as substance use disorders, varied by age. Specifically, externalizing problems (e.g., attention deficit hyperactivity, and conduct) were more common among adolescents, while internalizing problems (e.g., depression, generalized anxiety, and traumatic distress) were more common among adults, 26 and over; overall rates of substance dependence outnumbered abuse in all age groups, but increased with age. These divergent patterns of comorbidity have implications for both the mental health and substance abuse treatment systems in attempting to meet the differential needs of adolescents and adults who enter either system of care.

The distinction between substance abuse and dependence is sometimes blurred to such an extent that clarification becomes necessary. Standard usage of the two terms was presented in

the fourth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (American Psychiatric Association, 1994), subsequently revised to define *substance abuse* as a “maladaptive pattern of substance use manifested by recurrent and significant adverse consequences related to the repeated use of substances” (American Psychiatric Association 2000, p. 198). A strict application of this definition may fail to capture the need for drug abuse treatment.

Substance dependence is the more serious condition, with those affected showing increasing tolerance for the drug (or alcohol) and needing progressively larger amounts to achieve a “high.” Those with substance dependence disorders are obsessed with obtaining their substance of choice and with its use, and persist in using despite any ensuing detrimental physical or psychological problems, however dramatic.

Substance abuse has become the informal default term, often used to indicate both abuse and dependence. The tendency within substance abuse treatment professionals is to use “substance abuse” whenever the use of either alcohol or drugs is excessive. Greater specificity in conveying the nature and extent of substance use problems has important implications for treatment planning.

2.2 Treatment Models and Strategies

Paralleling the epidemiological studies described above, research into the treatment of co-occurring disorders has followed two distinct paths. First, non-specific models of care have been developed and tested for their ability to alleviate the symptoms of the full range of co-occurring disorders and to affect a broad array of outcomes. These treatment approaches include: group counseling, case management, residential treatment (Drake, O’Neal, & Wallach, *this issue*); and modified therapeutic communities (Sacks, Banks, McKendrick, & Sacks, *this issue*). While these interventions have generally produced favorable outcomes in the treatment of co-occurring disorders, less is known about their differential impact on precisely defined combinations of mental and substance use disorders. Furthermore, each of these models of care employs a mix of treatment components that may vary in focus and intensity across different treatment settings.

Second, specific treatment strategies, both pharmacological and psychological, have addressed particular disorders with more targeted interventions. Clozapine, an available pharmacological agent effective in reducing the symptoms of schizophrenia, has shown promise (albeit in preliminary studies) in limiting alcohol and drug use in patients with schizophrenia (Green, Noordsy, Brunette, & O’Keefe, *this issue*). The authors point to certain other atypical antipsychotic drugs that might prove useful in reducing alcohol and drug problems in co-occurring disorders populations; additional rigorous studies are needed to determine the efficacy of these medications when prescribed for addicts with schizophrenia and other co-occurring severe mental disorders.

Levin and colleagues (*this issue*) report on a study of cocaine-dependent subjects drawn from those who had been randomized into the placebo arms of three medication trials (venlafaxine, methylphenidate, and gabapentin). Subjects were placed into three groups; one group had co-occurring major depression, a second had co-occurring attention deficit/hyperactivity, while the third group had no co-occurring mental disorder. Two main findings suggest the importance of diagnoses and treatment of mental disorders in relation to outcome for clients with cocaine dependence. First, among the cocaine-dependent subjects who had achieved abstinence at baseline (i.e., urine tested negative for cocaine), those with either major depression or attention deficit disorder/hyperactivity had better outcomes over time than the group without co-occurring disorders. Second, among those subjects who had not achieved abstinence at baseline

(i.e., urine tested positive for cocaine), the group with no co-occurring mental disorder achieved better outcomes.

A variety of behavioral treatments have been developed to address mental health disorders in particular combinations with substance use disorders, including post-traumatic stress disorder (PTSD). This special issue includes a study of trauma that compared women who had experienced abuse in childhood to their non-abused peers, and found the abused women realized less benefit from treatment in psychological functioning, substance abuse, and continued exposure to trauma (J. Sacks, McKendrick & Banks, *this issue*). As the authors noted, this is a relatively new area of research inquiry, and the pathways connecting trauma history with outcome have yet to be elucidated but, as their study shows, the deleterious effects of traumatic experiences have clear repercussions for treatment outcomes. One of the behavioral interventions that has emerged to mediate the consequences of trauma, “Seeking Safety” (Najavits, 2002), has achieved positive outcomes for diverse groups of women with co-morbid PTSD and substance use disorders in a variety of settings (e.g., Hien, Cohen, Miele, Litt, & Capstick, 2004; Zlotnick, Najavits, Rohsenow, & Johnson, 2003). Other examples of behavioral therapies include family-based interventions, such as *Multi-Systemic Therapy* (Henggeler, Clingempeel, Brondino, & Pickrel, 2002; Henggeler, Schoenwald, Borduin, Rowland, & Cunningham, 1998), and *Multi-Dimensional Family Therapy* (Liddle et al., 2001), which have been effective for adolescents with conduct disorder and substance use disorders. Also, a study of *Double Trouble in Recovery*, a self-help group for clients with co-occurring disorders, demonstrated that consistent attendance was associated with better medication adherence (Magura, Laudet, Mahmood, Rosenblum, & Knight, 2002).

Dialectical Cognitive-Behavioral Therapy (Bohus et al., 2004; Linehan et al., 2002; Lynch et al., 2006), has demonstrated promise in the treatment of borderline personality disorder when co-occurring with substance use disorders. A recent study of contingency management for patients with opioid dependence and antisocial personality disorder Neufeld et al., *this issue*) reports significantly better attendance and lower psychosocial impairment for the contingency management group as compared to those receiving standard methadone treatment. These latter research findings are particularly important because such individuals (i.e., those whose substance use disorders co-occur with personality disorders) have traditionally been considered to be poor candidates for intervention.

In a review of 45 studies (22 experimental and 23 quasi-experimental) of non-specific and specific interventions for persons with co-occurring substance use disorders and severe mental disorders, Drake and colleagues (*this issue*:pg #) concluded: “Current research indicates that at least three types of integrated interventions for substance use disorder are probably effective for dual diagnosis clients: group counseling, contingency management, and long term residential treatment.” These three types of interventions had significant positive effects on a variety of other outcomes, which was also the case for those interventions not effective for substance use outcomes; for example, case management typically extended time in the community, while legal interventions (e.g., jail diversion and release programs mandating treatment) generally improved treatment participation. As the authors state, although interventions had no statistically significant effects on substance use outcomes, they “...often [led] to improvements in other areas of adjustment that are consistent with their effects in the general population of individuals with severe mental disorders.” (In this review, the category of “case management” included both assertive community treatment and intensive case management, while the category of “residential treatment” included the modified therapeutic community.)

2.3 Treatment Systems and Settings

Treatment for co-occurring disorders is offered in diverse settings, varying widely in their nature and resources. At perhaps the most fundamental level, clients with mental and substance use disorders seek services from either mental health or substance abuse treatment providers, who operate programs with differing treatment philosophies and approaches.

Within the substance abuse treatment system, Flynn and Brown (*this issue*) point out that programs today are not likely to be funded, organized or staffed to meet the needs of those whose substance use disorders co-occur with severe mental disorders; however, these programs may be adequately equipped to deal with the full range and severity of substance use disorders when the accompanying mental conditions are less severe. A recent survey of drug treatment facilities within a single state (McGovern, Xie, Segal, Siembab, & Drake, 2006) examined mental and substance abuse disorders, current practices, and barriers to service delivery. The authors found high rates of a broad range of mental disorders, but lower rates of the most severe mental disorders, including schizophrenia. The minority of clients with more severe mental health needs was referred to the mental health system for treatment, while the majority of clients without severe mental problems received integrated treatment services in individual substance abuse programs (McGovern et al., 2006).

The framework for classifying treatment systems serving clients evincing co-occurring disorders according to the severity of the disorders is represented in a model, promulgated by the National Association of State Mental Health Program Directors in conjunction with the National Association of State Alcohol & Drug Abuse Directors (1999). The model depicts four quadrants of care based on high and low mental health and substance abuse severity, and places the substance abuse system in quadrant three (high severity substance abuse/low severity mental illness). In this model, the mental health system is placed in quadrant two (high severity mental illness/low substance abuse severity), which implies that the mental health system would be better able to provide services to those with severe mental disorders co-occurring with less severe substance use disorders. The four-quadrant model, while historically useful, has been criticized for the imprecision of its description of "severity," and for shortcomings in the quadrants' correspondence with specific treatments and treatment settings. These deficiencies led a panel of experts to cite the limited utility of the model as a guide for the delivery of treatment services for co-occurring disorders (Pincus, Watkins, Vilamovska & Keyser, 2006). At the same time, further empirical work is needed to determine the overall and specific utility of the four quadrant system of classification.

Developing effective models of *integrated* care within the substance abuse and mental health treatment systems will require each system to augment the treatment it currently provides to meet the full range of its clients' differential needs; the article by Ries and colleagues (*this issue*) provides an example of the need for such an approach. These authors identified a subgroup of psychiatric inpatients characterized by a high severity of addiction in conjunction with substance-induced (temporary) suicidal symptoms. The author's conclude that, to provide appropriate treatment for this co-occurring disorders sub-group, psychiatric inpatient facilities would need to expand their capabilities, adding intensive addiction interventions. Similarly, addiction treatment facilities, which might encounter a similar treatment-seeking client subgroup, would need to augment their existing competencies to include services for suicidal clients. While substance abuse and mental health treatment programs are the acknowledged centers of co-occurring disorders treatment and research, it should be noted that many other settings (e.g., criminal justice system, homeless shelters, medical clinics, schools) must also respond to the needs of individuals with co-occurring disorders. Determining the role these other settings can play in addressing co-occurring disorders, and the extent to which they can adopt evidence-based practices, will be an important component of future research.

2.4 Continuity of Care

Both mental health and substance use disorders are conceptualized as chronic conditions, characterized by patterns of symptom manifestation, treatment, decline of symptoms, relapse, recurrence of symptoms and a return to treatment. Thus, the effective treatment of either or both conditions is liable to entail intervention and monitoring, and to continue over time. As Flynn and Brown (*this issue*) point out, among those who receive substance abuse treatment, the presence of any mental disorder will likely contribute to a persistent threat of relapse to substance use. While not everyone will relapse, the risk of relapse for the vast majority of those with co-occurring disorders demands a model of treatment and service delivery support that is extended to sustain recovery, wherein adherence to medication regimens, behavioral change, and signs of relapse are monitored.

3.0 Suggestions for a Research Agenda

3.1 Epidemiology

The information from general population studies as reported in this special issue is important from an overall public health perspective. At the same time, more information is needed concerning people in treatment and more research is warranted. For example, a nationally representative sample of individuals participating in treatment for co-occurring disorders would provide data related to the types and severity of mental and substance use disorders present among those receiving treatment services. Similar studies could be undertaken the criminal justice system, which provides services for large numbers of individuals with substance abuse and mental health problems. Likewise, a survey of existing co-occurring disorders programs could examine existing services, staffing, resources, organizational characteristics, and approach to integrating substance abuse and mental health treatment. This information would clarify the needs of the client population, and provide data to describe the ability of the treatment system to meet these needs.

3.2 Treatment Models and Strategies

The goals of non-specific treatment models (e.g., assertive community treatment, residential treatment) and specific targeted treatment strategies (e.g., contingency management) are likely quite different, more wide-ranging in the former and more focused in the latter, and can be evaluated accordingly in terms of expected main outcomes, although the effects of targeted interventions may also generalize to other than the targeted domains. Evaluative studies can also illuminate the best application of each and the ways in which particular strategies can be incorporated into treatment models to increase their effectiveness.

In substance abuse treatment, a research base has influenced service delivery in areas ranging from initial engagement, as exemplified by an emphasis on motivation enhancement strategies, to community re-entry, as illustrated by a focus on cognitive behavioral strategies for relapse prevention, strategies that have been employed in both substance abuse and mental health settings. As part of their comprehensive review of the literature on interventions for people with substance use disorders and co-occurring severe mental disorders, Drake and colleagues (*this issue*), found that the evidence from eight studies of motivational interviewing was “weak and inconsistent,” while a recent review of the literature on relapse prevention with this population failed to identify any studies of relapse prevention post-primary treatment (the maintenance stage) (McGovern, Wrisley, & Drake, 2005). Future research should build on earlier work in the substance abuse field and systematically examine the effectiveness of these strategies within co-occurring disorders populations, both those with severe mental disorders and others, with less severe, mental disorders. (See the “Special Section on Relapse Prevention Therapy” in *Psychiatric Services*, Volume 56, pp 1269–1302, 2005, for an in-depth discussion of relapse prevention theory and research as it applies to persons with co-occurring disorders.)

Although well established in the substance abuse field, the relationship of motivation for change and treatment outcome has not been thoroughly studied among those with co-occurring disorders. Measurement of motivational stages is daunting enough when considering substance use disorder (multiple substances, varying motivation, cognitive vs. behavioral indicators); the challenges are more than doubled when mental disorders must also be considered. DiClemente, Nidecker and Belleck (*this issue*) provide a framework for considering motivation and stages of change within the co-occurring disorders population where an intentional behavioral change process seems to be in effect. To mediate the difficulties that those with co-occurring disorders encounter within the change process, the authors point to external reinforcers (to aid internal processing), simplified treatment approaches, medication, and skills development, used alone or in combination.

Because individuals with co-occurring disorders have an array of mental health, substance use, medical, family, and social problems, measures must be identified and outcomes assessed across several domains. At a minimum, outcomes associated with both substance use and mental health should be considered. Studies should also report differential outcomes over a broad array of outcome domains to capture all data related to treatment progress and stabilization, permitting a full-fledged comparison of effectiveness. In the field of drug abuse treatment, criminal activity, HIV risk behavior, employment/access to licit income, stable housing, and participation in parenting and family activities are outcome variables that capture recovery status. When evaluating mental health outcomes, salient measures would include avoidance of hospitalization, symptom change, medication compliance, improved self-esteem or sense of psychological wellbeing. Although standardized instruments offer some of the best means of measuring symptom change, *differential* change may be difficult to assess in studies that aim to evaluate psychosocial interventions in a context where some (or all) of both experimental and comparison subjects in a study continue to receive prescription medications. Finally, when exploring the direct relationship between an intervention and a targeted outcome, it may be useful to consider the interactive relationships between and among various outcomes.

3.3 Treatment Systems and Settings

As emphasized by Flynn and Brown (*this issue*), studies that are developing and testing both new and existing interventions and services need to consider the nature and severity of mental and substance use disorders as well as more traditional factors of age and developmental stage, gender, race, ethnicity, socio-economic status, physical health, and treatment history. Clarification is needed of the types of co-occurring disorders that can be treated effectively with single disorder interventions and those that require integrated mental health and substance abuse treatment. With regard to the latter, integrated models of care suitable to the substance abuse treatment system need to be developed and tested. For example, a recent consensus document identifies the essential components of co-occurring disorders treatment for substance abuse treatment agencies (Center for Substance Abuse Treatment, 2005); these (and other) approaches need to be evaluated.

3.4 Continuity of Care

Since substance use and mental disorders are both considered to be conditions requiring long-term treatment, monitoring, and support, research that examines aftercare models (dose, continuity with primary treatments, relapse prevention strategies and social supports) is needed, paying particular attention to the role of the newly emerging double recovery self help movement (Center for Substance Abuse Treatment, 2005:190–196). Continuity of care research efforts should develop and test: (1) strategies and techniques that ensure successful transition to and continuance in aftercare services; and (2) case management strategies that emphasize accessing community resources to meet the multiple needs of clients with co-occurring disorders.

Brown and colleagues (2004) recently developed a measure, the *Community Assessment Inventory*, designed to elicit the significance of the client's perception of supports within the community to his/her treatment engagement and retention. This measure uses four scales to assess the influence of the family with which the client has been living, as well as that of the extended family, friends and the local community. The evaluation of community supports can also be an important component of future research on continuity of care.

3.5 Treatment Process

In substance abuse treatment, considerable work has focused on elucidating the process of treatment and recovery (Simpson, 2001; Simpson, Joe, & Rowan-Szal, 1997). A model of care based on the examination of treatment progress and continued recovery management holds promise for the treatment of co-occurring disorders but has yet to be tested. Studies within this area would relate treatment engagement to early progress and retention, as well as to treatment outcome. Research should also seek to identify content, intensity, pace, modality, timing, and financing of treatment interventions and services to maximize outcome improvements, including the alleviation of mental health symptoms and drug use, and sustained functioning in the community.

3.6 Organizational Factors

Health services research has yet to define the effects of organizational factors on the quality of care delivered to persons with co-occurring disorders who receive treatment and services from a variety of providers in several settings. In some cases, clients with co-occurring disorders access treatment and services in specialty care mental health and/or drug abuse treatment programs; in other instances, non-specialty care systems (health care, educational, criminal justice, and social service agencies) struggle to meet the needs of this population. Between specialty care and non-specialty care organizations, the variability in primary mission, organizational climate, culture, structure, management, staffing patterns and expertise, business practices, and resources is considerable. These structural and environmental factors have broad implications for the types of practices and interventions that agencies are able to implement and the types of clients that they can serve. Research is needed that will help to describe the roles different provider organizations can play in mediating the multi-faceted problems of individuals with co-occurring disorders, to determine the structure and coordination of treatment services that will optimize client outcomes, and to define interactions among providers in coordinating care and in leveraging scarce resources.

3.7 Implementation Research

The availability of new treatments and research-based practices for co-occurring disorders has drawn attention to their implementation. Implementation research seeks to understand the process whereby new treatments and practices are adopted, implemented, and sustained. The scant research conducted in this area has, for the most part, adopted a one-dimensional view that reduces the implementation of innovation and research-based practices to a one-time linear transfer of knowledge from researchers and developers to providers. A conceptual framework for implementation research needs to take into account the extent to which the process is influenced by organizational characteristics (the contextual setting of implementation), treatment providers (the target of implementation), and clients (the consumer of treatment and research-based practice), as well as the extent to which modification from the core protocol, while often essential to meet the needs and circumstance of both program and clients, may be a limiting factor in maintaining the positive outcomes obtained in the studies that established the protocol's effectiveness.

In this issue, Clark and colleagues describe a set of initiatives undertaken by the Substance Abuse & Mental Health Services Administration (SAMHSA) to foster the implementation of

evidence-based practices through the improvement of the treatment delivery system serving individuals with co-occurring disorders. These comprehensive initiatives provide fertile ground for case studies of different approaches to implementation and might afford opportunities to study such topics as the role of training, certification standards, financing structures and organizational characteristics in facilitating change. Research is needed to assess the overall success of this effort, as well as to gain an understanding of various approaches to integrating services and changing systems of care.

4.0 Conclusion

As this special issue illustrates, research has increased our understanding of co-occurring disorders—its prevalence, the many associated problems, and the ways in which treatment and treatment outcomes can be affected—and has expanded treatment options for practitioners and clients. Until recently, research has been limited in its tendency to locate the preponderance of studies in mental health settings, which has disproportionately sampled the co-occurring disorders subgroup with severe and persistent mental disorders. Clearly, more research should be sited in substance abuse and other settings (e.g., homeless facilities, criminal justice) where treatment and services are organized around substance use disorders, and where co-occurring mental disorders tend to be of mild to moderate severity. Future study in three areas seems to hold the most potential for continuing to advance the field. Specifically, (1) research that informs and guides decisions on the allocation of limited resources, including specialized personnel would benefit treatment programs; (2) research that promotes the re-conceptualization of drug addiction as a chronic rather than an acute condition with the concomitant development and testing of different models of continuing care would make a significant contribution to the co-occurring disorders population; and (3) research that explores implementation issues (e.g., the staffing, resources, and organizational characteristics necessary to adopt, realize and sustain a research-based treatment innovation) would help to bridge the science-to-service gap in the treatment of co-occurring disorders. Most important, realization of this agenda would continue to improve care for individuals with co-occurring disorders.

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