Modeling the use of innovations in private treatment organizations: The role of absorptive capacity

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Abstract

Few studies have identified the organizational characteristics that are associated with the transfer of research-based treatment techniques into practice. One potentially fruitful concept is absorptive capacity, referring to an organization’s ability to seek and utilize information, which may be positively associated with the use of innovative treatment techniques.

This paper examines the associations between an additive measure of innovation use and three measures of absorptive capacity: environmental scanning, collection of satisfaction data, and the level of workforce professionalism. Data from a nationally representative sample of 322 privately funded substance abuse treatment centers indicate that treatment organizations use a greater number of innovations when they engage in more environmental scanning, survey referral sources, and third party payers for satisfaction, and have a more professional workforce. These results indicate the importance of absorptive capacity in predicting organizational innovativeness. © 2004 Elsevier Inc. All rights reserved.

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1. Introduction

Although several substance abuse treatment innovations have been developed and empirically validated in recent years, there is an ongoing concern about the slow rate of adoption of these innovative treatment technologies (Lamb, Greenlick, & McCarty, 1998; Sloboda & Schildhaus, 2002). Several studies have examined the process of technology transfer within single treatment organizations (Andrzejewski, Kirby, Morral, & Iguchi, 2001; Liddle et al., 2002; Martin, Herie, Turner, & Cunningham, 1998). Others have examined the attitudes and behaviors of individual clinicians regarding innovative treatment techniques (Ball et al., 2002; Forman, Bovasso, & Woody, 2001; Miller & Mount, 2001; Morgenstern, Morgan, McCrady, Keller, & Carroll, 2001; Thomas, Wallack, Lee, McCarty, & Swift, 2003). Beyond this work, there have been few studies of the organizational characteristics associated with the greater use of pharmacological and behavioral treatment innovations.

Consideration of organizational processes in relationship to the movement of research-based techniques into practice has been identified, however, as an important issue (Rosenheck, 2001; Simpson, 2002). An understudied organizational dimension in the treatment innovation literature is absorptive capacity, defined as the ability of an organization to access and effectively use information (Cohen & Levinthal, 1990; Zahra & George, 2002). Research in other industries provides evidence for the importance of absorptive capacity in facilitating the use of new technologies, processes, and services, suggesting that organizations with greater information processing and application capabilities are more likely to use innovations.

This research models the relationship between absorptive capacity and the use of treatment innovations among privately funded substance abuse treatment organizations. Three dimensions of absorptive capacity are considered: the level of workforce professionalism, environmental scanning, and collection of satisfaction data from organizational buyers and suppliers. It is argued that having a more professional workforce provides an important organizational foundation for the use of information. Environmental scanning, which refers to drawing upon informational resources...
in the external environment, and the collection of satisfaction data are organizational behaviors that provide information that can influence decisions to use innovations.

Using data from a nationally representative sample of 322 privately funded treatment centers, this research evaluates the direct effects on the use of treatment innovations of (1) environmental scanning, (2) the collection of satisfaction data, and (3) workforce professionalism. These treatment innovations include counseling and therapeutic approaches as well as medications that improve clinical outcomes. In addition, this research models the associations between levels of workforce professionalism, environmental scanning, and the collection of satisfaction data since greater professionalism may enhance the abilities of organizations to engage in the latter two organizational behaviors, thereby indirectly influencing patterns of innovation use.

1.1. Organizational innovation and the context of substance abuse treatment

Studying the use of innovations is vital because it is widely believed to enhance an organization’s performance and competitive position (Fichman, 2001; Johnson, Donohue, Atkin, & Johnson, 2001). These performance gains are particularly important for smaller organizations operating in turbulent environments (Covin & Slevin, 1989; Pierce & Delbecq, 1977). Many smaller, community-oriented substance abuse treatment organizations operate in environments with highly unstable sources of revenue, in part due to managed care’s attempts to contain the costs of care (Mechanic & McAlpine, 1999; Taleff & Swisher, 1997). The impact of this turbulence can be seen in the high rate of closure among treatment centers in the private sector in the 1990s (White, 1998). Data from the early 1990s indicated that nearly one third of privately funded organizations that offer alcoholism treatment services closed (Blum, Roman, & Shane, 1996) and nearly 15% of private substance abuse treatment centers closed between 1995 and 1999 (Johnson & Roman, 2002).

Facing these environmental threats, surviving treatment centers have adapted their treatment services to reflect the limits imposed by third-party payers, who can be perceived of as “organizational buyers.” For example, one adaptation was the movement away from the 28-day inpatient Minnesota Model program that dominated private treatment in the 1980s and early 1990s (Roman, Jonhson, & Blum, 2000). These inpatient programs were often replaced with outpatient programs that were more likely to be reimbursed (Mechanic, 1997).

In addition to capping reimbursement, managed care organizations and other funding agencies have increasingly demanded that treatment organizations use evidence-based practices (Lennox & Mansfield, 2001; Magura, Schildhaus, Rosenblum, & Gastfriend, 2002; Sloboda & Schildhaus, 2002). Considerable effort has been devoted to the testing of innovative substance abuse treatment methods in clinical trials (Magura et al., 2002). These clinical trials have provided important evidence for the efficacy of a variety of pharmacological and behavioral treatments (National Institute on Drug Abuse, 1999; Sindelar & Fiellin, 2001).

Institutional theory suggests that the demands of managed care organizations and other third party payers for the use of evidence-based techniques would generate significant coercive pressures for substance abuse treatment organizations to use these innovations (DiMaggio & Powell, 1983). The adoption of pharmacological and behavioral treatment innovations appears to be a “rational response” to environmental demands (Strang & Macy, 2001). However, the adoption of these evidence-based innovations in the field of addiction treatment is notably slow (Lamb et al., 1998; Sloboda & Schildhaus, 2002). Adoption does occur in some organizations, but there is little theoretical explanation of the variation between centers in innovation use.

In the few studies about the organizational predictors of innovation use within the substance abuse treatment literature, most focus upon single innovations (Roman & Johnson, 2002; Thomas et al., 2003). While these studies contribute to knowledge about the transfer of specific technologies, they limit the construction of a general theoretical understanding that can be applied to a range of innovative treatment techniques (Fichman, 2001; Hage, 1999). This research addresses this shortcoming by using an aggregate measure of innovation adoption based on an additive index of fifteen innovative substance abuse treatment techniques. Such an aggregate measure has been recommended by a number of management researchers (Damanpour, 1991; Fichman, 2001; Kivimaki et al., 2000; Monge, Cozzens, & Contractor, 1992).

This inventory of fifteen treatment innovations reflects an attempt to include a wide range of approaches to substance abuse treatment. A key resource was the National Institute on Drug Abuses (NIDA; 1999) publication, Principles of Addiction Treatment: A Research-Based Guide. They identify naltrexone, LAAM (leva-alpha-acetyl-methadol), motivational enhancement therapy, supportive-expressive psychotherapy, the community reinforcement approach, the Matrix model, and vouchers as evidence-based treatment practices. In addition, research has demonstrated the clinical utility of selective serotonin reuptake inhibitors (SSRI; Pettinati, 2001), buprenorphine (Ling & Shoptaw, 1997; Sindelar & Fiellin, 2001), rapid opiate detoxification (Ling & Shoptaw, 1997), dual-focus schema therapy (Ball, 1998), and disulfiram (Carroll et al., 2000; Carroll, Nich, Ball, McCance, & Rounsaville, 1998) in the treatment of substance abuse.

Music therapy and art therapy represent innovative approaches to substance abuse treatment that may be particularly useful for clients who have experienced trauma (Gallant, Holosko, & Siegal, 1997; Grover, 1999). Studies of acupuncture have yielded mixed results (Margolin et al., 2002; Schwartz, Saitz, Mulvey, & Brannigan, 1999), but the prevalence of its use in the treatment system (Avants, 2000;
Margolin, Holford, & Kosten, 2000) provides justification for its inclusion.

Thus, this research considers the role of absorptive capacity in the use of treatment innovations. We see absorptive capacity as an organizational characteristic that can be developed and enhanced via managerial decision-making. In sum, the purpose of this paper is to estimate the association between absorptive capacity and the use of innovations with the goal of providing insight into the transfer of addiction treatment technologies from research into practice within private treatment centers.

1.2. Theorizing the relationship between absorptive capacity and innovation adoption

A common definition of innovation in the management literature emphasizes the element of “newness” of an idea, process, or product in relation to the previous state of the organization (Fichman, 2001). Innovations may be developed internally (Kivimaki et al., 2000; Monge et al., 1992) or may be adopted from external sources (Pierce & Delbecq, 1977). However, Kimberly and Evanisko (1981) argue that in order to compare organizations in terms of their use of innovations, it is necessary that the innovations under investigation be culled from the overall organizational field. Thus, in the present research, the innovations included were drawn from the substance abuse treatment research literature. It is important to note that this research focuses on the use of innovations as opposed to innovation development, since the predominant concern in the treatment field is upon the use of available evidence-based practices.

Management theorists note that a necessary condition for the adoption of innovations is the procurement, processing, and assimilation of information into organizational knowledge. Cohen and Levinthal (1990) describe this organizational learning capability as absorptive capacity, and others suggest that it is a key resource that can support the adoption of innovations (Dewar & Dutton, 1986; Fichman, 2001). Developing absorptive capacity requires organizational behaviors that improve the ability of the organization to learn. In turn, there are three organizational behaviors that indicate enhanced absorptive capacity: the employment of a professional workforce, engagement in environmental scanning, and collection of satisfaction data from organizational buyers and suppliers.

Absorptive capacity is partially dependent on the level of professionalism within an organization’s workforce. Higher educational attainment among staff members suggests a larger foundation of prior knowledge, which Cohen and Levinthal (1990) argue is central to the ability to comprehend and apply new knowledge. This linkage may provide the theoretical explanation for the commonly found positive association between having a more professional staff and innovation (Damanpour, 1991; Fichman, 2001).

In the field of substance abuse treatment, counselors perform the principal treatment activities. First, some have argued that workforce professionalism can be seen in terms of the percentage of counselors that have attained at least a Master’s degree level of education (Mulligan, McCarty, Potter, & Krakow, 1989; Taleff & Swisher, 1997). Second, a professional knowledge base is also indicated by the percentage of counselors that are formally licensed or certified in substance abuse treatment (Stoffelmayr, Mavis, & Kasim, 1998). Third, in addition to these types of professionalism based on formal credentials, some counselors draw upon a knowledge base of personal experience with recovery. Humphreys, Noke, and Moos (1996) found that counselors in recovery were more likely to have an eclectic orientation towards treatment, which could be positively associated with aggregate innovation use, itself an eclectic mixture of treatment techniques. Finally, the employment of physicians by centers represents an additional knowledge base that influences the diversity and patterning of counseling activity. These four indicators of professionalism are hypothesized to be positively associated with the use of treatment innovations within private treatment centers.

As noted by Macdonald (1995), in order to obtain the informational resources necessary for innovation, it is important that organizations engage with the environment in which they are situated (Tang, 1999). Organizations can invest in their absorptive capacity through environmental scanning, which refers to the use of external sources of information (Damanpour, 1991; Delaney, Jarley, & Fiorito, 1996; Howell & Shea, 2001). Cohen and Levinthal (1990) specifically identify training and professional development activities as a means to enhance absorptive capacity. Classic innovation studies demonstrated positive association between involvement in professional organizations and innovation (Hage & Aiken, 1969; Hage & Dewar, 1973).

Organizational use of external sources of information, including publications and communication with similar types of organizations, contributes “raw” informational resources that can then be processed within the organization. Information about new technologies available for adoption can flow into the organization through these external mechanisms (Ebadi & Utterback, 1984; Frambach & Schillewaert, 2002) and promote the development of innovative ideas within the organization (Monge et al., 1992). This information flow can also help to identify organizational deficiencies and raise perceptions that there is a need for change (Pierce & Delbecq, 1977). Key decision-makers can then use this information in making decisions about the use of innovations and how those innovations may solve certain organizational challenges. Given this literature, a positive association between environmental scanning and the use of innovations is hypothesized.

In addition to environmental scanning, organizations may enhance their innovativeness through communication that occurs within key inter-organizational relationships related to the flow of supplies and products (Goes & Park, 1997; Pierce & Delbecq, 1977). Richard and Potvin (2001)
argue that the use of inter-organizational networks may provide important informational resources that affect an organization’s ability to innovate. These inter-organizational relationships include networks of organizational buyers and suppliers. In addition to new information about changes in the field, inter-organizational may enhance an organization’s knowledge of the specific wants and needs of their organizational customers which can inform decisions about innovations (Frambach & Schillewaert, 2002; Kivimaki et al., 2000; Macdonald, 1995; Slappendel, 1996).

Inter-organizational communication can take many forms, but the use of formal data collection procedures, such as surveys, is an important aspect of the communication between an organization and its buyers and suppliers. Cohen and Levinthal (1990) note this type of communication contributes to absorptive capacity and ultimately innovation, because new organizational needs may be identified and then addressed through innovations. Furthermore, these inter-organizational networks may provide information about innovations that competing organizations have adopted, which can result in what Strang and Macy (2001) describe as “social contagion” effects within a given industry. For substance abuse treatment organizations, third-party payers can be conceptualized as organizational buyers, while organizations that refer clients for admission represent organizational suppliers. Thus, the collection of satisfaction data from these organizations is hypothesized to be associated with greater use of treatment innovations.

There are likely to be associations between levels of workforce professionalism, environmental scanning, and the collection of satisfaction data from buyers and suppliers. Making the most effective use of new information obtained through environmental scanning and the collection of satisfaction data remains somewhat dependent on the professional skills of an organization’s workforce (Tang, 1999). Greater levels of workforce professionalism, therefore, are hypothesized to be associated with greater environmental scanning and an increased likelihood of the collection of satisfaction data from “buyers” and “suppliers.”

To summarize, we hypothesize that environmental scanning, the collection of satisfaction data, and workforce professionalism are positively associated with the use of treatment innovations. In addition, the level of workforce professionalism is hypothesized to be positively associated with environmental scanning and the collection of satisfaction data, thus creating an indirect path between innovation utilization and workforce professionalism.

2. Materials and methods

2.1. Sample

The National Treatment Center Study (NTCS) is based on a two-stage stratified random sample of substance abuse treatment facilities that is representative of the private treatment sector in the U.S. To be eligible to participate in the NTCS, programs were required to receive less than 50% of their funding from governmental block grant sources. Centers were also required to offer a level of care at least equivalent to structured outpatient services, as defined by American Society of Addiction Medicine standards (Mee-Lee, Gartner, Miller, Shulman, & Wilford, 1996). These eligibility requirements excluded counselors in private practice, halfway houses and transitional living facilities, and programs that offered exclusively methadone maintenance, court-ordered driver education classes, or detoxification services.

2.2. Data collection

Data collection procedures involved on-site interviews with the administrators and when available, clinical directors of these sampled treatment centers. Full description of this methodology appears in Knudsen, Johnson, Roman, and Oser (in press). The human subjects committee of the institutional review board at the University of Georgia approved this research design. This analysis focuses on data collected in 2000–2001 during which a participation rate of 88% was achieved. Only centers that provided complete data for all measures were included in this analysis, resulting in a sample size of 322 privately funded treatment centers.

2.3. Measures

The dependent variable—organizational use of treatment innovations—indicates the number of treatment innovations currently used at the treatment center. Center administrators were provided with an inventory of treatment innovations that had been identified in the literature concerning treatment efficacy. These fifteen innovations included pharmacological treatments (disulfiram, naltrexone, LAAM, buprenorphine, SSRI, and rapid opiate detoxification), psycho-social therapies (motivational enhancement therapy, supportive-expressive psychotherapy, dual-focus schema therapy, the community reinforcement approach, the Matrix model, vouchers, music therapy, and art therapy), and the complementary technique of acupuncture. Possible responses ranged from zero to fifteen. Other innovation researchers recommend using this inventory method because it allows for comparison across organizations (Delaney et al., 1996; Kimberly & Evanisko, 1981) and provides more consistent findings (Damanpour, 1991) than focusing upon a single innovation.

As previously noted, an organization’s absorptive capacity is a multi-dimensional construct. This research included six indicators: four measures of workforce professionalism and the two latent variables of environmental scanning and the collection of satisfaction data. The first professionalism measure indicated the percentage of counselors that had completed at least a Master’s degree level of education (percentage M.A. counselors). In addition, administrators
identified the percentage of certified or licensed counselors employed at the center (percentage certified/licensed counselors) as well as the percentage of counselors in recovery from substance abuse (percentage recovering counselors). The final measure of professionalism was whether the center employed had at least one staff physician (1 = physician(s) on payroll, 0 = no physicians on payroll).

The environmental scanning measure was based on four items that asked center administrators to estimate the extent to which their staff’s knowledge about treatment techniques drew upon publications, participation in professional development, membership in professional associations, and informal conversations with other members of treatment organizations. Possible responses for each item ranged from 0 (no extent) to 5 (very great extent).

The second latent variable measured was the collection of satisfaction data. This variable was comprised of two items. The first item asked if the center surveyed client referral sources for their satisfaction with the services received by their referred clients. The second item ascertained if the center collected this type of satisfaction data from third-party payers. Both items were dichotomous (1 = yes, 0 = no).

The estimated model controls for five organizational characteristics. These control variables include the profit status of the organization (1 = for-profit, 0 = non-profit), organizational size (natural log-transformed measure of the number of full-time equivalent employees), whether the center is located in a hospital (1 = hospital-based, 0 = non-hospital based), center age in years, and whether the center is located in a rural county, which was defined by location outside of a metropolitan statistical area (1 = rural, 0 non-rural).

Previous research suggests that for-profit organizations may be more likely to use innovations because of the competitive pressures they face in the marketplace (Damanpour, 1996). Organizational size generally is positively associated with the use of innovations (Frambach & Schillewaert, 2002). Hospital-based centers are expected to use more treatment innovations because these centers can draw upon unique resources available within the larger hospital (Roman & Johnson, 2002). More mature organizations may be less likely to use innovations (Kimberly & Evanisko, 1981). The measure of rural county location was included due to concerns about the possible disparities in treatment service availability in rural areas (Robertson & Donnemmeyer, 1997).

2.4. Analysis

The proposed model was evaluated using Mplus (version 2.13), a structural equation modeling software program. This software provided model estimates at both the measurement level and the structural level. Confirmatory factor analysis allowed for the evaluation of latent variables created from the shared variance between individual items (Muthen & Muthen, 1998). Constructing latent variables eliminated the error components of individual items, leaving an unobserved measure that had advantages in terms of reliability and validity. Confirmatory factor analyses were conducted for the items indicating environmental scanning and the collection of satisfaction data. Since the latent variable of satisfaction data collection was based on dichotomous indicators, a weighted least squares estimator was used for this analysis. All items loaded on their expected factors (results not shown). In addition to the measurement model estimates, Mplus produced estimates of the hypothesized associations between the variables, significance tests for those coefficients, and overall measures of model fit (Muthen & Muthen, 1998).

3. Results

3.1. Descriptive statistics

With regard to organizational characteristics, 29.5% of these private substance abuse treatment centers operated on a for-profit basis, 56.2% were based within hospitals, and 23.3% of centers were located in rural counties. The average center age was 18.3 years (SD = 11.4) and the average log-transformed center size as 2.9 (SD = 1.2). In the average center, 54.2% of counselors had at least M.A. degrees (SD = 33.5), 55.7% had licenses or certifications in addictions counseling (SD = 34.6), and 44.5% of counselors were personally in recovery (SD = 29.8). About 55.2% of centers employed at least one physician.

3.2. Structural model estimates of organizational use of treatment innovations

The average center currently used nearly 5 of the 15 treatment innovations measured (mean = 4.97, SD = 2.44). Estimates for the structural model of innovation use appear in Table 1. The first column presents the predictors of environmental scanning, including the four measures of workforce professionalism and the organizational-level control variables. The hypothesized relationships between levels of workforce professionalism and environmental scanning received partial support. The percentage of licensed or certified counselors was positively associated with environmental scanning (β = .145). The employment of at least one physician at the center was associated with greater environmental scanning (β = .148). The association between the percentage of M.A. counselors and environmental scanning did not achieve statistical significance. In addition, there was not a significant relationship between the percentage of counselors in recovery and environmental scanning.

As for the predictors of the collection of satisfaction data, presented in the second column, the percentage of M.A. counselors was positively associated with the collection of satisfaction data (β = .278). There was a significant positive relationship between the percentage of counselors in recovery and the collection of satisfaction data (β = .154). Neither
Organizational characteristics generally did not predict environmental scanning or the collection of satisfaction data. The only exception was organizational size. Although not a significant predictor of environmental scanning, organizational size had a significant positive effect on the collection of satisfaction data ($\beta = .251$).

The third column of Table 1 presents the results for organizational use of treatment innovations. Environmental scanning and the collection of satisfaction data were significantly associated with the adoption of treatment innovations. Treatment centers that engaged in more environmental scanning, meaning information-seeking in the external environment, adopted a significantly greater number of treatment innovations ($\beta = .289$). In addition, the collection of satisfaction data from referral sources and third-party payers was significantly associated with innovation utilization ($\beta = .140$). Centers that collected more types of satisfaction data used a significantly greater number of treatment innovations ($\beta = .170$). None of the other workforce measures were significantly associated with the use of treatment innovations.

Three of the control variables had significant associations with the measure of innovation. First, organizational size was associated with the use of treatment innovations ($\beta = .290$). As suggested by the literature, this association was positive, indicating the increased likelihood of greater levels of innovation adoption in larger organizations. The association between profit status and innovation revealed significantly greater innovation use in centers that operated on a for-profit basis ($\beta = .113$). Hospital-based centers used on average a significantly number of treatment innovations ($\beta = .097$). Center age and location in a rural county were not significantly associated with the use of innovations in private treatment centers.

This model of organizational use of innovations explained about 26.3% of the variance in innovation utilization. The measure of model fit provided further empirical support for the proposed model. Given that the model was estimated using a weighted least squares estimator, Muthen and Muthen (1998) argue that a WRMR (weighted root mean square residual) of less than .90 indicates good model fit. The WRMR for this analysis was .69.

4. Discussion

Data from the National Treatment Center Study provide support for the theory that an organization’s absorptive capacity is associated with its use of treatment innovations. These data point to the importance of organizational behaviors that engage the treatment center with the external environment. Environmental scanning, or the use of informational resources such as professional development seminars and publications, had a positive effect on innovation adoption. In addition, having formal channels of communication with organizational suppliers and buyers through formal satisfaction data collection activity was positively associated with organizational use of treatment innovations, independent of environmental scanning and organizational characteristics. These findings suggest two mechanisms that can facilitate technology transfer, which can be developed via managerial decision-making.

The measures of workforce professionalism generally operated indirectly on the use of innovations, suggesting that while these dimensions of professionalism may be supportive of the use of innovations, their direct effects are more limited. Only the percentage of M.A. level counselors used a significantly greater number of treatment innovations ($\beta = .170$). None of the other workforce measures were significantly associated with the use of treatment innovations.

The measures of workforce professionalism measures, only one of the indicators had a significant direct effect on the use of treatment innovations. Centers with higher percentage of M.A. level counselors used a significantly greater number of treatment innovations ($\beta = .170$). None of the other workforce measures were significantly associated with the use of treatment innovations.

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The measures of workforce professionalism generally operated indirectly on the use of innovations, suggesting that while these dimensions of professionalism may be supportive of the use of innovations, their direct effects are more limited. Only the percentage of M.A. level counselors, one of the four professionalism measures, was directly associated with innovation utilization. The percentage of certified/licensed counselors and the percentage of counselors in recovery were only indirectly associated with the innovation measure. While the importance of physicians’
presence in substance abuse treatment centers has often been emphasized, these data offer only limited support for the association between their presence and the adoption of innovations. Physicians’ presence is a significant predictor of environmental scanning, but does not emerge as a significant direct predictor of innovation adoption.

While these findings significantly contribute to literature of the transfer of research into practice within the substance abuse treatment field, certain limitations of this research should be noted. First, the data are cross-sectional, which limits the extent to which causality can be established. Replication of these findings in a panel longitudinal design would enhance our ability to make causal arguments. Second, we are limited in our ability to thoroughly measure workforce professionalism since we did not have data on the presence of other professionals, such as social workers, employed in these treatment settings. We did consider a measure of full-time equivalent nurses as an indicator of professionalism; this measure was neither directly nor indirectly associated with innovation. Finally, the treatment centers in the sample are in the private sector, so these findings may not generalize to publicly funded organizations. These limitations provide several directions for future research.

Certain limits about the measurement of the dependent variable, innovation utilization, merit discussion. The group of fifteen variables included in this analysis is not intended to be a definitive list of all recent treatment innovations. Given the constantly evolving nature of the treatment field, it would be impossible to create such an all-encompassing list. Rather, we aimed to use an inventory of techniques that drew on a range of pharmacological innovations and psycho-social interventions without necessarily encompassing everything that could be considered an innovation. This range covers techniques with lengthy histories in substance abuse treatment as well as more recently developed approaches. The balance between pharmacological and psycho-social approaches was intended to minimize undue bias that could arise from emphasizing only one type of treatment. For example, if the measure only included medications, the physician measure of professionalism could be highly significant while the importance of the counselor-related measures on innovation could be underestimated. The inverse could occur if only psycho-social interventions were included. Thus, the list reflects an attempt to find a balance between these two types of techniques.

Commentators have recently noted that the field of substance abuse treatment has increased in its professionalism, in part because more states are requiring certification and higher levels of education for clinical staff (Mulvey, Hubbard, & Hayashi, 2003). This trend of professionalism, therefore, should be viewed by health policymakers as having a positive effect on the movement of treatment innovations into this field of health care. Investments supporting opportunities for such professionalism may produce tangible results in the transfer of evidence-based treatment techniques into practice.

In addition, our findings offer those interested in facilitating the transfer of research into practice with two key management tools for increasing the flow of innovations from research institutions into real-life treatment settings. First, center administrators should be encouraged to promote the use of external sources of information by members of their organizations, such as research-based publications, as well as support the involvement of clinical staff in professional development activities. Innovation adoption cannot solely be based on the existing knowledge staff within the organization, as has long been noted by management theorists. It requires engagement with the external environment. Second, treatment center administrators should be encouraged to engage in ongoing communication with their buyers and suppliers, such as third-party payers and client referral sources. In particular, the use of treatment innovations is greater when organizations engage in the collection of satisfaction data, which may identify unmet needs of these organizational buyers and suppliers.

More generally, this research points to the importance of inter-organizational networks in supporting the use of treatment innovations. These findings are suggestive of the value of recently developed collaborative relationships between community-based treatment providers and other organizations, such as university-based research centers (Brown & Flynn, 2002; Clark, 2002; Rawson & Branch, 2002; Spear & Rawson, 2002). The development of inter-organizational relationships within initiatives such as NIDA’s Clinical Trials Network may hold considerable promise for the adoption of innovations by those facilities within the Network (Forman et al., 2001).

Health policymakers continue to struggle with understanding the barriers to the adoption of empirically-supported treatment innovations in substance abuse treatment settings. We have identified three significant predictors of innovation, which partially explain the variation in the use of innovations in these organizations. Our research suggests that further attention to the development of absorptive capacity within treatment organizations may yield important benefits in terms of the adoption of efficacious treatment techniques.

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