

Chapter One

**Building and
Maintaining
Systems of Care**

Understanding Collaboration in Systems of Care

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Introduction

Since Jane Knitzer's 1982 report entitled *Unclaimed Children*, many states and localities have been developing systems of care to more effectively serve children with serious emotional disturbance. Several policy approaches have been used to foster the development of these systems of care for children with multiple complex needs and their families. These approaches have included unfunded mandates, laws and memoranda of understanding, systems change and other mechanisms.

To date the findings of studies of child and family outcomes associated with systems of care have been disappointing. Two well-designed studies (Bickman, Heflinger, Lambert, & Summerfelt, 1996; Bickman, Summerfelt, Firth, & Douglas, 1997) have shown that the functional outcomes of system of care interventions have not been superior to outcomes of non-system of care or traditional approaches to providing care to the target population. This finding has prompted the reexamination of approaches to studying systems of care leading to a focus on process and system level outcomes before moving to a study of child and family outcomes. The logic behind this approach suggests that if the child serving system does not change to reflect the principles and values of systems of care as articulated by Stroul and Friedman (1986), it is unreasonable to expect that the desired child and family outcomes will be realized. The mechanism used to establish systems of care and the resulting level of collaboration may be important factors influencing the achievement of client level outcomes. The purpose of the current, federally funded research project is to examine the relationship between the policy instrument used to foster the development of systems of care and the resulting level of collaboration among the partner agencies.

Methods

Phase 1

Phase 1 of this study consisted of a national survey in which all states were asked if they had established, either at the state or local level, a system of care for children with serious emotional disturbance. States that had established one or more such systems were requested to provide the research team with data and relevant documents regarding their policy instruments. Thirty-nine (78%) states responded to this request for information. The materials they supplied were coded independently by two team members regarding the policy instrument used, the principles of a system of care that were described, the participating agencies, the target population, and other relevant variables. Policy instruments included mandates, inducements, capacity building, and system change as described by Elmore (1987). Coding discrepancies were resolved by the team members through group review of the state's documents. The data were entered into a computer and a cluster analysis was conducted. Five clusters were identified based on the agencies involved, the principles of systems of care included, and the type of policy instrument used. The clustering program identified an exemplar state in each cluster.

Phase 2

In Phase 2 of this study, site visits lasting 3 to 7 days were conducted at all five exemplar sites, using a backward mapping approach, i.e., beginning at the level at which the maximum impact of the policy is desired (local level) and moving to the state level. Data were gathered by observing meetings, reviewing records, interviewing key informants and administering a collaboration scale designed by Greenbaum and Brown (2001). A total of 114 persons responded to the Interagency Collaboration Scale. The three subscales in this instrument measure: 1) beliefs and attitudes regarding collaboration, 2) items

shared among the organization (behaviors), and 3) information about personal experience with other organizations in the system of care (knowledge). Many respondents included additional comments about their experience with, and perceptions of, interagency collaboration. Using semi-structured interview schedules, interviews were also conducted with parents, case managers, and key decision makers. Data analysis produced mean collaboration scores by site for all three subscales. These scores are shown in Table 1.

Table 1
Mean Collaboration Scores by Site

| <i>Site</i> | <i>N</i> | <i>Attitudes</i> | <i>Behavior</i> | <i>Knowledge</i> |
|-------------|----------|------------------|-----------------|------------------|
| Cluster 1 | 15 | 4.522 | 3.474 | 4.413 |
| Cluster 2 | 42 | 4.459 | 3.227 | 4.065 |
| Cluster 3 | 17 | 4.466 | 3.194 | 4.047 |
| Cluster 4 | 14 | 4.128* | 3.308 | 3.843 |
| Cluster 5 | 26 | 4.480 | 3.591 | 4.150 |

* $p = .004$

Results

Regardless of the policy instrument used to establish the system of care or the cluster to which the state belonged, most states showed high scores on attitudes, behaviors and knowledge related to collaboration. However, the Cluster 4 exemplar state's respondents showed a statistically significantly lower score on attitudes toward collaboration than respondents in other states. This cluster was characterized by inclusion of multiple child-serving systems and citation of a principle related to a multi-system approach. Along with Cluster 3, this cluster relied on a systems change approach. Elmore (1987) described this mechanism as involving the transfer of authority among individuals and agencies in order to alter the system of service delivery. Examination of the qualitative data collected during site visits indicated that the Cluster 4 exemplar state had two different organizational approaches to developing systems of care. These approaches involved different agencies and the target population varied by county and region. Also, child welfare was not represented in the system of care. In this state the two different types of collaboratives had been competing for the same funding. Respondents in the Cluster 4 state also indicated that in addition to the competition for funds, there might have been too much money that was made available too fast for collaboration to develop around the use of this money.

In addition to attitudes, behaviors and knowledge, the qualitative data indicated that structural and organizational factors are important in promoting collaboration. The Interagency Collaboration Scale does not include items related to these factors. A number of the respondents listed specific structural or organizational factors such as barriers to establishing flexible funding because of agency budget requirements or different catchment areas for each agency. It is suggested that future work on collaboration systematically attempt to measure the structural and organizational factors that create barriers to interagency collaboration. The next step in this research is to site visit another state in each of the clusters to examine the extent of within-cluster and between-cluster variation.

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Children Referred for Comprehensive Community Mental Health Services: Understanding Both Strengths and Impairment

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Introduction

The recent call for the incorporation of strengths into children's mental health assessment, treatment and service delivery (e.g., US Dept. of Education, 1994) has not only resulted in the development of strengths-based instruments (e.g., Epstein & Sharma, 1998), but also in a debate around the strength construct itself. Several researchers have pointed out that many measures of strengths are in reality inverted measures of risk and that strengths are sometimes measured as the absence of psychopathology. This approach implies that children who have serious mental health challenges cannot, by definition, exhibit social, behavioral or emotional strengths.

Strength-based assessment in children's mental health is relatively new (Epstein, Dakan, Oswald, & Yoe, 2001). The relationship of strength-based measures to those that are problem-based and the psychometric properties of these measures in relationship to problem-based measures have only recently begun to be investigated (Epstein, 1999; Lyons, Uziel-Miller, Reyes, & Sokol, 2000; Oswald, Cohen, Best, Jenson, & Lyons, 2001). It is important to determine whether strengths and risks/problems are related but unique constructs, or rather opposite ends of a single continuum. Both interpretations have important implications for service delivery and planning.

To date, under the Comprehensive Community Mental Health Services for Children and their Families Program, the Center for Mental Health Services (CMHS) has awarded 85 five- and six-year grants in 46 states and two territories to develop and implement multi-agency systems of care that provide comprehensive, community-based, family-driven, culturally competent and accessible services to children with serious emotional disturbance and their families (Center for Mental Health Services [CMHS], 1999). Data collected as part of the national evaluation of this program (CMHS, 1999) provide an opportunity to investigate the strengths of children with serious emotional disturbance who are experiencing various levels of functional impairment. The purpose of this paper is to describe those strengths and determine whether youth experiencing greater functional impairment also exhibit strengths, and if this relationship exists across demographic subgroups.

Methods

The study sample ($N = 1,838$) was selected from youth participating in the outcome study of the national evaluation of the Comprehensive Community Mental Health Services for Children and their Families Program. Youth in the current study sample were required to have complete data on gender, age, race, ethnicity, Child and Adolescent Functional Assessment Scale score (CAFAS; Hodges, 1994), and Behavioral and Emotional Rating Scale score (BERS; Epstein & Sharma, 1998). The data used in the current study were collected between June 1997 and June 2002 from caregivers of children served in systems of care that were federally funded in 1997 and 1998.

Information on children's age, race and ethnicity, gender and household income was collected from caregivers at intake into service. Age was dichotomized into less than 11 years, and 11 years and older. Household income was dichotomized, according to the Federal Registry poverty guidelines, into annual household incomes of less than \$15,000, and \$15,000 and higher. The low prevalence of minority racial and ethnic categories led to the re-categorization of race as a dichotomous variable: non-Hispanic Caucasian youth and others. Nearly three-quarters (73%) of the sample was 11 years of age and older

and two-thirds (66%) were male. Slightly more than half (54%) of the study sample was non-Hispanic White and nearly half (46%) of the study sample reported living in poverty (less than \$15,000 annual family income).

Measures

Functional impairment was assessed at intake into systems of care using the Child and Adolescent Functional Assessment Scale (CAFAS; Hodges, 1994), and strengths were assessed using the Behavioral and Emotional Strength Rating Scale (BERS; Epstein & Sharma, 1998). Both the CAFAS (e.g., Hodges, Doucette-Gates, & Kim, 2000; Hodges, Doucette-Gates, & Liao, 2000, Hodges & Wong, 1996) and the BERS (e.g., Epstein, Harniss, Pearson & Ryser, 1999; Epstein, Nordess, Nelson, & Hertzog, 2002; Epstein, Ryser, & Pearson, 2002) have demonstrated reliability and validity.

The total CAFAS score is calculated by summing across functional impairment ratings in eight domains (School, Home, and Community Role Performance, Behavior Toward Others, Moods and Emotions, Self-harmful Behavior, Thinking, and Substance Use). Four categories of the total CAFAS score were utilized in this study to represent levels of functional impairment: 0-40, *none/minimal/mild impairment*; 50-90, *moderate impairment*; 100-130, *marked impairment*; and 140-240, *severe impairment*.

The BERS assesses behavioral and emotional strengths across five life domains: Interpersonal, Intrapersonal, Affective, School-related, and Family Strengths. The overall Strength Quotient, which is obtained through the summation of the five standardized subscales, and the individual subscales were used in the current study. The overall Strength Quotient has a mean of 100 and a standard deviation of 15, and the subscales have a mean of 10 and a standard deviation of three. Higher scores indicate higher levels of strength.

Results

Results from the CAFAS revealed that over half (58.8%) of the study sample had marked or severe functional impairment, while the BERS indicated that nearly half (42.2%) of the sample showed average or above average strengths. There was a moderate negative correlation between overall strengths and overall functional impairment ($r = -.45, p < .0001$) that accounted for 20.3% of the shared variance. Correlations of the same magnitude and direction were found between overall functional impairment and each of the domain specific strength ratings. There was a significant difference in BERS overall Strength Quotient among youth with mild/minimal, moderate, marked, and severe CAFAS scores, $F(3,1834) = 134.77, p < .0001$. As expected, youth with minimal/mild functional impairment had the highest average strengths ($M = 101.2$), followed by youth with moderate ($M = 91.0$), marked ($M = 84.3$), and severe ($M = 78.9$) impairment. It is important to note, however, that even youth with severe impairment had near average strengths. This same pattern was found for the relationship between overall functional impairment and domain specific strength ratings.

Boys were rated with higher overall average strengths ($M = 92.0$) than girls ($M = 82.9$), $F(1,1830) = 148.8, p < .0001$; older children ($M = 90.7$) had higher overall average strengths than younger children ($M = 88.1$), $F(1, 1830) = 9.9, p < .01$; and children of minority race/ethnic background ($M = 90.7$) had higher overall strengths than children of majority race/ethnic background ($M = 88.8$), $F(1,1830) = 4.01, p < .05$. While the relationship between CAFAS and BERS scores was consistent across race/ethnic and age subgroups, there was a significant CAFAS by Gender interaction, $F(3,1830) = 3.55, p < .05$, indicating that girls at higher levels of functional impairment had lower strength ratings than boys with similar impairment ratings.

Discussion

This study found that even those youth experiencing severe functional impairment exhibited close to average levels of behavioral and emotional strengths. This finding provides evidence that strengths and impairment are not opposite ends of the same continuum, but rather separate constructs. In addition, this paper provides further support for the convergent validity of the BERS given the moderate correlation between strengths and functional impairment, within and across strength-specific domains. Furthermore, with the exception of gender, the construct validity support appears to hold across demographic subgroups.

Implications

The results of this study suggest that service and treatment planning must take into account the strengths of all children. Since even the most severely impaired children exhibited near average strengths, these strengths should be assessed and effectively utilized in treatment planning and implementation. It appears that the measures of strengths and impairment each capture different information. Clinical assessments should expand beyond deficit-based measures to include measures of strengths, thereby not only gauging the needs of children but also discovering the foundation upon which to build their interventions. While deficits may accurately identify areas for needed improvement, the strengths

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Brief Symposium

Systemic Approaches to Evaluation in Systems of Care: Use of the Team Observation Form and System of Care Practice Review

Introduction

Mario Hernandez

Systems of care involve multiple strategies for improving organizational relationships in ways that are intended to create and provide access to an expanded and coordinated array of community-based services (Hernandez & Hodges, 2003). These strategies are expected to shape organizational policies, regulations, and funding mechanisms; drive the development of services; and shape practice for individual children and their families. The systems of care strategy is driven by an explicit organizational philosophy that emphasizes services that are family focused, individualized, provided in the least restrictive environment, coordinated among multiple agencies, and culturally competent (Stroul, 1996; Stroul & Friedman, 1986). Services and service planning within a system of care are expected to embody the philosophy about the way services should be delivered. Given this expectation, it becomes necessary for systems of care to utilize tools for assessing the fidelity of service delivery to system-of-care principles. Moreover, existing or new quality improvement procedures need to incorporate these tools in order to help systems of care improve their direct services. While the current trend in children's mental health is to move toward the creation and adoption of evidence based practices within communities, very little attention has been given to creating and using methods that both assess the fidelity to system-of-care values and principles at the practice level. This lack of attention may be due, in part, to the fact that system-of-care values and principles can be difficult to operationalize for communities implementing systems of care. Also, communities often expend large amounts of time to bring their stakeholders together into collaborating entities: thus, little time remains to focus on the specifics of direct service practices. Communities should not assume that their direct service practices are consistent with the values and principles of the system of care. Close monitoring, feedback and training to support fidelity to system-of-care values and principles is needed in order to ensure that current and future direct services practitioners interact with children and families in a culturally competent, family focused, community-based and individualized manner.

The most common process present in every system of care is the treatment planning meeting. These meetings represent the embodiment of organizational reforms at the level of the individual child and family. Ensuring that meetings are conducted in a manner that is consistent with the principles of family direction and individualization is critical because, through these planning meetings the array of services offered by a system of care are accessed. Rarely are the facilitators of these meetings given training to support their work in successfully facilitating meetings involving families, informal helpers, agency representatives and others.

This brief symposium provides two examples of how quality improvement tools can be used to reflect the delivery and planning of child mental health services. The first tool described is the System of Care Practice review (SOCPR; Hernandez et al., 2001). This tool assesses the fidelity to system-of-care values and principles at the level of service delivery. The experience of using the SOCPR in a system of care will be described. The second tool, The Team Observation Form (TOF) focuses on the behavior of facilitators during *in vivo* treatment planning meetings. Both of these tools were used by the THINK project, which is funded by the Center for Mental Health Services (CMHS) and is located within Hillsborough County Florida. Finally, this summary shares results that associate adherence to system-of-care values and principles at practice level with child-level outcomes.

Chair

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THINK Team Observation: A Mixed Methods Approach to Assess Service Delivery in a Community Mental Health System of Care

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Introduction

Child and family wraparound teams meet regularly in planning meetings to discuss, write, plan, and update an individualized service plan for the child with a serious emotional disturbance (SED) and his or her family. Team meetings provide a rich opportunity to view the team process at important moments in the life of the team, in a naturalistic setting. This research addressed the following research questions: (a) What is the level of adherence to the system-of-care and wraparound principles evidenced in the child and family team meetings? (b) How do team interactions affect adherence to the system-of-care and wraparound principles?, and; (c) How do the team leader's facilitation practices affect adherence to the system-of-care and wraparound principles?

This study was designed to provide feedback to program managers and staff, to identify the strengths of the program, and to identify areas where staff may need additional training and/or supervision.

Method

This research combines data gleaned from: (a) a quantitative checklist, adapted from the Wraparound Observation Form (WOF; Epstein et al., 1998; Epstein et al., 2002); (b) a qualitative, ethnographic methodology; and (c) in-depth interviews with caregivers.

We made several revisions to the WOF resulting in the Team Observation Form (TOF) utilized in this study. Terminology in the instrument was revised to reflect local procedures and terms, and descriptions of observed behaviors in the observer protocol manual were further operationalized and revised to reflect local practices. A pilot cultural competence section was added, as was a qualitative ethnographic component. The qualitative component was added to address concerns that the quantitative measures may not adequately describe the actual process observed at the meetings. In-depth interviews with caregivers were added to obtain information from their point of view about the team meeting process.

The ethnographic portion of the study involves one or two observers who attend child and family team meetings and take detailed field notes on the meetings. They write down observed behaviors, verbal and non-verbal communication, and contextual comments and observations. They also summarize comments to help frame the meeting in its entirety. Because we are very concerned about the possibility

that our observations will affect service provision to the family, we have taken a “no surprises” approach to the observations. That is, we hold the assumption that if meeting participants are aware of the observation process, any adverse effects (e.g., being reticent to speak openly) of those observations will be lessened. Once permission from the family is granted, we contact all of the meeting participants to advise them of the study and to answer any questions or concerns they may have about the observation. Field notes are taken by hand during the meeting and more detailed notes are written after the meeting. For meetings with multiple observers, we jointly review our experiences after the meetings.

Results

This summary reports on the findings of the first fifty observations of this ongoing study. Twenty-two meetings were attended by one observer, and 28 were attended by two observers. The meetings observed involve two different agencies providing wraparound facilitation and leadership.

All meetings had one or more team leaders and caregivers present. Eight out of 10 meetings included a Family Advocate or mentor, and half of the meetings included a school administration representative. Four out of 10 meetings included a school social worker/guidance counselor, and a teacher, and 38% of all meetings included an outside/private therapist. An average of six people were in attendance at these meetings. Not all life domains (i.e., financial, recreation, education, mental health, etc.) were discussed or incorporated into the Family Support Plan at every meeting. Many Child and Family Team meetings were called for a specific purpose (e.g., to discuss a change in school IEPs or to address a crisis situation). On average, 7.6 life domains were addressed in each child and family team planning meeting. Family, mental health, and education domains were part of the Family Support Plan discussion in over nine out of 10 meetings, while the substance abuse domain was rarely discussed.

Six communication factors present in the team meetings seemed to influence the team process and adherence to system-of-care and wraparound philosophies. These factors were: (a) the extent to which the team actually operated as a system, (b) the way the team framed or made sense of the meeting, (c) the structure of the meeting, (d) the communicative networks operating in the meeting, (e) the manner of empowerment of the team members, and (f) the role ambiguity or clarity evident in the meetings. As in any system, these factors are interconnected and interrelated.

This research suggests that, in order to fully adhere to system-of-care and wraparound principles, team meetings need to be framed within a system orientation. This framing creates specific roles for the individual players on the team, which facilitates their interaction in a manner that supports a system orientation. The meeting framework is influenced by the meeting structure, the communicative networks, and the empowerment of the team members.

Team Strengths

Team members and team leaders did a fair job at following wraparound and system-of-care principles in the meetings. Team members did a good job at fulfilling their role of suggesting community resources to assist the family and in following through by providing information. They also did a good job of providing resources to the families. They were successful at coordinating resources between agencies, and at encouraging input from formal team members. They also had success in managing the team meetings to introduce participants and obtained at least tacit approval of the plan by those participants. Team members were able to introduce at least some level of strengths discussion into the meetings, make the meetings convenient to the family, and present the family’s point of view. They involved the family in the Family Support Plan design, provided unconditional care, set behavioral goals, assigned goals to team members, and made an effort to respect the family’s culture and beliefs.

Team Challenges

The teams struggled the most with: (a) including informal supports in the plan and in the meetings, (b) giving the youth and family full voice and equal power, (c) always addressing all needs

in the plan, (d) connecting goals with strengths, (e) maintaining a strengths focus throughout entire meeting, (f) creating or reviewing a safety or crisis plan to address potential crises or emergencies, (g) ensuring that all team members treat the family courteously, (h) ensuring that families fully understand and agree with the plan, discussing criteria for future termination of program services, (i) providing and using a meeting agenda, (j) summarizing goals at the end of the meeting, and (k) discouraging the use of jargon by team professionals. It was also noted that, in addition to the above challenges, further improvement could be made if the team were to break up the Family Support Plan goals into smaller action steps; this change may help disempowered families take better control of their goals.

Discussion

Child and family team meeting success begins before the meeting starts. Building a team that is a truly systemic, interrelated whole takes more work than simply inviting people to a meeting. The key to operationalizing systems-of-care and wraparound philosophy is to intentionally frame a system orientation within the child and family teams through: (a) meeting structure; (b) communication that implicitly states group guidelines, philosophies, and rules; and (c) nonverbal communication (gestures, paralanguage, eye contact) that is inclusive to all team members. When team members are socialized to understand their roles on the team, and when they are empowered to carry those roles out, the entire group can more effectively negotiate this system pattern.

In theory, the systems approach is the backbone of the system-of-care and wraparound concepts. In practice, team meetings often fall back on the more traditional medical model of mental health and social service. Thus, it is a challenge to change the meeting paradigm to one of a systems approach. If the team leader frames the team meeting according to system-of-care-and wraparound principles, then team members would seem to be more likely to assume roles within that orientation and, in turn, the meeting content will more likely to adhere to those principles. The extent to which the leader intentionally frames the orientation seems to have a great deal to do with the successful achievement of this orientation.

Merely assigning people to a team, and inviting them to a meeting, does not create a child and family team, nor a system of care orientation. An effective team is motivated by a shared culture and a shared passion. Effective teams need senior management commitment, a shared vision, a clear mandate of authority, clear performance targets, success indicators, defined roles and responsibilities, trust, a balance of attention to task and attention to process, realistic expectations, and a shared understanding of what the group wants to accomplish (Parker, 1994).

The mixed methods approach to assessing team meetings has several advantages. The triangulation of data allows for action-oriented, evocative findings. It enables the researchers to provide specific recommendations to agencies, and to incorporate the findings into wraparound facilitation training. It is also generalizable to other, similar, systems of care.

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System of Care Practice Review (SOCPR): A Case Study Approach to Measuring Systems of Care at the Level of Practice

Angela Gómez

Introduction

THINKids is a demonstration project for a Center for Mental Health Services (CMHS) site and the state children's mental health authority in Tampa, Florida. The demonstration uses an independent case management model, based on system-of-care (SOC) and wraparound principles to coordinate services and supports for the families of children and youth with serious emotional disturbance (SED).

The System of Care Practice Review (SOCPR; Hernandez et al., 2001) protocol is based on a case study methodology that was adapted from the Family Experience Study (Gutierrez-Mayka & Hernandez, 1997) and is similar in approach to service testing (Groves & Foster, 1995). The case study's unique strength lies in its ability to draw evidence from a variety of sources including interviews with caregivers, children and youth, informal supports and case managers as well as a review of case records. Due to the quantity of information that the case study approach can collect, and the opportunities for validation from multiple data sources, this approach provides a potentially strong method for learning about service delivery within a community context from the perspectives of families and their providers. The SOCPR case study approach determines the degree to which services are child-centered and family-focused, community-based and culturally competent, and examines of the impact of services on families.

The SOCPR is based on the SOC principles for children's mental health. Three study objectives were derived from the SOC principles described by Stroul and Friedman (1986); the SOCPR should reflect values that are: (1) Child-centered and Family-focused, (2) Community-based and (3) Culturally competent. The SOC philosophy also assumes that the implementation of these principles at the practice level will produce positive impact for children and families receiving services; thus, a fourth objective was added to ascertain impact.

Method

THINKids was selected for this study based on the program's interest in obtaining feedback on their services. This goal represented an additional effort by the THINKkids program to determine the extent to which their System Navigators were implementing the SOC approach at the practice level.

A total of 15 families participated in the study. The families were selected to participate by the THINKkids System Navigators. Families signed a Permission to Contact form allowing the study's team members to contact them and to set up the interviews.

Analysis. The analysis of the SOCPR follows a sequential process in which data are coded, sorted, rated, and examined. All of the interview questions in the SOCPR were pre-coded at the time the protocol was developed. This allowed questions to be sorted by interview (i.e., primary caregiver, child, etc.) and by objective (i.e., Child-centered and Family-focused, Community-based, and Impact.). Once all of the required data for the protocol had been collected, the information was integrated in order to rate the summative questions, each relating to a specific objective. The ratings specified for each objective were then averaged to provide a global rating for that objective. In addition, the summative questions for each objective were clustered, with their average rating representing a measurement of the individual components in each objective.

Results

The results are organized and presented based on the four study objectives: Child-centered and Family-focused, Community-based, Cultural Competency, and Impact. Findings represent the combined ratings of the summative questions and the frequency analysis of the written responses. A rating ranging

from 1 to 7 was derived for each of the objectives and their embedded measurements. Scores from 1 to 3 represent lower implementation of a SOC approach, and scores from 5 to 7 represent enhanced implementation of SOC principles. Figure 1 illustrates THINKKids' mean scores by objective.

Discussion & Conclusions

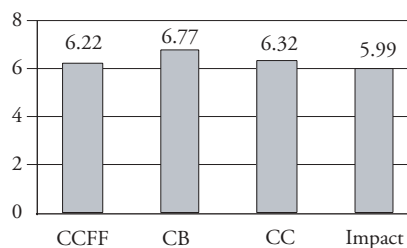
The SOCPR helped to explain the interface between services provided and the needs and strengths of the families receiving those services. The overall findings from this study show that THINKKids follows a system-of-care approach to service delivery. The emphasis of this approach is to provide services to the identified child and his or her family system. Child and family strengths are identified, and thus serve as building blocks for service delivery. Families, and in most instances the children, participate as partners in service planning and delivery. The majority of the services provided are home and/or school based. Interventions are offered in a timely manner, and great efforts are made to identify services within the community. The range of services provided responded to the identified needs of children and their families, limited in some instances by the availability of services in the community. Families with transportation constraints are provided with bus passes and in some instances transportation is provided by System Navigators to facilitate access to services. There is coordination of services among service providers as much as possible, considering that some service systems are not as responsive to the system of care approach as others. The cultural context surrounding families is recognized and taken into account when developing service plans and in the interactions between the System Navigators and the families they serve.

The SOCPR provides a useful approach for measuring the implementation of SOC principles at the level of practice and for providing quality improvement feedback to service providers. This is a family and provider friendly approach that focuses on systemic aspects of the SOC rather than on the individual characteristics of families and providers.

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Figure 1
Mean Scores by Objective on SOCPR



System of Care Practice Review Scores as Predictors of Clinical Outcomes in the Phase I Comparison Study

Robert L. Stephens, E. Wayne Holden, & Mario Hernandez

Introduction

Previous evaluations of the impact that the system-of-care approach has on mental health service delivery for children with serious emotional disturbance have focused primarily on evaluating symptom and impairment outcomes for children and families and the services and costs associated with obtaining these outcomes (Bickman et al., 1995; Bickman, Summerfelt, & Noser, 1997; Lambert, Brannan, Breda, Heflinger, & Bickman, 1998). Little attention has been given to practice-level factors that may influence the impact that systems of care have on children and families. The longitudinal comparison study of the national evaluation of the Comprehensive Community Mental Health Services for Children and Their Families program was designed to assess factors in service delivery systems and communities that may shape the overall impact of systems of care. The program is sponsored by the Center for Mental Health Services (CMHS) of the Substance Abuse and Mental Health Services Administration (SAMHSA).

An understanding of the relationship between changes at the level of the service delivery system and outcomes for children and families can only be derived by exploring contextual factors in the community and in the practices of service providers. The System-of-Care Practice Review (SOCPR; Hernandez et al., 2001) was included in the longitudinal comparison study to assess these contextual factors. The SOCPR was designed to assess the service experiences of children and families during the provision of care in CMHS-funded communities and matched comparison communities without CMHS funding.

A direct assessment of service experiences at the practice level was needed to determine whether system-of-care principles were being expressed directly in the interactions between service delivery personnel and families. System-of-care principles may be fully expressed at the level of the community or a specific agency, but incomplete diffusion of these principles into the practices of service providers will limit the effectiveness of these system changes. Conversely, in communities without a CMHS-funded system of care, system-of-care principles may be incorporated into the practices of individual service providers, but may not be operating in the community overall or in the administration of a specific agency. The current study was designed to assess the extent to which the experience of the principles of a system of care in interactions with service providers is predictive of clinical symptom outcomes for children being served in CMHS-funded system-of-care and matched comparison communities.

Methods

The SOCPR was conducted by staff at the Louis de la Parte Florida Mental Health Institute of the University of South Florida. The SOCPR used a case study approach to evaluate service experiences. The case study's unique strength lies in its ability to draw evidence from a variety of sources including documents, artifacts, interviews, and observations (Yin, 1990). The case study approach provides a potentially strong method for learning more about service delivery within a community context from the perspectives of families and their providers because of the quantity of information available and the opportunities for validation from multiple data sources (Hernandez et al., 2001). Hernandez et al. (2001) provide a detailed description of the development and application of the SOCPR within the comparison study.

Participants. Children and families were selected for participation in the SOCPR from samples of children and families being served in systems of care (SOC) and their matched comparison (non-SOC) communities. The number of children in the SOC and non-SOC groups, their associated demographic characteristics, and *p*-values for statistical tests of the differences between the two groups are presented in Table 1.

Table 1
Demographic Characteristics of Children in Each Sample
and Significance of Differences between Samples

| | SOC (<i>N</i> = 36) | Non-SOC (<i>N</i> = 39) | Significance |
|-------------------------|-------------------------|-----------------------------|-----------------|
| <i>Gender</i> | | | |
| Male | 55.6% | 62.9% | n.s. |
| Female | 44.4% | 30.8% | |
| <i>Age</i> | | | |
| Mean (<i>SD</i>) | 10.47 (3.5) | 11.21 (3.6) | n.s. |
| <i>Race/Ethnicity</i> | | | |
| African-American | 26.1% | 50.0% | <i>p</i> < .001 |
| White | 67.4% | 30.0% | |
| Hispanic/Latino | 0.0% | 0.0% | |
| Mixed Race | 0.0% | 14.0% | |
| Other | 6.5% | 6.0% | |
| <i>Family Income</i> | | | |
| Less than \$15,000/year | 46.7% | 75.0% | <i>p</i> < .05 |
| \$15,000/year or more | 53.3% | 25.0% | |

Instruments and procedures. The SOCPR protocol for each family consisted of multiple data collection components including document review, primary caregiver interview, child interview, formal provider interviews and informal helper interviews. Summary scores (1, *strongly disagree*, to 7, *strongly agree*) were generated for the following four domains and their 13 underlying subdomains: (1) *Child-centered and Family-focused*—Individualized, Full Participants, Case Management; (2) *Community-based*—Early Intervention, Access to Services, Level of Restrictiveness, Integration and Coordination; (3) *Cultural Competence*—Sensitivity and Responsiveness, Awareness, Agency Culture, Informal Supports; (4) *Impact*—Improvement, Appropriateness of Services. A Total score was calculated by averaging the scores for the 13 subdomains.

Data on child behavioral problems were collected with the Child Behavior Checklist (CBCL; Achenbach, 1991) at baseline, discharge, and 12-month follow up. The CBCL is a 134-item standardized checklist of childhood behavior problems and social competence that is completed by the parents or caregivers.

Results and Discussion

Table 2 presents descriptive statistics for the SOCPR Total scores and the CBCL Total Problems raw scores and T-scores for both samples. Correlations between the SOCPR Total scores and the CBCL Total Problems raw scores were calculated at each of the three data collection waves. SOCPR Total scores correlated significantly with CBCL Total Problems raw scores at the 12-month follow-up for the Non-SOC group ($r = -0.48, p < 0.001$). Thus, the experience of services that embodied system-of-care principles at a high level was associated with lower symptomatology one year after entry into services. In order to understand the factors related to positive outcomes in children's mental health service delivery, a series of multiple regression analyses was conducted predicting outcomes with SOCPR Total scores.

The series included CBCL Total Problems raw scores at 12 months as the dependent variable and used forced entry of predictors in the following order: (1) the baseline CBCL Total Problems raw score, (2) race/ethnicity coded 1 for White and 0 for all other categories, (3) site coded 1 for SOC sites and -1 for Non-SOC sites, (4) SOCPR Total score, and (5) Site x SOCPR Total score interaction. Predictor variables were mean-centered prior to conducting the analyses.

Table 2
Descriptive Statistics for SOCPR Total Score and CBCL Total Problems

| | SOC (<i>N</i> = 50) | | | Non-SOC (<i>N</i> = 46) | | |
|--------------------------|----------------------|-------|-----------|--------------------------|-------|-----------|
| | Mean | SD | Range | Mean | SD | Range |
| SOCPR | | | | | | |
| Total Score | 5.92 | .71 | 4.29-6.94 | 4.47 | .96 | 2.56-6.09 |
| Baseline CBCL | | | | | | |
| Total Problems raw score | 64.54 | .71 | 10-151 | 72.86 | 32.92 | 5-135 |
| Total Problems T-score | 68.39 | 9.04 | 41-90 | 70.28 | 10.86 | 37-88 |
| 12 Month CBCL | | | | | | |
| Total Problems raw score | 46.50 | 26.05 | 0-111 | 57.11 | 37.59 | 0-155 |
| Total Problems T-score | 61.25 | 11.62 | 23-82 | 63.55 | 15.73 | 23-89 |

As expected, baseline clinical symptom scores predicted symptom scores at 12 months ($\beta = 0.76$, $p < 0.001$). More important, however, were the other significant predictors of CBCL Total Problems at 12 months: the SOCPR Total score when entered in Model 4 ($\beta = -7.45$, $p < 0.05$) and the Site x SOCPR Total score interaction when entered in Model 5 ($\beta = 8.16$, $p < 0.025$). The entire sample of children from the system-of-care communities had SOCPR Total scores greater than or equal to 4, indicating that all children and families in the system-of-care communities experienced services that embodied the system-of-care principles at a consistently high level. There was a trend suggesting that, as children's clinical needs increased, the perceptions that their service delivery experiences embodied system-of-care principles also increased. However, this trend was not statistically significant. In contrast, there was more variability in SOCPR Total scores for the sample of children and families served in the non-SOC communities. Further, there is a tendency for the children in the non-SOC communities who experienced greater manifestation of system-of-care principles in their services to have fewer behavioral and emotional symptoms at intake. This inverse relationship between experience of the principles and clinical symptoms is even stronger at 12 months after intake into services.

The generally higher level and consistency of service experiences in the federally-funded communities is similar to a previous report of the system-of-care assessment in the longitudinal comparison study (Brannan, Baughman, Reed, & Katz-Leavy, 2002). Using a set of semi-structured interviews with a wide range of community stakeholders and a scoring system embedded within a complex conceptual framework, similar results were found regarding the operationalization of the system-of-care principles at the program and community levels. System scores across the systems of care indicated a significantly higher level of operationalization of system-of-care principles and were less variable than those across the non-SOC sites. In addition, there was some movement toward the system-of-care approach in the non-SOC sites.

The current results underscore the importance of measuring service experiences at the practice level. Clarification of the service experience context within community-based programs has important implications for understanding the transportability of evidence-based interventions into systems of care and other efforts to enhance the effectiveness of children's mental health services (Burns & Hoagwood, 2002).

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Symposium Discussion

Norin Dollard

The three studies described herein provide a basis for examining the logical chain of planning, to service delivery, to child and family outcomes. The Team Observation Form uses both quantitative and qualitative methods of assessing the degree to which service and support planning adhere to system-of-care principles. The System of Care Practice Review uses a case study methodology to look at the same set of principles and values as they occur in the implementation of the service plan (i.e., service delivery). Moving to the next step, the third study relates degree of adherence to system-of-care values and principles in order to improve child and family outcomes.

The first two studies provide a means for understanding how well the espoused system-of-care principles are being observed in practice, and allow for practical feedback to front line staff in order to affirm good work or to make improvements. Further, these studies yield rich information about the context in which services are provided. The third study's results indicate that in areas where there has been an infusion of funds to encourage service system and infrastructure development based on system-of-care principles—that consistently high levels of implementation were observed. Changes in clinical symptoms, however, did not vary as a result of the degree to which system-of-care principles were observed. By contrast, in the comparison communities, the degree of adherence to system-of-care principles was variable, and decreases in the severity of clinical symptomatology were inversely related to scores on the System of Care Practice Review.

These findings suggest that high levels of adherence to system of care principles may be a necessary contextual feature for understanding changes in clinical outcomes, but not a sufficient condition to guarantee positive outcomes for all children and families. It may be that the effects of evidence based treatments, currently being identified and tested, are enhanced if they are provided in a service environment that implements system of care principles and bring the field closer to understanding “what works for whom” (Evans & Banks, 1996).

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Symposium

The Nebraska Family Central System of Care for Children and Families: Expanding Care in Rural Areas

Symposium Introduction

Beth Baxter

This symposium presented the history of Region III Behavioral Health Services and how they created a system of care for children with serious emotional challenges in Central Nebraska. Region III covers 22 rural counties (14,972 square miles) with a population of 223,143. Forty-nine percent of the area is considered frontier, with less than seven persons per square mile, and 51% is considered rural, with seven or more persons per square miles but no associated cities of over 50,000. With the award of a Center of Mental Health Services grant in 1997, Region III was able to bring key stakeholders together to create Nebraska Family Central System of Care.

The papers delivered in this symposium presented five key components in Nebraska Family Central: (1) an overview of the evolution of the Nebraska Family Central System of Care from the CMHS grant to sustainability, (2) the expansion of the Professional Partner Program and the use of data to improve outcomes, (3) the expansion of wraparound to school-based settings, (4) the use of outcome data from Professional Partner and School-Based Wraparound programs to sustain and expand the system of care, and (5) expansion efforts to provide a system of care approach for children and families in the child welfare/juvenile justice system.

Evolution of Nebraska Family Central System of Care for Children and Families

Beth Baxter, Mark DeKraai, & Ann Tvrđik

Introduction

Nebraska Family Central is an integrated system of care for children with serious emotional challenges in central Nebraska. The twenty-two counties that make up the area for Nebraska Family Central consist of farmland and grazing pastures with the major industry being agriculture. Forty-three percent of the area's population is contained within three cities. A majority of the towns in the area have a population of less than 1,000. Twenty-six percent of the population is under the age of 18 while 38.5% is 45 or older. Eleven percent of the population lives below the poverty level. Twelve of the 22 counties have one or less licensed mental health practitioners. The challenges to meeting the needs of children with serious emotional and behavioral disorders and their families in such a rural, sparsely populated area made the creation of the integrated system of care more difficult than usual. This initiative was implemented with an award from the Center for Mental Health Services grant in 1997, and focused on five areas:

- Provide individualized care for children and their families (e.g., wraparound).
- Provide evidence-based therapeutic interventions identified through the research literature.
- Ensure family involvement at all levels.
- Promote interagency collaboration across child-serving agencies.
- Develop a process for decision-making based on data to help in quality improvement and sustainability.

Chair

Beth Baxter

Authors

Beth Baxter et al.

Andrew Brackett et al.

Reece Peterson et al.

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Jana Peterson et al.

Program Components

To ensure that services and supports are individualized, Nebraska Family Central originally expanded the Professional Partner Program through the CMHS grant, and utilized evaluation data to monitor children's functioning over time and to measure progress made toward goals set by child and family teams. Building on the successful outcomes achieved for children and families, wraparound was expanded and adapted in four school settings through the School-Based Wraparound programs. Both programs participated in the national evaluation combined with a site-specific local evaluation and benefit from a continuous feedback mechanism. Wraparound was also adapted to other programs within the Nebraska Family Central including: (a) the development of volunteer community wraparound teams to identify and become involved with children and adolescents before problems became too severe; (b) CO-OP for Success, which combines behavioral health, vocational rehabilitation, and schools in an effort to provide youth with job skills and employment opportunities as they transition to successful adulthood and; (c) use of wraparound technology by Families CARE, the family organization for the project, to help families who wanted a family partner to assist them.

An important component of Nebraska Family Central is the provision of high-quality services. One service provided through the project is Multisystemic Therapy (MST; Henggeler & Borduin, 1995). MST has a strong research base demonstrating its effectiveness for children with serious emotional disorders. Nebraska Family Central offers MST as a stand-alone intervention or in combination with wraparound. The Nebraska Model uses an ecological approach, incorporating wraparound and MST. The model is a collaborative one, based upon a thorough understanding of both the wraparound process and MST by all personnel involved. Wraparound is the primary intervention through the Professional Partner Program, with MST being utilized on a selected basis as specialized clinical treatment for specific families. The collaborative implementation of MST as part of the wraparound process is based on mutually agreed upon practices and procedures including referral, assessment, implementation, and evaluation.

Family Participation

One of the guiding principles of Nebraska Family Central is that families are full participants in service delivery, peer mentoring, outreach efforts, program evaluation, information dissemination, advocacy, and system policy development. Families CARE is a family-operated organization and a key participant in Nebraska Family Central. Families CARE is a non-profit organization that provides support and advocacy for families with children who have emotional, mental and/or behavioral challenges. There are primarily four main programs provided by Families CARE: the Family Care Partner Program, the Family Evaluation Program, the Y.E.S. (Youth Encouraging Support), and Parents for Change. Families Care Partners are also family members who provide one-on-one support, listen to parents' needs and concerns, and help parents find appropriate resources. Family Care Partners also attend meetings to help assist parents by communicating and advocating for their needs, and to assist with the child and family team if requested by the family.

Nebraska Family Central created the Care Management Team (CMT) whose primary function is to conduct utilization reviews and to manage youth placement. CMT serves children at risk of or in an out-of-home placement. This service involves administering and scoring the Child and Adolescent Functional Assessment Scale (CAFAS; Hodges, 1990); interviewing caregivers; reviewing client records of the youth including any psychological/mental health assessment information, and the risk assessment completed for youth in juvenile services; and participating in child and family team meetings when necessary. Additionally, CMT tracks referrals from the Nebraska Department of Health and Human Services and other service providers, determines needed and available support services, and identifies gaps in services.

Interagency Collaboration

Interagency collaboration is a critical feature of Nebraska Family Central. The Nebraska Family Central Council consists of representatives from behavioral health, child welfare, juvenile justice, education, vocational rehabilitation, families, providers and communities. The Council works as a

collaborative to conduct needs assessments, oversee strategic planning, and guide policy development to improve service delivery for children and their families.

Nebraska Family Central has been successful in using information for local and state decision makers in order to sustain and expand the system of care in Nebraska. In 1999 Nebraska Family Central used service utilization, outcome and cost data to propose a pilot project to the State of Nebraska to serve youth with complex needs who are state wards and placed in high-level care. The intent was to serve these youth through the system of care including the use of the wraparound approach and community-based services at a reduced cost. Region III Behavioral Health Services entered into a cooperative agreement with the Nebraska Department of Health and Human Services to form a collaborative partnership between Region III and the Central Service Area, Office of Protection and Safety. Consequently, the Integrated Care Coordination Unit (ICCU) was developed to care for youth who are high-need state wards in Central Nebraska and for whom traditional services have failed to produce positive outcomes. The identified youth exhibit high levels of functional impairment in multiple areas (e.g., school, home, community, self-harm, substance abuse) over a long period of time.

The ICCU was implemented in January of 2001 with 20 Care Coordinators participating in intensive training and began serving 201 identified youth who were enrolled in the unit between May and September 2001. The program has shown positive outcomes for children in its first year of implementation and has produced cost savings for the State of Nebraska. Furthermore, this model is being replicated across the State of Nebraska.

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Utilizing Assessment Data to Coordinate Services for Children with Emotional Disorders

Andrew Brackett, Brock Arehart, & Nathan Canfield

Introduction

The Professional Partner Program began serving children with serious emotional disorders in 1995. In October 1997, Region III Behavioral Health Services was awarded a Center for Mental Health Services grant that allowed for dramatic expansion within the Professional Partner Program. Using the wraparound approach, Professional Partners coordinate supports and services for families who have children with a serious emotional disorder, ensuring that families have a voice, ownership and access to a comprehensive, individualized family support plan. In each case, a child/family team is formed to more effectively coordinate formal and informal supports and services. The child/family teams are provided assessment data specific to the case to assist in the coordination process.

The following case example illustrates how the child/family team uses assessment information to identify strengths and needs, coordinate appropriate services and supports, and evaluate progress realized in the process of achieving individualized goals. The data presented are actual program data.

Subject

Joe (pseudonym) is a nine-year-old male diagnosed with Attention Deficit Hyperactive Disorder (ADHD) and Adjustment Disorder. He resides with his biological parents and two sisters in a small rural

community in Nebraska. Joe is enrolled in the fourth grade at a local elementary school where he receives special education services to address his academic needs. In the past, Joe participated in outpatient therapy to address behavioral concerns and the family participated in outpatient therapy to address domestic violence issues in the home.

Joe was referred to the Professional Partner Program by the Nebraska Department of Health and Human Services. At referral he was identified with the following presenting problems: poor peer interaction, non-compliance, physical and verbal aggression, fire setting, poor academic performance, property damage, theft, police contact, persistent lying, and disruption in the classroom. On the Child and Adolescent Functional Assessment Scale (CAFAS; Hodges, 1990), where higher scores indicate greater impairment, he scored in the severely impaired range in the area of School/Work. The CAFAS scores also indicated moderate impairment in the areas of Home and Behaviors Toward Others. The total CAFAS score (using eight subscales) was 80.

Measures

At intake, three additional assessment tools were completed to identify Joe's greatest behavioral needs: Weekly Adjustment Indicator Checklist (WAI; Burchard, 1990), Eyberg Child Behavior Checklist (Eyberg, 1992) and Sutter-Eyberg Child Behavior Checklist (Eyberg, 1992). The WAI indicated that Joe engaged in non-compliant behaviors 85% of the time on four out of seven days. The WAI also indicated that Joe struggled with maintaining positive peer interactions 85% of the time on three out of seven days. The Eyberg Child Behavior Checklist intensity score was 130, with 24 problems identified, including refusal to do chores and difficulty maintaining attention and focus. The Sutter-Eyberg intensity score was 101, with 10 problems identified including lying, class disruption, and difficulty maintaining attention and focus.

Due to a change in assessment tools utilized in the Professional Partner Program, the Ohio Scales Assessments (Ogles, Melendez, Davis, & Lunnen, 2000) were implemented in place of Eyberg and Sutter-Eyberg Behavior Checklists. The Ohio Scales Assessments were designed to assess behaviors of children with severe emotional disorders and appeared to most effectively meet the program's needs. Results from the Ohio Scales Assessments will be used in evaluating Joe's progress and needs as soon as they become available.

Goals and Supports

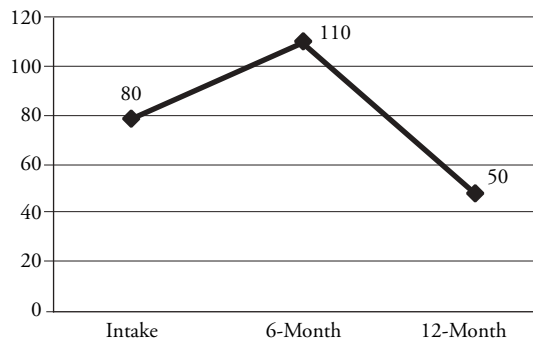
After initial assessments were completed, the family identified formal and informal supports to participate in a child/family team. Supports identified included: Joe's biological parents, local police, friends of the family, grandparents, child protective service worker, therapist, resource teacher, family doctor, mentor/tutor, and Joe's aunt and uncle. Joe's child/family team met at least once each month to discuss goals and interventions that could help Joe by utilizing the identified strengths and needs discovered during the initial assessments. Goals that were identified included increasing Joe's completion of tasks and projects, i.e., homework assignments, from 7 out of 20 days per month to 15 out of 20 days per month to be measured by the Sutter-Eyberg (line 34) as well as verbal reports from Joe's primary classroom teacher. A second goal encouraged Joe to receive passing grades in all classes by utilizing a mentor/tutor to help with homework, reading and social skills which would be measured by the CAFAS and periodic grade reports. A third goal was set with the intention of increasing Joe's compliance with rules and requests in the home from three days of compliance 85% of the time, per week, to five days of compliance 85% of the time, per week, to be measured by the WAI, (line 2).

The child/family team also created a safety plan to address the safety risks from Joe's potentially verbally and physically abusive and fire starting behaviors. The team set a goal for Joe to increase compliance of medication intake by utilizing a reward system, measured by the WAI, (line 2). The team also assisted the family in locking and securing all fire starting materials in the home and equipping the family home with fire extinguishing equipment. The team closely monitored progress in these three areas as measured by the WAI, (lines 12, 6, 19, respectively).

Outcomes

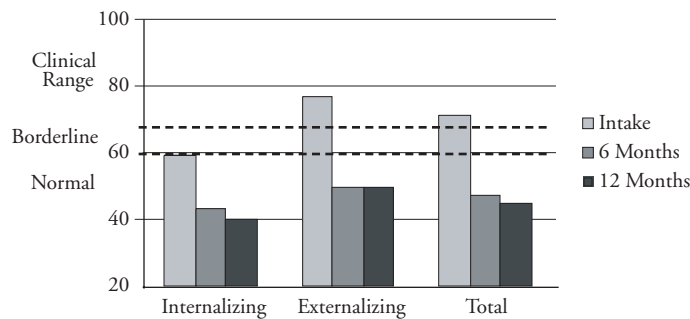
Further assessment of Joe’s functional impairment was achieved through administration of the CAFAS and Child Behavior Checklist (CBCL; Achenbach, 1991) every six months following intake. The CAFAS, (using eight subscales), showed an increase at six months of 30 points, with a score of 110. Significant issues had surfaced in the home causing Joe to display aggressive behaviors at home and in the community; therefore, his Home and Community subscale scores increased. His Mood subscale score also increased due to displays of anxious behaviors at school. The child/family team modified his plan of care to address these issues. Consequently Joe’s impairments decreased in these areas over the next several months resulting in an overall CAFAS (eight scale) score of 50, showing an overall decrease of 30 points from the original score of 80 calculated at intake (see Figure 1).

Figure 1
CAFAS 8-Scale Total Scores—Intake to 12 Months



The CBCL, which assesses internalized and externalized behaviors, showed a decrease of 16 points at six months and an additional three points at 12 months, for internalized behavior, and a decrease of 17 points at six months and no additional decrease at 12 months, for externalized behavior. The CBCL indicated that Joe’s behaviors declined from a total score of 71 in the clinical range, to a total score of 45 in the normal range during the 12-month period in which the assessment information was gathered and recorded (see Figure 2).

Figure 2
Child Behavior Checklist (CBCL)
Total T-Score



Currently, Joe and his family continue to work toward discharge from the Professional Partner Program. The team feels that Joe and his family have made significant progress in a number of the target areas but would like to see improvement in Joe’s educational situation. The team is in the process of implementing goals to address Joe’s inability to focus in the classroom and non-completion of assignments.

Discussion

The utilization of assessment data is vital to the care coordination process. The child/family teams have access to their case specific information on a monthly basis. The Professional Partner gathers the assessment data from the families, youth, teachers, and caregivers and submits the data to the agency evaluation department where the information is compiled, calculated, charted, and graphed. The evaluation department circulates the information back to the Professional Partner for the child/family team to utilize in the decision-making process. The child/family teams are equipped with information necessary to gain insight and understanding into the lives of their clients and families, to coordinate services according to the families' individual strengths and needs, and to monitor progress in the team's endeavor to empower the families toward success. The Professional Partner Program continues to demonstrate the importance of utilizing assessment data to coordinate services and improve the lives of the children and families that are served.

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An Overview and Evaluation of the Central Nebraska School-Based Wraparound Team Model

Reece Peterson, Nathan Canfield, & Ann Tvrdik

Introduction

Wraparound has become a widespread process employed by mental health and social service agencies to address the needs of children and youth with emotional disturbance and their families (Burns & Goldman, 1999). The guiding principles of wraparound (Burchard, 2000; VanDenBerg & Grealish, 1997) ensure that families have a voice, ownership, and access to a comprehensive individualized support plan. The wraparound process is strength-based, family-centered, and acknowledges families as equal partners. It promotes utilization of the least restrictive, least intrusive developmentally appropriate interventions in accordance with the strengths and needs of the student and family within the most normalized environment and an overall system of care (Stroul, 1993). This process permits services to be coordinated effectively in a way the family directs. This paper provides a brief overview of the implementation of School-Based Wraparound (SBW) Teams in Central Nebraska.

Implementation

Typically, wraparound is coordinated by a person in a mental health or social service agency who initiates and organizes the process, and ensures that the process is faithful to the principles of wraparound. While this coordination model has been effective, it has had some limitations in being able to access schools and the education system. These limits may be in part related to the following factors:

- Schools have had little knowledge, training or experience with wraparound;
- Some human service professionals have little knowledge of the organization, operation and culture of schools, sometimes leading to unrealistic expectations of schools;
- Schools are the only agency with a mandate to serve all children;
- Since wraparound service coordination is family centered, these efforts are sometimes suspiciously viewed by the schools as adversarial, and;
- Points of entry into schools for wraparound are not clearly identified.

In Central Nebraska, a variation of the typical wraparound model has been initiated, called School-Based Wraparound (SBW), based in part on a model developed by Eber (1996). While the basic principals of wraparound are the same, this model uses a team of *two individuals* to organize and coordinate wraparound, one with a mental health or social service background (family facilitator), and one with an education background (education facilitator). The team is trained to implement wraparound, but is better able to overcome the partnership obstacles with schools.

The *family facilitator* makes the initial contact with family, obtains permissions, conducts a strengths discovery, and works with the family to develop a family specific wraparound team, as well as coordinating with other service providers and agencies. The *education facilitator* makes the initial contact with the school, conducts a strengths discovery at school, conducts baseline observation, gathers data and records, consults with the school personnel related to that youth's behavior, and works diligently to increase communication between school and family. While these individuals are different in their expertise and roles, they share a caseload of youth and their families, implement much of the intervention together, and are capable of assuming each other's roles in the other's absence. Both work with the family and attend wraparound team meetings.

This model of wraparound is quite different from other, similar programs where wraparound coordinators may have been housed or co-located in a school, but where no specific changes in roles have been made to address school needs. In the Central Nebraska SBW, the schools' strengths and needs are assessed in a fashion similar to the family; the school is given a voice, ownership for its role, and a clear support plan for working with the child and family team. Expected outcomes for each student are based on the needs identified by the student, family and school personnel. The SBW team is a resource for guidance, support, and problem-solving to meet the goals identified in each student's plan (Eber & Nelson, 1997; Eber, Nelson & Miles, 1997). Ongoing data collection, including review of progress toward outcomes of the plan, guides program implementation.

Method

Since the SBW model is a part of the Center for Mental Health Services grant, a wide array of evaluation data were gathered on the children and their families involved in the four SBW sites. The youth were enrolled in SBW in a generally similar fashion and with similar criteria as other wraparound programs in the area.

Data Gathered

Types of data collected at intake and six-month intervals for all children include: (a) descriptive information; (b) clinical and functional outcomes, using the Child and Adolescent Functional Assessment Scale (CAFAS; Hodges, 1990); (c) child and family strengths, using the Behavioral and Emotional Rating Scale (BERS; Epstein & Sharma, 1997), and; (d) other information collected for the national and local evaluation. Information taken from these measures assists in the creation of the initial plan of care, in setting the child-family team goals, and for evaluation of the program.

Types of data collected at monthly and weekly intervals for all children include tools that monitor a child's behavior from a parent's and a teacher's perspective, such as the Eyberg Child Behavior Inventory (Eyberg, 1992), and the Sutter-Eyberg Child Behavior Inventory (Eyberg, 1992). The Eyberg inventories

ask the caregiver or teacher to assess the intensity of 36 behaviors and how problematic the behaviors are in the home or school. Another instrument used is the Weekly Adjustment Indicator Checklist (WAI; Burchard, 1990), which monitors the specific behaviors of a child for all the days in a week. The WAI is used to track 16 negative behaviors (e.g., physical aggression, property damage, runaway, sexual acting out, and extreme verbal abuse) in addition to five positive behaviors (e.g., school attendance and peer interaction). The information gleaned from these monthly and weekly tools assists in measuring progress made toward the goals established.

The SBW also receives data from families on the Wraparound Fidelity Index (WFI; Bruns, Suter, Force, Burchard, & Dakan, 2002), which are collected by Families CARE (the family support organization). The WFI is used to assess the fidelity of the wraparound approach to the eleven core elements of wraparound.

Valid & Successful Cases

To insure an accurate measure of the program, valid cases were defined as cases in which the youth was either: (a) enrolled in SBW for at least 30 days with a plan of care; (b) had been enrolled within three months before the inception of SBW, or; (c) had not been enrolled in SBW or any wraparound program more than once. Assessments were considered valid when they were conducted within three months of a youth's intake or discharge dates. While valid cases included any case meeting these criteria, "successful" cases were those in which the individual goals had been met and the team recommended discharge for that reason.

Sample Description

Children and families are referred to the SBW teams from a variety of sources (e.g., education, juvenile justice, child welfare, mental health agencies, or word of mouth). Youth in SBW are between the ages of five and 20 years, with the majority between 10 and 15 years. For this report, 126 valid cases were identified, with 83% males and 17% females. One fifth of the youth were state wards during all or part of their enrollment. All of the children had a DSM-IV diagnosis, with the largest numbers having a primary diagnosis (Axis I) of Attention-Deficit and Disruptive Behavior Disorders (47%) and Adjustment Disorders (17%).

Results

All of the youth enrolled in SBW exhibited functional impairments in two or more life areas. The Sutter-Eyberg results showed decreases in both the intensity, from 127.3 to 105.1, and problem scales, from 13.7 to 9.3 (see Figure 1). For the successful youth, the improvement was even more significant, with intensity dropping from 121.4 to 86.9, and problems from 14.5 to 6.0. All of these changes were statistically significant.

On average, children made significant progress over time in terms of behavior and functional impairment as measured by the CAFAS scores (see Figure 2). For youth enrolled in SBW, the overall average CAFAS score at intake for 106 children was 110.3 (moderate to severe impairment). Six months later the average CAFAS score was 90.6 (moderate impairment), a significant improvement. For youth with 12-month data, the CAFAS scores continued to show a decline throughout that period. All of these declines were statistically significant. For both of these groups, the school subscale scores were of particular importance and continued to decline (i.e., improve), although less dramatically. The findings indicate that the changes in functioning on the CAFAS over time are consistent with improvements in behaviors identified by monthly and weekly behavioral tools during the same time period.

When the responses of caregivers and youth were tallied on the WFI, SBW achieved an average rating of 87% across all 11 core elements of wraparound, with only Natural Supports at 71% falling below the expected criterion of 80%.

Figure 1
Sutter-Eyberg Student Behavior Inventory Scores
School Based Wraparound Program, Central NE
Valid Youth with Complete Data

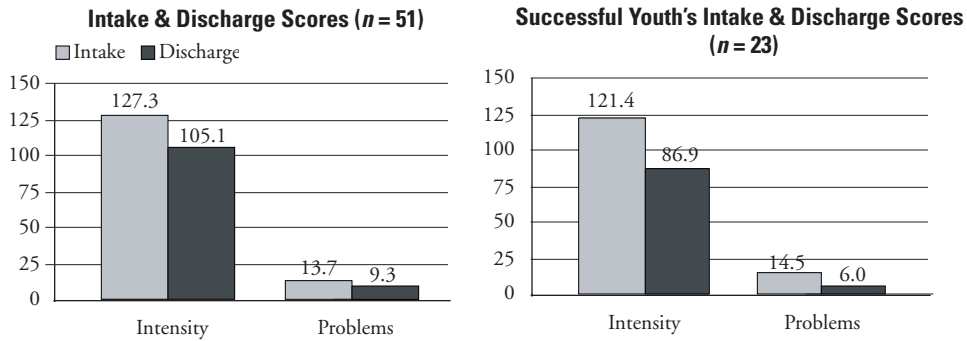
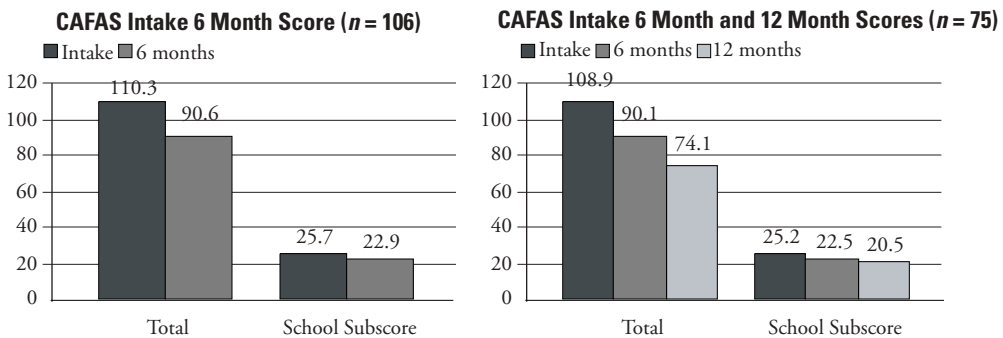


Figure 2
Sutter-Eyberg Comparison of Total Scores
School Based Wraparound Program, Central NE
Valid Youth with Complete Data



Discussion

The preliminary results of this evaluation appear positive. Clearly the SBW team model is having a strong impact on reducing overall functional impairment (as shown by the CAFAS scores) and also reducing the negative behaviors of the youth (as shown by the Sutter-Eyberg inventories). This was accomplished while maintaining a very high degree of fidelity to the principles of wraparound.

The next step will be to evaluate whether the impact created by SBW teams has improved the involvement of school personnel, and created more effective school programming for the youth than might have otherwise occurred. A more detailed evaluation of this model is expected, but preliminary evidence supports its overall success.

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Using Case-Specific Information for Financial Sustainability

Mark DeKraai

Introduction

Nebraska Family Central utilizes an integrated system of care for children and adolescents with serious emotional challenges in central Nebraska. This initiative was implemented with a grant award from the Center for Mental Health Services. The project has three major goals: (a) to demonstrate improved outcomes for children and families, (b) to sustain the project beyond the grant funding, and (c) to expand the system of care approach to other parts of the State. The evaluation data have been important in assisting with the financial sustainability and expansion of the initiative. Consequently, Nebraska Family Central was granted permission to serve 201 high-needs youth in the child welfare/juvenile justice system as a separate carve-out. Service utilization, outcome, and cost data were critical in developing the successful proposal. This paper will provide detailed information regarding how evaluation data were used to develop case rates and service utilization and cost projections which resulted in project sustainability and expansion of care coordination statewide.

Background

Project partners hoped that by showing positive outcomes for children and families, new funding would be available to sustain and expand the system of care. Unfortunately, in Nebraska, as in many other states, economic constraints have forced the State to look more at budget cuts than at service expansion. Given this reality, the strategy for sustainability focused on how to use existing resources more effectively. The challenge was to shift resources from traditional approaches to the system of care, and good evaluation information became critical in this effort.

In Nebraska, the child welfare and juvenile justice systems were facing financial difficulties. The number of children served by the system was increasing at 17% per year and costs for services were increasing significantly. The State's child welfare/juvenile justice system was seeking deficit appropriations from the legislature to cover financial shortfalls. Many children were being served in higher levels of expensive residential care because of the lack of community alternatives, and there was a belief that these residential services were not producing positive outcomes for children or their families. The State's juvenile justice facilities were overcrowded and additional beds were being added to the state's psychiatric hospitals to handle the overflow from juvenile corrections. Ninety percent of youth confined in the juvenile facilities had a diagnosable mental health or substance abuse disorder. The situation in the child welfare/juvenile justice system became an opportunity to promote the system of care as an alternative approach to meeting the needs of these youth.

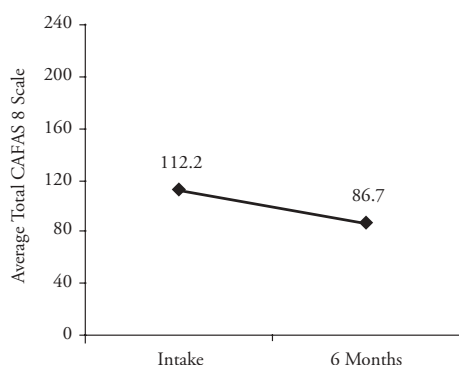
Method

In 1999, Nebraska Family Central submitted a concept paper to State policy makers proposing to serve youth in high-level care through the system of care including the use of the wraparound approach and community-based services. The proposal suggested that this shift in service delivery would serve youth at a lower cost with better outcomes. Nebraska Family Central used an extensive database of outcome measures to demonstrate positive outcomes for kids served in the system of care. For example, based on data from the Professional Partner and School-Based Wraparound Programs, we could show substantial improvement for youth involved in wraparound on the following measures: school attendance and grades, school detentions and expulsions, juvenile delinquency measures, caregiver strain, behavioral and emotional strengths, behavioral problems, parent and child satisfaction with service delivery, positive and negative behaviors, and child functioning. Figure 1 is an example of information presented and shows improvement in child functioning from intake to six months in wraparound.

A major challenge became how to convince policy makers that the system of care could produce these outcomes for children and families while at the same time reducing costs. To meet this challenge, Nebraska Family Central developed a cost analysis and case rate reimbursement proposal.

This process involved: (1) specifically identifying the target population through a point-in-time survey conducted of all children in the region who were in out-of-home placements in April 2000 who were in treatment foster care or higher levels of care (e.g., group homes, residential treatment, inpatient hospitalization; *N* = 201); (2) identifying current costs by funding source and expenditure type for the target population by obtaining cost data over the six months prior to the point-in-time survey; and (3) subtracting out costs that would not be part of the agreement or the case rate.

Figure 1
Child Functioning* from Intake to 6 Months



*Child Functioning is measured by using the 8-scale total score on the Child and Adolescent Functional Assessment Scale (CAFAS). (Hodges, 1990)

Results

Based on this cost analysis, we proposed a case rate of 95% of State costs, which would allow the State to save money. We also proposed that any cost savings beyond the 95% could be reinvested in the system of care. Of the 201 youth who met the criteria, 50.9% were in treatment foster care, 29.9% were in group homes, 14.0% in residential treatment, and 4.2% in shelter care. Based on the needs of the target population identified, we projected changes in placements if youth were served through an individualized wraparound process along with projected costs of services by service category. Costs of the current system were compared to the proposed system as shown in Table 1.

Table 1
Comparison of Current Costs and Projected Costs

| | <i>Current System</i> | <i>Proposed System</i> |
|---------------------|-----------------------|------------------------|
| Per Child Per Month | \$2,101.84 | \$1,996.75 |
| Total Annual Costs | \$5,069,638 | \$4,816,156 |

Discussion

In June 2001, a cooperative agreement was signed to begin serving the 201 youth in the system of care. Two types of information were crucial in reaching this agreement: detailed data concerning how the system of care improved the lives of children and their families, and valid cost information by individual child. This information was essential to show that the system of care could produce better outcomes at lower costs.

This pilot project has been successful. Youth in the initiative have shown substantial improvement in functioning and behavioral measures and have moved to less restrictive settings. Costs for services are close to projections, thereby producing significant savings. In fact, the initiative has been so successful that Nebraska has begun statewide replication. The contract with Nebraska Family Central was expanded by 40 youth in July 2002 and now serves 241 youth. In November 2002, Families First and Foremost began serving 197 youth from the child welfare/juvenile justice system in Lancaster County, which includes the state capitol, Lincoln. Beginning February 2003, 135 youth were enrolled in the Integrated Care Unit in Omaha, Nebraska's largest city. Beginning in summer of 2003, 200 youth are scheduled to begin Integrated Care Coordination in northern Nebraska and 120 youth are scheduled to be served in the Panhandle (western Nebraska). Therefore, by summer or fall of 2003, approximately 900 youth will be served statewide through a wraparound approach in Integrated Care Coordination Units. These five areas represent approximately 85% of the State's population; only two areas of the State (southwest and southeast Nebraska) have yet to develop Integrated Care Coordination.

Program evaluation information played an important part in the sustainability of the project and expansion of the system of care to the rest of Nebraska. This information included data on improved outcomes for children and families who had participated in the Professional Partner Program and School Wraparound, service utilization and cost data for these programs, and cost data on youth who were being served in traditional services such as group home, foster care, and residential treatment programs. This information was necessary to convince policy makers that a wraparound approach could improve outcomes for children and adolescents at lower cost.

Integrating Wraparound within Child Welfare/Juvenile Justice System: An Overview and Evaluation of the Integrated Care Coordination Unit Pilot Project in Central Nebraska

Jana Peterson, Beth Baxter & Ann Tvrdik

Introduction

This paper provides a brief overview of the implementation of the Integrated Care Coordination Unit (ICCU). The ICCU utilizes the wraparound process to provide services for at-risk, state ward youth and their families with more appropriate care and better outcomes at a lower cost. The visualization, creation, and implementation of the ICCU have been by the inspired efforts of three critical partners: behavioral health, child welfare/juvenile justice, and family support.

Integrated Care Coordination Unit (ICCU)

Region III Behavioral Health Services (Region III), the Central Service Area of the Department of Health and Human Services (HHS), Families CARE, and other system partners developed the ICCU. The ICCU program promotes an individualized system of care for Central Nebraska youth who are state wards, demonstrate high needs, and for whom traditional services have failed to produce positive outcomes. The identified youth have exhibited high functional impairments in a variety of areas (e.g., school, home, community, self-harm, substance abuse) over a long period of time.

The youth served are those in Agency-Based Foster Care (therapeutic foster care) and higher levels of care. Funding is through a cooperative agreement between Region III and HHS on a case rate basis.

The ICCU is a public care coordination collaborative that includes HHS and Region III Care Coordinators who are trained in the areas of Protection and Safety and Wraparound. ICCU Care Coordinators provide intensive case management and ensure that care adheres to the principles of wraparound. Wraparound is a strength-based process for services and supports that is individualized and based on the needs of the youth and his or her family. ICCU case management adheres to the following wraparound principles:

- A no reject/eject philosophy;
- A comprehensive assessment to determine the child and family's needs;
- A child and family team consisting of both professionals and non-professionals who know the child and family;
- A Care Coordinator, with a caseload of no more than 10 families, to facilitate the child and family team;
- Development of an Individualized Child/Family Support Plan based on the strengths of the child and family;
- Strategies that are individualized to the child and family's needs and based on the family's cultural background;
- Through flexible funding, purchase of services and supports identified in the plan;
- Monitoring of outcomes and modification of strategies to produce better results.

The vision is for HHS and Region III to jointly develop and implement a system of care focus that successfully brings together system partners who have statutory responsibility to service children and families with other key stakeholders that provide services and supports. Other important system components include: (a) Families CARE, a family operated support and advocacy organization for families of children with serious emotional and behavioral issues; (b) the Care Management Team (CMT), which provides utilization management/review; (c) a strong cross agency Program Evaluation component, which collects demographic, service utilization, cost, and outcome data; and (d) Nebraska Family Central, the interagency organization that has oversight responsibilities for services to children and families in Central Nebraska. The system of care includes an assessment of services needs across systems, a review of system-wide service utilization patterns, the promotion of individualized care based on the unique strengths and needs of each youth and family, and an integrated delivery system. The desired system of care outcomes include:

- Services are managed within the budget—efficiencies in the system of care allow for services for an increasing population at reduced cost, and focus on decreasing the number of children entering state custody.
- Maximize the assets of communities and informal supports and decrease the emphasis on formal service delivery.
- Use the least restrictive, least costly, most effective services, which are individualized for the child's and family's needs.
- Utilize flexible funds to meet the unique needs of each child and family.
- Integrate funding, intakes, assessment, care coordination, resource development, service delivery, and utilization management across systems.
- Produce positive measurable outcomes for children and families enrolled in the ICCU.
- Reduce recidivism of juvenile offenders and reduce abuse and neglect of state wards in care, thereby helping to keep children and communities safe from violence, abuse and neglect.
- Reduce out-of-home placements, placements in restrictive settings, out-of-community placements, the time children spend in the protection and safety system, and the number of placement changes for children, thereby contributing to permanency and stability in children's living situations.
- Families will have enhanced capacity to provide for their child's needs, promoting a greater sense of well-being, improved child and family functioning, and increased levels of consumer satisfaction with service delivery, participation in planning and services delivery, and adherence to wraparound principles.

The desired outcomes will be achieved while taking into consideration that HHS has the responsibility to administer the child protective services and state ward programs. To ensure that this responsibility is fulfilled, HHS retains full legal guardianship of the youth who are served through this partnership. HHS reserves the right to make all final determinations with regard to any and all placement and treatment issues for all state wards. All services provided are in accordance with any court orders that provide any specific conditions or requirements pertaining to placement, treatment, visitation, or other case specific matters.

ICCU is a truly integrated model, bringing together the delivery of child welfare and juvenile justice services through intensive case management and the wraparound process.

Target Population

The children and adolescents served in the ICCU share the following characteristics: mental health issues; high functional impairments in multiple areas (e.g., school, home, community, self harm, substance abuse); persistent problems over long term, multi-agency involvement; high service costs (although these youth constitute less than 25% of the state ward population in Central Nebraska, they use almost 70% of the resources); and for whom traditional services have failed to produce positive outcomes.

The ICCU uses the Child and Adolescent Functional Assessment Scale (CAFAS) to assess the degree of impairment in youth with emotional, behavioral, and/or substance use symptoms/disorders (Hodges, 1990). The average total CAFAS 8 scale score was 118.4 for 130 youth at intake.

Implementation

The ICCU was implemented in January of 2001 with 20 Care Coordinators participating in intensive training in protection and safety and wraparound. The ICCU began serving 201 identified youth who were enrolled in the unit between May and September 2001. The desired average caseload of a Care Coordinator is 10 families. During the fiscal year ending June 30, 2002, a total of 257 youth were served. In July 2002, the contract was expanded to serve an additional 40 youth. At the time of this writing, the ICCU has 24 Care Coordinators and serves approximately 241 youth.

The ICCU has three offices: in Kearney, Grand Island, and Hastings, Nebraska. HHS and Region III share supervision responsibilities of the ICCU. Region III and HHS co-located several staff members within each other's offices to facilitate the integration of the unit and share resources.

The Care Management Team (CMT) performs utilization reviews for appropriateness of the youth's placement in the Central Service Area. This team is an integral component of the ICCU. The CMT works with traditional Protection and Safety workers from HHS to gather referral information for the ICCU and assists with child and family teams as needed. The CMT is comprised of staff from Region III and is jointly supervised by Region III and HHS.

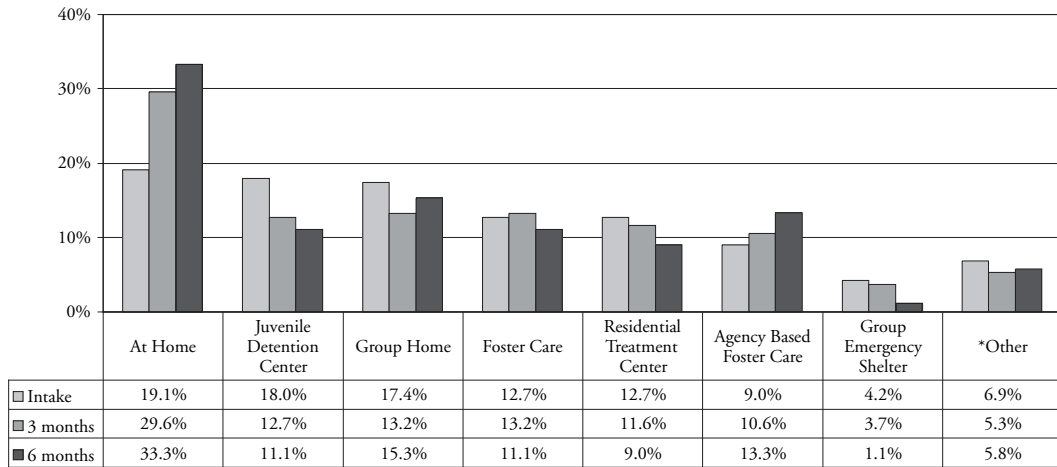
The ICCU was built upon a base of strong family involvement. The ICCU gains tremendous support and assistance from Families CARE, a family-centered non-profit organization for families who reside in Central Nebraska. Families CARE provides Family Care Partners who advocate, mentor, and support, to empower families. The ICCU has a quality assurance process to ensure a high standard of outcomes. The ICCU utilizes several assessment tools to guide child and family teams and to monitor outcomes for the individual youth and families served.

Assessment Results

One of the goals of the ICCU is to reduce out-of-home placements. After receiving services in the ICCU for six months, 189 of the original 254 youth had living situation information at intake, three months, and six months after admission (see Figure 1).

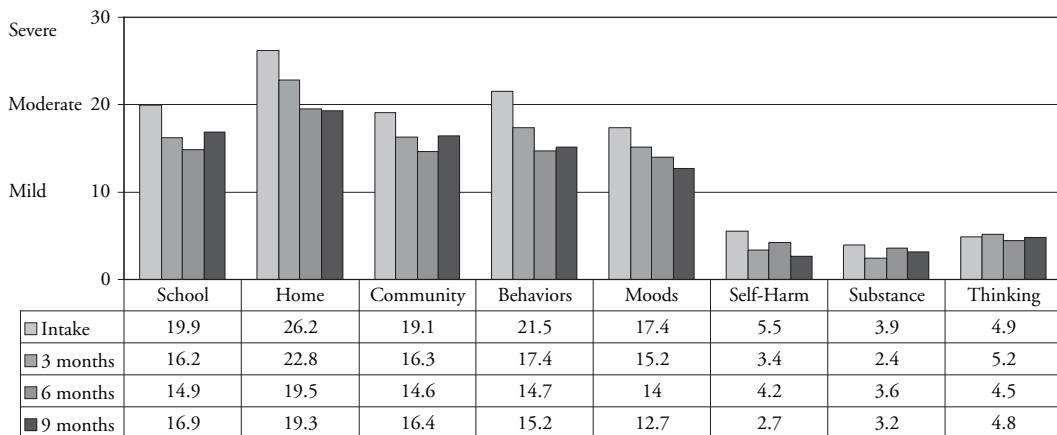
ICCU youth are also rated with the CAFAS after three months, six months, and nine months. Within three months of services with the ICCU, the average CAFAS 8 scale score for these youth ($n = 130$) was 99.0. The average CAFAS 8 scale score at six months was 90.0, showing improvement. After receiving services in the ICCU for nine months, these same youth had an average CAFAS 8 scale score of 91.2. This reflects a statistically significant. ($p < .001$) total decrease of 27.2 points from the intake average of 118.4. Figure 2 shows the change in the CAFAS individual subscale scores for the these 130 youth over 9 months.

Figure 1
Living Situation of Children and Youth (n = 189)



* Nine living situations were grouped together since each were below 3.5%

Figure 2
9 Months CAFAS Subscale Scores (n = 130)



Conclusion

The ICCU is funded through a monthly case rate per youth served. The case rate was negotiated at 95% of the HHS child welfare cost of serving the identified youth. Beginning in 2002, over \$800,000 of cost savings will be reinvested in the system through the replication of the Integrated Care Coordination Model across the State of Nebraska. The ICCU system of care has:

- integrated child welfare/juvenile justice, behavioral health, and family support;
- shown positive outcomes for youth through decreases in their functional impairments and through reducing youth placements in restrictive settings;
- created cost savings for the State of Nebraska; and
- created an Integrated Care Coordination Model that can be replicated.

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Community Evaluation Teams: A Collaborative Approach to Evaluation and Quality Improvement in Systems of Care

**Sheila Bell
Phyllis Nettles**

Introduction

As people come together to support children and families, decisions about how to do so must be made and prioritized. Stakeholders such as families, youth, community members, and professionals should be involved in making these decisions. Community Evaluation Teams (CETs) provide a forum to bring these stakeholders together to work on the evaluation and continuous quality improvement processes of a system of care (SOC). This paper defines the rationale and role of the CET, and provides insight into how one may be started, and how to involve families as CET members. Lessons learned in the implementation of a CET are also discussed.

Community Connections for Families (CCF), a Substance Abuse Mental Health Services Administration (SAMHSA) SOC grant project in Allegheny County, PA, implemented a CET in the summer of 2001. CCF is built on a wraparound/system-of-care model of delivering mental health services to children and their families. CCF serves youth ages 6 - 14, with a diagnosis of a Serious Emotional Disturbance (SED) who are involved in two or more child serving systems (e.g., mental health, child welfare, juvenile justice, and education), and who live in one of five CCF partner communities.

A CET consists of individuals who come together from diverse backgrounds to discuss and interpret evaluation findings and to devise creative ways to make those findings useful for families, decision-makers and communities. The CCF CET is comprised of approximately 20 family members, youth, community members, and systems partners from child welfare, juvenile justice, education, and mental health.

The CET provides a forum for parents and professionals to create an environment of mutual learning. Some of this learning is formal. For example, members of the CCF CET have participated in several training sessions, including the Federation of Families' (FoF) World of Evaluation Training and CCF's Evaluation 101. Less formal learning emerges through the rich discussions that occur when people of various cultural backgrounds collaborate.

The CET is responsible for using data to guide decisionmaking about the system of care. CETs are formed to help everyone involved understand the SOC, its treatment goals through wraparound services, and to assist in its evaluation. This may involve using data as part of advocacy work, or teaching others about data and comparing verbal "real-life" experiences in the system of care with existing data. By taking a utilization-focused approach to evaluation (i.e., information is only collected if it is useful), and considering data as well as their personal experiences, CET members inform others about what they perceive to be happening in the SOC. Because members of the CET are those who are directly involved in the SOC in some way, families and members of the community are positioned to impact the direction of change in the SOC by providing current decisionmakers with the information that will lead to positive outcomes for children and their families.

Community Evaluation Teams (CETs)

Activities of the CET

This section discusses the activities that CCF implements through their CET and why CETs play an important role in the structure of the overall program. There are several activities a CET can adopt, which are listed below. However, CCF has recently realized that the forming of subcommittees within the CET can provide a useful way to help members target their areas of interest and stay focused around these activities:

- **Interpreting Data.** Discussing SOC data results is an important part of each CET meeting. SOC evaluation staff compile child and family outcomes data from a longitudinal outcomes study (which includes caregiver strain, education, child functioning, demographics, risk factors, services received, etc.) as well as satisfaction and program data collected as part of the SOC's continuous quality improvement processes. These data are presented to the CET members who review and discuss them for trends, possible interpretation, dissemination, and if needed, plans of correction. A bi-annual outcomes report is produced out of this process.
- **Telling Others About Data.** CET members are champions of evaluation and quality improvement. They use data to communicate with others in an effort to create awareness and system change.
- **Training.** As members of the CET complete evaluation trainings, they, in turn, train new CET members and others in the community.
- **Defining Indicators and Benchmarks of Success.** The CET can help evaluators and program planners define indicators of various program aspects, and suggest how the program should measure success in those areas.
- **Monitoring Language.** The CET can monitor the wording of outcome reports, surveys, and other documents to ensure that they are family friendly and clear.

The Role of the Family Member

Family members are an important part of the CET structure and philosophy. Family members who join the CET can take on several roles. As collaborators, they work with professionals to foster an atmosphere of mutual learning and respect. They also offer suggestions about areas the program can target for quality improvement and sustainability, and make decisions to help improve those target areas. They may also drive discussion around evaluation information, set agendas, and facilitate the CET meetings and subcommittees meetings. Furthermore, having family members at the table to interpret data provides an invaluable perspective on the system that professionals may overlook without their insight. Overall, by communicating their understanding of the data and working for continuous quality improvement, family members are both trendsetters and leaders.

Starting a CET

Starting a CET is fairly simple, but does take a lot of planning and can be time intensive. CET composition and member recruitment must be addressed early; these decisions will be impacted by the tasks they will be charge with completing. Initial plans should also include decisions about meeting structure, such as typical agendas, who will facilitate, and how decisions will be recorded. Once members are recruited, appropriate training activities must be identified and scheduled, as well as incentives for continuing to participate in CET activities (e.g., stipends, meals, etc.). Due to the inherent diversity of such a group, there will be many logistical issues to consider. For example, it is important to select meeting times and locations that meet the needs of participants in terms of work schedules, childcare and transportation.

Feedback from CET Members

SOC evaluation staff held an informal focus group during a CET meeting to learn more about why members feel their involvement in a CET is important. Seven family members and five professionals attended. Professional members stated that they enjoy the aspects of mutual learning, partnership and collaboration with parents and colleagues. They also reported that they gained valuable knowledge about how evaluation and quality improvement can advance the SOC. Finally, professional members said that attendance at CET meetings helps prevent “burn out” because they have the opportunity to step back from their daily routines and focus on the “big picture” SOC.

Family CET members thought their involvement in the CET was important because it empowered them to be accepted by peers and professionals as true partners in guiding decisionmaking. They also reported that knowledge gained about data and how systems work was another beneficial aspect of their involvement with the CET.

Lessons Learned

CETs are an important part of a program/system's best practices. By bringing people served by the program to the table to review the information collected, the program enhances its ability to better meet the needs of the families and communities it serves. The CET is also a powerful vehicle for communication and empowerment for parents and professionals alike. CETs can be very involved in providing data for new funding, sustainability efforts, social marketing, quality improvement, and system change. CETs also help to guide decisionmaking for management, supervision and training. Nationally, CETs have also been successful in writing, and obtaining, new grant funding.

CCF has learned, and continues to learn, many things from the implementation of a CET. Some of the most important lessons gleaned from the process include:

- **Time and Hard Work.** Planning is crucial, and good planning takes time. It may take four to six months to develop a core team dedicated to the process. It also takes time to allow the team to decide what they are interested in and where they would like to focus their efforts;
- **Ongoing Training.** Because several family members attended the Federation of Families' (FoF) evaluation training, some family members on the CET were ahead of the professionals in terms of their knowledge of evaluation. Hence, CCF devised its own Evaluation 101 curriculum for professionals and family members who were unable to attend the FoF training sessions;
- **Keeping Focused.** Evaluation and quality improvement are broad topics and they need to be narrowed and planned out so that the group can be productive;
- **Administrative Support.** Having the support of key administrators from the CCF plays an important role; it gives the CET greater credibility and also increases the CET's opportunities to implement quality improvement change;
- **Involving System Partners.** Keeping the topics fresh and relevant to all involved is one of the challenges of working with system partners. However, system partner involvement is a crucial component of the CET. Not only are they needed to represent their viewpoints in relation to the SOC, but also to hear the families voice their insights and concerns about evaluation topics that are relevant to all systems, and;
- **Members are champions.** Leaders are important to the success of any team, system, or program. Every member of the CET is a leader and champion of evaluation and quality improvement in a SOC.

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System of Care Benefits and Barriers: A Perspective from the Colorado Cornerstone Initiative

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Introduction

The Colorado Cornerstone Initiative has focused on creating a community-based system of care for youth across three counties: urban, suburban and rural. It employs a multi-level approach that relies on teams of family members and professionals at several service and policy levels. At the service level, dyads of family advocates and service coordinators work to support the individual needs of families. At the county level, a Local Coordinating Council (LCC) with members from family and provider organizations seeks to integrate service options and overcome barriers to collaboration. At the state level, the governing board (with family members, policy makers and researchers), works to develop policy supporting an integrated approach to mental health service delivery.

This study integrates findings from three evaluation efforts looking at outcomes and at barriers to effective system of care implementation: (a) a quantitative study looking at client characteristics and changes over time, (b) a qualitative study of families' experiences with Cornerstone, and (c) a qualitative study of wider agency and advocacy community collaboration. By triangulating methods, the study provides information on youth progress on individual change, on community progress on collaboration, and on caregiver perceptions of the process—all important facets of creating systems of care.

Methods

Baseline data were obtained for 126 youth enrolled in the outcome study, with six-month follow-up data available for 52 families. In addition to presenting frequencies for selected demographics and presenting problems, *t*-tests were used to compare intake and follow-up scores on the Child Behavior Checklist (CBCL; Achenbach, 1991a), the Youth Self Report (YSR; Achenbach, 1991b), the Behavioral and Emotional Rating Scale (BERS; Epstein & Sharma, 1997), the Child and Adolescent Functional Assessment Scale (CAFAS; Hodges, 1997), and the Caregiver Strain Questionnaire (Brannan, Heflinger, & Bickman, 1998).

Selected Cornerstone families were interviewed to gather their views on the service experience, wraparound process, program principles such as cultural competence and a strengths orientation, comparisons to previous experiences with systems and helpers, and implications for program evolution. Families were chosen purposively, based on degree of an integrated system of care (SOC) achieved, and represented families at both extremes (High and Low SOC). Ratings of SOC level were based on dyads' assessment of their effectiveness in achieving four outcomes: (a) meeting needs of the caregiver; (b) meeting needs of the youth; (c) developing a partnership with the family; and (d) integrating a system of care. The final sample of 12 caregivers represented all three counties and both levels.

The agency/family collaboration case study focused on the process of agency and family organization involvement in each county. Six focus groups (with a total of 78 participants) were conducted with the LCCs, and 16 individual interviews were conducted with key informants from agencies and family organizations. Participants were asked about barriers to system of care collaboration, sustainability, partnership governance, differences in philosophy, and about recruiting both providers and families into collaborations.

Results

Data on Cornerstone Youth/Caregiver Progress

Two thirds of Cornerstone youth were boys, with an average age of 12.8 years. The youth represented all race/ethnicities: 56% White, 16% Hispanic, 8% African American, 2% American Indian, 1% Asian/Pacific Island, and 14% Multiracial. Problem areas were measured using the CBCL and the YSR. All CBCL dimensions had average T-scores greater than 60 (problem levels greater than 84% of the general population). Youth reports of problems were somewhat lower, with average T-scores between 50 and 60 for all dimensions, except for delinquent conduct where the average T-score was 63. Caregivers reported a wide range of concerns about youth at intake, including cruelty to animals (21%), fire setting (38%), physical aggression (56%), alcohol and substance use (45%), suicidal ideation (24%), and police contact (72%). Youth reported high levels of problem behaviors as well, including alcohol use (60%), marijuana use (51%), weapons possession (20%), and drug sales (20%). At intake, caregivers reported Cornerstone youth as having affective strengths at the 25th percentile, while all other areas (Intrapersonal, Interpersonal, Family Involvement, School) were below the 5th percentile.

Youth strengths were measured with the BERS. At six months, significant increases in strengths as measured by the BERS scores were seen for the Interpersonal, School and Affective domains. Caregivers reported significant decreases in all CBCL domains except the Thought dimension. Changes for those two instruments are shown in Table 1. Youth reported significant decreases in those same domains, with the exception of the Thought, the Social and the Delinquency dimensions. There were no significant differences found for the functional areas measured by the CAFAS. Caregivers reported significant decreases in objective caregiver strain (stressful events), and in subjective internalizing strain (feelings such as worry and anxiety), but not in subjective externalizing strain (feelings such as anger and resentment), as shown in Table 2.

Family Perspective on System of Care Services

With regard to what parents perceived to be working well, several clear themes emerged. These themes cross over the two groups that were sampled, because even for the Low SOC families, regardless of outcome, parents often perceived that the process itself had been helpful. The primary themes are as follows.

Table 1
Paired T-Test Results, BERS and CBCL

| Scale | N | Mean Scores (Raw) | | |
|------------------------|----|-------------------|----------|---------|
| | | Intake | 6 Months | t |
| BERS | | | | |
| Interpersonal Strength | 52 | 20.02 | 22.52 | -2.40* |
| Family Involvement | 52 | 15.44 | 16.79 | -1.77 |
| Intrapersonal Strength | 51 | 17.73 | 18.65 | -1.16 |
| School Functioning | 48 | 9.83 | 12.38 | -2.26* |
| Affective Strength | 52 | 11.77 | 12.90 | -2.22* |
| Total Strengths | 52 | 74.29 | 83.31 | -2.52* |
| CBCL | | | | |
| Withdrawn | 52 | 6.63 | 5.46 | 2.43* |
| Somatic Complaints | 52 | 3.63 | 2.73 | 2.30* |
| Anxious/Depressed | 52 | 11.62 | 8.87 | 4.10*** |
| Social Problems | 52 | 5.31 | 4.56 | 2.37* |
| Thought Problems | 52 | 3.75 | 3.27 | 1.69 |
| Attention Problems | 52 | 10.15 | 8.85 | 2.58* |
| Delinquent Behavior | 52 | 7.85 | 6.38 | 2.76** |
| Aggressive Behavior | 52 | 19.02 | 15.87 | 3.60*** |
| Internalizing | 52 | 19.85 | 14.98 | 4.65*** |
| Externalizing | 52 | 26.87 | 22.25 | 3.68*** |
| Total Problems | 52 | 74.54 | 60.81 | 4.53*** |

* $p < .05$. ** $p < .01$. *** $p < .005$

Table 2
Paired T-Test Results, Caregiver Strain Questionnaire

| Scale | N | Mean Scores | | |
|--------------------------|----|-------------|----------|---------|
| | | Intake | 6 Months | t |
| Objective Strain | 49 | 3.04 | 2.73 | 3.00*** |
| Subjective Externalizing | 49 | 2.35 | 2.16 | 1.49 |
| Subjective Internalizing | 49 | 3.98 | 3.67 | 2.31* |
| Global Strain | 49 | 3.16 | 2.87 | 3.46*** |

* $p < .05$. ** $p < .01$. *** $p < .005$

Respect. In contrast to some prior experiences of seeking help, most parents interviewed felt listened to, complimented, and approached as partners. They often equated the standard of “cultural competence” with respect.

Services “Outside the Box.” Parents appreciated the way the dyads provided support and how they had been able to move quickly to offer unique flex-funded opportunities—including specialized summer camps, mentors, and recreational passes.

Different Kind of Relationship. Families valued the in-home meetings and the presence of the dyad with them at formal agency meetings to model a strengths approach, and to advocate for them.

The Right Level of Care. Several families tried to get their child back home from an overly restrictive placement in juvenile justice. But more families requested help getting or keeping their child in an adequate level of care when they felt care was either being denied altogether or when their child was discharged prematurely or without follow-up.

Feedback on Cornerstone and what it could do differently contained both praise and criticism, and was not divided into the High and Low SOC groups. Several parents in the Low SOC group felt the dyads had tried to help their child. And several parents in the High SOC group were dissatisfied by recent interactions with Cornerstone. Many of the interviews occurred during and after a period of change in the organization and in relation to some unanticipated budget restrictions. This impacted the interviews and showed the importance of handling organizational change and crisis in a family-centered way.

While only a few of the parents interviewed were involved in Cornerstone both as a service recipient and as a partner in the larger collaboration between the state, agencies, and families, that dual role was not an easy one. Sometimes the decisions to be made at the administrative level could have a direct effect on services received. Parents wondered if they could transfer their skills in advocating for themselves within other agencies, to doing the same within the system of care itself.

Agency and Family Organization Experience of Collaboration

Focus groups and key informants involved in the structure of Cornerstone’s system of care efforts revealed some successes and some barriers in the process of partnering for change in the way children’s mental health services are delivered. As with the study of family perspectives, there were some clear differences among the counties involved. One county had a more activist, family-driven philosophy, and a clear vision of moving children’s care from formal institutions to the community. One large county, with long distances between people and agencies, had difficulties with both family and agency recruitment for governance. Yet a small county, in which many of the participants know each other, struggled with the issues of confidentiality and privacy. Since Cornerstone works across all three counties, there are multiple systems of governance involved—this is perceived by some family organizations and agency personnel as complex, time-consuming, and “heavy.”

Some members of the LCCs clearly saw some momentum in the shift from pathology to strengths, from stigma to prevention, and from provider as expert to provider as partner. However many barriers still existed, including the difficulties associated with promoting creativity in institutionalized programs. Considerable struggle still existed regarding “family focused” vs. “family driven” approaches, and over what it means to share power.

Families and professionals were learning about the nature of partnership and could see evidence of “becoming a we,” and of a more balanced distributions of power in Cornerstone governance. There remain considerable community barriers to sharing power and to addressing long-standing levels of distrust. As members of the LCCs seek to plan for sustainability, they struggle with the need to strengthen effective partnership, engage key local systems, and promote commitment to more concrete approaches to partnership, including blended funding and innovative service approaches.

Discussion

Putting the results of all three studies together, it is clear that while Cornerstone serves some very challenging youth (i.e., having high levels of substance abuse, police contact, aggression, and behaviors such as fire-setting), parents have experienced some positive changes in their own feelings of strain, and have reported positive changes in youth behavior across several dimensions. Parents also felt supported by the family advocate/service coordinator dyads working with them. There remain considerable challenges in implementing effective systems of care across very diverse counties and in integrating parents receiving services into the wider governance collaboration.

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Symposium

Substance Use and Substance Abuse among Youth with Severe Emotional Disturbance

Symposium Introduction

Robin E. Soler

The co-occurrence of substance abuse with other severe behavioral or emotional problems increases impairment and impacts treatment outcomes among adults (Kavanagh, 2000; Office of Applied Statistics [OAS], 1999a; Osher, 2000), and has recently become a focal point for collaboration among the three agencies under the Substance Abuse and Mental Health Services Administration (SAMSHA)—the Center for Substance Abuse Treatment (CSAT), the Center for Substance Abuse Prevention (CSAP), and the Center for Mental Health Services (CMHS). These agencies are placing particular emphasis on measurement and treatment of substance abuse comorbidity among children and adolescents. The Office of Applied Statistics, from their review of the literature, found broad prevalence estimates of substance abuse comorbidity among adolescents ranging from 22% to 82% (OAS, 1999b). Although these prevalence estimates are suspect because of limitations in measurement, they indicate significant challenges faced by children and adolescents with severe emotional and behavioral disturbance and their families.

Robin Soler, Senior Scientist with the national evaluation of the Comprehensive Community Mental Health Services for Children and Their Families program, introduced the symposium by briefly describing prevalence rates of substance use and substance use comorbidity among youth included in the national evaluation. The following papers explore different aspects of the problems of substance use and substance abuse comorbidity among children with severe emotional disturbance. Gregory Aarons, Ann Garland, and Richard Hough describe service utilization patterns for youths in San Diego County, California with individual substance use disorders or mental health disorders, and for those with comorbid mental health and substance use disorders. Next, Ken Gallagher and Philip Nordness describe the assessment of the mental health status and the possible existence of substance abuse problems among delinquent youth admitted to a juvenile assessment center in a mid-western community. In the third paper, by Kelly Rogers, Maria Fernandez, Terri Shelton, James Frabutt and Margaret B. Arbuckle, the authors report on a study of risk and protective factors related to the use of alcohol, cigarettes, and marijuana among 306 youth receiving system of care-based services through the North Carolina CMHS-funded grant sites. The final paper, authored by Vestena Robbins, Kari Collins, and Lisa Marcum, concerns substance use comorbidity in the Eastern Kentucky Comprehensive Community Mental Health Services for Children and Their Families program grant community. They describe the characteristics and service use patterns of children with substance use comorbidity and program efforts made to meet the needs of these children.

Problems associated with underdiagnosis of substance abuse disorders will be described. Differences in the prevalence rates of substance use and abuse by gender and racial/ethnic group membership will be addressed and recommendations for service provision and interagency collaboration will be offered.

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Service Use of Youths with Substance Use and Mental Health Disorders

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Introduction

The co-occurrence of substance use disorders (SUDs) and psychiatric disorders is a significant clinical problem, especially among service-involved youth. Such co-occurrence often goes unrecognized, complicates treatment/services, and can increase the likelihood of service use. Underutilization of mental health services by adolescents with psychiatric disorders is a significant public health concern (Burns et al., 1995; Cuffe et al., 2001). Youths who have had contact with public service systems represent a particularly high-risk group, with elevated rates of psychiatric disorders, including substance use disorders (Aarons, Brown, Hough, Garland, & Wood, 2001; Garland, Hough, Landsverk, & Brown, 2001; Garland, Hough, McCabe, et al. 2001; King, 2000; Stiffman et al., 2001; Walrath, Nickerson, Crowel, & Leaf, 1998). These youths show higher rates of mental health service use compared to community samples of adolescents; however, there is still significant unmet need for mental health and substance abuse services among these youths (Garland, Hough, McCabe, et al., 2001). Estimates indicate that only 20% of youths with severe emotional disturbance receive specialty mental health services (Burns et al., 1995) and yet little is known about what types of mental health services these youths receive and how diagnostic profiles are associated with utilization of different types of services.

Given that youths with co-occurring substance use and psychiatric disorders are at increased risk for a variety of maladaptive outcomes in adolescence and adulthood (Sheehan, 1993), identification, referral, and provision of services for this population is essential. The purpose of this study was to examine rates of co-occurring disorders among youths in public sector services, and service utilization rates for mental health services for high-risk youth, and to examine how single and co-occurring diagnostic profiles were associated with utilization of mental health services.

Participants

Participants included 947 adolescents ages 13-18 sampled from all youth who had an open service episode from January through June, 1997 in one or more of five San Diego County public sectors of care: Alcohol and Drug Services (AD), Child Welfare (CW), Juvenile Justice (JJ), Mental Health (MH), and Public School Services for Youth with Serious Emotional Disturbance (SED). Participants did not differ significantly from non-participants with regard to age, gender, sector affiliation, or race-ethnic distribution, except that slightly fewer Asian-Americans participated relative to the eligible sample. The sample was stratified by service sector affiliation, race/ethnicity, and level of restrictiveness of placement.

The percentage of youths having past year contact with each service sector was as follows: 5% AD, 21% CW, 43% JJ, 54% MH, and 15% SED. Two thirds of the sample was male, and the mean age was 15.9 years ($SD = 1.6$). The racial/ethnic distribution was 33% Caucasian; 32% Latino; 21% African American; 8% Asian American/Pacific Islander; and 7% Multi-racial/other. Most of the parent/caregiver informants (hereafter referred to as "parents") were biological parents (79%). Others included adoptive, foster, or step-parents, and a small number of professional caregivers.

Procedure and Measures

Informed written consent was obtained from a parent and written assent was obtained from the youth. Most interviews were conducted in the home (84%) and parents and youth were interviewed individually. Parents and youth were compensated for participation in the interviews. Interviewers (non-clinicians with at least a bachelor's degree) received 100 hours of training on interviewing strategies as well as the administration of the specific instruments. Reliability checks were conducted approximately once per month; quality assurance protocols are described in more detail in Aarons et al. (2001).

Participants and their parents were interviewed individually to assess for past year psychiatric disorders with the Diagnostic Interview Schedule for Children (DISC-IV; Shaffer, Fisher, Lucas, Dulcan, & Schwab-Stone, 2000). Substance use disorders were measured by youth report on the Composite International Diagnostic Interview - Substance Abuse Module (CIDI-SAM; Cottler, Robins, & Helzer, 1989). Functional impairment was ascertained with the Children's Global Assessment Scale (CGAS; Shaffer et al., 1983) and with the Columbia Impairment Scale (CIS; Bird et al., 1993). Service use was measured with parent and youth reports on the Services Assessment for Children and Adolescents (SACA; Horwitz et al., 2001; Stiffman et al., 2000), and caregiver strain by the Caregiver Strain Questionnaire (CGSQ; Brannan, Heflinger & Bickman, 1997).

All data reported are for past year diagnoses and service use. DISC-derived (non-SUD) diagnoses are labeled *Psychiatric*, and CIDI-SAM-derived substance use diagnoses are labeled *SUD*. Youths were classified into the following five diagnostic groups: (1) Co-occurring Psychiatric and SUD disorders; (2) Psychiatric disorder only; (3) SUD only; (4) No diagnosis with functional impairment; and (5) No diagnosis and no functional impairment. Within each group, youths could have multiple diagnoses; for example, those in the Psychiatric disorder only group could have co-occurring non-SUD diagnoses.

Service types examined included outpatient (e.g., outpatient clinic, psychologist, physician, outpatient alcohol/drug treatment), 24-hour care (e.g., residential treatment center, inpatient hospitalization), or informal (e.g., self-help groups, peer support). Chi-square analyses were conducted to test for significant differences in service use across diagnostic groups and in sociodemographic and family/social factors potentially associated with service utilization. Given that there were significant differences in many of these factors across groups, multiple logistic regression analyses were conducted to test whether the significant differences in likelihood of service use remained when the effects of these confounding factors were statistically controlled. All analyses were conducted using STATA, Version 7.0 statistical software with data weighted to represent the population.

Results

Figure 1 shows that 18% of the sample had a co-occurring mental health and substance use disorder, 41% a psychiatric disorder only, 6% a substance use disorder only, 15% no diagnosis with significant impairment, and 20% no diagnosis and no significant impairment. It is possible that youth could have no diagnosis or impairment in this study because youth were sampled from multiple sectors of care where a specific diagnosis was not a criterion for services (e.g., child welfare). Figure 2 shows the percent of youth in each diagnostic category utilizing outpatient services, 24-hour care, and informal services. Outpatient services were most commonly used. Youth with co-occurring disorders and psychiatric disorders only were most likely to use outpatient services, $\chi^2(4) = 40.0, p < .001$. There was a marginal effect for youth with co-occurring disorders to use more 24-hour care, $\chi^2(4) = 20.5, p = .08$. Youth with co-occurring disorders and a SUD only were most likely to receive informal services, $\chi^2(4) = 87.9, p < .001$.

Finally, logistic regression analyses controlling for demographics, caregiver strain, police contact, and prior service utilization showed a number of effects. Logistic regression analyses specified youth with no diagnosis and no impairment as the reference group. Youths with co-occurring disorders were more likely than youths in the reference group to receive outpatient ($OR = 2.56, p < .01$) and informal services ($OR = 2.95, p < .01$). Youths with a psychiatric disorder only were also more likely to receive outpatient

Figure 1
Prevalence of Substance Use and Psychiatric Disorders

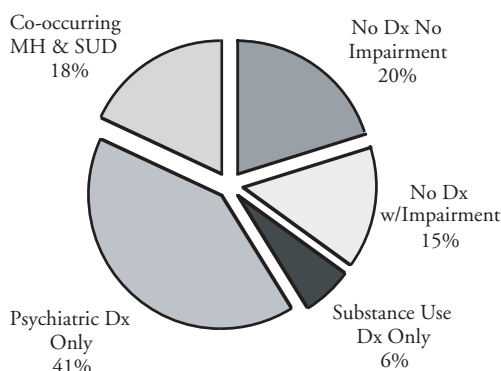
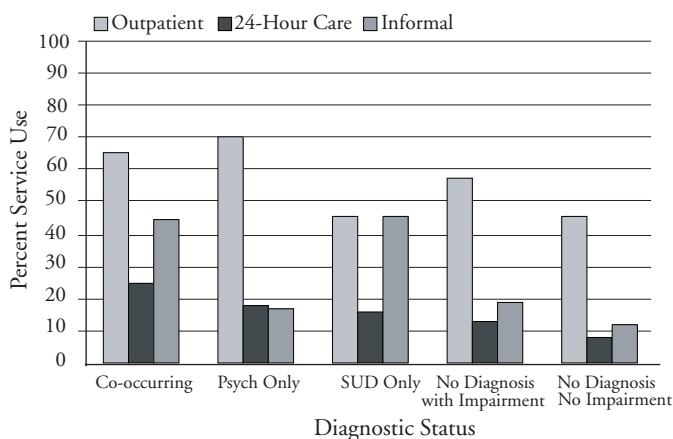


Figure 2
Service Type by Diagnostic Status



services ($OR = 2.29, p < .01$). Youths having a SUD only were more also likely than youths in the reference groups with psychiatric disorders only and comorbidity to receive only informal services ($OR = 3.14, p < .05$), suggesting unmet need for professional mental health and/or substance abuse services for these youths.

Conclusion

As expected, youths sampled from public service sectors had high rates of co-occurring psychiatric and substance use disorders. These youths also had higher rates of psychiatric disorders and service utilization compared to community samples. Specifically, 53% of this sample had utilized specialty outpatient mental health service in the past year, whereas only 13% of a large multi-site community sample of youths in a similar age range reported such utilization (Leaf et al., 1996). However, significant unmet need for professional mental health services was identified and there are clear discrepancies in patterns of use related to diagnostic profile. Most strikingly, youths with SUDs only were significantly less likely to receive professional services compared to youths with other psychiatric disorders and comorbidity. Discrepancies in service utilization such as those identified here should be addressed by more effective outreach efforts to identify and refer youths with psychiatric diagnoses and SUDs. Expansion of research on the processes of service utilization is needed to identify the greatest barriers to effective services and to make services more available, attractive, and effective for youths and their families.

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Screening for Mental Health Status and Substance Abuse Among Delinquent Youth: Estimating Comorbidity in an Undiagnosed Population

Ken Gallagher & Philip Nordness

Introduction

With the increasing recognition of mental health and behavioral disorders of youth within the general population, the overlap between mental health and juvenile justice services has become more evident (Underwood, Mullan & Walter, 1997). Several researchers have documented that approximately 70% to 90% of youth in the juvenile justice system meet official criteria for at least one psychiatric diagnosis, with conduct disorder and substance abuse disorders being the most prevalent (Atkins et al., 1999; Coccozza, 1992; Davis, Bean, Schumacher & Stringer, 1991; Otto, Greenstein, Johnson & Friedman, 1992; Teplin, Abram, McClelland, Dulcan & Mericle, 2002).

Substance abuse disorders often co-occur with other diagnoses, specifically conduct disorders and mood disorders (Davis et al., 1991). Disorders are said to be comorbid, or co-occurring, when a youth simultaneously meets criteria for two or more different disorders (Cullinan & Epstein, 2001). Youth with co-occurring disorders often have more complex needs than those with a single disability, and identification and assessment of youth with co-occurring disorders can be more difficult than assessment of youth with only one disorder (U.S. Department of Health and Human Services, 1999). It has been estimated that 18% to 75% of youth with a diagnosable disorder in the general population experience comorbid disorders (Cullinan & Epstein, 2001). Within the juvenile justice population, it is believed that these rates may be even higher (Coccozza & Skowrya, 2000).

While these estimates suggest a significant number of youth are experiencing mental health and substance abuse disorders, the lack of attention paid to youth in the juvenile justice system by researchers, service providers, and policy makers, makes it difficult to understand the extent of this problem and what services are needed for these youth (Coccozza, 1992). Given that mental health and substance abuse records of youth are rarely available to juvenile justice personnel at intake, the need for appropriate screening and assessment becomes paramount to providing appropriate treatment for juvenile offenders (Grisso, Barnum, Fletcher, Cauffman, & Peuschold, 2001; McClelland & Dembo, 1994). In addition, providing appropriate screening and assessment can form the basis for effective treatment plans that may help reduce recidivism by addressing the issues that put the youth at risk for delinquency in the first place (Bilchik, 1998; McClelland & Dembo, 1994).

The purpose of this study was to screen youth for potential mental health and alcohol/drug problems at intake into a juvenile assessment center in the Midwest. We then estimate the comorbidity of these conditions among this undiagnosed population.

Method

Participants

The sample consisted of 178 youth in a juvenile assessment center in a medium sized city in the Midwest. Seventy-five percent of the sample was male. Participants ranged in age from 12 to 17 years ($M = 15.86$ $SD = 1.47$). Seventy percent of the youth were identified as Caucasian, 16% African American, 7% Hispanic, 5% Native American, and 2% Asian.

Measures

The Massachusetts Youth Screening Instrument-Second Version (MAYSI-2; Grisso & Barnum, 2000) was designed as a routine screening instrument to identify symptoms of a mental health disorder for youth 12 to 17 years old at intake into the juvenile justice system. The MAYSI-2 is a self-report screening instrument that can be completed in 10 minutes and requires no special clinical experience to administer,

score, or interpret. The instrument contains 52 questions to which youth answer *yes* or *no* as to whether the item has been true for them within the last few months. These questions comprise separate scales for a variety of disorders: (a) the Alcohol/Drug Use scale (8 items); (b) the Angry-Irritable scale (9 items); (c) the Depressed-Anxious scale (9 items); (d) the Somatic Complaints scale (6 items); (e) the Suicide Ideation scale (5 items); (f) the Traumatic Experiences scale (5 items); and, for males only, (g) the Thought Disturbance scale (5 items). The scales are scored independent of each other and there is no overall total score.

Each scale, except Traumatic Experiences, has a designated *caution* and *warning* cut-off score. The Traumatic Experiences scale is intended to provide staff with additional information, but there is currently no way to determine the amount of exposure to traumatic events which would warrant special attention (Grisso & Barnum, 2000). A youth who scores above the caution cut-off on a given scale is considered to have a mental health concern of possible clinical significance. Youth who score above the warning cut-off scores should be considered most likely in need of attention because they are reporting problems at a level that exceeds the average for youth in juvenile justice settings (Grisso & Barnum, 2000). In previous studies the MAYSI-2 has demonstrated adequate validity and reliability (Grisso & Barnum, 2000; Grisso, et al., 2001).

The Simple Screening Instrument (SSI; Winters & Zenilman, 1994) is a self-report instrument designed to identify possible alcohol or drug abuse disorders for youth at intake into the juvenile justice system. The SSI measures five primary content domains associated with alcohol and drug abuse: (a) the Alcohol and Other Drug Consumption domain (3 items); (b) the Preoccupation and Loss of Control domain (5 items); (c) the Adverse Consequences domain (6 items); (d) the Problem Recognition domain (6 items); and (e) the Tolerance and Withdrawal domain (2 items). The domains are scored together and comprise a single score, ranging from 0 to 14 (some items are not scored in the total). Categories of scores indicate the relative risk of alcohol and other drug abuse: scores of 0-1 indicate *none to low risk*, scores of 2-3 correspond with *minimal risk*, and scores of 4 and above are *moderate to high risk* and indicate a possible need for further assessment.

The MAYSI-2 and the SSI were administered to 178 youth within 48 hours of intake into a juvenile assessment facility in the Midwest. The 52 question items of the MAYSI-2 and the 18 items of the SSI were read to each youth by the facility therapist. The youth responded to each question by circling a *yes* or *no* on the answer sheet, indicating whether the item had been true for them within the previous six months. Responses from the MAYSI-2 and SSI questionnaires were entered into the institution's information system and retrieved by researchers from the University.

Results

Youth who scored above the caution cut-off on the MAYSI-2 Alcohol/Drug scale, or who scored in the moderate to high-risk range on the SSI, were defined as having a potential alcohol/drug abuse disorder. Table 1 shows the crosstabulation of the screening results from these two measures. Not surprisingly, potential substance abuse problems as defined by these measures are highly related to each other ($\gamma = .93$; $p < .001$). However, the SSI identifies almost twice as many youth than does the MAYSI-2 scale (50% vs. 27%, respectively) as having a potential substance abuse problem.

Youth were defined as having a potential mental health disorder if they scored above the caution cut-off on the remaining MAYSI-2 scales (four scales for girls and five for boys). The relationships between these separate mental health indicators and the two substance abuse indicators were all in

Table 1
Crosstabulation of Substance Abuse Indicators

| MAYSI-2 Alcohol/ Drug Scale Categories | SSI Categories | | Total |
|---|-------------------------|--------------------------|------------|
| | None to Minimal Risk | Moderate to High Risk | |
| No Problem | 86 (48%) | 44 (25%) | 130 (73%) |
| Above "Caution" | 3 (2%) | 45 (25%) | 48 (27%) |
| Total | 89 (50%) | 89 (50%) | 178 (100%) |

$\gamma = .93$
 $p < .001$

the moderate range. The weakest relationship was between the MAYSI-2 Angry/Irritable scale above the caution cut-off and the SSI at the moderate to high cut-off ($\gamma = .40$; $p < .01$). The strongest relationship was between the MAYSI-2 Depressed/Anxious scale above caution and the MAYSI-2 Alcohol/Drug scale above caution ($\gamma = .56$; $p < .001$). However, estimates of comorbid conditions ranged from 6% (for those with both the MAYSI-2 Suicide Ideation and Alcohol/Drug scales above the caution cut-off) to 30% (for those with the MAYSI-2 Somatic Complaints scale above caution and the SSI at moderate to high).

Table 2 shows the strength of the relationship (γ) and the percent of the population estimated to have comorbid conditions (%) between selected indicators of potential mental health problems and both indicators of potential substance abuse problems. Again, a moderate relation was found between all these measures of potential mental health disorders and substance abuse problems, ranging from .39 (*ns*) to .58 ($p < .001$). However, depending on how one defines potential mental health problems (e.g., more than one MAYSI-2 scale above the warning cut-off) and which of the two alcohol/drug measures are used, estimates of comorbidity range from 4% to approximately 40%.

Table 2
Crosstabulation of Mental Health and Substance Abuse Indicators

| <i>Mental Health Indicators</i> | <i>Substance Abuse Indicators</i> | | | |
|-----------------------------------|-----------------------------------|-----|------------|-----|
| | <i>MAYSI-2 Alcohol/Drug Scale</i> | | <i>SSI</i> | |
| | γ | % | γ | % |
| Any MAYSI-2 scale above "caution" | .46* | 21% | .58** | 38% |
| >1 MAYSI-2 scale above "caution" | .57** | 16% | .55** | 26% |
| Any MAYSI-2 scale above "warning" | .51* | 9% | .55* | 14% |
| >1 MAYSI-2 scale above "warning" | .39 | 4% | .41 | 6% |

* $p < .05$

** $p < .001$

Discussion

The MAYSI-2 and the SSI are appropriate measures for juvenile justice facilities to use as front door screening instruments. By using these tools, juvenile assessment center staff can quickly determine whether juveniles represent a risk to themselves or the community, and can identify which youth may require further mental health or substance abuse assessment and evaluation (Grisso et al., 2001).

However, our research suggests that some caution should be exercised in using and interpreting these, and similar, tools. Difficulties in estimating comorbidity arise from a variety of sources. The sensitivity (i.e., accurately identifying those with a problem) and the specificity (i.e., accurately identifying those without a problem) of mental health and substance abuse screening instruments may vary widely. The type of disorder (e.g., suicide ideation vs. depression) may be related to substance abuse. The level of potential disorder indicated by a screening instrument (e.g., above a warning cut-off) directly determines the percentage of the population identified. Therefore, estimates of comorbidity may depend more on the selection of a screening instrument, problem definition and agency policy, than on the characteristics of the youth.

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Risk and Protective Factors in Alcohol, Cigarette, and Marijuana Use

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Introduction

Children and families enrolled in system-of-care-based services often have a variety of issues requiring treatment. Unfortunately, mental health professionals often focus exclusively on presenting problem behaviors without considering other aspects of children's lives that might be related to such behaviors. A major component that commonly is not addressed in treatment planning is substance use. Because there is a strong positive relationship between mental illness and substance use among children (Greenblatt, 2000; White, Brick, & Hansell, 1993; White, Loeber, Stouthamer-Loeber, & Farrington, 1999), the need to identify risk and protective factors is crucial for the effective treatment of children and youth with serious and emotional behavioral disorders. The present study attempts to identify risk and protective factors related to the use of alcohol, cigarettes and marijuana among youth receiving services within a system of care context.

Method

Participants were drawn from the North Carolina Families and Communities Equals Success (NC FACES) and System of Care-Net grant communities in North Carolina funded by the Center for Mental Health Services in 1997 and 1999 as part of the Comprehensive Mental Services for Children and Their Families program. The goal of that nationwide program was to provide services that are child-centered and family-focused, strengths-based, community-based, and culturally competent. The program also included an evaluation component that assessed system development and individual outcomes for children and families. A full description of the national evaluation protocol and data collection procedures is provided elsewhere (see Holden, Friedman, & Santiago, 2001).

The current study focuses on substance use among 334 adolescents aged 11 to 18 years who participated in the outcome study. All had at least one clinical diagnosis, with almost half diagnosed with Attention Deficit Hyperactive Disorder (ADHD; 49%), followed by oppositional defiant disorder (38%), mood disorder (21%), and conduct disorder (11%). Fifty-six percent of adolescents had at least one comorbid disorder, with 6% identified as having a comorbid substance use disorder.

Substance use was assessed using Part A of the Substance Use Survey (SUS-A) from the Center for Mental Health Services (CMHS, 1997a). In that questionnaire, children are asked if they ever used any of a list of twelve substances ranging from alcohol to non-prescription drugs, how old they were when they first tried the substance, and whether and how often they used the substance in the past six months. Because substance abuse research tends to focus mostly on alcohol, cigarettes, and marijuana, and because these three substances were the most prevalent in this sample, they were identified as the targets for the current study. Furthermore, based on the assumption that a shorter timeframe for recall of past behavior would yield the most accurate measure of substance use, the present study focuses on substance use in the past six months in all analyses.

The Demographic Information Questionnaire (DIQ; CMHS, 1997b) is a 37-item, caregiver-reported measure of a variety of child and family characteristics. Furthermore, the DIQ identifies the presence of circumstances and conditions in both individual and family domains that previous research has identified as risk factors for emotional and behavioral challenges. In addition to basic questions such as the child's gender, age, and ethnicity, caregivers responded either *yes* or *no* to risk

factors such as a history of mental illness, parental history of felony, parental substance use, and physical and/or sexual abuse of the child.

Protective factors across various domains were assessed using the Behavioral and Emotional Rating Scale (BERS; Epstein & Sharma, 1997). The BERS is a 52-item questionnaire of caregiver-reported child strengths, positive behaviors, and activities. Two subscales from the BERS are used in the present study: Family Involvement and Affective Strength. Family Involvement is a 10-item subscale that assesses the child's participation in family activities, with sample items including, "Over the past three months, my child demonstrates a sense of belonging to the family" (Cronbach's $\alpha = .84$). Affective Strength is a seven-item scale that assesses the child's desire and ability to receive and give affection and assistance from and to others, with sample items including, "Over the past three months, my child accepts the closeness and intimacy of others" (Cronbach's $\alpha = .79$). Caregivers responded to each item on a 4-point scale, from 0, *the behavior was not at all like the child*, through 3, *the behavior was very much like the child*. Composite scores for each subscale were created by summing all items within that subscale.

To examine prevalence levels of substance use over the past six months prior to intake, descriptive and frequency analyses were conducted. Additionally, correlational analyses were conducted to examine bivariate associations between variables. A series of three hierarchical logistic regression models were used to estimate the probability of alcohol, cigarette, and marijuana use in the past six months. Each of the dependent variables was regressed first on demographic variables, followed by risk factors in the second model, and protective factors in the third model.

Results

Table 1 shows sample characteristics and descriptive statistics for our predictor variables. Each type of substance use was correlated positively with the other substances (alcohol and cigarettes: $r = .54, p < .001$, cigarettes and marijuana: $r = .51, p < .001$, and marijuana and alcohol: $r = .64, p < .001$). Thus, children who used one type of substance were more likely to use other types of substances as well (not shown).

Table 1
Descriptive and Frequency Statistics for Predictor Variables (N = 334)

| Indicator | % | <i>X</i> | <i>SD</i> | Range |
|-----------------------------------|----|----------|-----------|---------------|
| Sample Characteristics | | | | |
| Male | 75 | | | |
| European American | 59 | | | |
| African American | 36 | | | |
| Used Alcohol ^a | 26 | | | |
| Used Cigarettes ^a | 43 | | | |
| Used Marijuana ^a | 22 | | | |
| Family History of Felony | 50 | | | |
| Family History of Substance Use | 68 | | | |
| Primary Substance Use Disorder | 7 | | | |
| Co-morbid Substance Use Disorder | 6 | | | |
| Identified w/Substance Use Issues | 13 | | | |
| Age | | 14.50 | 1.68 | 11.00 - 18.00 |
| Family Involvement ^b | | 16.34 | 6.46 | 0.00 - 30.00 |
| Affective Strength ^b | | 12.47 | 4.55 | 0.00 - 21.00 |

^a Percentages are for substance use in the past six months.

^b Higher scores indicate: more family involvement and more affective strength.

Our regression models for use of alcohol and cigarettes showed age to be a significant predictor of alcohol use with older children being twice as likely to report use than younger children. Higher levels of family involvement decreased the likelihood of use, but affective strength unexpectedly increased the likelihood of use.

The logistic regression models to predict marijuana use are presented in Table 2. The demographic predictors in Model 1 indicated that both ethnicity and age (but not gender) predicted marijuana use over the past six months. Model 2 included the two target family risk factors of History of Felony and Substance Use. Children with a history of substance use in the family were almost three times as likely to use marijuana than children whose parents did not have a history of substance use.

Table 2.
Logistic Regression Models to Predict Marijuana Use in the Past Six Months (*N* = 334)

| Predictor | (1) | (2) | (3) | (Model 3) | |
|-----------------------------------|------------------------|------------------------|------------------------|------------------------------|----------|
| | <i>B</i> (<i>SE</i>) | <i>B</i> (<i>SE</i>) | <i>B</i> (<i>SE</i>) | <i>e</i> ^{<i>B</i>} | <i>p</i> |
| Demographic Variables | | | | | |
| Male | .63(.37) | .61(.38) | .46(.40) | 1.58 | .25 |
| European American*** | -.89(.37) | -.92(.38) | -1.19(.40) | .31 | .00 |
| Age*** | .83(.14) | .83(.14) | .87(.15) | 2.39 | .00 |
| Risk Factors | | | | | |
| Family History of Felony | | -.65(.42) | -.72(.43) | .49 | .09 |
| Family Substance Use* | | .99(.44) | 1.09(.45) | 2.98 | .02 |
| Protective Factors | | | | | |
| Family Involvement** | | | -.13(.05) | .88 | .01 |
| Affective Strength** | | | .17(.07) | 1.18 | .01 |
| Constant | -13.69 | -14.08 | -14.33 | | |
| Omnibus Model χ^2 | 60.58 | 66.55 | 76.12 | | |
| <i>df</i> | 3 | 5 | 7 | | |
| Significance | .000 | .000 | .000 | | |
| -2LL | 189.31 | 183.34 | 173.77 | | |
| Cox & Snell <i>R</i> ² | .23 | .24 | .27 | | |
| Nagelkerke <i>R</i> ² | .35 | .38 | .42 | | |

Note. *e*^{*B*} = exponentiated *B*.
p* < .05, *p* < .01, ****p* < .001.

Model 3 included the two target protective factors of Family Involvement and Affective Strength. According to the block chi-square statistic, Model 3 is superior to both Models 1 and 2 in terms of overall model fit. The relations between marijuana use and ethnicity, age, and parental history of substance use held for Model 3. Additionally, the odds ratio for the family involvement coefficient was .88 (*p* < .01), with a 95% *CI* of .80 - .96, showing that higher levels of Family Involvement were linked with lower levels of marijuana use. Furthermore, the odds ratio for the Affective Strength coefficient was 1.18 (*p* < .01), with a 95% *CI* of 1.04 - 1.34. Thus, higher levels of affective strength increased the likelihood of marijuana use over the past six months. According to the chi-square statistic, the overall model was significant at the .001 level, predicting 82% of responses correctly.

Conclusion

In terms of demographic characteristics, age was a significant predictor across all three substances, with older children more likely to have used substances than younger children over the past six months. The only other demographic characteristic that predicted substance use was ethnicity, and that was only for marijuana use (African American children were more likely to have used marijuana than were European American children). Among risk factors, substance use in the family increased the likelihood of using both cigarettes and marijuana, but not alcohol, in the past six months. Of protective factors, family involvement decreased the likelihood of substance use across all three substances (i.e., alcohol, cigarettes, and marijuana). Affective strength surprisingly increased the likelihood of substance use across all three types of substances.

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Adolescents with Substance Abuse Comorbidity in Eastern Kentucky: Characteristics and Patterns of Use

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Introduction

Despite prevalence estimates ranging from 22% to as high as 85% in studies of clinical samples (Greenbaum, Prange, Friedman, & Silver, 1991; Hovens, Cantwell, & Kiriakos, 1994), the needs of youth with mental health and substance abuse disorders have long been neglected. Due to multiple and complex needs, many adolescents with substance abuse and mental health problems are under-identified or inappropriately served. Fortunately, increased attention is being directed to this population of youth. In an effort to better understand the needs of this population, this paper presents the demographic, clinical, and functional characteristics of adolescents with substance abuse comorbidity enrolled in a system of care in the Appalachian Mountains of Eastern Kentucky. National media have labeled Eastern Kentucky as the “prescription-painkiller Capital of the US,” particularly with respect to the abuse and misuse of OxyContin. Coupled with the extensive growth and sale of marijuana, and with regional traditions (e.g., moonshine and homebrew) that romanticize the notion of alcohol usage, this section of the state provides unique insight into the accessibility and acceptability of illegal substances.

Method

The sample in this study consisted of 355 children and youth served in the Bridges Project, a children’s mental health initiative in Eastern Kentucky funded by the Center for Mental Health Services (CMHS). As part of the national evaluation of CMHS-funded grant communities, descriptive information is available for all children and youth enrolled in the system of care, and outcome data are gathered for those for whom informed consent is given. Outcome interviews are conducted at baseline and every six months thereafter for up to 36 months. Caregivers receive \$25 per interview, and youth are given \$10.

Data were entered into an Access database and imported in SPSS software (SPSS Inc., nd) for the purposes of data analysis. *T*-tests and chi-square tests were utilized to examine demographic, clinical, and functional similarities and differences among those with and without substance abuse comorbidity.

Results

Three criteria were used to determine the presence of substance abuse comorbidity among youth in the sample: (a) the presence of a DSM substance-related diagnosis, (b) a moderate or severe rating on the substance use scale of the Child and Adolescent Functional Assessment Scale (CAFAS; Hodges, 1990), or (c) evidence of a severe consequence (e.g., dramatic drop in grades) as a result of substance use as reported by the youth on the Substance Use Survey (CMHS, 1997). Using these three criteria, 11% ($n = 48$) of the youth were determined to have substance use comorbidity (SA group).

Demographically, those in the SA group were significantly older ($t = -7.17, p = .000$) with an average age of about 15 years and were more likely to be female, $\chi^2(1, N = 427) = 19.86, p = .000$. Those in the SA group were twice as likely as non-SA youth to have received services in a residential treatment center or inpatient psychiatric hospital in the year prior to intake, $\chi^2(1, N = 427) = 6.44, p = .01$. Not surprisingly, those in the SA group were more likely to have received alcohol-substance abuse therapy in the 12 months prior to intake, $\chi^2(1, N = 427) = 148.38, p = .000$, as compared to those in the non-SA group; however, only 38% of those in the SA group had received substance-specific services in the past 12 months.

With respect to risk factors, youth with substance abuse comorbidity were more likely than non-SA youth to have been psychiatrically hospitalized at some time in their life, $\chi^2(1, N = 427) = 8.93, p = .003$, to have a history of runaway behavior, $\chi^2(1, N = 424) = 22.45, p = .000$, to have attempted suicide, $\chi^2(1, N = 425) = 10.01, p = .002$, and to have a family history of substance abuse $\chi^2(1, N = 413) = 6.71, p = .01$. No differences were noted between the groups for chronic health concerns.

The SA and non-SA groups were compared on measures of family and child functioning. While caregivers reported no significant differences in their level of strain, those in the non-SA group did report higher levels of family functioning, $t = 2.89, p = .005$. The two groups did not differ in overall emotional and behavioral strengths, but those in the non-SA group had significantly more strengths in the area of family involvement as measured by the Behavioral and Emotional Rating Scale (BERS; Epstein & Sharma, 1997). The extent to which the two groups displayed problem behavior as measured by the Child Behavior Checklist (CBCL; Achenbach, 1991) did not differ, nor were differences detected with respect to overall functioning as measured by the Child and Adolescent Functional Assessment Scale (CAFAS; Hodges, 1990). The SA group did, however, exhibit significantly greater impairment on the Community subscale of the CAFAS ($t = -1.97, p = .05$), indicating greater participation in illegal and delinquent acts. In a similar vein, those in the SA group reported increased likelihood of having been accused of a crime, $\chi^2(1, N = 108) = 12.22, p = .000$, arrested, $\chi^2(1, N = 108) = 6.37, p = .01$, asked to appear in court, $\chi^2(1, N = 108) = 14.56, p = .000$, found guilty of a crime, $\chi^2(1, N = 108) = 11.29, p = .001$, and placed on probation, $\chi^2(1, N = 108) = 7.40, p = .007$. When asked to report on their engagement in specific delinquent acts, those in the SA group were more likely than those in the non-SA group to set fires, $\chi^2(1, N = 108) = 10.8, p = .001$, go joyriding, $\chi^2(1, N = 108) = 6.37, p = .01$, or deal drugs, $\chi^2(1, N = 108) = 9.60, p = .002$.

Discussion

The risk of substance abuse increases dramatically among children with severe emotional disabilities. The results of the present study indicated that only 7% of the current sample had a substance-related diagnosis, despite evidence that a greater number were experiencing problems related to their substance use. This discrepancy is likely due to a number of factors, such as the difficulty in differentiating between typical youth experimentation and the presence of an actual diagnosable DSM substance-related disorder and the hesitancy of clinicians to give an official substance-related diagnosis to a youth. This finding points to the need for increased training in the assessment, identification, and treatment of youth substance use issues for mental health care providers.

In addition, youth in the SA group exhibited significantly greater problems than those without substance abuse problems, particularly with respect to engagement in illegal and delinquent acts and the need for restrictive placements such as hospitalization, resulting in greater service and treatment costs. Improved family functioning and youth involvement in the family emerged as potential protective factors against substance abuse, highlighting the critical importance of family involvement in treatment. Further investigations are needed to clearly understand the substance use issues of youth receiving services for serious emotional disabilities.

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Community Connections for Families: Evaluation of a Comprehensive System of Care for Children’s Mental Health

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Introduction

Community Connections for Families (CCF) is a children’s mental health system-of-care program funded by the Substance Abuse Mental Health Services Administration (SAMHSA) and the Allegheny County Department of Human Services (ACDHS). CCF seeks to provide service coordination and support to children with serious emotional disturbance and their families across a minimum of two service systems (e.g., mental health, child welfare, juvenile justice, and education). CCF’s Mission is to “empower youth, families and communities to manage and advocate for their needs and realize their dreams. We accomplish this by partnering with, supporting and educating youth, families, communities, and professionals” (CCF, n.d.). The program is based on the following 12 core values:

- Youth-Centered
- Family Focused and Driven
- Safety (Youth, Family and Community)
- Individualized
- Strengths-Based
- Community-Based/Least Restrictive
- Cultural Competence
- Relentless Advocacy
- Outcome-Based
- Cost-Effective/Cost-Responsible
- Education
- Physical and Mental Well-Being

The purpose of this study is to evaluate the efficacy of the CCF program by analyzing outcomes data collected over the course of one year. The design of the evaluation is in accordance with the grant reporting guidelines set by SAMHSA. In this study, we specifically focused on outcomes data related to youth symptomatology and functioning, family resource availability, and caregiver strain.

Methods

Participants

CCF clients live in five communities in or around Pittsburgh. Participants included 50 boys and 16 girls who were referred to CCF for family-based case management by schools, mental health agencies, child welfare offices, juvenile courts, community organizations, and caregivers themselves. The children ranged in age from 6 to 14 years ($M = 10.9$, $SD = 2.29$); 52% of children were African American, 38% Caucasian, 8% Biracial, and 2% Latino.

Measures

Child Behavior Checklist for ages 4-18 (CBCL; Achenbach, 1991a). The CBCL is a multidimensional scale that assesses caregiver reports of children’s competencies and problem behaviors. We utilized the Externalizing scale (comprised of the aggressive and delinquent behavior subscales), Internalizing scale (comprised of withdrawn, somatic complaints, and anxiety/depression subscales), and

the Total Problem scale (comprised of all problem behavior items) to derive caregiver ratings of youth symptomatology.

Youth Self-Report for ages 11-18 (YSR; Achenbach, 1991b). The YSR is a self-report counterpart to the CBCL. We utilized the Externalizing scale, Internalizing scale, and Total Problem scale to derive self-reported ratings of symptomatology.

Child and Adolescent Functional Assessment Scale (CAFAS; Hodges, 1994). The CAFAS assesses functional impairment across a variety of domains. In addition to analyzing Total Youth Functioning scores, we evaluated changes in youth functioning subscales: Role Performance (School/Work, Home, Community), Behavior Toward Others, Moods/Emotions, Self-Harmful Behavior, Substance Use, and Thinking.

Family Resource Scale (FRS; Dunst & Leet, 1985). The FRS measures the adequacy of a variety of resources needed by households with young children. In addition to analyzing overall Family Resource scores, we analyzed changes in all subscales: Growth and Support, Health and Necessities, Nutrition and Protection, Physical Shelter, Intra-Family Support, Communication and Employment, Childcare, and Income.

Caregiver Strain Questionnaire (CGSQ; Brannan, Heflinger, & Bickman, 1990). The CGSQ measures the extent to which caregivers experience difficulties, strains, and other negative effects as a result of their caregiving responsibilities. In addition to Global Strain scores, we analyzed all subscales: Objective Strain, Subjective-Externalized Strain, and Subjective-Internalized Strain.

Procedure

All measures were completed by trained assessors based on interviews with caregivers or youth. Baseline data were collected within 30 days of admission into the CCF program. Follow-up data were collected at six- and twelve-month time points.

Results

In order to evaluate changes across the three time points (baseline, six-month, twelve-month), we conducted a series of within-subjects, one-way ANOVAs in which we computed statistical significance according to a linear function F test. This test was used because it could determine whether there were continued increases or decreases across the three time points.

The first set of ANOVAs evaluated changes in youth symptomatology (overall, externalizing, internalizing) according to parent reports and then youth reports (i.e., CBCL and YSR). As noted in Table 1, there were significant reductions in parent-reported overall, externalizing, and internalizing symptomatology. With regard to youth reports, there were significant reductions in overall and externalizing symptomatology, but not internalizing symptomatology (although the means decreased in magnitude over time).

The second set of ANOVAs investigated changes in youth's functional impairment. As noted in Table 2, the CAFAS showed a significant decrease in overall impairment. Significant reductions in impairment were also observed in three specific domains: School/Work, Home, and Behavior Towards Others.

The third set of ANOVAs examined changes in the availability of family resources, as measured by the FRS. Table 3 shows significant increase in overall family resource availability. Significant increases in resource availability were also observed in four specific domains: Health and Necessities, Communication and Employment, Childcare, and Income.

The final set of ANOVAs assessed changes in caregiver strain as measured by the CGSQ. As noted in Table 4, there was a significant reduction in the overall strain experienced by caregivers. Significant reductions in strain were also observed in two specific domains: Objective Strain and Subjective-Internalizing Strain.

Table 1
Changes in Overall, Externalizing, and Internalizing Youth Symptomatology

| Problem Behavior | Baseline | | Six Months | | Twelve Months | | F_{Linear} |
|--|----------|-----------|------------|-----------|---------------|-----------|--------------|
| | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | |
| <i>Parent-Reported Symptomatology (N = 48)</i> | | | | | | | |
| Overall | 72.0 | 27.8 | 65.8 | 28.7 | 58.2 | 27.1 | 12.76*** |
| Externalizing | 29.6 | 12.3 | 26.7 | 13.0 | 24.7 | 12.1 | 8.66** |
| Internalizing | 16.8 | 9.5 | 15.7 | 9.9 | 13.4 | 9.5 | 7.14** |
| <i>Youth-Reported Symptomatology (N = 19)</i> | | | | | | | |
| Overall | 57.1 | 27.7 | 48.8 | 26.4 | 47.3 | 27.0 | 5.47* |
| Externalizing | 18.8 | 10.6 | 14.6 | 9.2 | 14.2 | 9.8 | 7.74* |
| Internalizing | 14.1 | 9.7 | 13.7 | 9.4 | 12.3 | 9.1 | 0.83 |

Note: * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 2
Changes in Youth's Functional Impairment

| Domain | Baseline | | Six Months | | Twelve Months | | F_{Linear} |
|-----------------|----------|-----------|------------|-----------|---------------|-----------|--------------|
| | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | |
| Total | 91.3 | 36.1 | 86.5 | 41.4 | 80.4 | 43.6 | 4.05* |
| School/Work | 21.7 | 8.8 | 20.9 | 8.6 | 18.4 | 9.2 | 7.11** |
| Home | 21.2 | 10.3 | 16.5 | 10.3 | 17.7 | 10.3 | 5.70* |
| Community | 4.5 | 8.1 | 8.0 | 9.6 | 5.5 | 9.6 | 0.60 |
| Behavior/Others | 18.8 | 8.0 | 17.1 | 8.3 | 15.8 | 9.4 | 6.94* |
| Moods/Emotions | 16.8 | 8.5 | 15.2 | 9.5 | 16.5 | 10.0 | 0.05 |
| Self-Harm | 3.3 | 7.7 | 4.1 | 9.5 | 1.9 | 4.7 | 1.68 |
| Substance Use | 0.9 | 4.2 | 1.2 | 5.7 | 1.3 | 4.9 | 0.53 |
| Thinking | 4.0 | 6.8 | 3.7 | 6.8 | 3.2 | 6.4 | 0.49 |

Note: $N = 66$, * $p < .05$, ** $p < .01$.

Table 3
Changes in Family Resource Availability

| Domain | Baseline | | Six Months | | Twelve Months | | F_{Linear} |
|----------------------|----------|-----------|------------|-----------|---------------|-----------|--------------|
| | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | |
| Total | 3.35 | 0.66 | 3.60 | 0.60 | 3.63 | 0.63 | 9.37** |
| Growth/Support | 2.67 | 0.73 | 2.86 | 0.82 | 2.83 | 0.76 | 2.53 |
| Health/Necessities | 3.37 | 0.67 | 3.58 | 0.69 | 3.59 | 0.59 | 5.19* |
| Nutrition/Protection | 3.37 | 0.69 | 3.44 | 0.73 | 3.43 | 0.76 | 0.39 |
| Physical Shelter | 4.42 | 0.63 | 4.57 | 0.54 | 4.51 | 0.66 | 0.77 |
| Family Support | 4.03 | 0.84 | 4.16 | 0.76 | 4.05 | 0.86 | 0.03 |
| Comm/Employment | 3.48 | 0.78 | 3.66 | 0.77 | 3.87 | 0.78 | 8.72** |
| Childcare | 2.86 | 1.61 | 3.34 | 1.63 | 3.67 | 1.60 | 7.60** |
| Income | 2.61 | 1.32 | 3.12 | 1.34 | 3.05 | 1.11 | 5.15* |

Note: $N = 58$, * $p < .05$, ** $p < .01$.

Table 4
Changes in Caregiver Strain

| Domain | Baseline | | Six Months | | Twelve Months | | F_{Linear} |
|-------------------|----------|------|------------|------|---------------|------|--------------|
| | M | SD | M | SD | M | SD | |
| Global | 2.86 | 0.88 | 2.42 | 0.81 | 2.56 | 0.79 | 8.40** |
| Objective | 2.77 | 1.07 | 2.33 | 1.06 | 2.25 | 1.01 | 13.90*** |
| Sub-Externalizing | 2.33 | 0.97 | 1.93 | 0.79 | 2.51 | 0.63 | 2.86 |
| Sub-Internalizing | 3.48 | 0.94 | 3.00 | 0.94 | 2.91 | 0.98 | 19.29*** |

Note: $N = 59$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Discussion

The results of the present evaluation suggest a high degree of efficacy for the CCF program. Families enrolled in the program experienced significant and continued improvements in several domains. Youth displayed significant decreases in overall and externalizing symptomatology according to both parent and self reports. With regard to internalizing symptomatology, youth reported decreases that did not meet criteria for statistical significance, but parents noted significant improvements over the twelve-month period.

Improvement was also observed in youth's functional impairment. Overall rates of impairment decreased over the twelve-month period. Specifically, significant reductions in impairment were noted in behavior towards other and role performance within school, work, and home contexts.

In addition to improvements in youth's symptomatology and impairment, this evaluation documented important changes in family functioning. Families experienced significant increases in resource availability. Over the twelve-month period, families reported better employment, gains in income, improved debt management, and enhanced ability to provide food, shelter, and basic utilities. Families also experienced greater access to communication technology and transportation as well as quality childcare and health care.

Given these changes in youth and family functioning, it is not surprising that caregivers reported significant decreases in overall strain. Negative events or consequences resulting from the youth's problem behaviors were less likely to disrupt family relationships, routines, and social activities. Furthermore, caregivers experienced increased personal time and more harmonious relationships with neighbors. Finally, negative feelings regarding caregiving (e.g., worry, guilt, and fatigue) were significantly reduced.

This study documented significant improvements for the youth and families enrolled in the CCF program over the course of one year. The CCF program has made a positive impact on many individuals, families, and communities. Given its efficacy, the program should serve as a model for other systems of integrated service delivery. Coordination of services and ongoing support for children and families should receive high priority in the design and implementation of systems of care.

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Outcomes of Suicidal Youth in Comprehensive Community Mental Health Services

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Introduction

Juveniles who attempt suicide exhibit considerable heterogeneity (Goldston, et al., 1996; Goldston, et al., 1998; Pfeffer, Normandin, & Tatsuyuki, 1994; Walrath, et al., 2001). For example, repeat suicide attempters evidence higher rates of affective disorders and impairment in moods compared with other suicidal youth (Goldston, et al., 1998; Walrath, et al., 2001). Attempters who have made previous—but not recent—attempts appear similar to repeat attempters in rates of family violence, family substance use, and sexual abuse in outpatient samples, and rates of affective disorders in inpatient samples (Goldston, et al., 1998; Walrath, et al., 2001). First-time attempters appear less impaired than repeat or previous attempters (Walrath, et al., 2001).

Although a body of research has identified cross-sectional differences among these groups, little longitudinal research has been conducted to examine differential outcomes. Understanding these differences and how they change over time will provide critical information for treatment planning and service delivery. The purpose of the current study is to examine the six-month functional outcomes of children with different suicide attempt histories.

Methods

Analyses were based on information collected during the baseline and six-month assessment of children participating in the outcome study of the national evaluation of the Comprehensive Community Mental Health Services Program for Children and Their Families Program. Information was collected from 28 communities in 22 system-of-care grant sites funded in 1993 and 1994. A complete description of the evaluation protocol and data collection procedures are described elsewhere (see ORC Macro, Inc., 1997; Holden, Friedman, & Santiago, 2001).

Sample

Current study participants were drawn from youth participating in the outcome study of the national evaluation. Children in the outcome study were between five and 17.5 years of age at entry into services, did not have siblings enrolled in the outcome study, and had caregivers who consented to participate. Additional inclusion criteria for the present study included complete data on: (a) gender, (b) age, (c) race and ethnicity, (d) presenting problem, (e) history of suicide attempt, and (f) baseline and six-month Child and Adolescent Functional Assessment Scale (CAFAS) subscale and total scale scores (Hodges, 1994). The outcome study included 18,834 children; 3,960 were included in the current sample. Differences between these suicide attempt groups have been characterized elsewhere (Walrath, et al., 2001).

Measures and Indicators

Suicide Attempts. At intake, youth or their caregivers responded to a dichotomous question concerning the history of suicide attempts. The referring agency or family identified whether suicide attempt was a presenting problem that precipitated entry into treatment. Four suicide attempt categories were defined as follows: (a) *first-time attempt* was indicated by a presenting problem of suicide attempt and no history of prior attempt, (b) *previous attempt* was indicated by a history of prior

suicide attempt but no suicide attempt presenting problem, (c) *repeat attempt* was indicated by both a presenting problem and history of suicide attempt, and (d) *no attempt* was indicated by the absence of both history of suicide attempt and presenting problem of suicide attempt.

Demographic Information was collected either directly from caregivers at intake or through review of existing records. Data on race and ethnicity were collapsed into four categories: Non-Hispanic White, Non-Hispanic Black, Hispanic, and Other racial and ethnic groups.

Psychosocial Functioning was assessed at baseline and six months using the CAFAS (Hodges, 1994), which was completed either by clinicians or independent interviewers who underwent structured training (Hodges, 1997).

Analyses

First, a General Linear Model - Mixed Model (GLM-MM) was used to assess change in the total CAFAS score from baseline to six months as a function of suicide attempt group status. Second, two logistic regressions were performed predicting total CAFAS score. In the first regression, the suicide attempt group was used to predict severe functional impairment at six months (scores of 140 or higher on the six-month CAFAS Total score) among children who scored in the severe range at baseline. In the second regression, suicide attempt group was used to predict severe impairment at six months among children who did not score in the severe range at baseline. Finally, two sets of logistic regressions were performed predicting each of the eight CAFAS subscales. In the first set, for each subscale, suicide attempt group was used to predict severe impairment at six months (subscale scores of 30) among children who scored as severely impaired on that subscale at baseline. In the second set, for each subscale, suicide attempt group was used to predict severe impairment at six months among children who did not score as severe on that subscale at baseline.

Results

Of the 3,960 youth in the study sample, 126 (3.2%) were identified as first-time suicide attempters; 413 (10.4%) as previous attempters; 215 (5.4%) as repeat attempters; and 3,206 (81%) as having never attempted suicide (Table 1). There was a significant association between change in CAFAS score and suicide attempt group, $F(3,50) = 13.56, p < .001$. While on average, all groups exhibited improved functioning at six months, the average improvement in scores over time was greater for the previous attempters (baseline $M = 116.42$; 6 month $M = 89.23$) and repeat attempters (baseline $M = 118.48$; 6 month $M = 90.21$) than for first time attempters (baseline $M = 96.80$; 6 month $M = 79.33$) and never attempters (baseline $M = 85.16$; 6 month $M = 70.65$). It should be noted that the previous attempter and repeat attempter groups scored as the most impaired of the four groups at baseline, and that the repeat attempter group in particular continued to manifest the most functional impairment of all groups at the follow-up assessment.

At baseline, 20.6% of first-time attempters scored in the severe functional impairment range, compared with 40% of repeat attempters, 39% of previous attempters and 13% of never attempters. Among children who scored as severely impaired at baseline, there were no group differences in the likelihood of severe impairment at six months (Wald = 1.74, $p > .05$). Among youth who were not severely impaired at baseline, repeat attempters were 3.12 more likely than never attempters to demonstrate severe impairment at six months (Wald = 16.12, $p < .001$).

Table 2 provides the results of the logistic regressions examining the association subscale scores and the three suicide attempting groups. Among children who scored as severely impaired on the respective subscales at baseline, suicide attempt group predicted severity at six months only on the Behavior Toward Others subscale of the CAFAS. Previous attempters who were rated severe at baseline were more than two times as likely to be rated as severe at six months than were never attempters.

Table 1
Demographic Characteristics of Children by Suicidal Behavior (N = 3,960)

| | <i>Never Attempted</i> (n=3206) | <i>First-time Attempt</i> (n=126) | <i>Previous Attempt</i> (n=413) | <i>Repeat Attempt</i> (n=215) |
|--------------------------------|------------------------------------|--------------------------------------|------------------------------------|----------------------------------|
| Age at Referral | M=10.86 (SD=3.67) | M=11.70 (SD=3.23) | M=13.16 (SD=3.10) | M=13.35 (SD=2.86) |
| Gender (male) | 69.4% (2225) | 57.1% (72) | 50.8% (210) | 45.6% (98) |
| Race and Ethnicity | | | | |
| Non Hispanic, White | 57.1% (1830) | 66.7% (84) | 63.2% (261) | 59.5% (128) |
| Non Hispanic, Black | 21.9% (703) | 20.6% (26) | 15.0% (62) | 20.5% (44) |
| Hispanic | 8.6% (276) | 5.6% (07) | 11.1% (46) | 11.6% (25) |
| Other | 12.4% (397) | 7.1% (09) | 10.7% (44) | 8.4% (18) |
| CAFAS at Baseline ^a | M=84.69 (SD=42.29) | M=97.46 (SD=41.93) | M=118.74 (SD=48.50) | M=120.65 (SD=43.29) |

^aPsychosocial functioning was assessed using the Child and Adolescent Functional Assessment Scale Total score

Table 2
Logistic Regression Analyses of CAFAS Subscale Scores: Predicting Subscale Severity at 6-month Follow-Up for Children With and Without Severe Subscale Ratings at Baseline

| | | | CAFAS Subscales | | | | | | | |
|------------------------|--------------------|----|--------------------|-------------------|-----------------------|-------------------------------|---------------------------|------------------------------|-----------------|----------------------|
| | | | <i>School Role</i> | <i>Home Role</i> | <i>Community Role</i> | <i>Behavior Toward Others</i> | <i>Moods and Emotions</i> | <i>Self-Harmful Behavior</i> | <i>Thinking</i> | <i>Substance Use</i> |
| Severe at Baseline | Wald (n) | | 4.95 (n=1144) | 3.04 (n=1140) | 5.48 (n=352) | 8.09* (n=563) | 6.37 (n=403) | .18 (n=226) | 1.95 (n=101) | .29 (n=137) |
| | Previous Attempt | OR | 1.24 | 1.05 | 1.84 | 2.05** | 1.89 | 1.07 | 1.08 | 1.16 |
| | First-time Attempt | OR | 1.96 | .70 | .74 | 1.12 | .85 | .001 | .001 | .004 |
| | Repeat Attempt | OR | 1.34 | 1.34 | 1.95 | 1.07 | 1.71 | 1.12 | .221 | .91 |
| Not Severe at Baseline | Wald (n) | | 9.95* (n=1868) | 38.82*** (n=1872) | 5.65 (n=2660) | 7.39 (n=2449) | 13.28** (n=2609) | 26.68*** (n=2786) | 1.62 (n=2911) | 2.40 (n=2875) |
| | Previous Attempt | OR | 1.85** | 1.86** | 1.91 | 1.34 | 2.19*** | 3.26*** | 1.14 | 1.69 |
| | First-time Attempt | OR | 1.39 | 2.45** | .99 | 2.35 | .881 | 3.19* | 1.93 | .65 |
| | Repeat Attempt | OR | 1.43 | 3.98*** | 1.12 | 1.52 | 2.34* | 6.17*** | 1.53 | 1.01 |

Odds Ratios (OR) for each suicide group represent the likelihood of being severe at six months compared with the never attempter group
*p < .05, **p < .01, ***p < .001

Among children who did not score as severe on various subscales at baseline, suicide attempt group was associated with ratings of severe impairment at six months on four subscales: School, Home, Moods and Emotions, and Self-harmful Behavior. Previous attempters were approximately two times as likely as never attempters to be rated severe in School Role Performance, Home Role Performance, and Moods and Emotions at six months, and more than three times as likely to be rated severe in Self-harmful Behavior at six months. Repeat attempters were four times as likely to be severely impaired in Home Role Performance at six months, two times as likely to be severely impaired in Moods and Emotions, and over six times as likely to be rated severe in Self-harmful Behavior than never attempters. In addition, first-time attempters were over twice as likely as never attempters to score as severely impaired in Home Role Performance at six months and over three times as likely to be severely impaired in Self-harmful Behavior than never attempters.

Discussion

The results of this study suggest that on average, all youth, regardless of suicide history, show functional improvements at six months. While repeat and previous attempters started out more impaired and remained more impaired at six months, they also showed a greater rate of improvement than first-time and never attempters. Among those who were rated severely impaired at baseline, there were few differences in impairment at six months as a function of suicide group. Among youth who did not score as severely impaired at baseline, those who had made suicide attempts were more likely than other youth to be rated severe across a number of life domains at six months.

A significant portion of children who made suicide attempts did not present with severe functional impairment, and these children were more likely than others to manifest severe impairment at six months, especially in relation to self-harmful behavior. An immediate implication is that clinicians should maintain close watch over all children who have exhibited suicidal behavior regardless of their apparent functioning and observed propensity for self-harm.

This finding raises questions concerning why these children manifest impairment later in the treatment cycle. One interpretation is that, relative to other children, problems associated with suicidal youth are not evident at intake. Children who have made suicide attempts may be less likely to provide accurate information about problems. As a consequence, their treatment plans may not address concerns that manifest only over time. Clinicians may wish to question and observe these youth more extensively than would otherwise be warranted. A process of regular reassessment and revision of service plans may be an important part of caring for children who have made suicide attempts. Another interpretation is that these children do not experience the same treatment benefits as other children, in which case additional research is needed on effective treatments for these youth.

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Examining Factors that Predict Improvement in a System of Care Over Time

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Introduction

Although some researchers have suggested that participation in systems of care is associated with improved outcomes across several domains (e.g., CMHS, 1998; 1999), little is known about whether the services provided within systems of care are equally effective for all children with serious emotional disturbances. Of particular interest to policymakers, program administrators, and other stakeholders, is research that can predict whether certain subgroups of children will benefit most from specific service configurations within a system of care. This study examined characteristics that might differentiate young people served in a system of care whose level of functioning improved over time from those children whose functioning stayed the same or got worse. The setting for this study, the Dawn Project, has been previously described in the literature (Anderson, McIntyre, Rotto, & Robertson, 2002; Russell, Rotto, & Matthews, 1999).

Methodology

Analytic Strategies

Data for these analyses came from the Dawn Project's computerized information management system. Data were compiled and cleaned by project assistants who are part of a team conducting an external evaluation of the Dawn Project. Data analyses occurred in two stages: first, changes in clinical functioning occurring between the time children enrolled in the Dawn Project and after six months of involvement were examined with paired means *t*-tests, using SPSS (SPSS, 2002). Second, STATA (StataCorp, 2003) was used to conduct multinomial logistic regression analyses to examine the influence that a series of predictor variables had on whether Dawn Project participants' functioning improved, remained unchanged or decreased over time.

Dependant Variable

To investigate the impact that the Dawn Project has on the functioning of the young people who participate, changes in total mean Child and Adolescent Functional Assessment Scale (CAFAS; Hodges, 1996) scores were examined between enrollment in the Dawn Project and then at six months of participation. The Dawn Project uses the CAFAS to assess the degree to which problems are disruptive to functioning for the children participating in Dawn. Service coordinators describe and rate each of the children on their caseload at enrollment and at six-month intervals thereafter until disenrollment. The outcome variable, change over time, was reduced to three levels—children whose functional impairment: (a) improved, (b) stayed the same, or (c) declined.

Independent Variables

Predictor variables included demographic information (gender, race, and age at enrollment), number of presenting problems at enrollment, DSM diagnosis at enrollment, living arrangement at enrollment, Medicaid eligibility at enrollment, and referral source to the Dawn Project. Race was coded as either being Caucasian or not Caucasian. Living arrangement at enrollment into the Dawn Project indicated whether a child was living in: (a) the home of a family member, (b) a foster care placement, or (c) a residential setting. Presenting problems denoted the aggregate number of problem indicators, out of a

possible total of 16 that were verified by a child's service coordinator at enrollment. Presenting problems included, for example, abuse, neglect, school behavior, substance abuse, involvement with the law, etc. It is generally assumed that higher numbers of presenting problems at enrollment indicate a greater need for intervention.

Youth also presented a variety of DSM diagnoses at the time of enrollment. For this study, diagnoses were recoded into one of the following groups: depression, anxiety-stress related, ADD, behavior challenges (without ADD) and "other," which was a catchall category that included diagnoses for fewer than five participants (e.g., cognitive challenges). Medicaid eligibility was coded as either being eligible or not. Referrals to the Dawn Project were coded to indicate whether a participant had been referred to the Dawn Project from: (a) child welfare, (b) juvenile probation, (c) special education, or (d) from one of the pilot programs created to provide services to several additional populations of Marion County children, including those in psychiatric hospitals or in the Correctional Department.

Description of the Sample

The sample for this study includes 188 Dawn participants who had data available for this study, including CAFAS scores at both enrollment and six-months. This sample was drawn from the total Dawn Project population ($n = 467$) as of February 2002. The demographic profile of the total population indicates that approximately 65% of the group is male ($n = 302$) and that this group of males is comprised of the following: 56% have indicated that they are African American, biracial, or belong to another minority group ($n = 169$), and 44 % are Caucasian ($n = 133$). Among females ($n = 165$), 59% are African American, biracial or from another minority group ($n = 97$), and 41% are Caucasian ($n = 68$). Approximately half of the total group was in an out-of-home placement prior to or upon enrollment. The average age at enrollment is slightly less than 13 years.

In the sample for this study ($N = 188$), the mean enrollment age is 13.24 years, almost 64% of the group is male, and 53% is either African-American or biracial. Further, at enrollment, the majority of participants (60%) were living in a family home or the home of a relative; 14% were living in a foster home or therapeutic foster home; 6% were in a group home; and 14% were in a residential treatment center or other inpatient facility. To ensure our analyses were conducted with representative samples, participants who had CAFAS data available at enrollment and six months were compared to participants who did not. No significant differences were found between those with ($N = 188$) and without scores available ($n = 274$) on demographic characteristics, including age, ethnicity, and gender.

Findings

Repeated Measures Results

At enrollment, the mean total CAFAS score was 95.45 for the study sample ($N = 188$) and at six months, the mean score had decreased to 70.83. This is a clinically significant reduction (i.e., 20 or more points) and is statistically significant using a paired t -test ($t(187) = 7.71, p < .001$).

Subgroups

A review of the changes in total mean CAFAS scores that occurred over time indicates that roughly two-thirds (69.1%; $n = 130$) of the sample were rated as demonstrating clinically significant improvement in overall functioning during the first six months in Dawn, i.e., scores decreased by 20 or more points. The remainder of the sample included those with CAFAS scores that stayed the same (9.0%; $n = 17$); i.e., scores did not change in either direction by 20 or more points, and those with scores that increased (21.8%; $n = 41$) by 20 or more points; i.e., functional impairments rated as clinically more severe than what had been reported at enrollment.

Multinomial Regression Results

In this stage, the outcome variable (i.e., change in average CAFAS score over time) was trichotomized into three groups: (a) improved, (b) unchanged, and (c) declined, to examine the degree to which the three subgroups could be differentiated by variables of interests (i.e., demographic information, number of presenting problems, DSM diagnosis, living arrangement, Medicaid eligibility, and referral source). Findings indicated that age at enrollment was the only statistically significant variable to predict improvement over time (see Table 1). To gain further confidence in this finding, we dichotomized the CAFAS scores in two different ways, each time rerunning the analysis: first, we created two groups, score improved, score did not improve; second, we created two groups, score decreased, score did not decrease. In both analyses, age continued to be the only significant predictor of change over time.

We also examined the predicted probability (Long, 1997) of being in one of the three groups (i.e., improved, stayed the same, got worse) as a function of age at enrollment (see Table 2). Findings indicate that the chance of a six year old improving during the first six months in the system of care is over 90%, while a 16 year old has less than a 60% chance of improvement. Conversely, 16 year olds have an almost 30% chance of getting worse, whereas this chance is only 5% for children six years old.

Discussion

Similar to other research findings from the Dawn Project system of care, we found significant improvements in functioning over time using the CAFAS, and also found that the percentage of participants whose functioning either remains the same or decreases over time is about 30% (Anderson, Wright, Kooreman, Mohr, & Russell, 2003). In prior work, however, it was not clear what distinguished children who improved over time from those who did not. In this study, the younger the age of the child at enrollment, the more likely he or she was to improve over time. Such findings support calls for earlier intervention in the lives of children with emotional and behavioral needs. Moreover, knowing whether older children would respond better to substantively different service configurations than those that are effective with younger children would help providers better align interventions with both immediate and longer term needs. Future studies should attempt to identify additional factors that predict system of care success so that this information can be used to improve practices in ways that have real impacts on children with serious emotional disturbances and their families.

Table 1
Summary of Ordinal Logistic Regression of Change in Functioning Over Time (got better, stayed the same, got worse)

| Predictor Variable | B | SE B | Z |
|---|-------|------|--------|
| Total number of presenting risk factors at enrollment | .03 | .11 | .22 |
| Age at enrollment | -.20 | .07 | -2.66* |
| Race (Caucasian, not Caucasian) | -.44 | .35 | -1.28 |
| Sex (male, not male) | -.08 | .38 | -.21 |
| Living arrangement at enrollment ¹ | | | |
| Foster | -.06 | .48 | -.12 |
| Residential | .10 | .52 | .20 |
| Medicaid Eligibility (yes, no) | -1.86 | 1.12 | -1.67 |
| DSM Diagnosis ² | | | |
| Depression | -.47 | .45 | -1.06 |
| Anxiety-Stress | -.57 | .58 | -.98 |
| ADD | -.93 | .45 | -2.07 |
| Referral Source ³ | | | |
| Pilot Projects | -.45 | .57 | -.78 |
| Special Education | .90 | .71 | 1.27 |
| Juvenile Probation | -.06 | .39 | -.16 |

¹the comparison group is living at home;

²the comparison group is a behavior-related diagnosis (without ADD);

³the comparison group is child welfare;

* $p < .05$.

Table 2
Predicted Probabilities of Group Membership at Given Ages

| Age at Enrollment | Predicted Probability of Functional Change Over Time | | |
|-------------------|--|-----------------|----------|
| | Improved | Stayed the same | Declined |
| 6 | .91 | .03 | .05 |
| 8 | .87 | .05 | .09 |
| 10 | .83 | .06 | .11 |
| 12 | .76 | .08 | .15 |
| 14 | .68 | .10 | .22 |
| 16 | .59 | .12 | .29 |

Note. Percentages that do not add up to 100 are due to rounding.

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Expenditures in a System of Care: Relationships Between Services and Outcomes

**Jeffrey A. Anderson
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Introduction

Findings from both national (e.g., Center for Mental Health Services, 1998) and local (e.g., Walwirth, Sharp, Zuber, & Leaf, 2001) evaluation efforts of systems of care have started appearing in the research literature and a few studies have attempted to understand service usage or expenditures in systems of care. On the whole, however, researchers have not examined the cost effectiveness of system-of-care approaches, nor have expenditure and service patterns been clearly articulated (Foster, Kelsch, Kamradt, Sosna, & Yang, 2001). The purpose of this paper is to describe the funding structures and expenditure patterns of a system of care called the Dawn Project and to examine: (a) how dollars are spent over time in a system of care, and (b) whether certain configurations of expenditures predict improvement in functioning over time.

Methods

The setting for this study, the Dawn Project, has been previously described in the literature (Anderson, 2000; Russell, Rotto, & Matthews, 1999). Briefly, the Dawn Project integrates system-of-care principles (Stroul & Friedman, 1986) into a care management environment, adhering to a case rate of \$4,256.00 per participant, per month.

Data Capture Mechanisms

Cost data for this study were collected from the Dawn Project's software system, The Clinical Manager (TCM; Clinical Data Solutions, 1998). All cost information is recorded in TCM and monitored by a service coordinator, whose role is to guide and monitor the child and family team. During each month a child is in the project, service coordinators review the team's service plan and work with the team to determine which services will be required in the upcoming month. The coordinator then enters these services into TCM as authorized services. A typical service plan will include four to five services authorized for the coming month (e.g., 20 days of residential treatment, 4 hours of family therapy, one month of service coordination, and \$200 for discretionary needs). In this scenario, the child is in residential treatment for most of the month, the family is working with a therapist to support preparation for the child's return home, and the team decides to purchase mechanical tools (with discretionary funds) to help a parent obtain employment.

Data Organization

The Dawn Project has developed a broad array of services in order to support the diverse needs of families in an individualized manner. Currently, there are 75 different services available to child and family teams. All services are identified with a numeric code, a description, unit of measure, and a cost. Coding the services provides a standard mechanism for classifying activities, while recording that activity in a database allows for summarization and monitoring.

To more efficiently monitor service delivery, service codes are collapsed into seven cost categories: Medical Services, Respite Services, Behavioral Services, Service Coordination, Placement Services, Mentoring, and Discretionary Spending, defined as follows. Medical services include those services traditionally provided by the physical health system. Respite care includes short-term arrangements

in which children spend time away from the home to provide families time away from childcare responsibilities. Behavioral services are those typically associated with mental health treatment such as individual therapy, family therapy, group therapy, crisis counseling, and others. Service coordination costs include service coordination and case management services. Placement costs involve relatively long-term living arrangements, including residential treatment, therapeutic foster care, foster care, group home, relative placement, shelter care, and supported independent living. Mentoring services are one-on-one, non-clinical interactions between provider and child and can include a focus on education, tutoring, parenting, supported employment, recreation, social networks, and others. Discretionary funds are costs not covered by any traditional payment source.

Data Aggregation and Analyses Strategies

To create the dataset for this study, costs from TCM were summed for each participant and each service category, on a monthly basis for 15 months. Data analyses occurred in the following stages. First, changes in clinical functioning occurring between the time children enrolled in the Dawn Project and after 12 months of involvement were examined with paired means *t*-tests. Next, total expenditures by service category and by month were aggregated to visually inspect how expenditures change over time. Finally, the impact that services had on changes in functioning over time was examined by regressing total expenditures in six of the cost categories onto residual change scores.

Study Variables

Dependant variable. Changes in functioning over time were obtained from the Child and Adolescent Functional Assessment Scale (CAFAS; Hodges, 1996) at two points in time: enrollment and one year after enrollment. The Dawn Project administers the CAFAS at enrollment and at six-month intervals thereafter until disenrollment. Change in functioning scores were created by regressing enrollment CAFAS total scores onto total scores at one year, creating a residual score, i.e., 12 month functioning scores that had the influence of enrollment scores removed.

Independent variables. Six of the seven cost categories (Respite Services, Behavioral Services, Service Coordination, Placement Services, Mentoring, and Discretionary Spending) comprise the predictor variables for this study. The category Medical Services was excluded from this study because it accounted for less than 1/10th of 1 percent of total expenditures over time.

Description of the sample

The sample for this study includes 156 Dawn participants who had complete data available over 15 months. This sample was drawn from the total Dawn Project population ($n = 467$, February 2002). The demographic profile of the total population indicates that approximately 65% of the group is male ($n = 302$) and, of this group, 56% is African American, biracial, or from another minority group ($n = 169$), and 44 % is Caucasian ($n = 133$). Among females ($n = 165$), 59% are African American, biracial or from another minority group ($n = 97$), and 41% are Caucasian ($n = 68$). The average age at the time of enrollment in the Dawn Project is 13 years.

In the sample for this study ($N = 156$), the mean age at enrollment is 12.94 years ($SD = 2.47$), 64% of the group is male, and 52% is either African-American or biracial. Participants who had CAFAS data available at enrollment and one year ($N = 156$) were compared to the total Dawn population ($n = 467$) to ensure analyses were conducted with representative samples. No significant differences were found on demographics characteristics, including age, ethnicity, and gender.

Findings

Changes in functioning over time. Initially, we examined changes in functioning that occurred over a 12-month period in the Dawn Project. At enrollment, the mean total CAFAS score was 95.40 ($SD = 43.74$) for the group of 156 Dawn youth. At 12 months, the mean score for this group had

decreased to 64.42 ($SD = 39.33$). This is a clinically significant reduction (i.e., 20 or more points) in impairment and is statistically significant using a paired t -test ($t_{(156)} = 7.85, p < .001$).

Expenditures over time. We aggregated the total dollars spent in each of the service categories (Respite Services, Behavioral Services, Service Coordination, Placement Services, Mentoring, and Discretionary Spending). Table 1 presents the percentages of costs within each of the seven categories by month and the overall 15-month averages. By comparing the overall averages with monthly percentages, it appears that most of substantial changes in percentages that occur, take place during the first several months. The Placement category, which has the highest percentage of dollars across time, decreases during the first three months. The opposite trend occurs in the Mentoring category. On the other hand, the Behavioral Health and Respite categories appear to increase over the 15-month period explored in this study. The Coordination, and Discretionary categories appear to remain fairly consistent over time.

Table 1
Total Percentage of Dollars Spent in Each Cost Category Aggregated by Months One through Fifteen

| Variable | Months | | | | | | | | | | | | | | | Average |
|---------------|--------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | |
| Placement | 84 | 74 | 68 | 68 | 64 | 65 | 66 | 66 | 67 | 64 | 64 | 63 | 64 | 65 | 64 | 67 |
| Mentoring | 4 | 11 | 15 | 17 | 18 | 17 | 16 | 15 | 17 | 17 | 17 | 15 | 14 | 15 | 15 | 15 |
| Behavioral | 4 | 7 | 7 | 7 | 9 | 10 | 10 | 10 | 9 | 11 | 10 | 11 | 10 | 11 | 12 | 9 |
| Respite | 2 | 2 | 4 | 3 | 4 | 4 | 3 | 3 | 2 | 2 | 4 | 4 | 5 | 4 | 6 | 3 |
| Coordination | 4 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 2 | 2 | 3 |
| Discretionary | 2 | 3 | 3 | 2 | 3 | 2 | 4 | 3 | 3 | 2 | 3 | 3 | 4 | 3 | 2 | 3 |
| Medical | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Note. Percentages that do not add up to 100 are due to rounding. Average is the average percentage in that specific category over the 15 months.

Table 2
Summary of the Multiple Regression Analysis for Variables Predicting Time 2 CAFAS Residual Scores ($N = 156$)

| Variable | B | SE B | B |
|-------------------|-----------|------|-------|
| Placement | 3.4 E-03 | .003 | .101 |
| Mentoring | 1.5 E-02 | .008 | .160 |
| Behavioral Health | 2.3 E-02 | .018 | .118 |
| Respite | 1.2 E-02 | .016 | .064 |
| Coordination | -1.3 E-02 | .032 | -.036 |
| Discretionary | -9.7 E-02 | .058 | -.163 |

Note. $R^2 = .043$; * $p < .05$.

Regression analyses. Next, we used OLS linear regression to examine the relationship between types and amounts of services and changes in functioning over time. Six service categories were entered as predictor variables and the twelve-month residual change scores (i.e., with the influence of enrollment scores removed) provided the dependent variable. Findings indicated that none of the service categories predicted functional change over time (see Table 2).

Discussion

The finding that specific service categories did not predict improvement over time was not unexpected because a central purpose of the Dawn Project is to braid funding streams. This occurs within the child and family team process in which a “service bundle” is tailored to individual strengths and needs of each family. Moreover, the emphasis is not on the provision of traditional services, but on the development and strengthening of natural supports available to the family. On the other hand, we found the changes in expenditures over time to be quite interesting. Upon enrollment in the Dawn Project, almost 85% of all costs are incurred in the Placement category, while much smaller portions of the total expenditures occur in the Mentoring, Respite, and Behavioral Health categories. We speculate that this high degree of utilization reflects the traditional service system’s propensity to place children in more restrictive settings, such as residential treatment, and to use smaller levels of services that are

much more community-based in nature. Moreover, placement costs appear to get smaller over time, with a corresponding growth in the use of community-based services. However, while intriguing, such speculation requires further examination. Forthcoming studies are investigating the degree to which cost expenditures shift from restrictive placements to community-based services and whether such reallocations are significant.

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A Parallel Processes Growth Mixture Model of Service Utilization and Clinical Outcomes in Systems of Care

Robert L. Stephens
Qinghong Liao

Introduction

The present study examines a general growth mixture model of change in service utilization and clinical symptomatology of children with serious emotional disturbance served in systems of care funded through the Comprehensive Community Mental Health Services for Children and Their Families Program. General growth mixture modeling (GGMM) uses both continuous and categorical latent variables to model individual variation in change trajectories. Intercepts and slopes of these trajectories are modeled as random effects, and latent trajectory classes capture fundamental differences in development. Thus, GGMM identifies different subgroups, or classes, of individuals based on differences in patterns of change over time (Muthén, 2001). If service utilization and clinical outcomes are viewed as two separate parallel processes, heterogeneity in change trajectories for the two latent growth curves can be examined in a parallel process growth mixture model (Muthén & Muthén, 1998).

The current study addresses the following research questions: Is there heterogeneity in trajectories of service utilization over time among children and families served in systems of care? Is there heterogeneity in clinical outcome trajectories among children and families served in systems of care? If service utilization and outcome trajectories over time are considered as parallel processes, are these simultaneous trajectories heterogeneous among children and families served in systems of care?

Methods

Participants

The participants were children five to 18 years old ($N = 2,523$) and their families enrolled in the longitudinal outcome study of the national evaluation of the Comprehensive Community Mental Health Services for Children and Their Families Program. The mean age of the children was 12.2 years ($SD = 3.06$ years), 69% were male, 62% were white, non-Hispanic, and 45% had an annual family income below \$15,000 per year.

Service data

Service utilization was assessed using the Multi-Sector Service Contacts Questionnaire (MSSC; Center for Mental Health Services, in review) which was administered to the caregiver of each child six months after entry into services and then every six months up to 36 months. The MSSC is a caregiver report measure of mental health service utilization during the past six months for 25 different types of services. For each service the respondent is asked whether their child received the service. If the service was received, the respondent is asked to report the amount and duration of the service over the past six months. From these data, the total number of different types of services received by each child was calculated, which was used as the service utilization measure in the analyses.

Outcome measures

Change in emotional and behavioral symptoms for children with serious emotional disturbance was assessed with the Child Behavior Checklist (CBCL; Achenbach, 1991), which was administered to the caregiver of each child at entry into services and then every six months up to 36 months post-entry. Externalizing Problems T-scores were used as the clinical outcomes measure in the analyses.

Analysis strategy

The analysis included only data from baseline through the 18-month follow-up data collection. All analyses were conducted using Mplus (version 2.12) software (Muthén & Muthén, 1998; 2002).

Initial analysis involved conducting latent growth curve (LGC) analyses of service utilization and clinical outcomes separately. The model building strategy involved the comparison of model fit indices for a series of nested polynomial models that included intercept only, intercept + linear slope, and intercept + linear slope + quadratic slope models (the latter for CBCL Externalizing Problems only). General growth mixture models (GGMMs) were conducted using the best-fitting LGC model as the baseline model and comparing model fit indices for subsequent models with increasing numbers of latent classes to represent heterogeneity in change trajectories for number of different types of services and Externalizing Problems scores separately. As these models are not nested, selection of the best-fitting model was based on information criteria fit indices that included the Akaike Information Criterion (AIC), the Bayesian Information Criterion (BIC), and Sample Size Adjusted Bayesian Information Criterion (SSABIC). Finally, a parallel processes general growth mixture model was used to investigate variability in trajectories of change in service use and clinical outcomes simultaneously. Once different classes of individual growth patterns were identified, the influence of covariates on latent growth class membership was examined.

Results

Results of the LGC modeling for number of different types of services indicated that an intercept + linear slope model fit the data best, $\chi^2(1) = 0.2874$, $p > .05$. The likelihood ratio test for change in χ^2 comparing the intercept only model to the intercept + linear slope model indicated significantly better fit for the latter model, $\Delta \chi^2(3) = 121.56$, $p < .0001$. Results of the GGMM for number of different types of services provided inconclusive evidence to discriminate between the 3-class and 4-class solutions. The BIC indicated slightly worse fit for the 4-class solution while the SSABIC indicated a better fit for the 4-class solution. Examination of estimated means from the two models suggested the addition of the fourth latent class refined the classification even though classification accuracy, as measured by the entropy statistic, was slightly less. The predicted values for mean number of different types of services for each of the four latent classes are depicted in Figure 1.

A similar series of analyses was conducted for CBCL Externalizing Problems T-scores. Results of the LGC modeling for Externalizing Problems indicated the intercept + linear slope + quadratic slope model was the best-fitting model, $\chi^2(1) = 4.25$, $p < .05$. The likelihood ratio test for change in χ^2 comparing the intercept + linear slope model to the intercept + linear slope + quadratic slope model indicated the latter model had significantly better fit, $\Delta \chi^2(4) = 58.17$, $p < .001$. Results of GGMM for Externalizing Problems provided evidence supporting a four-class solution, and predicted values the four classes are displayed in Figure 2.

Finally, a similar series of analyses was conducted considering the latent growth curves for number of different types of services and Externalizing Problems as parallel processes. Results of the prior LGC

Figure 1
Estimated Mean Number of Different Types of Services in Past 6 Months: Four-Class Solution

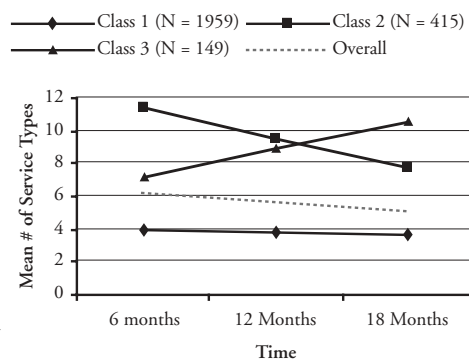
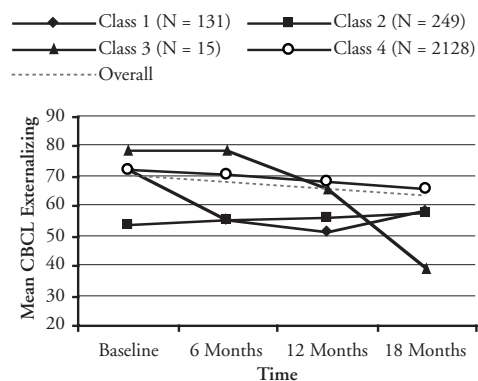


Figure 2
Estimated Mean CBCL Externalizing Problems T-scores: Four-Class Solution



modeling for the two separate LGCs served as the baseline models for the parallel process GGMM. Results of the GGMM for the parallel processes provided evidence supporting a 2-class solution. The predicted values for each of the latent classes are depicted in Figure 3.

Correlations among the latent variables were examined to test the relationship between the two parallel processes in each of the latent classes. For both Class 1 and Class 2, the estimated correlation of the latent intercept for Externalizing Problems scores with the latent intercept for the number of different types of services was positive and statistically significant indicating that higher levels of symptomatology at entry into services was associated with a larger number of different types of services ($r = .147$ for both classes).

Only for Class 1 was there a significant correlation of the latent linear ($r = .298$) and quadratic ($r = -.326$) slopes for change in Externalizing Problems with the latent intercept for number of different services. These findings imply that children with a greater likelihood of membership in Class 1 who had slower rates of initial improvement and more rapid later improvement used a larger number of different services in the first six months after entry.

The next step in the analysis involved modeling the influence of the following covariates on class membership: gender (1 = male, 0 = female), age (continuous), race (1 = white, 0 = non-white), and Medicaid eligibility (1 = eligible, 0 = not eligible). Inclusion of the covariates in the model reduced the number of children in the analysis by 265 (from 2,523 to 2,258) due to listwise deletion of cases without complete data on all covariates. The combined influence of the reduced sample size and the addition of the covariates changed the characteristics of the classes and resulted in a change in the relationship between the two parallel processes as depicted in Figure 4. Service use from entry to six months more closely mirrored initial severity of externalizing problems.

Figure 3
Estimated Mean Number of Different Services in Past 6 Months and Associated CBCL Externalizing Problems
T-scores: PPGMM

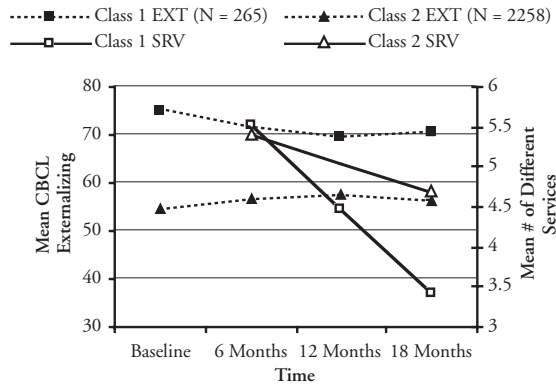
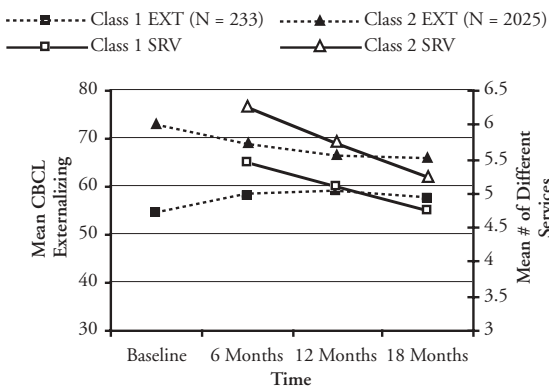


Figure 4
Estimated Mean Number of Different Services in Past 6 Months and Associated CBCL Externalizing Problems
T-scores: PPGMM with Covariates



The influence of the covariates on class membership was examined by regressing class membership on each covariate with Class 2 as the referent class. Only age and race of the child significantly predicted class membership. For every one year increase in age, probability of membership in Class 1 relative to Class 2 increased 1.116 times ($OR = 1.116, p < .01$). In addition, white children were approximately half as likely to belong to Class 1 relative to Class 2 ($OR = 0.504, p < .001$). In summary, Class 1 was more likely to be comprised of children with fewer symptoms at entry and who used fewer different types of services than Class 2. In addition, Class 1 was also more likely to be comprised of children who were older and non-white.

Discussion

The findings indicate that, regardless of the initial level of symptoms, children and families served in systems of care experienced a fairly large number of different services. Results of the present investigation also provided evidence that classes, or subgroups, of children exist who vary significantly in the way that the number of services they use changes over time. The results also suggest that classes, or subgroups, of children exist who vary in the way their externalizing problems change over time. This heterogeneity in change trajectories for a number of different services and externalizing problems was observed when the variables were examined separately. When considered as parallel processes, fewer classes were obtained suggesting that less heterogeneity exists for the parallel processes model. This finding suggests that the greater heterogeneity observed in the trajectories separately did not contribute to heterogeneity of trajectories modeled simultaneously. Class membership was predicted by age and race/ethnicity. When the influence of covariates was considered, children with higher initial levels of symptoms received a larger number of different types of services than children with lower levels. Greater reduction in number of services observed for children with higher symptom scores could reflect an increase in intensity of a more focused array of services, but this possibility remains to be tested in subsequent analyses.

A number of limitations to the current investigation should be noted. First, only three time points were available for modeling the change in the number of different types of services which limits the flexibility of modeling. Second, operationalization of service use as the number of different types of services does not capture change in amount, duration or intensity of services. Third, the model conceptualizes service use and clinical outcomes as parallel processes rather than sequential process. Future research should address these limitations through the inclusion of additional data collection waves in the analysis of service use. In addition, a measure of service amount or intensity should be examined to understand how a reduction in number of different services impacts the remaining array of services.

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Symposium

Children & Adolescents of Various Race, Ethnic and Gender Subgroups Served in System-of-Care Settings: Services, Clinical Characteristics, and Lifetime Experiences

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Symposium Introduction

Christine Walrath

The Comprehensive Community Mental Health Services for Children and Their Families Program began funding communities in 1993, and to date has funded 85 communities in 46 states and two territories of the United States. Over 50,000 children have been referred into service under this program making it the largest children's mental health services initiative to date. The children served by the Comprehensive Community Mental Health Services for Children and Their Families Program are culturally diverse in their backgrounds and characteristics. The system-of-care philosophy includes among its goals the development and provision of individually tailored and culturally appropriate services. In an effort to reach these goals, the characteristics of children from various cultural subgroups must be understood and utilized to inform service planning. This symposium includes three papers that have analyzed data from the national evaluation of the Comprehensive Community Mental Health Services for Children and Their Families Program to explore the characteristics of children from various cultural subgroups referred for service. The cultural subgroups include race and ethnicity, and gender; the child characteristics include service experiences, clinical indicators, and lifetime exposures and experiences.

An Examination of Ethnicity and Gender Differences in Primary Diagnosis and Comorbidity for Children and Adolescents in Systems of Care

Ly Nguyen, Girlyn Arganza, Larke Huang, & Qinghong Liao

Acknowledgements: This research was funded by the W.K. Kellogg Foundation Scholars in Health Disparities Program.

Introduction

Although research on mental health problems among ethnic minority adults has grown in recent years, the mental health status of ethnic minority children remains a little-studied topic (Gibbs & Huang, 1989). The present study seeks to contribute to this literature by exploring primary diagnosis and comorbidity as a function of ethnic background and gender among children and adolescents participating in the national evaluation of the Comprehensive Community Mental Health Services for Children and Their Families Program. This federal program is a multi-site initiative that provides grants to states, communities, territories, and Native American tribes to develop community-based mental health services for children with serious emotional disturbances and their families. The national evaluation of this program, conducted by ORC Macro International, included comprehensive data collected from the initial 22 grant sites funded in 1993 and 1994 (Manteuffel, Stephens, & Santiago, 2002). The intent of the national effort is to analyze descriptive and outcome data on children served in systems of care. The findings from this study should be used to inform the assessment and treatment of ethnic minority youth and the development of children's mental health research and policy.

Chair

Christine Walrath

Authors

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Method

The present study is an analysis of data collected from ten sites in California and Hawaii. These sites capture the best representation of the four major racial and ethnic groups—Hispanics, Blacks, Asian Americans, and Native Americans—in the United States. Descriptive analyses were conducted on data gathered at intake. Using logistic regression, separate analyses of primary diagnosis and comorbidity as a function of ethnicity and gender were performed. Analyses of primary diagnosis were performed only on those diagnoses with the highest prevalence rates: conduct-related disorders, Attention Deficit-Hyperactive Disorder (ADHD), depression/dysthymia, anxiety, adjustment disorder, and diagnosis deferred. The existence of each of these diagnoses and the existence of comorbidity were coded as binary variables (0 = *no*, 1 = *yes*). Descriptive data collected on children and families included age, gender, ethnicity, and diagnosis.

Results

Descriptive Statistics

Demographics. A total of 35,342 children and adolescents from sites in California and Hawaii were sampled. Of this sample, 50.9% were identified as White, 26% as Hispanic, 12.7% as Black, 3% as Asian American, 1.4% as Native Hawaiian, and 1.1% as Native American. Among the children for whom data were available, ages ranged from less than one year to 23 years. The mean age was 12.4 years, with 7.7% five years and under, 27% between six and 12 years, 37.9% between 12 and 16 years, and 27.4% 16 years and older. In this sample, there was a higher percentage of males (60.5%) than females.

Primary Diagnosis and Comorbidity. Of the 78.8% of the sample for whom a primary diagnosis was reported ($N = 27,843$), 39.3% of youth displayed a disruptive behavior disorder (i.e., 28.7% conduct-related disorder, 10.6% ADHD); 27.9% were diagnosed with depression or dysthymia, 7.8% with an anxiety disorder, and 6.6% with an adjustment disorder. The remaining diagnostic categories included psychosis, 1.9%; substance use, 2.1%; developmental disorders or autism, 1.2%; learning disabilities, 0.6%; abuse or neglect, 0.36%; and other diagnoses such as eating, somatic, or speech disorders, phobia, enuresis, or encopresis, 1.2%. Primary diagnoses were deferred for 11.1% of children.

Comorbidity was defined in this sample as youth with different primary and secondary diagnoses (excluding those with a deferred diagnosis on Axis I and II). In the present sample, 70% ($n = 24,746$) were coded for the presence or absence of co-occurring disorders and 31.6% ($n = 7,818$) were given a diagnosis of comorbidity. Twenty percent of those with a diagnosis of comorbidity ($n = 1,604$) displayed comorbidity in which the secondary diagnosis was substance abuse, and 15% ($n = 1,170$) displayed a secondary diagnosis of a conduct-related disorder.

Predicting Primary Diagnosis and Comorbidity

Ethnicity. Analyses of primary diagnosis as a function of ethnic group background revealed that Blacks, as compared to Whites, were more likely to have a diagnosis deferred ($OR = 1.9, p < .001$), and were also less likely to have diagnoses of ADHD ($OR = .8, p < .001$) and depression or dysthymia ($OR = .6, p < .001$). Hispanics, as compared to Whites, were more likely to have diagnosis deferred ($OR = 1.3, p < .001$) and conduct-related disorder ($OR = 1.3, p < .001$), and were less likely to have diagnoses of ADHD ($OR = .6, p < .001$) and depression or dysthymia ($OR = .8, p < .001$). Native Americans, as compared to Whites, were more likely to have diagnosis deferred ($OR = 1.4, p < .05$) and conduct-related disorder ($OR = 1.7, p < .001$), and were less likely to have a diagnosis of depression or dysthymia ($OR = .6, p < .001$). Asian Americans, as compared to Whites, were more likely to have diagnosis deferred ($OR = 1.6, p < .001$) and anxiety disorder ($OR = 1.8, p < .001$), and were less likely to have diagnoses of ADHD ($OR = .4, p < .001$) and depression or dysthymia ($OR = .6, p < .001$). Native Hawaiian children were more likely to have a diagnosis of conduct-related disorder ($OR = 3.0, p < .001$).

Comparing the existence of comorbidity among Whites to each of the five ethnic minority groups, significant differences exist with three ethnic groups. Blacks ($OR = .9, p < .01$) and Asian Americans ($OR = .7, p < .001$) were significantly less likely to display comorbidity. However, Native Hawaiians were significantly more likely to display comorbidity ($OR = 3.1, p < .001$) compared to Whites. Examining the subset of youth diagnosed with comorbidity and either a secondary diagnosis of substance abuse or a conduct-related disorder, ethnic minority youth were significantly more likely to have a secondary diagnosis of substance abuse compared to Whites ($OR = 1.5, p < .001$).

Gender. Analyses of gender and diagnosis revealed that females, as compared to males, were more likely to have a diagnosis of anxiety ($OR = 1.7, p < .001$), more likely to have a diagnosis of depression/dysthymia ($OR = 1.8, p < .001$), and more likely to have a diagnosis deferred ($OR = 1.6, p < .001$). Females were less likely to have diagnoses of ADHD ($OR = .2, p < .001$), and less likely to have diagnoses of conduct-related disorders ($OR = .5, p < .001$). In terms of comorbidity, females were significantly less likely to display comorbidity when compared to males in the sample ($OR = .8, p < .001$). Of the youth with comorbidity, females were significantly less likely to have either substance abuse ($OR = .8, p < .001$) or a conduct-related disorder as their secondary diagnosis ($OR = .7, p < .001$).

Discussion

Differences in diagnosis and comorbidity by gender and ethnic group were observed. As compared to White children, Asian-American children were more likely to have a diagnosis of anxiety, and Black, Hispanic and Asian-American children were less likely to have a diagnosis of ADHD. Hispanic, Native American, and Native Hawaiian children were more likely than White children to have a diagnosis of conduct-related disorder. All ethnic minority children were less likely to have a diagnosis of depression/dysthymia and more likely to have a diagnosis deferred as compared to White children. Further examination of the data also reveals that in the present sample, Native Hawaiians were more likely than Whites to have co-occurring disorders. In comparing Whites to non-Whites diagnosed with comorbidity, ethnic minority youth were more likely to have a secondary diagnosis of substance abuse. While this study may have limited generalizability because it is based on data from California and Hawaii grant communities, these results suggest the importance of cultural variables in the manifestation and diagnosis of behavior problems. These findings also underscore the importance of disaggregating data on ethnicity when possible for ethnic minority youth. Cultural variables should be carefully explored in assessment and treatment, and cultural considerations should also be examined in children's mental health research and policy.

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Similarities and Difference Among Children Referred by Juvenile Justice Agencies

Eileen Franco & Robin Soler

Introduction

Approximately one in five youth in the juvenile justice system has a serious mental health disorder (Cocozza & Skowrya, 2000; Office of Juvenile Justice and Delinquency Prevention [OJJDP], 2000). Barriers to providing mental health services to these youth include: (a) confusion of agency responsibility, (b) inadequate screening for mental health problems, (c) lack of mental health programs and staff to deliver services within the juvenile justice system, and, (d) lack of clear lines of funding for services (Cocozza & Skowrya, 2000). In 1997, minority groups represented two-thirds of the youth detained in secure juvenile facilities; however, only one-third of youth nationwide were minorities (Snyder & Sickmund, 1999). Consistent with these figures, Hispanic youth in systems of care were overrepresented among referrals from juvenile justice agencies (Franco & Soler, 2002).

The Center of Mental Health Services (CMHS)'s Comprehensive Community Mental Health Services for Children and Their Families Program, a multi-site Federal program, was initiated in 1993 to address a service gap in children's mental health by funding systems of care for children with serious emotional and behavioral disturbance. Children may be referred to the Comprehensive Community Mental Health Services for Children and Their Families Program from public child serving agencies (i.e., mental health, juvenile justice, education and child welfare), community-based organizations, families, or via self-referral. The current study draws from data collected as part of the national evaluation of this program and examines characteristics of children referred by juvenile justice agencies to determine if there are group differences in their functioning levels and the services they receive.

Methods

Caregivers of all children, and youth who are 11 years and older are interviewed at intake into services and every six months thereafter for up to 36 months as part of the longitudinal outcome study. The intake interview provides baseline information on children's behavioral and emotional strengths and problems, functional status, and involvement in delinquent behaviors. Follow-up interviews collect additional information on the services received.

Sample

According to data collected through March 2002, approximately 21% of the 8,649 children who were referred into service at grant programs funded in 1997-1998 were referred from juvenile justice agencies. These juvenile justice referrals are made up of court and detention center referrals. The racial and ethnic breakdown of youth referred by juvenile justice agencies that participated in the longitudinal outcome study ($n = 606$) is: 34.3% White, 31.5% African American, 17.5% Hispanic, 3.2% American Indian, and 0.8% Asian. and Almost 13% of these youth were characterized as belonging to an "Other" racial or ethnic group. Out of the 606 youth referred by juvenile justice, just over 3% were identified as American Indian/Alaska Native, and less than 1% were identified as Asian; thus, these two groups were not included in the analyses.

Measures

Descriptive data collected on children and families included demographics such as age, gender, family structure, race/ethnicity, educational attainment, and household income. Child social functioning was examined using the Child and Adolescent Functional Assessment Scale (CAFAS; Hodges, 1990), which rates the child's level of functioning in eight life domains. The Child Behavior Checklist (CBCL; Achenbach, 1991; 118 items; $\alpha = .82$ or higher) was used to assess children's emotional and behavioral problems. The Behavioral and Emotional Rating Scale (BERS; Epstein, & Sharma, 1998; 52 items,

$\alpha = .83$) identifies the emotional and behavioral strengths of children. The Delinquency Survey (25 items;) includes 19 questions about the youth's behavior in the community as it relates to contact with law enforcement. The Multi-sector Service Contacts (MSSC) provides standard descriptions for 21 types of services, and records location, frequency, and sequencing of services.

Analysis. First, descriptive information about the youth referred from juvenile justice agencies into the system of care were described using frequencies. Then, ANOVAs were conducted on the functional outcomes of youth referred from juvenile justice to determine whether race, ethnicity, age, gender, or clinical characteristics predicted delinquent behaviors. Last, logistic regressions were run to describe services received by youth of different racial and ethnic backgrounds who were referred to a system of care from juvenile justice.

Results

For those youth referred from juvenile justice and part of the longitudinal outcome study ($n = 606$), mean scores from caregiver reports of youth's functional impairment, emotional and behavioral strengths, and behavioral problems indicated differences across racial and ethnic groups. Hispanic and African-American youth had lower functional impairment ratings on the CAFAS than White youth ($F = 7.187$, $df = 3/419$, $p < .001$). Caregivers of Hispanic and African-American youth also reported fewer internalizing behaviors (i.e., anxiety/depression, somatic complaints, withdrawn) than caregivers of White youth ($F = 5.457$, $df = 3/467$, $p < .001$). Fewer externalizing behaviors (i.e., aggression) were reported by caregivers of Hispanic and African American youth than caregivers of White youth ($F = 6.904$, $df = 3/467$, $p < .001$). Although not significantly different, caregivers of Hispanic and African-American youth reported more behavioral strengths than caregivers of White youth.

Youth self-report of delinquent behaviors provide additional information about youth referred by juvenile justice agencies. Analyses conducted for 19 delinquent behaviors and five types of law enforcement contacts indicated significant differences in the experiences by racial and ethnic group membership (see Table 1). Hispanic youth were more likely than White youth to report engagement in four delinquent behaviors: gang involvement, carrying a weapon, joyriding, and getting (or trying to get) money from someone by threatening them. No significant racial or ethnic differences emerged for other behaviors examined which are more indicative of criminal behavior such as vandalizing property, buying or selling stolen goods, breaking into places to steal, and selling drugs. Lack of group differences in these criminal-like behaviors suggests youth should report contacts with law enforcement at similar rates, regardless of racial and ethnic background. However, Hispanic youth were more likely than White youth to report the following interactions with law enforcement: having been accused of breaking the law, arrested, found guilty of a crime, on probation, and sent to a detention center or jail (see Table 1).

Table 1
Odds Ratios of Delinquent Behaviors Reported by Youth Referred from Juvenile Justice Agencies

| | Gang involvement ($n = 294$) | Carrying a weapon ($n = 294$) | Joyriding ($n = 291$) | Getting or trying to get money from someone by threatening ($n = 294$) | Accused of breaking the law ($n = 294$) | Ever arrested ($n = 293$) | Found guilty of a crime ($n = 292$) | Probation ($n = 293$) | Detention or jail ($n = 293$) |
|------------------|-----------------------------------|------------------------------------|----------------------------|---|--|--------------------------------|--|----------------------------|------------------------------------|
| African-American | 1.489 | .886 | 1.764 | 2.497 | .553 | .954 | 1.050 | 2.235 | 1.035 |
| Hispanic | 3.291 ^c | 2.365 ^b | 2.965 ^b | 3.613 ^a | 2.602 ^a | 6.151 ^b | 2.310 ^a | 8.376 ^c | 8.436 ^c |
| Male | 1.054 | .429 | 1.387 | .621 | 1.293 | 1.277 | .828 | .936 | .799 |
| Age | 1.033 | 1.101 | 1.064 | 1.055 | 1.070 | 1.073 | 1.117 | 1.041 | 1.139 ^a |
| CAFAS | 1.005 | 1.005 | 1.004 | 1.016 | 1.002 | 1.009 ^b | .998 | 1.003 | 1.006 |
| BERS | .997 | .996 | .996 | .997 | 1.003 | 1.001 | 1.003 | 1.012 | 1.003 |

^a $p < .05$, ^b $p < .01$, ^c $p < .001$.

Note: Reference group is non-Hispanic White

Findings presented in Table 2 describe service provision to racial and ethnic minority youth who are referred to systems of care by juvenile justice agencies. White youth were more than four times as likely as African-American youth to receive medication treatment and monitoring and three times as likely to receive family therapy. White youth were nine times as likely as Hispanic youth to receive behavioral or therapeutic aide services and more than six times as likely to receive case management. White youth were also more likely than Hispanic youth to receive individual therapy, recreational services or flexible funds. These service patterns make sense, given differences in level of functional impairment.

Table 2
Predicting Service Utilization by Children Referred from Juvenile Justice: Odds Ratio

| <i>Service Received</i> | <i>Medication treatment and monitoring (n = 154)</i> | <i>Individual therapy (n = 151)</i> | <i>Case management (n = 153)</i> | <i>Family therapy (n = 154)</i> | <i>Behavioral or therapeutic aide (n = 154)</i> | <i>Recreational activities (n = 153)</i> | <i>Flexible funds (n = 152)</i> |
|-------------------------|--|-------------------------------------|----------------------------------|---------------------------------|---|--|---------------------------------|
| African American | 0.241 ^b | 0.177 | 0.399 | 0.316 ^a | 0.401 | 0.406 | 0.308 |
| Hispanic/Latino | 0.665 | 0.192 ^b | 0.147 ^b | 0.550 | 0.111 ^b | 0.173 ^b | 0.333 ^a |
| Gender | 0.684 | 0.568 | 1.752 | 0.636 | 1.213 | 0.538 | 2.016 |
| Age | 0.787 ^b | 0.908 | 0.917 | 0.888 | 1.081 | 0.937 | 0.984 |
| CAFAS | 1.008 ^a | 1.008 | 1.007 | 1.004 | 1.000 | 1.003 | 0.999 |
| BERS | 1.008 | 0.992 | 1.043 ^b | 1.004 | 1.024 | 1.008 | 1.022 |

^a*p* < .05, ^b*p* < .01.

Note: Reference group is non-Hispanic White. No significant racial or ethnic differences were observed for receiving the following services: assessment services, crisis stabilization, family preservation services, group therapy, day treatment, residential therapeutic camp, inpatient hospitalization, residential treatment center, therapeutic group home, therapeutic foster home, Independent living services, transition, family support services, transportation, or respite care.

Discussion

Interagency relationships promoted by systems of care provide opportunities for youth in juvenile justice to receive needed mental health services. However, differences were found in the characteristics of children referred from juvenile justice and disparities were observed in the services these children received. It is unclear if these differences can be attributed to lack of resources, service bias or overall mental health service system limitations. Grant communities have the opportunity to provide mental health services to youth of all racial and ethnic groups who may not typically receive these services because of social and cultural barriers to mental health service receipt and stereotypes that lead to more restrictive placement.

Future studies should explore the potential race and ethnic differences in reason for referral from juvenile justices agencies. For example, youth may be referred because they are in diversion programs or transitioning into the community after a stay in a juvenile justice facility. In addition, the specific needs of youth should be examined to determine if appropriate services are being offered to all youth, regardless of race or ethnicity. Finally, because Hispanic youth in particular are more likely to enter systems of care by way of juvenile justice, examination of help-seeking behaviors of families with children who have severe emotional disturbance of different ethnic and racial groups is needed. Results of these future studies and the current study can be used to improve outreach efforts and provide more culturally competent services.

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Understanding the Lifetime Experiences of Female Offenders Referred for System-Of-Care Services

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Introduction

Two and one-half million juvenile arrests were reported by law enforcement agencies in 1999—27% of which were female (Snyder, 2000). Between 1990 and 1999, as juvenile male arrests for aggravated assault, larceny theft, vandalism and weapons charges declined, female rates increased (Snyder, 2000). In addition, juvenile arrest rates for simple assault and drug abuse violations have increased faster for females than for males while those for robbery, burglary, motor vehicle theft, and runaway have declined more slowly. The majority of juveniles arrested are returned to the community with findings of non-delinquency or community-based dispositions (Stahl, 2001; U.S. Department of Justice, 1998). Furthermore, females tend to receive less restrictive dispositions and placements than males (Poe-Yamagata & Butts, 1996). A large proportion of females involved in the juvenile justice system have histories of life challenges that include, but are not limited to substance use, physical and sexual abuse, exposure to family violence, and school related problems (Acoca, 1999; Fejes-Mendoza, Miller, & Eppler, 1995). In addition, previous research has demonstrated that a large percentage of children involved in the juvenile justice system have mental health problems (Cocozza & Skowrya, 2000). This study uses the domains of risk (i.e., life challenge) presented in recent reports by the National Research Council and Institute for Medicine (2001) and the Surgeon General (US Department of Health and Human Services [USDHHS], 2000) to identify family, child, and school lifetime risk factors reported by females with conviction histories as compared to other service-referred youth using data from the national evaluation of the federally funded Comprehensive Community Mental Health Services for Children and Their Families Program (Center for Mental Health Services [CMHS], 1999).

Methods

Sample and Measures

Current study participants were selected from youth participating in the longitudinal outcome study component of the national evaluation, and had complete data on age, race, gender, ten family risk factors, seven child risk factors, and two school risk factors ($N = 2,220$). Demographic information and history of arrest with conviction were collected either directly from the child's caregiver during an intake assessment or through clinical records. The seven child risk factors (i.e., lifetime history of physical abuse, substance abuse, psychiatric hospitalization, running away, suicide attempt, being sexually abusive, and being sexually abused) and ten family risk factors (i.e., lifetime history of caregiver felony conviction, substance abuse, and psychiatric hospitalization; history of family violence and mental illness; a sibling placed in foster care, and a sibling placed in an institutional setting, current living placement of the youth [in the community versus outside of the community], income level and living instability [one or two lifetime residences versus three or more]) were collected from the youth or caregiver at intake into services. Finally, school performance (i.e., failing [59% performance average and below] versus not failing) and school absence information in the 90 days prior to intake was gathered from school system administrative records or caregiver reports.

Four percent ($n = 88$) of youth in this study are female with a history of conviction, and nine percent ($n = 210$) are male with a conviction history. Females without a conviction history represent 31% of this sample ($n = 677$) and males without a conviction history represent 56% ($n = 1,245$). Males and females with a conviction history tend to be older than those without, and non-Hispanic White youth are most

prevalent across all gender-conviction status groups. Over one-quarter of the youth were referred by a mental health agency (25.2%) with the remaining referred by schools (21.5%), the family (16.7%), child welfare (13.7%), juvenile justice (10.7%), or from elsewhere (12.3%). Interestingly, 50% of convicted youth were referred from sources other than the juvenile justice system.

Analyses

Multinomial logistic regression was used for the four groups of youth, comparing two groups at a time while taking into account all other variables and categories. In the current analysis, females with a history of conviction were set as the reference category. Regression equations estimated the conditional odds of being in another gender-arrest category compared to being in the female-with-arrest category.

Results

In addition to the demographic variables, the family, child and school risk factors were simultaneously entered into the model and only those variables that significantly influenced the model were retained.

Females with and without conviction history. Females with conviction history are more likely to be older ($COR = 3.57, p < .001$), Hispanic ($COR = 2.72, p < .05$ [African-American is the reference category]), report a history of drug use ($COR = 7.76, p < .001$), and have a previous runaway attempt ($COR = 2.78, p < .001$) compared to non-convicted females. The only family factor that differentiates females by conviction history is living instability, with females with conviction history more than 2.5 times as likely to have moved multiple times compared to otherwise similar females without conviction history. Neither school factor significantly discriminated between females with and without conviction histories.

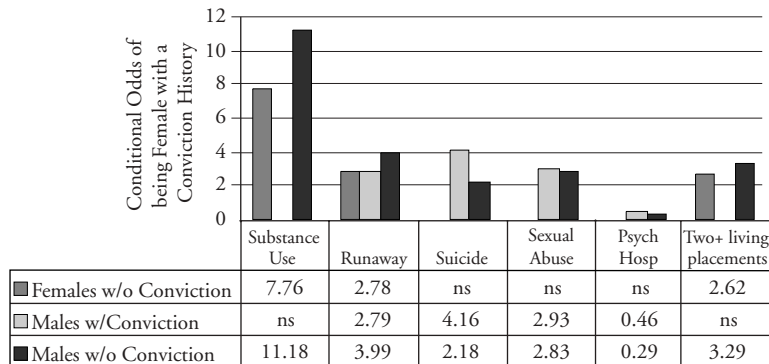
Females and males with conviction histories. Females with a conviction history have greater conditional odds of reporting previous runaway attempts ($COR = 2.79, p < .001$), being suicidal ($COR = 4.16, p < .001$), and a history of sexual abuse ($COR = 2.93, p < .001$) compared to males with a conviction history; however, they have lower conditional odds of a past psychiatric hospitalization ($COR = .46, p < .05$). All family and school factors failed to discriminate between male and female offenders.

Females with conviction history and males without conviction histories. The conditional odds of being 15 years or older is more than eight times higher ($COR = 8.30, p < .001$) for females with history of conviction compared to males without history of conviction in this sample. After accounting for other characteristics, females with a conviction history are more likely to report a history of previous runaway attempts ($COR = 3.99, p < .001$), past suicide attempts ($COR = 2.18, p < .01$), and sexual abuse ($COR = 2.83, p < .001$). Females face more than eleven times the conditional odds ($COR = 11.18, p < .001$) of reporting a history of drug and alcohol use compared to non-convicted males and are less likely to indicate a previous psychiatric hospitalization ($COR = .29, p < .001$). Once again, the only family risk factor to reach significance was living instability, with convicted females facing three times greater conditional odds ($COR = 3.29, p < .001$) than non-convicted males; neither school factor was significant.

Discussion

The current investigation of a community-based service sample identifies a unique set of factors (primarily child factors) related to gender and conviction status. As indicated in Figure 1, service-referred females with a conviction history were more likely to report a lifetime history of substance use and running away, as compared to males; however, they were less likely to have a history of psychiatric hospitalization. In addition, females with a conviction history were more likely than other females to have attempted suicide and experienced sexual abuse in their lifetime. These findings support the need for community-based comprehensive gender-specific planning and programming.

Figure 1
Females with Conviction History Compared to Other Youth (N = 2,220)



Increasing female arrest rates coupled with relatively few youth being committed to facilities suggest that more community-based providers will be faced with treatment planning decisions for these young women. In accord with system-of-care service delivery principles (Stroul and Friedman, 1986), the identified gender and conviction history differences in life challenges highlight the need for individualized treatment planning. The lifetime experiences of these offending young women not only differ from those of offending young men but also from those of non-offending youth referred for mental health services. Understanding these characteristics contributes to more efficiently targeted resources, more effectively defined treatment goals, and more appropriately initiated interventions. Given unique developmental, interpersonal, and societal issues specific to the female juveniles, experts contend that treatment approaches within the juvenile justice system should be gender conscious and directed. Guiding Principles for Promising Female Programming (U.S. Department of Justice, 1998) provides detailed information around gender-specific policies, program development, service provision and promising practices with female offenders.

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