

Service Coordination in Children's Mental Health: An Empirical Study From the Caregiver's Perspective

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Service coordination from the perspective of parents and other caregivers whose children have serious emotional disabilities was examined in this study. Service coordination was assessed with a self-report instrument administered to 266 caregivers. Analyses focused on the relationship of service coordination to child and family characteristics, service system complexity, family participation, overall satisfaction with services, and comprehensiveness of needs met. Although complexity of services was not related to service coordination, the severity of children's problems was inversely related and family participation was positively related to service coordination. In addition, service coordination significantly predicted satisfaction with services and comprehensiveness. The findings illustrate the utility of including the family perspective in the assessment of systems of care.

Of the many challenges facing those who serve children with emotional disabilities, the coordination of services is certainly one of the most difficult. Children with emotional disabilities frequently require a complex array of services, yet efforts to integrate services from multiple providers can be impeded by a variety of administrative, operational, and fiscal barriers. The task of coordination is especially challenging when attempts are made to truly individualize services to meet the unique needs of children rather than match children with conventional, "off the shelf" resources (Stroul & Friedman, 1986, 1988; VanDenBerg, 1993). With individualized services, the number of providers involved as well as the parameters of service delivery vary by child, and consequently, the number of potential linkages and interfaces among providers can grow exponentially. Whereas a handful of relationships among key agencies may suffice to coordinate conventional services, the use of individualized services requires a highly flexible approach that can accommodate a wide-ranging and ever-changing cast of participants. As the individualized services approach becomes more incorporated into the mainstream of policy and practice, a solid understanding of service coordination becomes increasingly important.

Empirical efforts to study service coordination in systems of care for children have been sparse. A few researchers have approached this issue from the perspective of organizational systems, emphasizing the linkages that exist, both formally and informally, within networks of agencies (Heflinger, 1993; Morrissey, 1992; Pandiani & Maynard, 1991). However, these studies have predominantly relied on the perspectives of agency staff, thereby providing little information on family members' views of coordination. Other investigators (Greenley & Robitschek, 1991; Tarico, Low, Trupin, & Forsyth- Stephens, 1989) have focused on the family's perspective but have used measurement procedures and sample sizes that substantially limit the generalizability of their findings. Overall, current research on service coordination in children's mental health has given insufficient attention to assessing the views of family members and to documenting how those views can be applied to a strategy for improvement (Friesen & Poertner, 1995; Kutash & Rivera, 1996). This neglect is particularly unfortunate given the increasing involvement of family members in shaping policies and programs both for their own children and for children in general.

In this article, we present an empirical exploration of service coordination from the perspective of parents whose children have emotional disabilities. For present purposes, service coordination is defined broadly as service providers working together on behalf of children, regardless of the formal (e.g., case management) or informal processes that cause this to happen. Four general issues were examined:

1. How service coordination may be influenced by family and child characteristics;
2. How service coordination may be affected by different service configurations;

3. The relationship of family participation to service coordination; and
4. The importance of service coordination to parents' satisfaction with services and to their judgments of how well services meet their children's needs in a comprehensive manner.

Service coordination was assessed with a recently developed self-report instrument, the Service Coordination Scale (DeChillo & Lebow, 1992). Because this instrument is relatively new and untested, an examination of its psychometric properties is included.

BACKGROUND

Coordination has long been considered a key ingredient in the effective delivery of social services. To varying degrees, improving the way services work together has been a goal of most reform efforts in the adult service system (Morris & Hirsch-Lescohier, 1978; Morrissey & Lindsey, 1987; Pressman & Wildavsky, 1979; Turner & TenHoor, 1978) and in the system of care for children as well (Joint Commission on Mental Health of Children, 1973; President's Commission on Mental Health, 1978; Stroul & Friedman, 1986). However, recent discussions of service coordination have been distinguished by more innovative and far-reaching suggestions for achieving it as well as a greater emphasis on consumer-based assessments of its utility.

Within the field of children's mental health, the most far-reaching and influential effort to improve the coordination of services has been the Child and Adolescent Service System Program (CASSP; Stroul & Friedman, 1986).

Begun as an initiative sponsored by the National Institute of Mental Health in the mid-1980s, CASSP promotes service coordination as a keystone of system change and places great importance on collaboration among agencies and professionals as a primary means of addressing all the needs of the child. CASSP also emphasizes the involvement of families in planning coordinated services and in assessing how well services work together (Epstein et al., 1993; Friesen & Koroloff, 1990; Petr & Barney, 1993; Stroul, 1993). This reflects both a belief that families have the inherent right to make decisions about their children's care and a recognition that they have a unique and broad view of the service delivery process. CASSP's emphasis on family and professional collaboration as a means of achieving coordinated services has had a marked influence on service systems nationwide.

Despite increasing recognition of service coordination as a major issue, only a few researchers have actually attempted to measure it in systems of care for children. Pandiani and Maynard (1991) used agency staff as respondents in a survey designed to evaluate the effectiveness of 12 interagency teams in Vermont. Staff reported that collaboration on case reviews, community education, and service delivery was greater during the 6-month period covered by the survey than prior to establishment of the teams. In a large-scale evaluation of a children's mental health demonstration project, Heflinger (1993) also used agency staff to assess various aspects of coordination (e.g., interagency interaction, activity coordination, referrals between agencies). Based on network analysis, her findings indicated a higher level of activity coordination at the demonstration site than at two comparison sites.

Interest in the perspective of family members on service coordination has, until recently, been limited to evaluations of services for adults. However, family members' views of coordination have begun to be included in studies of child service systems based on CASSP service principles. Tarico et al. (1989) interviewed caregivers about community services provided to children with emotional or behavioral disabilities. They reported that coordination between agencies was poor and that consistency in treatment plans from provider to provider was lacking. In an evaluation of a pilot program for children with emotional disabilities, Greenley and Robitschek (1991) found that caregivers viewed services as more coordinated after the intervention than before. Although based on a limited number of questions, these studies pioneered the use of the family perspective in documenting different levels of service system coordination.

DeChillo and Lebow (1992) took a more complex approach to measuring service coordination in an evaluation of a children's crisis response system. The design of the evaluation called for measuring a variety of indicators, including service coordination, before and after implementation of an innovative crisis intervention program in the state of Oregon. Service coordination was measured with a newly developed scale consisting of 18 items administered to parents. Because completion of the scale required involvement in more than one agency, the sample sizes obtained from two measurement occasions were too small to allow meaningful substantive analysis of the data. However, psychometric analyses of preliminary data from the instrument were sufficiently promising to warrant inclusion of the scale in a longitudinal evaluation of a case management demonstration program. This evaluation, which is described in more detail later in this study, was our source of data.

Overall, research on service coordination in children's mental health is in an early stage of development, especially for service coordination measured from the consumer's or family's perspective. As is often the case,

conceptual efforts in this area have reached far beyond the limits of empirical knowledge, and consequently, practice and policy developments proceed without the benefit of relevant research. Equally important, program decisions may be made without the perspective of the consumers and their families whose lives are most directly affected. Research efforts are needed to both develop methods of measuring service coordination and examine its role in the bigger picture of how services can best be structured to meet the needs of children and their families.

In this article, we present an examination of the relationship between service coordination, as assessed from the parent's perspective, and other key variables that may either affect or be affected by it. For the most part, the analyses were designed to explore assumptions and suppositions prevalent in the field. First, we focused on a number of child and family characteristics as possible influences on parents' perceptions of service coordination. Specifically, family income, caregiver education, foster parent status, and children's age, gender, ethnicity, and problem severity were examined in an effort to determine whether these characteristics were associated with coordination difficulties. Second, given the assumption that the characteristics of the service system affect the task of coordination, we examined the relationship of service characteristics to coordination, focusing on the number of providers involved, the number of formal agencies, the diversity of service sectors, and the existence of service plans. Third, we explored the relationship of family involvement and service coordination because increased family participation in service planning is a major principle of family-centered practice and might affect the degree to which agencies work together.

Finally, we examined the relative influence of service coordination from the family perspective on two family-oriented outcomes: parents' satisfaction with services and the degree to which parents felt that their children's needs were met in a comprehensive manner. The first of these, satisfaction, is generally regarded as an important facet of service effectiveness and has been the focus of much research (Kutash & Rivera, 1992; Larsen, Attkisson, Hargreaves, & Nguyen, 1979; Moynihan, Forward, & Stolbach, 1993; Stuntzner-Gibson, Koren, & DeChillo, 1995; Young, Nicholson, & Davis, 1995). However, in previous studies, investigators have not looked at how satisfaction may be influenced by the degree of service coordination. In the analysis reported here, regression procedures were used to identify the contribution of service coordination and two other variables, satisfaction with individual services and family participation, to predict overall satisfaction. The second outcome, the degree to which children's needs were comprehensively met, is a major goal of CASSP programs and the primary reason for developing an integrated system of care that can respond to a wider range of needs than traditional services (Epstein et al., 1993; Stroul & Friedman, 1986). Implicit in this approach is the assumption that more service coordination leads to greater success in meeting children's overall needs. That is, when service providers communicate and work together on behalf of the child, parochial definitions of need are expanded, and, consequently, important need areas are more likely to be identified and addressed. To empirically test this notion, we conducted a second regression analysis with a measure of comprehensiveness as the dependent variable and the same set of independent variables described earlier.

METHOD

Setting

Data for this study were collected as part of an evaluation funded by the National Institute of Mental Health and designed to assess the impact of the Robert Wood Johnson Foundation's Mental Health Services Program for Youth (Beachler, 1990) in Multnomah County, Oregon. Multnomah County is the major metropolitan county in the state and includes the city of Portland. The major focus of the evaluation was the Oregon Partners Project, an innovative approach to organizing and funding children's mental health services that featured case management and flexible funding. The design of the evaluation involved three conditions: the

Oregon Partners Project and two comparison conditions. For all conditions, data were collected at admission to the project and at 6-month intervals thereafter; however, in the analyses reported here, data from only the first measurement occasion were used. Because no intervention had yet taken place, families from the three evaluation conditions were pooled into a single sample.

Participants

Families were eligible for participation in the evaluation if their child was between 5 and 18 years of age, had a DSM-III-R diagnosis, and had experienced substantial limitations in at least two major life areas (e.g., school performance, relationship development, family life, and self-care). Participation in the evaluation was voluntary and involved both the child and the child's parent or caregiver. Because the focus of this study was on coordination of

multiple services, families were included only if they had indicated that their children had received more than one service in the previous 6 months. This sample consisted of 266 families out of an original 289.

Most of the caregivers were women (90%), and most were biological or adoptive parents (73%), although 21% were foster parents and 6% were other relatives. The majority of the children were boys (71%). Their ages ranged from 6 to 18 years, with an average of 11.7. Eighty-one percent were White, 22% African American, 10% Native American, 3% Hispanic, and 2% Asian American. (The sum of these percentages exceeds 100% due to multiple ethnic or racial affiliations.) When parents or caregivers were asked about diagnoses or names that they had been given for their children's disabilities, the most common responses were attention-deficit/hyperactivity disorder (43%), general emotional disorder (31%), and learning disorder (26%). Eighty-eight percent of the children scored within the clinical or borderline-clinical ranges for the total behavior problem score of the Child Behavior Checklist (CBCL; Achenbach, 1991).

Data Collection Procedures

Data were collected from parents or caregivers through structured, in-person interviews and questionnaires. We minimized the need for interviewer judgment by structuring interview questions so that responses or ratings could be recorded verbatim in written form. The interviews were conducted by graduate students who received 8 hours of initial training in the interview protocol and regular refresher training thereafter. Completed interview materials and questionnaires were reviewed for missing data and adherence to the protocol and, when necessary, were corrected by phone calls to the parent or caregiver to clarify, verify, or obtain information. The interviews, including completion of questionnaires, took from 2 to 2 1/2 hours and took place in a location chosen by the parent or caregiver, usually his or her home. At the completion of each interview, parents or caregivers were paid \$25.

Measures

Data collection for the larger evaluation involved an extensive list of measures; however, only measures relevant to this study are described here. The interviews began with a series of demographic questions regarding child and family characteristics. In order to obtain a detailed picture of the child's services and activities, the parent or caregiver was presented with eight defined need areas of the child: leisure, education, social, health, mental health, primary (e.g., food, shelter), facilitation (e.g., transportation, advocacy), and support (e.g., respite care, parent support groups). The parent was asked to identify all services and activities that the child received or was involved in during the previous 6 months and that addressed any of the eight need areas. As part of a series of follow-up questions, the parent was asked to indicate who provided and arranged each activity and to provide both a satisfaction rating for each activity or service and a rating of the extent to which each service met the child's needs. Each rating used a 4-point scale (ranging from *not at all* to *a lot*). Following this, the parent was given a list of the eight need areas and, using the same 4-point scale, asked to rate the extent to which the child's needs were met in each separate area, regardless of the specific services received.

In a later segment of the interview, a series of questions was asked about service plans and the extent of parental participation in planning. Some of these questions asked about the occurrence of discrete events that might indicate family involvement (e.g., being invited to and attending meetings). Other questions asked for ratings of the extent to which participation occurred (e.g., "To what extent were you involved in developing the plan?"). Ratings were made with a 4-point scale (ranging from *not at all* to *a lot*). The use of these various responses in analyses are discussed in more detail later in this article.

Following completion of the interview segment regarding services, the parent completed additional measures, including the Service Coordination Scale, the CBCL, a general satisfaction scale, and other measures not used in the analyses reported here. The Service Coordination Scale consisted of 18 items that asked parents to rate the occurrence of different activities or conditions that might indicate that agencies or organizations were working together to coordinate services. Among these activities were duplication of paperwork, agreement among providers about a single service plan, communication among providers from different agencies, and availability of services. Ratings were made with 5-point scales (ranging from not at all to very much). As described below, a subset of these items was formed into a single composite score reflecting service coordination.

The CBCL consisted of 113 items about problem behaviors as well as additional items concerned with the child's social, recreational, and school performance. The CBCL provides a total behavior problem score, two broad-band problem scores, and several narrowband scores. We used the total behavior problem score, with a published reliability estimate of .96 (Achenbach, 1991) as an indicator of problem severity.

Satisfaction was measured with an adaptation of the Client Satisfaction Questionnaire developed by Larsen et al. (1979). It consisted of eight items focusing on a range of issues such as quality of services, satisfaction with the amount of help received, recommending such services to a friend, and using the same services again if needed. The published reliability estimate for this scale was .93 (Larsen et al., 1979). Minor changes were made to the original item wording to make it more relevant to the services being evaluated. The scale was administered at the end of the interview to measure parents' overall feelings about the service package that their children and families had received, thereby providing a summary measure to supplement family members' ratings of individual services.

RESULTS

Service Coordination Score Refinement

In an effort to obtain a more refined service coordination score, a two-stage procedure was used. First, 5 items from the original 18-item pool were omitted a priori on the basis of their focus on service availability, which was considered tangential to the specific issue of service coordination. Next, the remaining 13 items were analyzed with principal components analysis whereby the first unrotated principal component was examined for the highest loadings. Nine items with loadings above .50 were retained for the final scale and are presented in Table 1.

The individual item means were generally higher than the midpoint of the scale, suggesting a tendency among parents to report that services were coordinated to a moderate degree. However, many parents reported less favorable levels of coordination. For example, on the bellwether item in the principal components analysis, "The service providers have worked together for my child," roughly one third of the parents said this occurred only a little or not at all. For all analyses reported in this article, the items in Table 1 were summed to form a single service coordination score. This ranged from 10 to 45, with a mean of 31.9. The alpha coefficient associated with this score was .88, indicating a high level of internal consistency (DeVellis, 1991).

Table 1
Means, Standard Deviations, and Factor Loadings on First Principal Component for Service Coordination Items

Item ^a	M	SD	Factor loading
The service providers have worked together for my child. ^b	3.4	1.4	.77
The workers from the different service providers seem to agree on a single plan for my child. ^b	3.3	1.4	.76
The information received from various service providers was contradictory. ^c	4.0	1.1	.73
The staff from the different service providers disagree on what care my child should get. ^c	4.0	1.2	.73
The staff from the different service providers have given me good information about my child's care. ^b	3.5	1.1	.72
When we've been referred to new providers, the staff are aware of my child's situation. ^b	3.2	1.3	.71
When a new service provider has become involved, he or she is unaware of my child's situation. ^c	3.5	1.4	.66
Staff members from one provider have helped me get services from other providers. ^b	3.1	1.3	.63
There is no cooperation among the service providers giving services to my child. ^c	3.9	1.3	.59

^aN = 266. ^bScale: 1 = *not at all*; 2 = *only a little*; 3 = *some*; 4 = *mostly*; 5 = *very much*. ^cScale: 1 = *very much*; 2 = *mostly*; 3 = *some*; 4 = *only a little*; 5 = *not at all*.

Child Characteristics, Family Characteristics, and Coordination

Relationships between child or family characteristics and service coordination were examined with regard to children's age, gender, ethnicity, CBCL total problem severity, family income, foster parent status, and caregiver education. Analyses were based on t tests for categorical variables and Pearson product-moment coefficients for continuous variables, with significance levels evaluated according to a Bonferroni adjustment for multiple comparisons. Of the variables examined, only CBCL total problem severity was significantly related to service coordination ($r = -.26$, $p < .001$), suggesting that higher problem severity was associated with less service coordination, albeit to a modest degree.

Service Characteristics and Coordination

To explore the relationship of service characteristics to service coordination, the agencies and providers listed by caregivers as providing services to their children were classified. This classification was based on Stroul and Friedman's listing of components in the system of care (1986) and consisted of nine major sectors of service

providers: mental health, social and child welfare, education, health, vocational, recreational, juvenile justice, churches, and an operational category that included transportation, advocacy, and volunteer groups. For multiservice agencies, classification was based on their major function. For example, day treatment providers were classified as mental health organizations even though they typically provided educational, social, and other non-mental health services as well. The classification process was accomplished by five of the authors, with cases distributed equally among them. Reliability was examined by repeating the classification process with a 10% sample of cases randomly selected and assigned across the original group. A kappa coefficient computed between the two sets of codes was .79, indicating a high level of reliability (Fleiss, 1981).

The percentage of families with services or activities from each sector were as follows: education (88%, excludes home schooling and educational services through day treatment), mental health (75%), social services including child welfare services (62%), health (43%), recreational (38%), operational or other (26%), church (23%), juvenile justice (10%), and vocational (1 %). The relationship of individual provider categories to service coordination was examined through t tests performed for each category except juvenile justice and vocational providers where sample sizes were too small. Significance levels were evaluated through a Bonferroni adjustment for multiple comparisons. None of the t ratios was significant, suggesting that mere involvement with a specific type of provider did not produce any systematic differences in service coordination.

Next, four quantitative measures were derived to provide different views of the complexity of each family's service involvement: overall number of services provided by agencies or organizations; number of *unique* agencies or organizations involved (e.g., two mental health agencies would be counted separately); number of services provided by the five major service sectors of mental health, social and child welfare, health, education, and juvenile justice); and number of *unique* service sectors involved (e.g., two mental health agencies and one school would be counted as two unique service sectors). The latter two measures were included because even though many agencies and organizations might be involved in the life of a child, the parent's perception of service coordination is likely to be more heavily influenced by the major service providers.

The number of services reported by caregivers ranged from 2 to 11 (the maximum allowed in the interview protocol), with an average of 6.1 per case ($SD = 2.3$). The number of distinct agencies and organizations providing these services ranged from 1 to 10, with an average of 4.1 per case ($SD = 1.8$). Narrowing the focus to the 5 major service sectors, services ranged from 1 to 10, with an average of 5.0 ($SD = 2.0$). A few families had services from only 1 of the major sectors (7%) while a few (2%) had services from all 5. The mean was 2.8 ($SD = .93$).

The relationship of service coordination to each of these four summary measures of service complexity was examined through Pearson product-moment correlations. None of these correlations was significant, suggesting that measures of service complexity based on counts of providers and service sectors are not related to parents' assessments of how well services are coordinated.

A third set of service-related analyses focused on service plans. In the interview, parents were asked to identify the agency or provider that had responsibility for their child's primary service plan. The term *primary* was used broadly and ranged from formal Individualized Education Plans to intra-agency plans of care. Parents' responses were coded with the same agency categorization described previously. For the vast majority of families (90%), the primary plan was the responsibility of one of three types of providers: education (48%), mental health (22%), and social services (20%), almost entirely represented by Oregon's child welfare agency.

Differences among levels of service coordination were examined through a one-way analysis of variance with these three provider types as levels of a single factor and service coordination as the dependent variable. The means for education, mental health, and social service providers were 30.93, 31.27, and 36.14, respectively. The analysis was significant at $p < .001$, $F = 8.69$ (2,239), with an associated eta square of .07. Post-hoc comparisons based on a Sheffé procedure revealed that the mean coordination score for social services was significantly higher than the means for mental health and education ($p < .01$). This pattern of findings suggested that families whose children's primary plans were the responsibility of the state child welfare agency tended to view services as more coordinated.

Service Coordination and Family Participation

To explore the relationship between service coordination and family participation, a series of measures reflecting different ways in which families may become involved in service planning was used. One measure, family participation in planning, was based on ratings that parents provided concerning how involved they were in the development of their child's primary plan. Ratings were made with a 4-point scale in response to six questions that asked parents about their level of involvement, how much their ideas were valued, their agreement with the plan, their role in planning, how much their whole family's needs were considered, and their level of influence in the

planning process. Ratings were summed into a single composite score with an alpha coefficient of .86. The Pearson product-moment correlation of this score with the service coordination score was .42 ($p < .001$), suggesting that parents considered services to be more coordinated to the extent that they were involved in developing the primary plan for their child.

Other measures of family participation were based on parents' reports of the following events: invitations to meetings with agency staff involved in the child's care, home visits by service providers, parent-teacher conferences, information requests, the development of a written primary plan, and requests to parents to "sign off" on a primary plan. Each of these events was measured in a dichotomous manner (i.e., with a yes/no response indicating at least one occurrence in the previous 6 months). Significant biserial correlations were found between service coordination and being invited to at least one meeting with agency staff ($r = .24, p < .001$), the development of a written plan ($r = .23, p < .001$), and receiving at least one home visit from a service provider ($r = .20, p < .001$). This pattern of relationships further corroborated the link between coordination and family participation.

Service Coordination, Satisfaction, and Comprehensiveness

The analyses reported thus far examined relationships between service coordination and various characteristics of either the family or the service system, including the degree to which providers encouraged family participation. However, a question of greater interest to policy and program developers is the role that these factors play in influencing outcomes. Two outcomes that are critical to family-centered philosophy are parents' overall satisfaction with services and parents' judgments of how well the full spectrum of their children's needs are met, henceforth referred to as comprehensiveness. Accordingly, a final set of analyses focused on these outcomes and the relative importance of service coordination in their prediction.

Satisfaction was measured with an adapted version of the Client Satisfaction Questionnaire. The alpha coefficient obtained for this version was .94, an indication of high internal consistency among items. Comprehensiveness was measured with a series of questions asking parents to rate the extent to which their children's needs were met in eight categories: leisure, education, social, health, mental health, primary, facilitation, and support. Ratings were made in reference to the child's overall circumstances, regardless of what services were being received. The ratings, which used 4-point scales (ranging from *not at all* to *very well*), were first dichotomized by scoring responses of *very well* as 1 and all other ratings as 0. The dichotomized ratings were then summed into a single score so that a 0 indicated that no needs had been met very well and 8 indicated that all needs had been met very well. Internal consistency was not examined here because the items measured distinct need areas rather than a single underlying, latent variable. Both of these outcome measures, satisfaction and comprehensiveness, have distinct meaning in discussions related to policy and accountability, and therefore, each was analyzed individually. However, they also overlap conceptually and empirically, as reflected in a moderately strong correlation of .49 ($p < .001$) between them.

At issue was the relative importance of service coordination in predicting these outcomes while also taking into account other possible influences. The first of these additional influences was satisfaction with individual services. Our reasoning here was analogous to the notion that the whole is greater than the sum of the parts. That is, overall satisfaction and comprehensiveness might reflect satisfaction with individual services as well as the extent to which services worked together. Satisfaction with individual services was represented by a single score that was formed by summing two averages: the average satisfaction rating by parents with respect to each service and the average rating of the extent to which parents believed that each service met the child's needs. All ratings were based on 4-point scales. The alpha coefficient associated with the sum of the two averages was .90.

The second contextual influence was family participation because families might view services favorably to the extent that they were involved in decisions about them. Family participation was represented by the score reflecting participation in the primary plan. This measure had the strongest relationship to service coordination of the family participation measures and, as shown

below, also had rather strong bivariate relationships to each of the outcome measures. Finally, because the degree of problem severity is widely believed to exert some effect on service outcomes, the total behavior problem score from the CBCL was included. Bivariate correlations among the outcome and predictor variables are presented in Table 2.

The analyses were based on two regression models with overall satisfaction and comprehensiveness as dependent variables. The method for entering variables was a mixture of hierarchical and stepwise procedures. For overall satisfaction, the CBCL behavior problem score was entered first as a covariate to control for this influence. Next, individual service satisfaction, family participation in planning, and service coordination were allowed to enter in stepwise fashion. A summary of the final model is given in Table 3.

With the CBCL problem score already in the model, the service coordination measure entered first with an R^2 increase of .41, followed by family participation with an R^2 increase of .08, and individual service satisfaction with an R^2 increase of .03 (all significant, $p < .001$). The R for the final model was .76. The standardized regression coefficients or beta weights, which indicate the unique contribution made by each variable to the model, were -.05, .47, .26, and .21, respectively (last three significant, $p < .001$). Service coordination clearly provided the strongest contribution to the model. The beta weight associated with the CBCL score was not significant in the final model, suggesting that it provided no unique contribution.

A parallel analysis with comprehensiveness, using the same mixture of hierarchical and stepwise procedures, was conducted (see Table 4). Again, with the CBCL problem score already in the model, the individual service satisfaction measure was entered first with an R^2 increase of .13, followed by service coordination with an R^2 increase of .05 (all significant, $p < .001$). The R for the final model was .52. The beta weights were -.17 (significant, $p < .01$), .27, and .26 (both significant, $p < .001$), respectively. These suggested that individual service satisfaction and service coordination had roughly the same level of unique association with comprehensiveness. Family participation failed to enter the model, despite a significant zero-order correlation of .32 with comprehensiveness, indicating that its relevant variability was largely shared with the other predictors. The pattern of findings suggested that parents considered their children's needs to be well met to the extent that they were satisfied with individual services and viewed services as coordinated.

TABLE 2
Correlations Among Variables in Regression Analysis

Variable ^a	1	2	3	4	5	6
1. Overall satisfaction	—	.49**	.68**	.52**	-.23*	.54**
2. Comprehensiveness		—	.42**	.42**	-.30**	.32**
3. Service coordination			—	.43**	-.26**	.42**
4. Satisfaction with individual services				—	-.21*	.38**
5. Total behavior problems (CBCL)					—	-.03
6. Family participation						—

^aN= 266

* $p < .01$ ** $p < .001$.

TABLE 3
Regression of Parents' Overall Satisfaction on Total Behavior Problems, Service Coordination, Family Participation, and Satisfaction with Individual Services

Variable ^a	R	Increase in R^2	F for increase	β	F for β
Total behavior problems ^b	.23	.05	13.94**	-.05	1.57
Service coordination ^c	.68	.41	197.47**	.47	90.35**
Family participation ^c	.74	.08	43.91**	.26	30.32**
Satisfaction with individual services ^c	.76	.03	20.17**	.21	20.17**

^aN=266. ^bForward entry. ^cStepwise entry.

** $p < .001$.

TABLE 4
Regression of Comprehensiveness on Total Behavior Problems, Satisfaction with Individual Services, Service Coordination, and Family Participation

Variable ^a	R	Increase in R^2	F for increase	β	F for β
Total behavior problems ^b	.30	.09	25.16**	-.17	9.84*
Satisfaction with individual services ^c	.47	.13	43.28**	.27	20.65**
Service coordination ^c	.52	.05	17.99**	.26	17.99**

Note. Family participation omitted from table due to no contribution

^aN=266. ^bForward entry. ^cStepwise entry.

* $p < .01$ ** $p < .001$.

DISCUSSION

In the field of children's mental health, recent efforts at system reform have strongly emphasized the need to improve the coordination of services and to increase parental participation in service planning and decision making. The findings from this study provide support for the increased attention given to service coordination and underscore the need to give credence to parents' views of this issue.

Because child and family characteristics may conceivably influence parents' views of service coordination, we initially focused on a selected group of these variables. Children's age, gender, and ethnicity had no relationship to service coordination, nor did caregivers' income, education, or foster parent status. However, a statistically significant inverse relationship was found between the severity of children's behavior problems and service coordination, a result that is consistent with the common assumption that services are more difficult to coordinate for children with severe problems. The rather weak correlation here suggests that it represents only part of a more complex picture. For some children, problem severity may indeed be associated with service coordination difficulties due to their need for intensive and diverse services. However, for other children, problem severity may lead to involvement with agencies in which coordination of services is directly and explicitly addressed. For example, child welfare or juvenile justice agencies often provide case management services, and day treatment programs typically integrate multiple services under a single auspice. Thus, problem severity may lead to countervailing influences on service coordination, a pattern that would produce a modest empirical relationship such as that found here.

The sheer number of services and providers in a given child's service plan also seems likely to have an impact on how readily these elements can be coordinated; many system change strategies are predicated on this assumption. Yet the present analysis failed to uncover any relationship, despite evidence that some children in the sample were receiving a fairly complex package of services. We considered a range of objective complexity measures, including number of services received, number of unique providers involved, number of major service sectors, and number of services provided by major service sectors, but none was statistically related to service coordination.

This lack of findings suggests that service coordination from the family's point of view may be achieved despite substantial service complexity, and conversely, that poor service coordination can occur in instances where objective complexity is minimal. The absence of statistical relationships may also reflect differential weighting given by parents to difficulties in coordination. For example, poor coordination between two key agencies may create difficulties that outweigh smooth relationships among other agencies involved. Simple complexity measures based on counts of agencies and services would not be sensitive to such differential weighting.

One system characteristic—the type of agency that had responsibility for the primary plan—did appear to influence perceptions of agency coordination. For children whose plans were the responsibility of Oregon's child welfare agency, service coordination tended to be viewed as better than for children working with mental health and educational organizations. This finding is likely a reflection of differences among organizations in their scope of responsibility. Mental health and educational organizations are traditionally inclined to focus on fairly limited areas of need and generally less likely to provide broad case management services. In contrast, child welfare agencies are usually mandated to provide a coordinated package of necessary support services and typically have strong case management components in their programs. Anecdotally, these differences were generally characteristic of agencies providing services to the participants in this study.

The analysis of family participation in relationship to coordination provided support for the emerging principle that families should be involved as much as possible in services for their children. In the present study, families with higher participation tended to view services as more coordinated. This was particularly evident when families participated in developing the primary plan, but also, to a lesser extent, when families were invited to meetings, received home visits, and were involved in creating a written plan. The functional link between family participation and coordination is likely a reflection of more than one pattern of influence. Family members who play a strong, active role in planning discussions may specifically promote coordination among service providers, and, even in the absence of purposive efforts in this regard, their very presence may provide a measure of accountability that leads to improved coordination. To some extent, the findings may also reflect the effects of better information because increased participation may afford family members the opportunity to observe coordination efforts that would otherwise go unnoticed. Regardless of the functional reason, the findings support efforts to increase family participation as an important part of the service coordination process.

Ultimately, greater coordination in service delivery is meaningful only to the extent that it leads to more effective services, and multiple perspectives on effectiveness, including those of consumers, are essential for an adequate picture. In this study, we focused on service coordination in relation to two key consumer-based outcomes

that reside at the very heart of the CASSP approach to service system development: parents' overall satisfaction with services and parents' views of comprehensiveness (i.e., the degree to which the full spectrum of their children's needs were met).

Service coordination showed a stronger relationship to overall satisfaction than did variables representing family involvement and satisfaction with individual services. This finding underscores the relative importance of coordination in service delivery efforts and is particularly supportive of an approach that emphasizes case management and interorganizational collaboration. Yet, how parents felt about individual services also had a relationship to their overall satisfaction, which indicates that the latter is multifaceted and that it reflects both individual service elements and interrelationships among those elements. The significant contribution of family participation in the model suggests that overall satisfaction reflects not just the coordination and favorable estimation of individual services but also the level of involvement that family members have in planning and approving services. Collectively the findings support a system development philosophy that fosters services that are not only individually effective but also reflective of collaboration among providers and family members.

In addition to substantive implications, the findings pertaining to overall satisfaction also have methodological relevance. The use of satisfaction as an evaluation construct has come under criticism for being too global and for requiring the respondent to generalize over too many issues or situations (Guttek, 1978; Keppler-Seid, Windle, & Woy, 1980; Lockyer & Dunt, 1978). Yet the growing emphasis on consumer-driven service models necessitates some assessment of consumers' opinions of services, whether the focus is satisfaction or some related concept (Lebow, 1982; Young et al.; 1995). The obvious remedy is to ask questions about the quality and shortcomings of specific services, perhaps deriving some summary measure based on these responses. The present findings, however, suggest that obtaining an adequate assessment

of satisfaction should not consider just the individual parts of the service package, but also how well the parts are coordinated. The findings also illustrate the richness of overall satisfaction measures in tapping a variety of underlying consumer perceptions and observations that collectively contribute to an overarching assessment of services.

The analysis of the second outcome, comprehensiveness, provided findings somewhat similar to those obtained with overall satisfaction. Two variables, satisfaction with individual services and service coordination, provided significant contributions to the model. The unique contribution of each was approximately the same. Parents tended to view their children's needs as comprehensively met to the extent that they were satisfied with individual services and considered services to be coordinated. This pattern speaks to the need to overcome the fragmentation that typifies much of the child service system. Many organizations have a relatively narrow, single focus, which often impedes their ability to recognize, much less address, all of the needs of a child with serious emotional disabilities. The findings suggest that this problem is best addressed with a dual strategy of ensuring the effectiveness of individual service elements and coordinating these elements. Family participation did not account for much unique variability in comprehensiveness, although on a bivariate level, its relationship was significant and rather substantial. This should not be interpreted as evidence against family participation; rather, it reflects limitations in interpreting multivariate relationships among variables representing different but overlapping aspects of service delivery and planning.

In evaluating the results of this study, a number of limitations should be kept in mind. First, the study was based on data from a single measurement occasion, thereby limiting conclusions to correlational or associative interpretation. The direction of influence is not clear, so that the finding linking parents' reports of participation and coordination, for example, may reflect a complex pattern whereby each exerts some effect on the other. Causal statements about what makes coordination better or worse must wait for more controlled studies.

A second limitation was the restricted nature of the sample, which was obtained in a single community and which consisted of a relatively small number of families with children who had severe emotional disabilities. Service coordination has broad relevance to many types and levels of disabilities, but the factors that influence it may vary greatly across different circumstances. More research is needed with larger and more widely varied samples before the findings of this study can be generalized.

Third, service coordination, and indeed, all measures used here, were measured by parents' self-report and thus represent the perspective of only one participant in the process. How congruent this perspective is with other possible viewpoints is not known, although it is likely that different stake-holders' assessments of coordination would be distinctive and idiosyncratic. For example, agency administrators may define coordination in terms of formal linkages between agencies even though such linkages may not manifest themselves in a level of coordination that a parent could observe. Similarly, service providers may not get an opportunity to observe coordination if their services are highly specialized or if parents themselves accomplish much of the coordination behind-the-scenes. The service coordination scale used here provided a reliable measure of this construct within the limitations of

self-report; however, an examination of the congruence of such self-reports with other measures of service coordination is needed for a better substantive and methodological understanding of this issue.

Service coordination has gained an unprecedented level of prominence in debates at all policy levels. Pressures to contain service costs coupled with an increasing dissatisfaction with service fragmentation will continue to drive these debates, although in what direction is not clear. It is clear, however, that family members and other consumers of services will continue to demand a role in assessing the adequacy of coordination efforts, and in this respect, conventional strategies that rely solely on professionals' judgments of coordination are no longer sufficient. The results of our study illustrate the utility and substantive value of examining family members' perspectives on this issue. Policies, programs, and research efforts that recognize and tap this perspective will gain valuable information that is attainable in no other way.

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