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Children’s Mental Health Service Use Across Service Sectors

by Barbara J. Burns, E. Jane Costello, Adrian Angold, Dan Tweed, Dalene Stangl, Elizabeth M.Z. Farmer, and Al Erkanli

Abstract: This DataWatch explores the roles of human service sectors (mental health, education, health, child welfare, and juvenile justice) in providing mental health services for children. The data are from the first wave of the Great Smoky Mountains Study of Youth, a population-based study of psychopathology and mental health service use among children. The results show somewhat higher rates of mental health service use than has been reported previously, while continuing to show a substantial amount of unmet need, even among children with both a psychiatric diagnosis and functional impairment. The findings point to a significant role for the education sector, suggesting that schools may function as the de facto mental health system for children and adolescents.

Estimates of mental health service use are critical to understanding unmet need, patterns of service use, and the adequacy of service provision. An important part of the National Institute of Mental Health’s (NIMH’s) mandate to help develop integrated systems of care for children is to integrate information about mental health service needs and use across the various agencies that provide such services.¹ Mental health organizations and providers have been expected to assume the lead role in the provision of mental health services, but recent legislation recognizes that other organizations charged with the health, education, and welfare of children also have a role to play.² An emerging literature on mental health needs and the provision of mental health services by sectors other than mental health reflects the fact that many children receive mental health services outside of the traditional mental health system.³

In this DataWatch we use data from the first wave of the Great Smoky Mountains Study of Youth (GSMS), a population-based community survey, to examine the demographic and clinical characteristics of children

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receiving services in the mental health sector, and the role of other child
service sectors in providing mental health care to children. We then discuss
the relevance of our findings to planning for health care reform.

Study Methodology

The GSMS is an ongoing longitudinal study of the development of
psychiatric disorders and the need for mental health services among rural
and urban youth. The details of the study design and instruments used have
been described elsewhere. Briefly, a representative sample of 4,500 chil-
dren, ages nine, eleven, and thirteen, identified through the Student Infor-
mation Management System (SIMS) of the public school systems of eleven
counties in western North Carolina, was selected using a household equal
probability design. A screening questionnaire, consisting of questions about
the child’s behavioral problems, demographic information, and service use,
was administered to a parent by telephone or in person. All children scoring
above a predetermined point on the behavioral questions, plus a one-in-ten
random sample of the rest, were recruited for the longitudinal study, result-
ing in a final sample of 1,015 children.

In the final sample, children and their parents were interviewed using
the third edition of the Child and Adolescent Psychiatric Assessment
(CAPA) and the Child and Adolescent Services Assessment (CASA) and
measures of family burden, maternal depression, family psychiatric history,
and the child’s physical health and development. The data presented here
are based on the first wave of interviews with the main sample, which took
place in 1992-1993. These families are contacted by telephone every three
months and are reinterviewed annually. Sample weights are used to adjust
for the effects of the study’s multistage design. The numbers reported here
represent those actually interviewed, while rates, statistical tests of group
differences, and effect sizes are based on weighted data.

Correlates of service use include demographic characteristics and clinical
status. Clinical status was determined by whether or not a child met the
diagnostic criteria for a Diagnostic and Statistical Manual of Mental Disor-
ders, Third Edition, Revised (DSM-111-R) disorder and whether or not he
or she exhibited impaired functioning (inability to function in develop-
mentally appropriate ways at school, at home, and with peers) related to the
reported symptoms. Both diagnosis and impairment classifications were
based on combined parent and child reports. Using these two dimensions,
we constructed four exhaustive and mutually exclusive categories of clinical
status. (1) The no diagnosis/no impairment group (63.7 percent of the
sample) included children without symptoms or impairment and children
with symptoms that fell below the diagnostic threshold for any particular
DSM-III-R diagnosis. This group included some children with high levels of symptomatology, but dispersed across several diagnostic categories. (2) The diagnosis/no impairment category (9.1 percent) included children who met diagnostic criteria for at least one DSM-III-R condition but did not display impaired functioning. (3) Children in the impairment/no diagnosis group (16.1 percent) did not meet criteria for any well-defined diagnosis, but their symptoms were evident in impaired functioning. (4) Children with both a diagnosis and impairment (11.1 percent) constituted the most severely affected category. This group could be considered to meet federal guidelines defining “serious emotional disturbance.”

Service sectors. A distinguishing characteristic of the GSMS is that service use is linked to mental health problems. Following the baseline diagnostic interview, interviewers asked about service use for problems previously mentioned. For each service setting identified by a child or parent, the interviewer obtained details of treatment: clinical focus, duration, provider, cost, source of payment, and perceived benefit. This DataWatch addresses only the use (or nonuse) of services in five sectors: mental health (psychiatric hospital, psychiatric unit in a general hospital, residential treatment center, group home, partial hospitalization, therapeutic foster care, mental health center, detoxification unit, outpatient drug/alcohol clinic, case management, or private mental health professional); education (boarding school, guidance counselor/school psychologist, or special class); health (medical inpatient unit, community health center, family doctor/other nonpsychiatric physician, hospital emergency room, or nontraditional healer); child welfare (social services counseling); and juvenile justice (detention center/jail, or probation officer/court counselor). Service intensity, cost, and benefit will be explored in later analyses. The data presented here are from the baseline administration performed in 1992-1993 and refer to the preceding three months.

Mental health resources in the study area. The eleven-county GSMS area is served by a relatively well developed service system. The area comprises two public mental health authorities (referred to in North Carolina as “area programs”): The Blue Ridge Area Program includes the four eastern counties in the region (including the city of Asheville), and the Smoky Mountain Area Program serves the seven remaining counties (including the Qualla Boundary Reservation). Both programs have a central administrative office and operate clinics throughout their catchment areas.

The Smoky Mountain and Blue Ridge Area Programs are recognized throughout the state for their well-developed, up-to-date services for children and their families. From 1989 to 1994 these programs were among seven sites across the nation that participated in The Robert Wood Johnson Foundation’s (RWJF’s) Mental Health Services Program for Youth.
The MHSPY contributed resources to local communities to enrich the availability of community-based programs (for example, therapeutic foster care, respite care, and case management) in an effort to keep children with serious emotional disturbance from out-of-home and out-of-community placements. The MHSPY also emphasized interagency collaboration. As a result, the area programs improved, solidified, and formalized their relationships with other agencies serving children. All of this was well under way when the GSMS data reported here were being collected. Interagency collaboration was expanded even further during the final months of the first wave of GSMS data collection as the region prepared for implementation of a Medicaid waiver for children’s mental health services. In short, providers of mental health services in the GSMS region were actively implementing the principles of a system and continuum of care.

Study Results

Demographic factors in need for and use of services. The number of children having a mental health diagnosis and the number using mental health services are broken down by sex, race, economic status, and urban/rural residence. We then used multivariate analyses to determine the relationship between each of these characteristics and recent use of mental health care (Exhibit 1). The results are broken down further to distinguish between use of mental health services within the specialty mental health sector (4.0 percent) and in all sectors combined (16.0 percent).

The overall rate for having any diagnosis was 20.3 percent. The major demographic risk factors were being male and living in poverty. African Americans were slightly more likely than whites to have a diagnosis, but the difference was not statistically significant. Place of residence made no independent contribution to the likelihood of diagnosis. The most common diagnoses were anxiety disorder (5.7 percent), enuresis (5.1 percent), tic disorders (4.2 percent), conduct disorder (3.3 percent), oppositional defiant disorder (2.7 percent), and hyperactivity (1.9 percent).

Being male and living in poverty were also the main demographic predictors for mental health service use in any sector. Children living in urban and rural areas were almost equally likely to have used services in any sector. Controlling for other factors, children from poor families were more likely than children from nonpoor families to have used services within the specialty mental health sector. In this community, however, specialty mental health services were less accessible to rural than to urban children. Overall, poverty was the most powerful demographic risk factor for both diagnosis and service use. Boys were more likely than girls both to have a diagnosis and to have used mental health services in any sector.
### Exhibit 1
Need And Service Use Of Clients In The Great Smoky Mountains Study Of Youth, By Demographic And Clinical Factors

| Individual characteristics | Number of cases in category
category<sup>a</sup> | Percent with diagnosis<sup>b</sup> | Speciality mental health Any sector<sup>b</sup> | Percent who used services in previous three months |
<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Full sample</strong></td>
<td>1,015</td>
<td>20.3%</td>
<td>4.0%</td>
<td>16.0%</td>
</tr>
<tr>
<td><strong>Sex</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>443</td>
<td>15.6</td>
<td>4.0</td>
<td>12.8</td>
</tr>
<tr>
<td>Male</td>
<td>572</td>
<td>24.9</td>
<td>3.9</td>
<td>19.2</td>
</tr>
<tr>
<td><strong>Race</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>920</td>
<td>19.2</td>
<td>4.1</td>
<td>16.3</td>
</tr>
<tr>
<td>African American</td>
<td>95</td>
<td>34.3</td>
<td>2.9</td>
<td>18.7</td>
</tr>
<tr>
<td><strong>Poverty status</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poor</td>
<td>344</td>
<td>35.4</td>
<td>7.4</td>
<td>20.9</td>
</tr>
<tr>
<td>Nonpoor</td>
<td>671</td>
<td>14.6</td>
<td>2.9</td>
<td>14.6</td>
</tr>
<tr>
<td><strong>Residence</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>649</td>
<td>18.6</td>
<td>2.6</td>
<td>15.3</td>
</tr>
<tr>
<td>Urban</td>
<td>364</td>
<td>23.4</td>
<td>6.7</td>
<td>17.5</td>
</tr>
<tr>
<td><strong>Multivariate analyses</strong>&lt;sup&gt;c&lt;/sup&gt;</td>
<td>Odds ratio (p value)</td>
<td>Odds ratio (p value)</td>
<td>Odds ratio (p value)</td>
<td></td>
</tr>
<tr>
<td>Sex (male)</td>
<td>1.70 (.0026)</td>
<td>0.98 (.9625)</td>
<td>1.49 (.0215)</td>
<td></td>
</tr>
<tr>
<td>Race (African American)</td>
<td>1.61 (.1116)</td>
<td>0.39 (.1763)</td>
<td>0.86 (.6578)</td>
<td></td>
</tr>
<tr>
<td>Poverty status (poor)</td>
<td>2.98 (.0001)</td>
<td>2.46 (.0024)</td>
<td>2.25 (.0001)</td>
<td></td>
</tr>
<tr>
<td>Residence (rural)</td>
<td>0.87 (.4251)</td>
<td>0.37 (.0024)</td>
<td>0.79 (.2070)</td>
<td></td>
</tr>
</tbody>
</table>

*Source: Great Smoky Mountains Study of Youth.*

<sup>a</sup> Number of sample members in each category.
<sup>b</sup> All percentages and significance tests are weighted to reflect population rates.
<sup>c</sup> Logistic regression analyses. The risk category is given in parentheses.

**Clinical status and service use.** The likelihood of a child’s having used mental health services within the three months preceding the initial interviews was strongly linked to the child’s clinical status (Exhibit 2). Of children with neither a diagnosable condition nor an impairment, only 1.6 percent reported using specialty mental health services during the three months prior to the interview, compared with 21.6 percent of children with both a diagnosis and an impairment. A similar relationship was evident for children obtaining mental health care from any sector, but the level of service use was higher for each clinical group in comparison with use of specialty mental health services.
Since the children with both a DSM-III-R diagnosis and significant functional impairment meet the federal Center for Mental Health Services (CMHS) definition for serious emotional disturbance, it seems reasonable to assume that these children have a prima facie need for mental health care. Thus, it is notable that 40 percent of these children received mental health care from any sector in the preceding three months, while only one in five received care from the specialty mental health sector.

Service provision by multiple service sectors. Among the 16 percent of children in the sample who reported receiving mental health care in any sector, 13 percent (81 percent of those served) received care in only one sector, and 3 percent (19 percent of those served) received care in more than one sector (Exhibit 3). The education system was clearly the major player in the de facto system of care for children with mental health problems. Between 70 and 80 percent of children who received services for a mental health problem were seen by providers working within the education sector (mostly guidance counselors and school psychologists). For the majority of children who received any mental health care, the education sector was the sole source of care.

The role of the general medical sector in providing mental health care was much smaller for this sample of children than that reported for adults. Approximately 11-13 percent of children receiving any mental health services reported use of the general medical sector for these services, with little differentiation by clinical status. For children with a diagnosis and/or impairment, the general health care system was rarely the sole source of mental health care.

The child welfare and juvenile justice sectors provided mental health services to relatively few children in the sample. Our findings suggest, however, that seriously emotionally disturbed children were much more
likely than other children to receive mental health services from the child welfare system, and that children with a diagnosis or serious emotional disturbance were more likely than children with neither to have received services from the juvenile justice system. The child welfare system was almost never the sole source of mental health services, but the juvenile justice system was the sole source of mental health services for many of the seriously emotionally disturbed children it served.

Multisector service use was influenced by clinical condition: Rates of multisector service use were highest for seriously emotionally disturbed children (29.3 percent) and lowest among children with neither a diagnosis nor an impairment (7.4 percent). Single-sector service use seemed to be the rule for those in the no diagnosis/no impairment category who received services (92.6 percent), with the education sector the primary provider.

Exhibit 4 provides a different perspective on the data. The overall role of each sector in mental health care is reflected by the height of the bar, which corresponds to the percentage of all children reporting recent help in each sector. (Because children could be seen in more than one sector, the bar heights do not add to 100 percent.) Segments within each bar correspond to the proportion of children served from each of the three clinical status
groups. Because of the small number of children served in the juvenile justice and child welfare sectors, data for these sectors have been combined. This exhibit shows the dominant role of the education sector in the provision of mental health care for the full spectrum of need. This was especially true for children in the no diagnosis/no impairment group, for which other sectors served a small proportion of children.

Study Limitations

At its baseline, the GSMS sample contained only children ages nine, eleven, and thirteen. The sectors providing mental health services are likely to differ by age of child: One would expect greater involvement by the child welfare sector with younger children and a larger role for the juvenile justice sector later in adolescence. Second, service use is presented without respect to the amount or the adequacy of the care received. For many children the amount of care received may have been small, thus reducing the number of children who might be considered to have been adequately treated. This issue will be examined with longitudinal data when exposure to treatment extends beyond the three-month window examined here, enabling fine-tuning of the definition of “treated” cases.

It is also important to bear in mind the widely differing patterns of service availability across the United States. Thus, patterns of service use can only be understood within the context of a particular service system. Although rates of illness in this study are essentially comparable to those of other community-based studies, we cannot attest to the generalizability of our
findings in service use to similar small cities and rural areas. Comparable studies have not been reported, and we await replications of our finding by an NIMH multisite study of mental health service use, need, outcomes, and costs among child and adolescent populations (UNOCCAP). The major role played by the schools in the GSMS may reflect the importance attached in these eleven school systems to providing counselors in elementary as well as in middle and high schools. Mental health resources in schools will be examined by the UNOCCAP study across community sites in relation to service use patterns, which will facilitate further comparisons.

Summary And Policy Implications

The data presented here show that the majority of children with recent mental health care needs were not receiving professional help for those needs. Although the likelihood of receiving care increased with clinical severity, even among seriously emotionally disturbed children only 40 percent had received any kind of mental health care during the three months preceding the first interviews. When children did receive care it was likely to be from a provider outside of the specialty mental health sector. The major player in the de facto system of care was the education sector-more than three-fourths of children receiving mental health services were seen in the education sector, and for many this was the sole source of care. The general health care system played a relatively minor role in the provision of mental health care for children. The role of the specialty mental health system was greatest for children with the most severe problems, Children with less severe problems were most likely to be seen elsewhere. The care of children with severe problems tended to involve multiple sectors, pointing to the importance of coordination across sectors.

The estimated use rate for mental health-sector services (4 percent in the preceding three months) exceeds the estimated range of 1-3 percent from earlier provider-based service use studies and is closer to the 5 percent estimate in the National Health Interview Survey. As mentioned earlier, the GSMS baseline data were collected during implementation of RWJF’s MHSPY in North Carolina, which enhanced service system capability, particularly in case management, therapeutic homes, and in-home crisis care. We can expect to see this increasing capacity and range of services reflected in both the amount and the patterns of service use as time goes on.

A shift in focus from mental health services provided by the specialty mental health sector to services provided by other sectors expands the number of recent mental health service users by a factor of four, to 16 percent. The services provided to children by other sectors significantly reduced unmet need (at the level of receipt of any care). If this picture
reflects national trends, the likelihood is enhanced that both more and less seriously disturbed youth receive some professional attention. The finding that poor children with a psychiatric disorder were more likely to receive mental health services from the mental health sector and from other sectors' also is encouraging. This is likely attributable to public-sector services that are attuned to the needs of this high-risk population and to Medicaid coverage. The observation that 10 percent of children without a diagnosis or an impairment used mental health services may reflect care for subdiagnostic symptoms and/or preventive interventions.

Other community surveys have found that mental health services delivered in nonmental health settings were provided largely by the education sector. There is, however, a need for more research to confirm the GSMS finding that the general medical sector provided few mental health services and did not discriminate among children with differing levels of need. However, studies in primary care settings have emphasized the mental health role of pediatric primary care. It may be that health care providers are more important for younger children, who are seen more frequently for general health care, than they are for the early adolescent GSMS population, or that the mental health care offered by health care providers was not recognized as such by the parents and children in this study.

Of particular interest is the finding that children who received mental health services in the child welfare sector were very likely to use mental health services in other sectors as well. Other studies have suggested that up to 50 percent of children seen in child welfare settings have a psychiatric disorder and that these children's problems and life situations are likely to be complex, pointing to a high need for mental health services.

Need for service integration. This first comprehensive estimate of multisector service use shows that among the 16 percent of children in the community who used any mental health services, almost one-fifth used multiple types of service agencies. More than one-third of the episodes of service use were reported by the 3 percent of the sample who used more than one sector. Thus, it is clear that multisector service use was a significant phenomenon, even in this predominantly poor rural community that might be expected to have limited resources.

The small degree of overlap between the education and mental health sectors raises a question about the potential of school personnel with limited mental health expertise to respond adequately to the clinical needs of emotionally and behaviorally disturbed youth. This concern is underscored by the high rate of seriously emotionally disturbed children seen only in the education sector and suggests a need to improve the linkages between schools and mental health centers. Since the introduction of the P.L. 94-142 legislation in 1975, which made schools fiscally responsible for all
services listed on the Individual Education Plan (IEP), school systems with limited resources have, to a large extent, avoided paying for services other than the required special education services. An alternative used in some places has been to develop a separate but linked community IEP by which mental health services are paid for by local mental health centers.” There is some hope that the new Individuals with Disabilities Education Act (IDEA), the federal law that supports special education and related service programming for youth with disabilities, will help to ensure that more than academic services are provided by schools, at least in conjunction with other child services agencies. Mental health advocates are pursuing federal legislation to strengthen school-based services for the entire child population as well as for children identified as seriously emotionally disturbed. Other approaches, such as school-based services paid for by Medicaid or through demonstration projects, have begun to appear.

Need for school-based mental health services. One strategy to improve children’s mental health services is to increase professional mental health resources within schools, where children can more easily take advantage of them. In studies of school-based clinics, the second most common presenting complaint is mental health problems, which speaks to the need for school-based mental health services. Even among seriously emotionally disturbed children, only 25 percent receive any counseling. Services could be extended to include classroom companions, behavioral aids, and flexible teams for those with more severe problems. Evidence that school-based services would be used is found in a recent study in which 99 percent of children referred to a school-based clinic in Tennessee actually received mental health services, in contrast to only 17 percent of children who were referred by the school to the local mental health center.

Conclusion

We believe that our data point to the need for a drastic organizational change in education—the location of professional mental health services inside schools. The consideration of health care reform proposals at the state level creates an opportunity to test models of school-based health and mental health services with longer-term implications for national policy.

We also suggest a series of questions for further research. First, it is necessary to examine the mental health services being delivered in mental health settings and other settings in greater detail: What types of providers are involved; what types of clinical interventions are being delivered; how effective are these services; and what is the relationship between costs and outcomes? Second, we need to better understand the dynamics underlying help-seeking and sector-choice patterns for children with mental health
problems. Is the high rate of multisector service use a function of effective screening and appropriate referrals among agencies seeing children for other purposes? Is the relatively low rate of multisector use among children who receive mental health services in the education sector appropriate? What is the role of parents in help-seeking decisions and service-sector choice? The findings presented here are only a first step toward quantifying mental health service use within and across sectors.

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NOTES


7. Ibid.


18. Lear et al., “Reorganizing Health Care for Adolescents.”
