Psychological Practice in a Pediatric Rehabilitation Hospital

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Described 127 consecutive referrals to a newly formed psychological consultation service in a pediatric rehabilitation hospital. This setting served children whose needs for comprehensive care and long-term hospitalization could not be met effectively elsewhere in the community. The complex patient population included children with permanent mental and/or physical handicaps who had survived due to advances in medical technology, those with traumatic or congenital brain injury, failure to thrive, feeding problems, apnea, tracheostomy, child abuse, and psychosomatic disorders. A range of psychological services were offered, including specialized assessments and treatment planning for rehabilitation, home and school placement, direct treatment and monitoring of behavioral progress, and consultation with staff. Implications for the practice of pediatric psychology and service delivery to patients in pediatric rehabilitation settings are discussed.

KEY WORDS: pediatric psychology; rehabilitation.

The role of the clinical psychologist in pediatric settings has expanded rapidly over the last decade to include clinical work, consultation, program planning, research, and training in liaison with a broad spectrum of health care

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specialists (Drotar, 1977; Drotar & Malone, 1982; Roberts, Fanurik, & Elkins, in press; Walker, 1979; Wright, 1967). Several authors (Kanoy & Schroeder, 1985; Ottinger & Roberts, 1980; Walker, 1979) have described the frequent problems referred to psychologists in ambulatory pediatric settings including negative child behaviors, developmental delay, school problems, and physical complaints. Drotar's (1977) description of consultation in an acute-care pediatric inpatient setting noted a high frequency of children with chronic illnesses and the need to consider psychological influences on physical problems. Others have described the need for specialized psychology services for populations such as pediatric oncology patients (Koocher, Sourkes, & Keane, 1979) and infants (Drotar & Malone, 1982).

The pediatric rehabilitation hospital is a new setting in which psychological services need to be developed and described. Pediatric rehabilitation hospitals provide an important resource for comprehensive long-term treatment for children with chronically impairing medical conditions, such as children who survive low birth weight, prematurity, and other neonatal risk conditions with permanent physical and/or mental handicaps (Klein, Hack, Gallagher, & Fanaroff, 1985; Singer, Wood, & Lambert, 1985), burn and head injuries, and children on ventilator support. Although the focus on children with physical problems in pediatric rehabilitation hospitals is similar to that provided in other pediatric settings, there are important differences. In marked contrast to acute-care inpatient settings, where crisis-oriented, time-pressured consultation is normative, pediatric rehabilitation settings focus on long-term patient needs and outcome. At least one study (Eagle, Evans, Knight, & Strassburg, 1977) has emphasized the unique context of mental health services in an outpatient pediatric rehabilitation service, noting parental emotional strain and the physical and financial burdens incurred in raising a disabled child. Spinetta et al. (1982) have also described the patterns of observed behavior in children with traumatically induced neurological impairments who were seen in a pediatric rehabilitation hospital. However, with the exception of these initial reports, little descriptive data exist on the practice of psychology in pediatric rehabilitation settings. This report describes the nature and functions of a newly organized clinical psychological service in a pediatric rehabilitation hospital and the implications for psychological services and training in similar settings.

THE SETTING

Health Hill Hospital for Children, the only pediatric rehabilitation hospital in Ohio, has separate inpatient divisions for infants, toddlers, and older children and adolescents. The 50-bed hospital, affiliated with Case
Western Reserve University School of Medicine, provides extensive supportive and therapeutic services to the hospitalized child and family, including physical, occupational, and speech evaluations, and therapy when needed, psychological evaluations, consultation, and social work liaison for the child and family throughout the hospitalization. Adjunct services include a school, preschool, and recreational therapy program. The psychology staff included one part-time clinical child psychologist, one part-time developmental psychologist, and psychology graduate students. During the course of the study, the hospital entered a period of growth and expansion, with average daily census figures rising from approximately 10 to 35 over the course of the 2-year period. Referrals to the hospital come from a state wide area since Health Hill is the only long-term subspecialty hospital in the state. However, the majority of referrals came from the two major tertiary-care pediatric hospitals in Cleveland.

CHARACTERISTICS OF REFERRALS FOR PSYCHOLOGICAL SERVICE

Number and Source

Referrals for psychological service were stimulated by weekly interdisciplinary programming conferences and regular meetings with unit nursing and child care staff. During a 2-year period, 1979–1981, 127 children from 142 admissions (89%) were referred for psychological services. The mean length of hospital stay was 70 days. Ages and diagnostic classifications of patient referrals over this period are described in Table 1.

Reason for Referral

The majority of referral questions related to intellectual status. Psychological testing provided information concerning cognitive deficits and strengths which helped to design and evaluate the child's progress in stimulation or rehabilitation programs. Assessments of children with neurological disorders, such as closed head injury, hydrocephalus, cerebral palsy, seizures, or brain tumor were used to determine the areas and the extent of deficits in cognition; to measure the intellectual correlates of an improving or deteriorating neurological condition; and to make recommendations for educational or vocational placements at discharge planning.

Questions regarding children's emotional status formed the second largest category of referrals, and included three major subgroups: (a) children
<table>
<thead>
<tr>
<th>Nursery (0-18 months)</th>
<th>Toddler (18 months-5 years)</th>
<th>Boys-Girls (6-21 years)</th>
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<tbody>
<tr>
<td>Organic failure to thrive</td>
<td>Abuse and neglect (n = 12, 35%)</td>
<td>Neurological disorders (n = 16, 48%)</td>
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<tr>
<td>(n = 26, 43%)</td>
<td>Neurological (n = 11, 35%)</td>
<td>Cerebral palsy</td>
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<td>CNS disorders</td>
<td>Cerebral palsy</td>
<td>Guillan-Barre syndrome</td>
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<td>Fetal alcohol syndrome</td>
<td>Seizures</td>
<td>Myelodysplasia</td>
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<td>Fetal dilantin syndrome</td>
<td>Myelodysplasia</td>
<td>Traumatic brain injury</td>
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<td>Cardiac anomalies</td>
<td>Multiple congenital anomalies</td>
<td>Psychophysiological</td>
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<td>Gastrointestinal disorders</td>
<td>Developmental delay (n = 5, 15%)</td>
<td>disorders (n = 11, 33%)</td>
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<td>Pulmonary disorders</td>
<td>Other (n = 6, 15%)</td>
<td>Obesity</td>
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<td>Nonorganic failure to thrive</td>
<td>Encopresis</td>
<td>Encopresis</td>
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<td>(n = 20, 33%)</td>
<td>Depression</td>
<td>Asthma</td>
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<tr>
<td>Other (n = 14, 24%)</td>
<td>Mixed developmental disorders</td>
<td>Other (n = 6, 199)</td>
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<td>Developmental delay</td>
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<td>Blindness</td>
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<td>CNS disorders</td>
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<td>Postsurgical care</td>
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whose emotional and family problems interfered with the management of somatic problems (e.g., asthma, obesity, diabetes); (b) children who had difficulties adjusting to chronic or newly acquired physical or mental disability and displayed depressed, aggressive, noncompliant, or regressive behavior; and (c) abused and neglected children who presented with emotional disorders associated with their history of inadequate caretaking and hospitalization, as in the following case illustration:

Justin had been hospitalized since he had been abandoned at 4 months of age with problems of failure to thrive and an undetermined neurological disorder which left him unable to use his legs. With therapies, he gained weight and made significant developmental progress. Now 3 years old, his IQ measured in the superior range and he was able to walk using a walker. Staff requested psychological consultation because of the recent emergence of severe behavioral problems including refusal to eat, aggressive behavior, and regression in toilet training. The psychologist noted Justin's depression and anger over the loss of peer and caretaker attachments during his hospitalization, his increasing awareness and frustration with his physical disability, and his growing realization of the absence of any permanent caretaker. Based on this evaluation, a recommendation was made for ongoing therapy. Intensive advocacy by the hospital and county personnel eventually resulted in a more rapid resolution of his court case and an adoptive placement in a permanent home.

Several adolescents with cerebral palsy who presented with noncompliance and bizarre behavior were diagnosed with more severe disorders, such as schizophrenia and psychosis.

*Psychological Services to Specialized Populations*

A wide range of standardized and specialized testing instruments was needed to properly assess the learning potential of children with varying degrees and combinations of physical and sensory handicaps. Traditional intellectual test batteries such as the Stanford-Binet (Terman & Merrill, 1973) and Wechsler (1974) scales were supplemented with other instruments, such as the McCarthy Scales of Development (McCarthy, 1972), the Vineland Social Maturity Scales (Sparrow, Balla, & Cichetti, 1984), and the Adaptive Behavior Scale (1974). Children with hearing impairment or suspected developmental language disorder were given the Hickey-Nebraska Test of Learning Aptitude (Hickey, 1982), or other nonverbal tests such as the Raven's Progressive Matrices (Raven., Court, & Raven, 1985). For motorically handicapped children, instruments were used that required only a minimal motoric response, such as the Peabody Picture Vocabulary Test–Revised (PPVT-R) (Dunn & Dunn, 1981), the Pictorial Test of Intelligence (PTI), and the Progressive Matrices.

Our assessments revealed that 3 of 15 children with sensory and motor handicaps who were evaluated in the course of this study had been previously
academically misplaced on the basis of inappropriate or invalid intellectual assessments by psychologists. The following cases are typical and illustrative.

Case 1. J.G., a 6-year-old Hispanic girl with mild cerebral palsy, was hospitalized for rehabilitation after a leg fracture due to abuse. Previous psychological testing with the Bayley Mental Scale and Stanford-Binet had yielded a DQ of less than 50 and an IQ of 37 and had resulted in placement in a developmental center for trainable mentally retarded since 3 years of age. Evaluation by the hospital speech pathologist suggested that J.G. was highly responsive to visual cues and gestures and had, in fact, rapidly learned several words in American Sign Language when they were demonstrated to her during a speech-language evaluation. She was found to have a profound bilateral hearing loss. Evaluation with the Leiter scale yielded an IQ of 82, in the low average range of functioning. J.G. was successfully fitted with a hearing aid and placed in a classroom for the hearing-impaired.

Case 2. B.T., a 13-year-old boy with severe visual acuity deficits and cerebral palsy requiring a wheelchair, was hospitalized because of recent regression in self-care skills and "lack of motivation" for academic work. He had attended classes from first grade on for the orthopedically handicapped and moderately mentally retarded based on a prior evaluation with the WISC-R that yielded an IQ of 50. Our evaluation using the prorated WISC-R verbal subtests yielded a verbal IQ of 80. In addition, questions regarding B.T.'s visual acuity led to eventual referral to the Society for the Blind. B.T. qualified as legally blind and was eligible to receive special education materials which facilitated his academic progress.

Specialized neuropsychological assessment instruments were necessary to carefully identify the behavioral and cognitive correlates of brain injury for children who had experienced head trauma or acute neurological insult. The Halstead-Reitan Neuropsychological Test Battery (Reitan, 1979a) for Older Children and the Reitan-Indiana Neuropsychological Battery (Reitan, 1979b) were used to evaluate deficits in memory, sensory-motor skills, and abstraction due to cerebral insult and to assess a child's prognosis for successful return to a regular academic program.

Detection of the psychological impact of neurological dysfunction and description of progress in attainment of developmental milestones were the primary goals of assessment of infants with developmental disabilities (Kearsley, 1981). Traditional infant measures, such as the Bayley Mental and Motor Scales of Infant Development (Bayley, 1969) were used and modified, when indicated, for application to blind (Fraiberg, 1977), deaf, or motorically handicapped infants. An alternative method of infant cognitive assessment, the Fagan Test of Infant Intelligence, which assesses infant recognition memory and information processing (Fagan & Singer, 1982; Fagan, Singer, Montie, & Shepherd, 1986) was used with infants whose motor dysfunction precluded effective use of traditional infant assessments.

Children with psychophysiological disorders, such as asthma, needed comprehensive management of the child's medical symptoms, psychological and family problems. The hospital program assessed the role of family influences on the child's physical symptoms and clarified the role of psycho-
logical versus physical factors in the child's management. In some cases, the program provided help for children and adolescents to develop more effective ways of coping with their family stresses and thus helped to interrupt a maladaptive cycle of debilitating physical symptoms.

Children who had suffered severe and chronic abuse and neglect had considerable needs for comprehensive treatment including occupational, physical therapy, and sometimes psychotherapy. Many of these children came from highly troubled and disorganized families who could not meet their physical and psychological needs. In many instances, these children spent a long time in the hospital and were eventually placed in foster care (Singer, 1986, 1987).

Infants who developed behavioral feeding disorders, often as a response to neurological disorders or chronic illnesses, were referred for psychological consultation. Food refusal, unusual food preferences, gagging, and vomiting were behaviors that interfered with adequate nutrition and were sometimes amenable to change using behavioral modification techniques (Handen, Mandell, & Russo, 1986; Linscheid & Rasnake, 1986; Singer & Wilson, 1986).

CONSULTATION ISSUES

Children in this rehabilitation setting had longer hospital stays, were more stable medically, and hence were more available to engage in therapeutic relationships than populations seen in pediatric acute-care hospitals. As a consequence, there was more time for detailed assessments of psychological functioning conducted by an interdisciplinary team as well as repeated assessment of the child's response to environmental change and therapeutic interventions.

Children recovering from trauma or illness frequently posed difficult management problems that were not apparent during the acute phases of injury or illness and required the staff to take a very active role in facilitating patients' longer term adaptation. Hospital staff in this setting reacted to the child's and family's depression and anger. In addition, staff often assumed a parental role with patients as the hospital stay wore on (Raphael, Karph, & Sills, 1980). In order to be an effective consultant in this setting, the psychologist needed to understand the pressures on staff and help the staff develop ways to deal with the stresses of patient care. The staff required special help to sustain positive emotional support to children whose progress was slow or whose motivation was tenuous. In order to cope with the emotional demands of the child's care (Versleys, 1980), some staff minimized the diagnostic implications of a child's long-term prognosis and had difficulty helping family members deal with their denial of the permanency of a child's
disability. In many cases, staff had unrealistic expectations of parents and responded angrily when family members, who had additional children and responsibilities, could not devote themselves to the child's rehabilitation program.

The behavioral outbursts of acutely distressed adolescents or children that occurred post head trauma were particularly troubling to nursing and therapy staff who generally had not been trained to deal with these problems. Other children with chronic disabilities developed personality problems and displayed maladaptive interaction patterns with parents which engendered demanding, whining, and dependent behaviors. For this reason, training staff to conduct behavioral management and treatment planning for children with poor impulse control, noncompliance, or passivity was an important function of the psychological consultant. Weekly meetings with nursing, aides, and therapy staff on each unit also served as a valuable forum in which to educate staff regarding the psychological aspects of a child's care, to develop specific intervention strategies, and to facilitate open expression of the staff's concerns and feelings related to patient care.

DISCUSSION

Pediatric rehabilitation hospitals provide a valuable resource for comprehensive care of children whose chronic physical, developmental, emotional, and family problems often cannot be addressed effectively elsewhere. This report underscores the varied roles of the psychologist in the rehabilitation hospital as well as the diverse needs of the populations. The psychologist's varied contributions to patient care include assessment and treatment planning for rehabilitation, home and school placement, behavioral treatment, environmental manipulation, and ongoing monitoring of psychological progress and consultation with staff (Eisenberg & Jansen, 1987; Larsen, Ayllon, & Barrett, 1987; Spinetta et al., 1982). To accomplish these disparate tasks, psychologists in pediatric rehabilitation settings need to develop expertise in a broad range of skills including neuropsychological assessment, the assessment of children with sensorimotor deficits, psychophysiological disorders, and abuse and neglect, as well as consultation and collaboration with other professions, and knowledge of community resources and the long-term ramifications of the child's medical condition or disability. Although many of these problems are familiar to pediatric psychologists who work in pediatric acute-care hospitals, psychological work in pediatric rehabilitation raises special problems. For example, psychologists in pediatric rehabilitation hospitals work with patients, families, and staff over a relatively long period to help them cope with the problems raised by the changes in their
child's functioning and the eventual transition from hospital to home. The psychologist's ability to help staff develop informed management plans appropriate to chronic problems and to deal with conflicting emotions generated by their long-term relationships with children and families is a critical aspect of their role.

The present observations have several implications for service delivery for populations seen in pediatric rehabilitation hospitals. Certain populations of children with neurological conditions and tracheostomy require special educational programming and have needs for ongoing family support that could not be easily met within existing community patterns of care. Such gaps in services stimulated several advocacy efforts. For example, in collaboration with parents, hospital staff volunteered to help the needs of head-injured children become more visible to others in the community by forming a local chapter of the National Head Injury Foundation. Moreover, the lack of psychosocial treatment services for severely abused and neglected children with developmental and emotional problems is a problem in many communities (Ammerman, Cassisi, Hersen, & Hasselt, 1986) and was also documented in our experience. The need for foster care services and specialized treatment for abused and neglected children's emotional problems was especially acute. Finally, children and adolescents with serious psychophysiological disorders often demonstrated very difficult problems that could not be adequately addressed within existing patterns of care in our community. In most cases, such children were admitted to the rehabilitation hospital because their medical problems could not be managed effectively by their physicians and their psychological problems could not be accommodated by psychiatric services. Even after their discharge from the rehabilitation hospital, these patients continue to require intervention and follow-up services which often are not available in the community. Our experiences suggest the need to develop specialized comprehensive management programs focused on the medical and psychological needs of children and adolescents with psychophysiological disorders.

With increasing numbers of children with chronic conditions and changes in reimbursability insurance patterns for these problems, one might expect that the numbers of pediatric rehabilitation hospitals and job opportunities for psychologists in these settings would increase (Eisenberg & Jansen, 1987). Psychologists who choose to work in pediatric rehabilitation settings need to adapt to a changing setting in which new populations require psychological services to be developed. For example, shortly after the time of this report, the hospital opened an additional 8-bed ventilator support unit to treat a growing population of chronically handicapped infants. To adequately assume the varied and challenging professional roles of pediatric rehabilitation, psychologists require clinical training at predoctoral and
postdoctoral levels in assessment, intervention, and consultation with these specialized pediatric populations. For this reason, pediatric rehabilitation hospitals are a potentially important site for clinical training.

Our clinical experiences indicated the need for research concerning the psychological outcomes of children who have experienced acute brain injury, tracheostomy, and severe abuse and neglect. Data concerning the initial psychological functioning of pediatric rehabilitation populations is needed to serve as a basis for studies of psychosocial treatment outcomes, prognosis, and service delivery. In addition, future research and clinical reports are needed to describe consultation issues and promising intervention approaches to the challenging problems seen in pediatric rehabilitation hospitals. This report is based on one pediatric rehabilitation hospital and generalizability of our experiences to other settings is not known. We anticipate that our experiences will encourage others to describe and evaluate psychological services in other rehabilitation hospitals.

REFERENCES

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Psychological Practice in Pediatric Rehabilitation


