Research Abstracts

This is the fifth in a series of abstracts taken from completed research studies funded by the American Occupational Therapy Association (AOTA) and the American Occupational Therapy Foundation (AOTF) over the past 12 years. Abstracts are being published three times during 1991, after which time the backlog of completed studies will have been eliminated. Thereafter, abstracts will be published annually.

A Study of Reliability and Validity of a Preschool Play Scale
Nancy Parry Bledsoe, MS, OTR, Jayne T. Shepherd, MS, OTR.
On file at AOTF.

Childhood play is a major arena for the development of knowledge, skills, and attitudes that permit productive adult behavior. Occupational therapists must assess and treat play dysfunction to facilitate normal development. The purpose of this study was to examine the reliability and validity of a play assessment tool, the Preschool Play Scale. Ninety children were observed and rated on the Preschool Play Scale, Lunzer's Scale of Organization of Play Behavior, and Faren's Social Play Hierarchy. Data were analyzed with bivariate correlation coefficients. Significant results suggest that the Preschool Play Scale will yield objective, stable, and valid measures of play for nondysfunctional preschool children when administered by trained observers. Recommendations for further study of the Preschool Play Scale are given.

A Study of Black Preschool Children's Performance on the Miller Assessment for Preschoolers
Rose Mary Martin, MS, OTR.
On file at AOTF.

This study examined the performance of 76 black preschool children on the Miller Assessment for Preschoolers (MAP) in comparison to test norms. The sample's MAP performance was also examined for significant differences in relation to sex and income level. Results revealed that the sample performed significantly differently from the test norms on the MAP Total Score, Foundations, Nonverbal, and Complex Tasks indexes. No significant differences were found between male and female subjects' MAP test scores or between lower-income and middle-income subjects' scores. Results indicated that although there were generally fewer than expected observed scores in the extremely high and low percentile categories, more than expected observed scores were found in the middle percentile categories. The researcher therefore concluded that the sample performed within a normal range of developmental abilities as shown by the comparisons with the MAP's norms.

Reliability of the Behavioral Assessment Scale of Oral Functions in Feeding
Kenneth Ottenbacher, PhD, OTA, Bonnie Swanton Dauck, OTR, Valerie Grahn, OTR, Marcia Gevelinger, OTR, Christine Hassett, OTR.

Oral facilitation is a commonly used treatment intervention in programs for persons with developmental disabilities, but there is little evidence sup-
porting the efficacy of this work in nor-

evaluation or assessment instruments

dents while they were being routinely

The Stratton Behavioral Assessment

with I-eported reliability and validity.

The difficulty of

ment development. These results may

even have been inflated by the experi­

cence of the examiners. The difficulty of

comparing performance in severely and

profoundly handicapped populations is

exacerbated by the low incidence of the

disorders, the heterogeneity of the pop­

ulation, and the restricted range of func­

tional performance.

A Comparative Study of Vestibular

Function and Motor Proficiency in

Children With Down Syndrome

and Age-Matched Children With

Other Forms of Mental

Retardation

Pamela Hellman, MA, OTR.

On file at AOTF.

The purpose of this study was to

cmpare the postrotary nystagmus,

prone extension, supine flexion, and

motor proficiency scores of children

with Down syndrome and other age-
matched children with mental retarda­
tion to the existing normative data.

Tests designed to assess these four var­

ables were administered individually to

17 children with Down syndrome and

15 children with mental retardation. No

significant differences were found be­

tween the two groups in any of the four

tested variables. However, a significant

difference in postrotary nystagmus and

motor proficiency scores was noted be­

tween the normative data and children

with Down syndrome.

An adjunct purpose of this study was to
determine if any of the four var­

ables were related in children with

Down syndrome and children with men­
tal retardation. Significant correla­
tions were found between the prone ex­

tension and motor proficiency scores in the

subjects with Down syndrome, the sub­

jects with mental retardation, and the

total sample. These results in combina­
tion with the correlations found be­

tween the supine flexion and motor

proficiency scores of the subjects with

mental retardation and the total sample

support the importance of postural sta­
bility in the acquisition of motor skill.

The additional correlation found be­

tween the prone extension posture and

the supine flexion posture in the total

test sample may suggest an overall muscle

tone deficit specifically related to tonic

muscle contractions. These results sug­
gest that treatment approaches empha­
sizing sensory input and modulation

may be more effective in the achieve­
ment of postural stability and motor

proficiency than are traditional motor

programs currently seen in special edu­
cational settings.

A Comparison of Service Provision

Models in School-Based

Occupational Therapy Services—

A Pilot Study

Winnie Dunn, PhD, OTR.


Occupational therapists provide ser­

vices to children within a number of

service provision models. Although

the literature discusses these models,

there have been very few investiga­
tions to identify their effects. This pilot study

compared the provision of direct ser­

vice and collaborative consultation to 14

preschoolers and kindergartners ran­
domly assigned to interventions. The

achievement of individualized education

plan (IEP) goals was used as the mea­
sure of educationally relevant child out­

comes. Therapists and teachers com­
pleted an attitude survey before and

after participating in the study. Results

indicated that although children in both

conditions achieved a similar percent­
ge of IEP goals, teachers in the collabo­
rative consultation condition reported

much larger occupational therapy con­
tributions to IEP goals and had more

positive comments on the attitude scale.

These results suggest that (a) similar

levels of goal attainment can be

achieved in direct service and in consul­
tation and (b) the relationships that de­

velop between therapists and teachers

may lead to a more positive overall view

of the learning environment and the

contribution of occupational therapy to

that environment. Further study is

needed to identify additional service

provision factors that contribute to suc­
sessful program outcomes.

Occupational Therapy Outcomes:

The Utilization of a Technological

Device and Current Modes of

Therapy in the Treatment of

Children With Visual-Sequential

Memory Deficits

Nancy Kathi, MS, OTR; Mary Driscoll, OTR; Marion Guild, OTR.

On file at AOTF.

The ability to diagnose learning dis­

abilities in young children has

placed such great demands on remedia­
tion resources that technology must fill

the personnel gap. A technological se­

quencing device (TSD) was designed as

a therapeutic tool for use with children

who show deficits in visual-sequential

memory. The child, working alone on

the machine, pushes three to six but­
tons in sequence to duplicate a pattern.

If the sequence is correct, the display

lights up a red button that also serves

as a playback button for reinforcement.

The TSD is equipped with four develop­
mental levels of learning materials; each

program contains activityware in various

categories (e.g., colors, numbers, se­
quenced story strips). The learning ma­
chine was tested on 12 children, each of

whom was paired with another child

who received traditional remediation.

Both groups of children averaged gains

of 1 year during the 3-month experi­
ment. This study has validated the effec­
tiveness of occupational therapy in daily

clinical practice for children who show

deficits in visual-sequential memory and

has also validated the viability of tech­
nology as an alternate mode of therapy

in the rehabilitation of children with

neurological impairments.

Evaluation of Visual-Perceptual

and Fine Motor Attributes of

Children With Myelomeningocele

Eileen Julie Rosenbaum, MS.

On file at AOTF.

This descriptive research study as­
essed visual-perceptual and fine

motor abilities in a group of children
with myelomeningocele. The purposes of the study were to determine the level of functioning in each area and to analyze the relationship between fine motor coordination and visual-perceptual function in children with myelomeningocele. The research sample comprised 12 children with myelomeningocele, aged 4 years 10 months to 8 years 4 months. All of the children were evaluated on the Motor-Free Visual Perception Test and the fine motor composite of the Bruininks-Oseretsky Test of Motor Proficiency. The results of the two assessments indicated that the children with myelomeningocele had deficits in both visual perception and fine motor coordination. The deficit in visual perception was mild. The deficit in fine motor coordination was severe in children with myelomeningocele and associated hydrocephalus. These results indicate that a comprehensive occupational therapy evaluation and treatment program for children with myelomeningocele should include visual-perception and fine motor assessments. It was recommended that future research be undertaken to determine the most desirable methods of training to ameliorate the deficits in fine motor coordination and visual perception in children with myelomeningocele.

Gestural Imitation Abilities of Young Children With Down Syndrome
Carol W. Lunsford, MS, OTR.
On file at AOTF.

This research was designed to gain information about the development of imitation in young children with Down syndrome. The subjects were 20 infants, 11 to 38 months of age, who were encouraged to imitate six kinds of gestures: actions with and without objects, actions with and without sound, and actions that were visible and not visible to them (e.g., hand actions vs. facial gestures). As was hypothesized, children imitated actions with objects and actions that were visible to them with greater frequency, sound did not affect performance. The subjects exhibited a range of total performance scores at each age, which implies that developmental level is a more important factor than chronological age in the determination of performance trends. As with nondysfunctional infants, attention level affected performance and response time. The imitation responses examined here were evaluated in a structured setting, a precursor to spontaneous performance. Responses therefore indicate emerging skills and may be used as baseline levels in treatment planning.

An Analysis of the Relationship of Proximal and Distal Motor Control
Jane Case-Smith, EdD, OTR.
On file at AOTF.

Occupational therapists have adopted the proximal-distal theory of motor development as a principle of treatment. Although this principle is an integral part of such widely accepted theories as neurodevelopmental treatment, research has not validated the sequence of proximal to distal motor development. This study of 60 nondysfunctional infants, 2 through 6 months of age, investigated the relationship of proximal and distal motor function as measured by the Posture and Fine Motor Assessment of Infants. The results demonstrated that shoulder and pelvic control were significantly related to fine motor control. Head control was not related to fine motor function, and general postural control was not significantly related to grasp. These findings indicate that certain aspects of proximal motor development are related to distal motor development in nondysfunctional infants; however, the relationship varies according to which motor components are examined. The finding that control of grasp is not significantly related to proximal motor control has implications for occupational therapists.