On-Line Computerized Assessment of Young Children Using The Minnesota Child Development Inventory

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ABSTRACT: Psychiatric evaluation of the preschool-age child necessarily includes consideration of the child's developmental status as well as definition of symptoms and clarification of child and family dynamics. The Minnesota Child Development Inventory provides a means for the developmental evaluation of the preschool-age child that conserves professional time by using an inventory format to obtain the mother's observations of her child. A computerized version of the Minnesota Child Development Inventory, including administration, scoring, and an interpretive report, is described. This article also discusses some general considerations for computerized testing and the usefulness of the MCDI in child psychiatry.

In child psychiatry there is a need for accurate, in depth, quickly available information about a young child's developmental status. A child who presents with emotional or behavioral symptoms may also be suffering some developmental lag or disability. Considerable professional time is required if the mother's report of her child's development is to be obtained in any detail through the interview process.

The Minnesota Child Development Inventory (MCDI) provides a standardized format for obtaining and interpreting mothers' reports of their children's development. The MCDI makes it possible to obtain extensive developmental information with minimal expenditure of professional time. The original MCDI was described ten years ago in this journal. This article briefly describes subsequent research with the inventory; it then describes the on-line computerized version of the MCDI and discusses its clinical utility in child psychiatry.

The MCDI can be used with children from one to six years of age. The mother—or other knowledgeable person—describes her child's current developmental status by answering "yes" or "no" to 320 items

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which describe developmental behaviors in the first six years of life. The MCDI provides a concise picture of the child’s current development on a profile of eight developmental scales: General Development, Gross Motor, Fine Motor, Expressive Language, Comprehension-Conceptual, Situation Comprehension, Self Help, and Personal-Social Development.

Research regarding the validity of the MCDI has included: normative data;\textsuperscript{3} clinical study of children with developmental and behavioral problems;\textsuperscript{4} studies of normal preschool-age children, including nursery school and Headstart children;\textsuperscript{5} preschool screening studies;\textsuperscript{6} and developmental follow-up of high-risk infants.\textsuperscript{7} These studies have demonstrated good correspondence between mothers’ MCDI reports and results of psychological testing. The confidence that can be placed in the validity of the mother’s report has been found to be related to her level of education and to her opportunity to observe her child’s behavior. Mothers with less than an eleventh grade education may have difficulty completing the MCDI.

**On-Line Computerized Testing**

The advent of microcomputer technology has made possible the development of inexpensive on-line administration, scoring, and interpretation of psychological tests. Advances in microcomputer technology parallel growing demands for psychological services. Computer usage is increasing in clinical and research settings. Programs have been developed to administer tests, interview patients, make diagnoses, and produce evaluative reports.

Computerized testing can provide useful descriptive and diagnostic information while consuming little of the clinician’s time. Thus, the busy clinician has additional time to devote to other duties that require skilled interaction with patients.

On-line testing allows the patients to continuously interact with and control the testing process. More importantly, test results are available to the clinician immediately upon completion of the test administration process. This can reduce the time required for accurate diagnosis and initiation of the intervention process.

Patients appear to respond positively to computer administration of tests.\textsuperscript{8} Computer-generated reports, when compared to traditional clinical assessment reports, have been judged equal in content and style\textsuperscript{9} and superior in accuracy and clinical utility.\textsuperscript{10} Evaluation of the interpretive rules and associated narrative statements by expert clinicians has also yielded positive results.\textsuperscript{11}