SHORT COMMUNICATION

Home Observation for the Measurement of Environment

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Abstract

Introduction

Home Observation for Measurement of the Environment (HOME) is a systematic assessment of the caring environment in which the child is reared. The primary goal of the instrument is to measure, within a naturalistic context, the quality and quantity of stimulation and support available to a child in the home environment. Its focus is on the experience of the child in the home environment; the child as an active recipient of inputs from objects, events and transactions occurring in connection with the family surroundings. It is intended to be used by practitioners as well as researchers, and ideally it should be combined with information from individual assessments of the child in a context of a multimodal assessment procedure [6].

Development & Objectives

HOME was first developed and used by Bettye Caldwell and her colleagues in a longitudinal study conducted during the 1960s, which examined the relationship between home environments, day care and children's development [6]. At this time, theorists and practitioners had accepted that the home environment makes an independent and significant contribution to children's development. It had become clear that assessment of IQ or of language development (or any kind of cognitive assessment on its own) could not provide sufficient basis for the prediction of children's developmental outcome [3]. Three main factors led to the construction of the HOME: a) the realization of the importance of the environment's contribution to the cognitive development of children, b) the inadequacy of the environmental measures used until then (mainly socio-economic status), and c) the need for a comprehensive environmental assessment when planning interventions [6].

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The HOME profile approaches child development through the ecological systems theory developed by Bronfenbrenner which places the developing individual in a context of interdependent environmental systems of differential impact. The assessment procedure of the HOME draws information on the dyad of the child and the primary caregiver, which is seen as the fundamental building block of the microsystem and upon which the formation of larger interpersonal structures is based [1].

Application

The following are some of the application of HOME:

Screening:

The HOME scale was intended for use in screening homes to identify those which pose a risk to a child's development [3].

Diagnosis:

The utility of the HOME scale as a diagnostic tool is uncertain. "Diagnosis" in this case is of the home as a learning environment for a child from birth to 3 years of age [3].

Matching Environments

Typically, environmental process measures, such as the HOME scale, account for substantially more variance in children's mental test performance than do structural measures such as SES designations. While the number of studies employing the HOME scale for matching is limited, the potential of the scale for this purpose appears substantial, particularly in studies using families from a single social status [3].

Program Evaluation

Several investigators have employed the HOME scale for purposes of program evaluation [3].

HOME Versions

The initial version of HOME is the Infant-Toddler HOME (0-3). Information is obtained through observation and interview with the primary caregiver (usually the mother) of the child in the family home. Items are scored on the basis of information obtained from the answers to the questions of the semi-structured

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interview and from direct observation of the home environment by a trained assessor. All items are scored according to a manual that provides explanation of each item and some examples for scoring them. The child is physically present and active along with the caregiver during the interview in order to obtain immediate information about the patterns of interactions between the caregiver and the child. The whole assessment lasts approximately one hour [6].

The Infant Toddler-HOME (IT-HOME) is composed of 45 items that are presented as statements to be scored as YES or NO. Higher total HOME scores indicate a more enriched home environment, always in relation to the children's contextual and organismic features. Even though no cut-off points are specified in the manual, the range of scores falling in the top and bottom quarter and the middle half are reported on the Summary Sheets. In general, scores falling in the lowest fourth of the score range indicate an environment that may pose a risk to some aspect of the child's development [5].

The next age group for whom HOME assesses the environment is 3 to 6 year olds. The Early Childhood HOME is made up of 55 items that are grouped in eight different subscales and are also scored in a binary manner (YES/NO). Two more versions of HOME have been developed for older children: the Middle Childhood HOME for children between 6 and 10 years and the Early Adolescence HOME for children between 10 to 15 years old [5].

Subscales/Factors

The HOME scale varies according to age-specific version, but generally incorporates measures of cognitive stimulation and warmth available to child, family's capacity to fulfill basic needs and patterns of social interaction and parenting practices [5].

IT-Home includes emotional and verbal responsibility of mother, avoidance of restriction and punishment, organization of physical and temporal environment, provision of appropriate play materials, maternal involvement with child, opportunities for variety in daily stimulation [5].

EC-Home includes learning stimulation, language stimulation, physical environment, warmth and acceptance, academic stimulation, modeling, variety in experience, acceptance [5].

MC-Home includes emotional and verbal responsibility, encouragement of maturity, emotional climate, growth fostering materials and experiences, provision for active stimulation, family participation in developmentally stimulating experiences, aspects of the physical environment [5].

EA-*Home* includes physical environment, learning materials, modeling, fostering self-sufficiency, regulatory activities, variety of experiences, acceptance and responsivity [5].

Psychometric Properties

Reliability

The first study conducted to assess the psychometric properties of HOME suggested that there is a 90% agreement between observers and internal consistency ranges from moderate to strong (.44 to .89). Test-retest reliability was moderate for a period of 18 months. As for concurrent validity, small to moderate correlations were found between HOME and seven socioeconomic status variables: welfare status, maternal education, maternal occupation, presence of father in the house, paternal occupation and crowding in the home [3]. Since the initial study, several researchers have studied the psychometric properties of IT- HOME and it has been concluded that inter-observer agreement has never fallen below .80 while the internal consistency of the total scores was found to be as high as .80 and internal consistency of the subscales ranged from .30 to 80 [6].

Validity

In order to assess validity, correlation coefficients were computed between the HOME scores and five socioeconomic variables: maternal education, maternal occupation, paternal education, paternal occupation and the amount of crowding in the home. Maternal education, paternal education and crowding ratio were moderately correlated with the total HOME scores (.57, .47 and .47 respectively). The highest correlation was observed between stimulation through toys, games and materials and maternal education (.65) [6].

Strengths and Limitations

The HOME Inventory has been used successfully in research and in practice. It is easy to administer and score and has sound psychometric properties. Even though it requires special training, it is straightforward to complete and to score and at the same time the whole procedure is not threatening to the family. The combination of interview and direct observation allows for an assessment of the caring environment along with a more detailed assessment of individual children [2].

However, one of the most serious restrictions of this inventory is lack of a standardized procedure for administration. Solutions to this limitation have been suggested which advises researchers to conduct their own measures in order to assess the psychometric properties of their measurements within any one study. Training practitioners to follow a standardized procedure of administration by

focusing on a specific day in the child's life and on obtaining factual information, can also overcome this issue [4]. Another limitation comes from the measurement scale itself. The choice of a binary scale makes it easier for the interviewer to score but it deprives the researcher or the practitioner of more subtle information needed to make informed judgements. When for example the interviewer finds that a parent has physically punished the child once during the last week, it is scored as Yes. If, however, this child is being physically punished several times every week, then the scale does not accommodate this more detailed information [3].

Conclusions and Recommendations

HOME is without doubt the most commonly used environmental assessment instrument in developmental research. Many years of research have demonstrated the important correlations it has with measures of cognitive and language development, and its ability to independently predict such outcomes later in the child's life. Most importantly, research has proved the instrument's validity in describing the home environments of children at risk and revealing the effect of home experiences in developmental outcomes. The review of large-scale intervention program, though, suggests that HOME has been used mainly as a measure of environmental change, and not as a guide for designing the actual content of the intervention [5].

A variety of implications, thus, for future research are apparent. For example, existing environmental process measures are perhaps as notable for what they do not contain as for what they do contain. Typically omitted are assessments of parental teaching style, discipline style, or consistency in discipline style across parents, not to mention across environments as is the case for many children who are placed in day care centers. Also, the HOME scale (and most other such measures) does not assess adult modeling behaviors such as energy level, initiative, task orientation, or interpersonal skills. Also neglected has been the behavior of household members other than the mother [3].

Significant improvements in environmental process instruments could be achieved more rapidly if there were more highly developed theories about the relationship of environment and development. For the present, the refinement of environmental process measures represents a step forward in the assessment of environmental quality; thus, enabling researchers to delineate more clearly the relationship between environment and development.

Relevance for African/Ethiopian Culture

The HOME has been shown to predict a number of child developmental outcomes within the United States. In order to use the inventory outside of the US, however, adaptations have been necessary. A review of the cross-cultural uses of the HOME

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scale revealed important differences among developing nations, relative to history, sociocultural norms, and politics, highlighting the need for the equivalence of the HOME to be demonstrated across cultures before broad generalizations are made [1]. Rather, the authors highlight the limitations of the HOME when administered without adaptations, as key home factors likely differ significantly between cultures. Generally, items associated with cognitively stimulating environments appeared to demonstrate the highest degree of equivalence across cultures. However, equivalence of the HOME factors must be weighed against the relevance in different cultures. Several researchers have highlighted the need for and proposed guidelines for the development of cross-cultural assessment tools. Geisinger (1994) outlines several steps in adapting the use of normative assessments for cross-cultural use, particularly the importance of ensuring that the same psychological construct is being measured across groups [4].

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