DEVELOPMENT OF A SURVEY MODULE ON CHILD DEVELOPMENT FOR CHILE

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INTRODUCTION

Healthy child development during the first years of life is considered critical to achieving later school success and to reduce inequalities. Since 1960, Chile has taken actions to promote early child development, particularly among those in poverty. In 1974, Rodriguez, Arancibia and Undurraga published a national scale to measure psychomotor delays among children from 0 to 2 months. In 1985, Haeussler and Marchant published another screening tool to measure child development among children 2 – 5 years old. These scales were implemented as screening tools in primary health care check ups. Although the coverage of children (0-6 years old) check ups in Chile is over 80%, there is no systematic information about the usage of developmental screening tests, and about the prevalence of functional developmental delays in the population.

At present, the Government of Chile is working on a National System of Social Protection for Infancy and Childhood. This policy priority has produced a growing need for national data about the prevalence of developmental delays and about the demands for child services of different modalities and their determinants. According to that, the Ministry of Health is including in its national survey on quality of life a module on child development and chronic diseases.

OBJECTIVE

Validate a screening test, to detect child developmental delays in population between 3 to 72 months old, to be included in the National Survey on Quality of Life.

METHOD

Design: Cross-sectional
Sample: 184 mothers of children less than 6 years old, in a middle income Primary Health Care Center at Santiago de Chile. (Power: 80%, type I err: 5%)
Variables: Developmental delay according to screening test (1 or more negative items) versus Developmental delay according to clinical diagnosis done by pediatricians, neurologists or psychiatrists, which was registered in the clinical record (gold standard).
Procedure: A set of questions, to be answered by the caregivers, were selected after an analysis of available validated instruments and expert opinions. These items cover all areas of child development according to seven groups of age. A preliminary application was done to a sample of 10 mothers, in order to correct language, to evaluate time and difficulties in the administration.
Source of items:
Greenspan Socio-Emotional Growth Chart (28)
Pauta Breve de Desarrollo Psicomotor (EEDP + TEPSI) (6)
Promedio Longitud del Enunciado (PLE/PNE) (1)
Receptive-Expressive Emergent Language Test (REEL)(1)
Pediatric Symptom Checklist (ADHD) (5)
The instrument was applied by trained professionals at the waiting room of a Primary Health Care Center during September and October 2005 to 184 mothers. Questions of the preliminary and his group of age were applied to every child.
Coding of the clinical results was done blind to the results of the applied screening test.
Analysis: A descriptive analysis of the variables, sensitivity and specificity were obtained. Internal reliability using KDR-20 was done.

RESULTS

A total of 164 cases were analyzed; 20 were eliminated because they do not have clinical
record in the Center (table 1). The sample average of age was 25, 3 months.

Table 1: Participants, KD20 and its p-value.

Group	N° ítems	N°	KD20	P-value	Need of excluding an item
1 (3 to 6 months)	5	29	0,34	0,0150	No
2 (7 to 11 months)	10	32	0,46	0,0001	Yes: 0,51 (item2.2)
3 (12 to 23 months)	13	42	0,67	0,0010	No
4 (24 to 35 months)	15	26	0,44	0,0195	Yes: 0,84 (item 4.6)
5 (36 to 47 months)	11	24	0,82	0,0001	No
6 (48 a 59 months)	13	15	0,70	0,0001	No
7 (60 a 72 months)	15	16	0,35	0,1000	Yes: 0,56 (item 7.6)

Sensitivity sequentially analyzed: 85,7%
Sensitivity not sequentially analyzed: 85,7%
Specificity sequentially analyzed: 82,8%
Sensitivity not sequentially analyzed: 81%

Clinically Healthy children,
- Total score (mean and standard deviation) not sequentially analyzed: 6,53 (SD 1,56)
- Total score (mean and standard deviation) sequentially analyzed: 12,51 (DS: 2,66)

Clinically Not Healthy children,
- Total score (mean and standard deviation) not sequentially analyzed: 6,17 (DS 1,617)
- Total score (mean and standard deviation) sequentially analyzed: 10,96 (DS: 3,42)

Differences in means in total score between health children and not health children
Not sequentially analyzed: p=0,19
Sequentially analyzed: p=0,005

CONCLUSION

After the analysis we recommended to exclude some items and we also recommended the application of the test in a sequential pattern to introduce more variance.
This preliminary validation study permits us to introduce some changes and to support its inclusion within the National Quality of Life Survey. The national application, which is in process, will allow us to validate it as a population screening tool.