

Observation of Communicative Behavior: an updated protocol from 0 to 72 months

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ABSTRACT

Purpose: to describe the updating of the Observation of Communicative Behavior protocol in the age group from 0 to 72 months.

Methods: the Observation of Communicative Behavior protocol was revised and updated, with the insertion of the child development milestones in its various areas, becoming a child development screening tool.

Results: the protocol includes 188 items, distributed in 10 age groups from zero to 72 months. The items were organized as follows: from zero to 24 months, divided by quarter (four age groups); from 24 to 36 months per semester (two age groups); and from 36 to 72 months, divided by year (four age groups). The items covered the areas of child development and its main milestones. The score is registered in the protocol and a score of 0 - does not perform the action or behavior, 1 - performs the action in an atypical, restricted manner or it is being acquired, 2 - properly performs the action/behavior, is attributed to the response, after analysis. Few materials and a structured environment are needed to apply the protocol.

Conclusion: the updating of the Observation of Communicative Behavior protocol has a direct impact on the initial assessment of children with or without suspected delay in child development and should be used by health professionals in monitoring typical child development (routine) or in cases where the child receives specific stimulation.

Keywords: Protocols; Child; Child Development; Neurosciences

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INTRODUCTION

Child development is a maturational and interactive process, resulting in an orderly progression of perceptive, motor, cognitive, language, socio-emotional, and self-regulation skills¹, being that the brain architecture is shaped by the interaction between genetic inheritance and environmental influences in the early years.

There is growing evidence that the identification of neurodevelopmental delays and early intervention have the potential to alter adverse development and provide significant short- and long-term benefits for children^{2,3}. In this perspective, understanding the trajectories of normative development during early childhood, looking at the different interactions of motor, linguistic, cognitive, and personal-social skills, since skills influence the development of one another, is of fundamental importance³.

In the same sense, there is a vast literature on the importance of child development surveillance, and monitoring risk and protection factors, with the main objective of favoring neurodevelopment, prioritizing the development windows and essential stimulation in the period of greater brain plasticity, as well as carrying out assertive diagnoses as early as possible⁴⁻⁷.

In this way, the prognosis of children with changes in global or specific development is more promising and there is a greater possibility of reaching the true potential that each child may have⁸.

Knowledge of normative development is fundamental for identifying risk signs and screening procedures are extremely important for taking measures to minimize probable developmental delays⁸, as well as the deleterious effects that these delays may have on child development. With the procedure for tracking neurodevelopment and identifying risk signs, it is possible to verify each area in particular, through additional diagnostic procedures, standardized or normalized for the reality of the target population. Thus, knowing the developmental expectation for each age group helps guide safe stimulation, helping children to fully develop their potential.

The measurement of child development is fundamental for clinical determinations about the needs of children and families^{8,9}.

To evaluate and diagnose developmental disorders in infants and children is of inestimable importance in relation to the possibility of performing essential stimulation, reducing or remedying damage and sequelae throughout life, minimizing consequences in the family

environment as well as optimizing the public services that this child may need⁵.

In view of this scenario, after years of experience working in the speech-language pathology diagnosis in broader contexts of child development, a compilation on the evolution of skills and developmental milestones in the age group from 0 to 72 months and organization in a protocol to be applied in a fast and practical way, with accessible resources, was carried out.

This study aimed at describing the updating of the Observation of Communicative Behavior protocol in the age group from 0 to 72 months.

METHODS

Considering the central theme of the study, the update of an evaluation protocol, not involving application in human beings, and without data from a pilot study or standardization, it was not necessary for this research to be appreciated by the Ethics Committee for Research in Human Beings.

The Observation of Communicative Behavior (OCB) protocol was initially created for academic purposes, to help undergraduate students in the observation of children's behaviors, and to verify whether the observed behaviors were in accordance with the expectations of the children's chronological age. In 2010 and 2017, the protocol was revised and the notes' sheet of observations was restructured, from its original version^{10,11}, starting to be used in a clinic school (university), in the speech therapy diagnostic internship (children with language disorders as part of broader frameworks or with genetic syndromes) and in studies developed in the institutional research group.

The current OCB protocol, described in this article, received a new revision, an update in its notes' sheet of observations, and considered/inserted the milestones of child development in its four base areas: fine motor-adaptive, gross motor, personal-social-emotional, and language and communication. It was built based on the manuals of the main scales of normative development¹²⁻¹⁵.

The OCB is a child development screening instrument, in the age group from 0 to 72 months, standardized, following a continuous flow of development, considering the chronological age and the evolution of the child development milestones, in its main base areas. It aims to favor the understanding of the milestones and the need for intervention or referral to diagnostic processes when it is verified that the child

is not showing the development and acquisition of the skills expected for the age group he/she is in.

The application of the OCB is quick, after frequent use of the protocol, taking about 20 minutes, on average, for completion, varying according to age and factors such as behavior, environment, and practice of the evaluator, among others.

The application material is simple, easy to handle and transport: bell, rattle, mirror, children's book, plastic bottle (with screw cap), paper balls or other material (that fits in the bottle), geometric shapes fitting game (simple), 10 cubes (primary colors, approximate size 2.5 cm), miniatures (doll, car, animals, cup, glass, plate, spoon, bed, hairbrush or comb, phone), ball (size of a tennis ball), bond sheet, pencil, scissors, alphabet, rope. Regarding the environment, it must be airy, with good lighting, quiet (no noise), and have a mat, table, and children's chair available.

In a playful situation, with spontaneous action by the child and semi-directed by the evaluator, the items related to the chronological age are evaluated considering three possibilities of annotation of an answer: 0 - does not perform the action or behavior; 1 - performs in an atypical, restricted manner or is under acquisition; 2 - properly performs the action/behavior. The child is expected to perform the items of the month or age group corresponding to their chronological age. When there are answer notes in "0" or "1", items from the previous age group must be evaluated until the child performs 90% of the protocol items referring to the given age group.

As it is a screening instrument, when the child does not present 90% of the items related to their chronological age, referral for complete evaluation and diagnosis of possible alterations in child development should be carried out, as well as the reapplication of the OCB in two or three months, after family orientation of the skills that the child did not perform. The normative scoring standards, considering the standard deviation, as well as the psychometric analysis of this instrument are under development and will be published in the near future.

RESULTS

The updated OCB protocol includes 188 items distributed in the age group from 0 to 72 months, considering the pace of development and acquisition of skills in their different areas.

The items, respecting the sequence of child development and their milestones in the four major areas of development, were distributed into 10 age groups:

- 1st year of life – 0 to 12 months: divided by quarter (four age groups);
- 2nd year of life – 12 to 24 months: divided by semester (two age groups);
- 3rd to 6th year of life – 24 to 72 months: divided by year (four age groups).

In Chart 1, the number of items to be evaluated by age group is distributed.

Chart 1. Number of items to be evaluated by age group

Age Group	Months	Number of items
1	0-3 months	21
2	3-6 months	22
3	6-9 months	24
4	9-12 months	27
5	12-18 months	19
6	18-24 months	22
7	24-36 months	21
8	36-48 months	16
9	48-60 months	8
10	60-72 months	8

In the OCB protocol notes' sheet of observations, there are three columns to mark the answer, classified as "0", "1" or "2".

DISCUSSION

The OCB protocol was developed based on the need for an instrument that would compile the milestones of child development in its various areas, with the main purpose of students and health professionals to carry out verification of normative development or, when relevant, to observe a risk sign for a delay in child development^{10,11}.

The OCB is a child development screening instrument, easy to use, with a self-explanatory answer sheet and standardized score. The materials needed for the application of OCB are easily accessible and transportable, allowing application in different environments. The importance of knowing the expectations for the appearance and consistency of neurodevelopment skills is emphasized in order to verify that the observed behavior is within the normative expectation for the age group in which the child is. As presented¹, there is an urgent need for child development indicators at the population level, to allow continuous monitoring, since the identification of children at risk (even mild) is essential²⁻⁴, as the literature has shown evidence of the importance of early intervention processes to reduce discrepancies for the child's future²⁻⁸.

Authors analyzed the use of the Integrated Management of Childhood Illness (IMCI) strategy, which was created with the aim of training health professionals to offer comprehensive care to children's health and prevent damage in the first years of life. A negative point identified in its application was the absence of development milestones organized month by month, but by longer age periods¹⁶. These authors considered that, mainly, between 0 and 24 months, the pace of development is more intense, being indicated the division by months, regarding the observations of the milestones of child development. The OCB protocol meets this finding, presenting its items divided every three months in the first year of life and every 6 months in the second year of the child's life.

Caminha et al. (2017)⁴ point out that, from 2004 on, in Brazil, the commitment to child development surveillance was reaffirmed, however, even today, the progress in terms of notes and recording of child development in the Child Health Handbook is small. They also emphasize that the importance of intensifying care in the so-called "1,000 critical days" is

presented worldwide. They reiterate that this context needs to be recognized in the national and international health forums, in the executive, legislative and judicial branches, as a matter of human rights^{4,17}.

The results of a recently published literature review⁶ point to the Brazilian reality that screening tests are used inappropriately, either because they extrapolate their purposes inappropriately or because they do not present their psychometric characteristics, such as their validation. The findings indicated that screening instruments with validation and not just with translation and cross-cultural adaptation, for example, are needed.

After completing the standardization norms, as well as knowledge of its psychometric characteristics and normalization for the Brazilian population, the OCB will be made available and will have a positive and decisive impact on child development screenings.

CONCLUSION

The updated OCB protocol was described in depth in terms of its structure, content, application, and use. This protocol has a direct impact on the initial assessment of children with or without suspected delay in child development, and may also be used by health professionals to monitor typical child development (routine) or in cases where the child receives specific stimulation in one or more areas of development.

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Author contributions:

ATF-V participated in the study design; acquisition of theoretical references, and structuring of the material found; organization of content; analysis of results; article writing; and critical review for relevant intellectual content;

DACL participated in the study design; organization of content; analysis of results; critical review for relevant intellectual content; and final approval of the version to be submitted for publication;

EPR participated in the acquisition of theoretical references, and structuring of the material found; organization of content; analysis of results; article writing; and critical review for relevant intellectual content.