
La estimulación temprana para el desarrollo infantil

The early stimulation for the childhood develop

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Resumen: La estimulación temprana se refiere a la atención de infantes que necesitan de recursos adicionales para su desarrollo. En consejos populares de Santiago de Cuba se ejecutó un trabajo para la estimulación temprana de niños portadores de factores de riesgo de retraso mental. Se utilizaron métodos teóricos de investigación y un pre experimento pedagógico que permitieron elaborar y evaluar un programa y una estrategia de estimulación temprana que proporcionan recursos para estimular y evaluar el desarrollo del niño. Esto contribuyó a detectar tempranamente las insuficiencias o retardos en el desarrollo de los niños estudiados.

Palabras clave: Estimulación temprana; Factores de riesgo; Programa Educa a tu hijo; Retraso mental.

Abstract: Early stimulation refers to the care of infants who need additional resources for their development. In popular councils of Santiago de Cuba, a work was carried out for the early stimulation of children with risk factors for mental retardation. Theoretical research methods and a pedagogical pre-experiment were used to develop and evaluate an early stimulation program and strategy that provide resources to stimulate and evaluate child development. This contributed to early detection of deficiencies or delays in the development of the children studied.

Keywords: Early stimulation; Risk factors; Educate your child program; Mental retarded.

Introduction

Internationally, the need to offer equal opportunities for access to education to all children from the earliest ages, including those with different stages of development, is recognized. Internationally, the importance and scope of early childhood education is recognized and it is stated that:

One of the objectives of education should be to favor neurosensory development, through the stimulation of vision, hearing and psychomotor development. This prepares the child to select, integrate, analyze and synthesize the world around him/her through information that integrates him/her with the environment, family and society. (Michelini et al., 2000, p. 1).

This shows the recognition of education in the early years of human life as a source of development that can be achieved by each individual.

Cuba presents unquestionable quantitative and qualitative advances in the attention to children, particularly preschool children with special educational needs. Proof of these results are the high indexes of attention and quality achieved, which is combined with the development of numerous researches in these areas. This has taken into account the need for diagnosis and, closely related to this, the implementation of early stimulation programs as a way to prevent developmental disorders (Rodríguez Roche, 2012).

However, there is still dissatisfaction with the early detection of children with developmental deficiencies or delays, which becomes more evident in the cases of those infants who have suffered the action of certain biological risk factors and are later diagnosed as mentally retarded.

The psycho-pedagogical-social study of disabled people and the psycho-pedagogical-social and clinical-genetic study of people with mental retardation, carried out in 2003, determined that Santiago de Cuba is one of the provinces with the highest incidence of mental retardation in its population (Gayle Morejón & Guerra Iglesias 2004). Therefore, differentiated attention to the diversity of children attending the Educate Your Child program becomes a priority for preventive work.

Development

The topics of early stimulation is not new and throughout the world researchers develop stimulating practices from different epistemological conceptions, aimed at promoting the development of children who are in an unfavorable social or biological situation.

Regarding the definition, scope, structure and functions of early stimulation, dissimilar criteria can be found that in general consider it as a set of actions, system of care,

activities to promote development (Bolsanello & Pérez López, 2006), (Ortega Matarrita & Núñez Chaves, 2017).

PAHO (2009) considers early stimulation as a set of actions that provide stimuli that favor child development.

For his part, Sánchez Palencia (2017) points out that "early stimulation is understood as that attention that should be provided to the child so that he/she develops in the best possible physical, intellectual and social conditions"(p. 856). It is noteworthy that this author takes into account the comprehensive nature that early stimulation must have in order to achieve its objectives.

Other researchers consider that it consists of a method that provides timely stimuli to favor development from birth to at least 3 years of age, taking into account the particularities of the development of the nervous system and the existence of sensitive periods. (Meza Guevara, 2017).

Early stimulation is also considered as a set of activities that can be applied from birth to 6 or 7 years of age, for being the stage with greater brain plasticity (Chalcualán PUSDÁ, 2017). It is also noted that it should not only be applied to healthy children but also to those with actual or potential developmental disorders, in order to stimulate their compensatory abilities (Sánchez Palencia, 2017).

Based on these considerations and following the Cuban experience and that of the author, early stimulation is defined:

As an intensive pedagogical process planned on the basis of the age characteristics of the children, aimed at preventing possible delays and deviations, to enhance the integral development of children affected by certain factors that could hinder their normal evolution (Huepp Ramos, 2005, p. 55).

It is taken into consideration that "early stimulation is a process that unfolds in an ascending spiral, from the stimulation of simple forms of activity to more complex ones, through the exchange of influences between the child and the adult" (Huepp Ramos & Fornaris Méndez, 2020, p. 3).

From the physiological point of view it is taken into consideration that if the functional system is formed thanks to the participation of afferentations, which coming from

different points of the periphery stimulate the brain contributing to its physiological maturation, its use would produce an additional stimulus, propitiating the direction from outside of the functional systems (Svietkova, 1985), including the unconditioned reflexes as a source of stimuli.

The direction of the development of the different processes is physiologically determined by the brain areas most suitable for functioning at a given stage, which implies that a stimulation that follows this course would lay the foundations for the development of others that are involved in the control and execution of actions of a higher level of complexity (Vigotsky, 1987).

Both points of view are interrelated when applied to the conditions and characteristics of child development in the ages of zero to two years, in which it is possible to use these older functions without detriment to the development of higher psychic functions, which is impossible in more advanced periods, when social influences take on greater weight in which case what is required is not prevention, but correction of the alterations suffered.

These assumptions were taken into account to develop a program of early stimulation activities that would complement the activities of the Educate Your Child program with the stimulation of unconditioned reflexes and that would allow for more intensive attention to children with risk factors by increasing the volume of the content of the stimulation process and reducing the time between evaluations of the child.

However, it is necessary to clarify that:

1. The activities follow the line of development of the processes to be stimulated, where the inclusion of the phylogenetic criterion plays an important role because it makes it possible to follow the natural course of the child's development, but it is not the only one.
2. The natural development of the child (unconditioned stimuli) is only a condition for the stimulation of the higher forms of the human psyche, which have a social origin.

3. The activities at each stage make possible the intensification of stimulation and the variety of its content, depending on the educational needs of each child, which depends on the individual diagnosis.

These demands, in order to be effective, have to be in direct relation with the infant's possibilities and his demands, manifested in the form of educational needs whose appearance and satisfaction propitiates the ascending movement of learning, where language becomes more and more important as an instrument of regulation of the psychic activity.

The content of the process is enriched with the determination of new activities that are included taking into account the results of psychological research of the child in this period and the personal experience of each of the drivers of stimulation, which gives a flexible character to the content of the pedagogical process, in this regard it is important to consider that "in the first years of life the child zero to six is not so necessary to provide him with a lot of knowledge in an isolated way and yes the tools that allow him to live in constant relationship with the world" (Torres Ramos , Ramos Villena , & Tortoló Fernández, 2016, p. 113). The stimulation of positive emotional communication constitutes the cross-cutting axis of the program; all activities promote a positive emotional climate in the communication process between the child and the person conducting the actions, as a guarantee for the emotional and cognitive stability of the child, which offers favorable conditions for learning and physical development and is considered an indicator of quality of life at preschool age (Huepp Ramos, 2005).

Human language is the main psychic tool for intellectual work; therefore language stimulation is present at all times. It is considered the possibility that in children affected by risk factors there may be limitations in the comprehension and use of oral language; this conditions the need for the stimulation of extraverbal forms of language to prevent possible affectations in communication.

As the sensory functions constitute the first step of knowledge and provide the factual material that enriches the content of thought to gradually penetrate into the essence of phenomena, the designed pedagogical process conceives the early stimulation of all analyzers in correspondence with their directions of development which corresponds to the functional potentialities of the child's nervous system. This includes the

stimulation of such ancient functions as smell, taste and touch, which constitute the contents of the process.

The functional development of the ear plays an important role in human activity, because it contributes to the orientation of the individual and the execution of his activity in a sonorous environment. The tonal hearing is of great importance for the child, together with the presentation of sounds, it is necessary the realization of vocalizations, which together contribute to achieve a better differentiation of tones, which affects the hearing for language and even for music.

The visual analyzer is stimulated with the perception of objects in the following direction: from moving to immobile objects, from near to far objects, from objects with red and orange colors to the rest of the colors. The manipulation of objects is linked to their visualization, in order to develop visual-motor coordination.

Motor stimulation begins with gross motor skills; it is essential to first develop muscular strength in the whole body with movements on appropriate surfaces, combined with sensory stimulation, which provides the possibility of mastering the movements of the head, trunk, arms and legs first, and then the fingers.

This order in the development of motor skills responds to the existence of two laws established by neurology, the law of cephalo-caudal development and the law of proximal-distal development, which cannot be ignored in stimulation, because they mark the most relevant milestones in the development of motor skills and their direction.

The activities foresee the movement of the eyes before those of the head. In the first months the movement of the arms is stimulated with more intensity than those of the trunk and finally the stimuli for the movements of the legs appear, in order to comply with the law of cephalic-caudal development. Later on, the arm and hand movement towards the object for grasping is stimulated, in another stage the stimulation of the manipulation of objects begins, which is successively perfected through the use of smaller objects and objects with a specific destination so that this manipulation has a more specific objective in relation to the manipulated object, expression of considering the distal proximal development.

Motor stimulation inevitably involves the use of instruments designed for daily activities, so that from the first years of life the child can adequately use those that are accessible for their use and necessary for the activity to be performed.

The stimulation process is not developed by isolating one area from the others. These areas constitute a single whole to form conditioned reflexes, considered the core of the process of generalization of thought, also because the most general objective of the process is the integral development of the child. On the other hand it is necessary to take into account that stimulation activities provide long-term positive effects on child development (Ozaydin, 2015).

In order for the external influence on the child to have a differentiated character, the particularities of his learning are considered, which in this period is manifested as imitation, which is the most frequent way that human beings have to learn, linked to the ability to reproduce actions through participation in them, controlling his learning pace to obtain the necessary information about the course of the process and take measures aimed at its constant improvement in order to meet the proposed objectives.

The early stimulation process is developed within the framework of the Educate your child program taking into account that "it is in the family where the first emotional and educational experiences are experienced and at the same time in its bosom they are guaranteed the security and stability necessary for their future development" (Colomé Medina & Fernández Fernán, 2017, p. 142).

The participation of the family and its positive emotional bond with the child during the early stimulation process is an aspect that exerts an effective influence on both the child and the participating parents which was demonstrated in the development of the research (Huepp Ramos & Fornaris Méndez, 2020).

In the province of Santiago de Cuba, pre- and perinatal factors constitute 68.29% of the causes of mental retardation identified in the 2003 study, the most frequent being: maternal infections, intrauterine growth retardation, preterm birth, malnutrition and/or anemia, maternal smoking, cesarean section, gestational hypertension, central nervous system infections, depressed newborn, malnutrition, low birth weight, instrumental delivery, congenital malformations, gestational hyperthermia, low Apgar, maternal

alcohol consumption, threatened abortion and preterm birth, as well as cranioencephalic trauma. These causes do not always lead to mental retardation, so their presence alone does not constitute a determinant in the appearance of this developmental deviation, and they can be considered as risk factors for mental retardation (Huepp Ramos, 2005).

Following these considerations, risk factors for mental retardation are defined as "a set of elements that have been identified as causal for mental retardation and which, because they have had an impact on a given individual, could jeopardize his or her normal development, without necessarily leading to the onset of the disorder" (Huepp Ramos, 2005, p. 28).

This conception made it possible to work with children who presented these risk factors and who were served by the Educate your child program, providing them with differentiated attention within this educational program.

In correspondence with these considerations, the strategy for early stimulation described below was designed.

General Objective: To apply the activities for early stimulation based on the protagonist participation of the family and other educational agents that have an impact on the child.

In order to achieve the proposed objective, the strategy will include four areas of work:

Promoters

1 Executors

2 Family

3 Children

Stages of the strategy.

Diagnosis. A preliminary study of each of the directions in which the process is developed was carried out.

1 Indicators of the diagnosis of educational agents:

a) Degree of preparation: Knowledge of risk factors and their incidence on child development, mastery of the basic elements of early stimulation and knowledge of the characteristics of the pedagogical process at this age.

b) Satisfaction with the task: Interest and disposition towards the early stimulation task, emotional bond with the proposed task.

2. Indicators of children's diagnosis:

a) General data.

b) Personal and family history.

c) Current development

d) Social conditions of development

For the application of the pedagogical strategy, District # 3 of the municipality of Santiago de Cuba was intentionally selected because, according to data from the Center for Diagnosis and Orientation (CDO) and the Study of Mental Retardation and Other Disabilities (2003), it is one of the areas of the municipality where there is a higher incidence of mental retardation. It is characterized by urban and suburban areas with social, economic and educational conditions, which can be classified from good to bad, that is to say, all the possible categories in which these aspects would be evaluated are represented, which is why this district is representative of other areas of the territory

Between January and February 2015, visits were made to the medical offices of the selected People's Councils to find out which children were born with risk factors and their characteristics, as well as to explain to the family doctors the general issues of the work to be carried out.

Polyclinics	Medical houses
Municipal	10, 13, 14, 31,15 y 17
28 de septiembre	48, 52, 23, 64 y 55
López Peña	32

Table 1. Provenance of the children studied.

Source: Own elaboration

Twenty-six children with risk factors were detected and were also included in the sample:

- Five promoters of the Educate Your Child program, graduates in Education with more than five years of experience in the task.
- Twelve family doctors as implementers.
- Three health activists as executors.

An educator from Kinder garden Circle who received three of the children in the second year of life.

24 families of the children under study (26 people).

As a result of the exchanges carried out during the diagnostic stage, it became evident that there was a need to:

1 Systematize the identification and follow-up of risk factors in mothers from the prenatal stage.

2 Delimit with family physicians the risk factors to be worked with.

Execution and control: It was decided to consider both elements within the same stage due to the characteristics of the pedagogical process of early stimulation of children from zero to two years of age with risk factors, where the result is controlled in the execution of the tasks themselves, so there is no general control at the end of the strategy. The basic actions included in this stage were the preparation of the educational agents and the direct stimulation of the child.

The stage began with the preparation of the promoters, who would be the multipliers of the preparation to the executors and these to the families.

The application of early stimulation to the children began in conjunction with the preparation of the families. The activities were carried out weekly by the executors of the Educate Your Child program with the children, which served as a demonstration for the parents who systematized them at home.

The actions of the strategy were evaluated in correspondence with the achievement of the objectives proposed for each one, having as indexes the states of Acceptable and Not Acceptable. When the planned objective has been met by more than 70% of the participants, the activity can be evaluated as acceptable, which does not imply that the rest do not receive the attention required to achieve the objective.

During the implementation of the strategy, the work of each of the people involved was systematically monitored in order to develop the necessary actions to eradicate any shortcomings that might arise.

The applied program consists of activities divided by stages in correspondence with the children's ages; stages of shorter duration than those of the Educate your child program were considered for the first year of life with two months of duration each, in which the activities are aimed at the development of positive emotional bonding, language, sensory functions and motor skills.

Each of the activities is broken down into its main actions as shown in the following table.

1-2 MONTHS	ACTIONS	Children												
		1	2	3	4	5	6	7	8	9	10	11	12	13
Slowly move in a horizontal direction an attractive object 20-30 cm from the child's face.	Keep doing another activity													
	Stops doing another activity, does not follow the object													
	Stop doing another activity and follow the object	7	6	9	2	3	2	3	3	3	4	3	5	4

Table 2: Program of early stimulation activities.

Source: Own elaboration

In the box corresponding to each child, the week in which he/she performs each of the actions is noted so that the child's development can be assessed based on the process he/she follows to perform a certain activity, which is important for the purpose of incorporating actions to correct any delays he/she may present.

The early stimulation program was delivered to the families. The Educate Your Child program implementers showed them the activities to be developed and provided guidance on aspects related to the care, attention and monitoring of the development of these children.

The weekly participation of the executors in the control of the activities allowed the children to become familiar with them, which prevented them from becoming strangers in the family environment, thus limiting the appearance of strange behaviors in the presence of strangers, which is very common at this age and favored that the observations were carried out by different people, guaranteeing their objectivity.

In the first year of life, the activities took place in the children's homes. In the first place, mothers, older siblings and other relatives of the children were the direct executors, who also contributed to the stimulation.

In the second year of life, the children joined groups attended by health activists, who, in addition to group work, gave particular guidance to the families of the children under study.

The mothers could develop the activities daily as many times as they considered necessary, taking into account the requirements already known, and they had to write down next to the activities the dates on which the child was able to carry them out.

As a result of the visits made to the families and the observations of the children, it was possible to observe a positive disposition to face the stimulation of the little ones and a favorable environment, which shows the result of the actions developed in the strategy for the preparation of the families and the execution of the stimulation.

Except for two children, all of them performed all the activities when they reached the second year, but within each stage, variations were observed among the children, which are due to individual differences and to the particularities of the activities

designed for stimulation, thus it was observed that the activities constituted by unconditioned reflexes were performed at the moment they were presented; The same happened with the activities related to sensory development; however, when it came to the activities where it was necessary to use different analyzers, some delays were found, mainly in children with hypoxia and low weight, who were slower in their responses.

In the aforementioned cases, aids were necessary that went as far as the joint execution of the activities with the child and the increase in the frequency of the activities in these areas.

Both aspects of the pedagogical help favored that in later stages the children executed the activities in the established periods, so that the execution time approached the established parameters.

The two aforementioned children were referred to the CDO at six and twelve months, respectively, for presenting developmental delays and were incorporated into the orientation and follow-up process carried out by that institution in accordance with Ministerial Resolution 126 of 1985.

However, it was recognized by the CDO specialists that these delays were not marked, which supports the effectiveness of the activities developed.

At present, the children continue to develop adequately and in the areas where we worked, these actions are systematized and the intervention continues with the participation of students from the Special Education and Speech Therapy careers of the Universidad de Oriente.

Conclusions

The pedagogical strategy applied interacts adequately with other educational programs when executed within the context of the Educate Your Child program and allows the stimulation of the child, as well as the evaluation of its development. The program of activities for the early stimulation of children from zero to two years of age with risk factors is effective in that it provides stimuli that lead to the integral development of the children under its influence.

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