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## *Family guidance methodology for psychomotor stimulation of infants with low vision diagnosis*

*[Metodología de orientación familiar para la estimulación psicomotriz del lactante con diagnóstico de baja visión]*

*[Metodologia de orientação familiar para estimulação psicomotora de bebês com diagnóstico de baixa visão]*

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## **ABSTRACT**

**Introduction:** incorporating and socially improving the standard of living of infants with low vision diagnosis (LVD) who present psychomotor development delay, is a challenge for physical rehabilitation professionals, since this is a disabling disease from a motor point of view.

**Objective:** to develop a methodology for family orientation in the psychomotor stimulation of infants with low vision diagnosis.

**Materials and methods:** theoretical methods such as analysis and synthesis, systemic structural functional methods were used for the construction of the theoretical framework, which made it possible to determine the essential elements to include in the elaboration of the methodology and determine its components. In the empirical order, the survey, the interview, the documentary analysis, the case study and the percentage calculation made it possible to evaluate the relevance of the methodology.

**Result:** the fundamental result of this study is the methodology for the orientation to the family in the psychomotor stimulation of infants with low vision.

**Conclusion:** the implementation of the methodology allows the family to be prepared to effectively influence the psychomotor skills of their children with low vision diagnosis.

**Keywords:** Family orientation, low vision, psychomotor skills, infant.

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## **RESUMEN**

**Introducción:** incorporar y mejorar socialmente el nivel de vida del lactante con diagnóstico de baja visión (DBV) que presentan retardo del desarrollo psicomotor, es un reto para los profesionales de la rehabilitación física por ser esta una enfermedad discapacitante desde el punto de vista motor.

**Objetivo:** elaborar una metodología para la orientación a la familia en la estimulación psicomotriz de los lactantes con diagnóstico de baja visión.



**Materiales y métodos:** se emplearon métodos teóricos como el análisis y la síntesis, el sistémico estructural funcional para la construcción del marco teórico, lo que posibilitó determinar los elementos esenciales a incluir en la elaboración de la metodología y determinar los componentes de esta. En el orden empírico, la encuesta, la entrevista, el análisis documental, el estudio de caso y el cálculo porcentual permitieron evaluar la pertinencia de la metodología.

**Resultado:** el resultado fundamental de este estudio es la metodología para la orientación a la familia en la estimulación psicomotriz de los lactantes con baja visión.

**Conclusión:** la implementación de la metodología permite preparar a la familia para incidir con efectividad en la psicomotricidad de sus hijos con diagnóstico de baja visión.

**Palabras clave:** Orientación familiar, baja visión, psicomotricidad, lactante.

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## RESUMO

**Introdução:** incorporar e melhorar socialmente o padrão de vida de bebês com diagnóstico de baixa visão (VBB) que apresentam atraso no desenvolvimento psicomotor é um desafio para os profissionais de reabilitação física por se tratar de uma doença incapacitante do ponto de vista motor.

**Objetivo:** desenvolver metodologia para orientação familiar na estimulação psicomotora de bebês com diagnóstico de baixa visão.

**Materiais e métodos:** para a construção do quadro teórico foram utilizados métodos teóricos como análise e síntese, funcionais estruturais sistêmicos, que permitiram determinar os elementos essenciais a incluir no desenvolvimento da metodologia e determinar os seus componentes. Na ordem empírica, o levantamento, a entrevista, a análise documental, o estudo de caso e o cálculo percentual permitiram avaliar a relevância da metodologia.

**Resultado:** o resultado fundamental deste estudo é a metodologia de orientação familiar na estimulação psicomotora de bebês com baixa visão.



**Conclusão:** a implementação da metodologia permite que a família esteja preparada para influenciar efetivamente as habilidades psicomotoras de seus filhos com diagnóstico de baixa visão.

**Palavras-chave:** Orientação familiar, baixa visão, habilidades psicomotoras, bebê.

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## INTRODUCTION

Working to prepare the family to stimulate the development of their children is a responsible and flattering task at the same time. Several authors at different times have carried out research on the topic; among their main contributions are those related to language development and learning. Currently, special attention is paid to children, unlike before the Triumph of the Cuban Revolution, where only those children of the highest social class who could pay medical expenses received differentiated attention.

Since the 19th century in the Republic of Cuba, the role that the family should play in the education of its children has been considered. From a legal point of view, there are documents referring to the role of the family, among them the Constitution of the Republic of Cuba (2019), The Family Code (2022), The Children's and Youth Code (1978).

However, neither in these documents nor in the aforementioned research does it explain how families can contribute to the development of the psychomotor skills of their children with low vision diagnosis.

Both the foreign and national authors mentioned above leave the way open for conducting research related to family preparation; among these, Picayo; Picayo and Pérez (2019), Pérez; Muñoz; Gómez *et al* (2022), Ulloa; Hernandez; Páez *et al* (2022) stand out, who have tried to improve the educational influences that infants receive at home, however, there are still cracks in family orientation in relation to activities in the psychomotor order and that this favors a more comprehensive development of infants with low vision diagnosis (LVD).



Others authors such as Quispe, CE; Troya, EV (2020), Montaña, L. (2019), Sampayo, Valle and Guerrero (2022), and Santiesteban, B. (2023) approach family orientation from different educational levels and various areas of intervention, emphasizing the importance of preparing families to practice, as well as taking into account their needs and potentialities.

Several authors have also investigated about the family, among them Calderón; Conesa; Suarez and Figueroa (2019) who addressed the preparation of the family for the development of educational work, Pérez, Ruiz and Rivero (2021) who conducted research on how to prepare the family so that it helps to perform independent work and, Céspedes, Alonso and Smith (2022) investigated about educational guidance to the family to stimulate sensory-motor development in the first year of life, Ferrales and Sánchez (2023) the preparation of the family for the development of the child from the educates your child program.

Morrillo, A.M, Aguavil, J.G, García, B.A, Coello, B.M (2022), Guerra, E., González, Y.A, Pérez, D., Gamboa, D., Contreras, T. (2022), have addressed psychomotor rehabilitation in pediatric age, but not particularly in children with visual impairment.

Regarding psychomotor stimulation in the family context in early childhood, authors such as Osoria, (2019) and Dolores, Rojas, (2019) agree on the need to take into account the sensitive periods for psychomotor stimulation.

In terms of psychomotor stimulation in infants with a possible low vision diagnosis, authors such as Quispe, Troya, (2020), agree on the importance of carrying it out systematically, but do not establish guidelines for its practice by the family, and most of them do not consider the age of the infant.

Based on the authors' experience, as well as on interviews with parents of children with low vision diagnosis, it was found that:

- There is insufficient parental knowledge of methods or techniques for psychomotor stimulation.



- The lack of methodological guidelines for the preparation of the family in psychomotor stimulation through information materials in the form of brochures, leaflets and digital materials, which can be socialized directly or indirectly, that address the problem of how to prevent delay of psychomotor development in infants with LVD and ensure optimal development of offspring.
- Insufficient parental knowledge of atypical courses of infant development and the importance of early psychomotor stimulation.
- The limited development of research on family preparation in theoretical elements related to psychomotor skills in children with LVD.

Therefore, the objective of this research is to elaborate a methodology for the orientation of the family in the psychomotor stimulation of infants with low vision diagnosis.

## *MATERIALS AND METHODS*

Among the methods and techniques used for the elaboration of the methodology, documentary analysis was found to determine the theoretical foundations of the family counseling process. The analysis and synthesis made it possible to specify the essential elements to include in the methodology. The systemic structural-functional approach made it possible to conceive the components, stages and actions of the methodology.

The survey allowed us to obtain information on the level of knowledge that parents have on aspects related to the characteristics of their infants in terms of psychomotor development and the preparation they have to enhance the stimulation process.

While the interview was applied to parents with the objective of knowing the potential and weaknesses of infants with LVD who do not attend special classrooms or rehabilitation areas in order to use the data collected to enrich the research.



A case study was developed based on the introduction of a methodology to contribute to the preparation of the family in the psychomotor stimulation of their infant child with low vision diagnosis. The percentage calculation allowed us to evaluate the relevance of the methodology.

A qualitative observational single-case, inclusive and exploratory study was carried out. The case study was developed following the logic of the stages conceived for the methodology; this was implemented in the family of an infant with low vision diagnosis with an optic nerve coloboma at 6 months of age and a psychomotor development evaluation corresponding to 2 months of age.

## ***RESULTS AND DISCUSSION***

A family orientation methodology is proposed to enhance the psychomotor development of their infant children with low vision diagnosis. This methodology is structured in stages; it presupposed a sequence of stages and each stage is in turn a sequence of actions, therefore, it explains how it operates in practice, how they are integrated, which methods, procedures and means are proposed, as well as the methodological recommendations to promote the preparation of the family to stimulate the psychomotor development of their infant child with a possible low vision diagnosis.

Objective of the methodology: to favor the orientation to the family to stimulate the psychomotor skills of the infant with a possible low vision diagnosis.

The first stage of the methodology is the diagnostic stage, which is proposed to be carried out in several directions:

1. Definition of the dimensions and indicators to be evaluated. The starting point is to define the dimensions and indicators that will be evaluated in the parents to determine the level of knowledge about how to stimulate psychomotor skills in infants with low vision diagnosis.





2. The selection and development of instruments to diagnose the level of knowledge about how to stimulate psychomotor skills in the infant with low vision diagnosis.
3. Application of the instruments developed to diagnose the level of knowledge about how to stimulate psychomotor skills in infants with low vision diagnosis.
4. Valuation analysis of the results and identification of the parents' potential and shortcomings.
5. Documentary review and analysis of the programs and methodological guidelines used for the orientation of the family in the psychomotor stimulation of the infant with low vision diagnosis.

The second stage is the planning stage in which the following actions are carried out:

1. The selection of methods is carried out. The use of methods is suggested according to the classification that takes into account the degree of participation of the subjects:
2. Determination of procedures: it is proposed to improve the process of preparing the family for psychomotor stimulation of the infant.
3. Determination of the teaching aids to be used. The teaching aids or materials to be used for stimulation are toys and objects of daily use by the infant, which should be attractive and brightly colored, washable, resistant, easy to handle and not dangerous to manipulate. These will be the complement for the realization of some of the stimulation activities.
4. Distribution of activities in the first trimesters of the first year of life (Table 1).



**Table 1** - *Distribution of activities in the first trimesters of the first year of life*

<b>Activities</b>	<b>1st trimester</b>	<b>2nd quarter</b>	<b>3rd quarter</b>	<b>4th quarter</b>
Activities to stimulate feeding.	X	X	X	X
Activities to encourage head and neck control while sitting	X	X	X	X
Activities to stimulate the smile.	X	X	X	X
Activities to stimulate actions for the arms.	X	X	X	X
Activities to stimulate actions for manual functions.	X	X	X	X
Activities to stimulate actions for the legs.	X	X	X	X
Activities to stimulate reflex actions.	X	X	X	X
Activities to stimulate the relationship between baby and family.	X	X	X	X
Activities for initial language stimulation.	X	X	X	X
Activities to stimulate for the initial stimulation of vision.	X	X	X	X
Activities to stimulate in the aquatic environment (Baby bath).	X	X	X	X
Activities to stimulate after bathing.	X	X	X	X
Activities to stimulate when changing clothes.	X	X	X	X
Activities to stimulate how to reward results	X	X	X	X
Activities to stimulate socialization	X	X	X	X
Activities to stimulate cognitive development	X	X	X	X
Activities to encourage and encourage peeing and pooping	X	X	X	X
Activities to encourage control of the head and neck while facing down.	X	X	-	-
Activities to stimulate control of the head and neck while facing up.	X	X	-	-
Activities to stimulate turning around	-	X	-	-
-	-		-	-
Activities to encourage sitting with assistance	-	X	-	-
Activities to stimulate play in the corral	-	X	-	-
Activities to stimulate floor play	-	X	-	-
Activities to encourage learning to crawl	-	X		



Activities to encourage self-feeding	-	X	-	-
Activities to stimulate sitting play.	-	X		-
Activities to stimulate discovery games	-	X	X	X
Activities to stimulate observation games	-	X	X	X
Activities to stimulate imitation games	-	X	X	X
Activities to stimulate palm grip.	-	-	X	-
Activities to stimulate crawling	-	-	X	-
Activities to encourage standing with help.	-	-	X	-
Activities to stimulate crawling	-		X	X
Activities to stimulate incorporation with help	-	-	X	X
Activities to stimulate the development of balance	-	-	-	X
Activities to stimulate play with other children	-	-	-	X
Activities to encourage standing with support	-	-	-	X
Activities to encourage taking steps with assistance	-	-	-	X

The third stage is the implementation. The main objective of this stage is to implement the family orientation methodology for the psychomotor stimulation of the infant with low vision diagnosis, in which the activities planned for this purpose are implemented.

Methodological recommendations for the implementation of the methodology. The methodology is accompanied by guidelines that allow its implementation in different contexts and conditions. Two workshops or activities of orientation and initial evaluation will be carried out for the orientation of the family for the realization of the psychomotor stimulation activities in the infant with possible low vision diagnosis and determination of the psychomotor age of the infant.

Fourth stage. Evaluation. It was carried out based on a group of actions that allow us to verify whether the methodology guarantees the achievement of the proposed objectives. The evaluation was directed to the process and therefore to consider the procedures used



to carry out the tasks, as well as the possibility of generalizing them; therefore, they should address the orientation, the execution process and the control itself.

From the practice, the family in charge of the psychomotor stimulation process of the infant with low vision diagnosis, evidence that the main difficulties in accessing the stimulation sessions were eradicated by the positive impact, since the methodology offered the necessary tools to carry them out at home, the conceptual and procedural references offered by this proposal, especially the different types of stimulations offered in the manual, provides an improvement in the emergence of initiatives by both the infant and the family, by considering the characteristics that typify infants with low vision diagnosis and that the family should master.

As part of the final results, an interview was applied to the family with the objective of knowing the evaluative judgments provided by the methodology for the stimulation of psychomotor skills in infants with low vision diagnosis in the family context.

The results obtained demonstrate that the family considers that the proposed methodology meets the requirements for the stimulation of psychomotor skills in infants with low vision diagnosis in the family context and that it has the necessary foundations to be mastered for work in the stimulation sessions.

The family considers that there is a correspondence between the objectives set out in the methodology and what the psychomotor stimulation program pursues in this type of disability, since it offers guidelines for the stimulation of psychomotor indicators based on the determination of the zone of current and upcoming development, the cognitive characteristics presented as a result of the disability and also the implications of the activity, which in this particular case refers to the activities to be considered for the early stimulation process.

Furthermore, it states that the selection, adaptation and distribution of activities and actions respond to the needs of maturity of the typical psychomotor development courses of the infant in the first year of life, taking into account the possible diagnosis of low vision of these infants, and adaptations to physical activity for rehabilitative



purposes to take into account the need to adjust the activities to the needs and potentialities of infants.

In relation to the methodological indications provided as part of the methodology, they were considered appropriate since they state the success of the sessions in order to fulfill the objectives of the methodology.

The family considers that the methodology with a didactic, integrated and organized nature is a fundamental tool for the stimulation of psychomotor skills in infants with low vision diagnosis through activities in the family context by intervening in the development of psychomotor capacities and skills.

Meanwhile, the inquiries made by the researchers through the survey made to the parents with the objective of obtaining information about the level of knowledge acquired in aspects related to the characteristics that their infant possesses regarding psychomotor development and the preparation they have to enhance the stimulation process through the guidance received showed the acquisition of knowledge about the typical courses of development of infants in the first year of life, fundamentally those referring to the biological age of the treated infant, they can conceptualize in their own words the meaning of early stimulation, as well as the importance of its application for the psychomotor development of the infant from the first days of birth. They are also identified with the benefits of early stimulation in the infants with low vision diagnosis, as well as identify the areas to be stimulated.

These activities encouraged reflection based on the practical experiences of the parents, the interest shown by the family in terms of attendance was recognized, intervention in the sessions based on their experiences, the attitude of the families revealed significant changes and satisfaction with the psychomotor development of their child. Improvement was noted in the infant's psychomotor development.

It was confirmed that the theoretical knowledge of the family was increased in relation to the psychomotor characteristics of infants, the peculiarities of the motor development



of infants with low vision diagnosis, the requirements on how to work with them to enhance their motor skills.

## CONCLUSIONS

Families of infants with low vision diagnosis are in need of guidance on how to successfully influence the psychomotor development of their child, to enhance their multi-sided development that will allow them to integrate into society as a useful individual.

The results obtained with the implementation of the methodology made it possible to confirm its effectiveness, in which a progressive increase in the level of theoretical and practical preparation of the family, on how to contribute to the stimulation of the psychomotor development of the infant with low vision diagnosis was observed.

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***Conflict of interest statement:***

The authors declare having competing interests.

***Author contribution statement:***

The authors have participated in the redaction of the manuscript and the documentary review.



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