Knowledge of the parents about child development: an integrative review

ABSTRACT
Objective: to analyze, in scientific production, what is the level of knowledge of parents with regard to child development and what are the factors that influence this knowledge. Method: the methodology used was that of integrative reviews. A survey was conducted in the databases LILACS, PubMed/MEDLINE, and SciELO, searching works indexed from 2010 to 2019. The search was carried out from March to April 2020. Results: 1,132 articles were surveyed, ten of which were in accordance with the inclusion criteria. They were used as the base of this review. The students showed the shortcomings of their parents in the detection of delays in their development milestones; an association between the knowledge level of parents and a better child development; and a higher level of knowledge in mothers. Conclusion: parents are essential for child development. Parents with more knowledge about this process are more likely to create a favorable environment for the healthy development of their children.


RESUMEN
Objetivo: analizar en la producción científica cual el nivel de conocimiento de los padres sobre el desarrollo infantil y los factores que influyen en este conocimiento. Método: se utilizó metodología de revisión integrativa, por medio de levantamientos en las bases de datos científicas LILACS, PubMed/MEDLINE, y SciELO, de trabajos indexados en el periodo entre 2010 e 2019. La búsqueda se realizó en marzo y abril de 2020. Resultados: fueron levantados 1.132 artículos, los cuales quedan en preñecimiento de inclusión y fueron usados como base para esta revisión. Los estudios evidenciaron falta de conocimiento de los padres en la detección de atrasos en los marcos del desarrollo; asociación del nivel de conocimiento de los padres a un mejor desarrollo infantil; y mayor nivel de conocimiento de las madres. Conclusión: los padres son piezas fundamentales en el desarrollo infantil. Padres con más conocimiento sobre ese proceso tienen más chances de criar un ambiente favorable al desarrollo saludable de sus niños.

INTRODUCTION

Child development (CD) is established in literature as a complex and dynamic process, related to the physical growth, neurological maturation, and progressive acquisition of the motor and psycho-cognitive skills of the child. Starting in the intrauterine life, it is an important factor for the evaluation of child health and wellbeing. Despite being continuous, qualitative, and serial, the chronology of this development can be affected by the influence of risk factors in the life of the child. These factors may have many origins: genetic, biological, associated to poor conditions of health and residence, inadequate practices of care/education, and an affected domestic environment.\(^{(1,2)}\)

It has been estimated that, throughout the world, more than 250 million children are not reaching their highest development potential. Most of these children live in low and medium income countries, where they are more likely to be affected by factors such as malnutrition, poverty, low educational levels, frequent and chronic infections, and the lack of stimulus.\(^{(3)}\)

Among the many risk factors, the knowledge of the parents about CD is frequently associated to the cognitive and socioemotional development of a child, since it allows the caregiver to understand the child and provide them with a better, more appropriate, and enriching interaction. It has been proved that mothers with more knowledge of CD are more likely to generate a proper domestic environment, that can help their child in all stages of their development.\(^{(4)}\)

Na América, uma em cada quatro crianças com menos de cinco anos tem risco moderado a alto de atraso no desenvolvimento, uma condição na qual as crianças não atingem oportunamente a linguagem motora, cognitiva, social, comportamental ou adaptativa. A early identification of this delay and use of early intervention services are essential to optimize the health and wellbeing of children. However, knowledge about the expectations of parents about child develop has seldom received attention, from their understanding about when a child’s development is late to their knowledge about which services are available and how to access them.\(^{(5,6)}\)

Starting from the presupposition that parents have an essential role in the creation of an environment that is favorable to CD, and that the first identification of delays in the development takes place at home, this work is justified by the high prevalence of children with delayed development in one or more domains of the evaluation, who, according with international literature, represent from 16 to 18%.\(^{(7)}\) Therefore, unveiling the perception of parents about their development is paramount to seek measures to improve their knowledge and increase the chances of early diagnoses.

The relevance of the scientific production directed at the knowledge of parents about CD is thus indicated. Although there are many studies that evaluate the knowledge of the parents about CD, searches revealed no literature reviews about the theme, justifying the interest in developing an integrative review about these aspects. This study is expected to contribute for a critical reflection about the practice of health assistance in the promotion of childcare, leading to better planning for this type of care, in addition to increasing the participation of the family in the process of caring.

Thus, the objective of this study was to analyze, in scientific production, the level of knowledge of parents with regard to child development, and the factors that influence this knowledge.

METHOD

An integrative review of literature was carried out from 2010 to 2019. Data collection took place from March to April 2020. This study was guided by the research question elaborated using the “PVO” strategy, in which P (population) corresponds to the parents, V (variable) to the parents’ knowledge about CD, and finally, O (outcome) indicates the expected outcome, in this case, children with a better neuropsychomotor development. As a result, the following guiding question was elaborated: what is the level of knowledge of parents about CD and what factors influence this knowledge?

The search for articles was conducted through the on-line access to three important health sciences databases: PubMed/MEDLINE, Latin American and Caribbean Health Sciences Literature (LILACS), and Scientific Electronic Library Online (Scielo). The following descriptors, controlled according to DeCS/MeSH (Science Health Descriptors/Medical Subject Headings), were used in order to maximize the search: desenvolvimento infantil (child development) AND conhecimentos, atitudes e prática em saúde (health knowledge, attitudes, practice).

The population was made up by studies whose methods included samples with children’s parents or caregivers.

From the results, two authors removed the relevant data. The process of reference selection for the systematic review followed the stages: identification, triage, eligibility, and inclusion, according to the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) (Figure 1).\(^{(8)}\)

The inclusion criteria indicated were: scientific articles in accordance with the guiding question; population of interest made up by the parents of caregivers of children; full access, free of charge; being available in its entirety; being in English, Portuguese, or Spanish; the outcome of interest was the level of knowledge of parents/caregivers about CD. Were excluded: reflexive studies; research protocols; editorials; letters to the editor; works duplicated in the different databases; titles and abstracts unrelated to the level of knowledge of parents/caregivers about CD.

To confirm that this stage was carried out with quality and avoid selection biases, two examiners decided, independently, on the criteria of inclusion and exclusion. Whenever there was a disagreement
between the reviewers, a third reviewer gave his collaboration.

The authors elaborated an instrument to extract the data from the authors that could guarantee that all relevant data was extracted, minimizing the risk of errors during transcription, and guaranteeing that information was assessed with precision. The instrument included the following information: author, year, country, sample, outcomes, and conclusion.

Figure 1 - Flowchart of the search: identification, triage, eligibility, and inclusion of the scientific data in the integrative review, according to the PRISMA (6), Parnaíba (Pl), Brazil, 2020.

**RESULTS**

The initial search in the databases referenced 1,132 potential articles for the review. After the inclusion criteria were applied, 111 articles were left. The titles and abstracts of these articles were read by the reviewers, to generate the final sample. The final result included 10 publications, 8 from PubMed/MEDLINE, and 2 from LILACS. No article from the SciELO electronic library attended was in accordance with the inclusion criteria.

The characterization of the studies is distributed in two tables. The first contains information regarding authorship, year of publication, country where the study was carried out, and sample of the research (Table 1). The second indicates the results and outcomes of these studies (Table 2). The researches on the knowledge of parents/caregivers about CD originated from different countries, such as Canada, the United States, Madagascar, Chile, Brazil, Peru, Australia, and Malawi.

Four studies were carried out with the parents of children under two years old. The results showed adequate knowledge about the general development of the child, with more shortcomings in the detection
of the delay of development milestones. Some studies also pointed out that a better knowledge of
mothers was associated to better educational levels and income.

Table 1 - Synthesis of the publications selected, according to country an sample. Parnaiba (PI), Brazil, 2020.

<table>
<thead>
<tr>
<th>References</th>
<th>Country</th>
<th>Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wilson et al. (2012)</td>
<td>Canada</td>
<td>Parents of children from 3 to 12 years old (n=501), professors of children from 3 to 12 years old (n=202), and family physicians (n=255)</td>
</tr>
<tr>
<td>Magnusson et al. (2017)</td>
<td>United States</td>
<td>African American and Hispanic mothers, of low income, whose children had a delayed CD (n=22)</td>
</tr>
<tr>
<td>Chung et al. (2019)</td>
<td>Madagascar</td>
<td>Caregivers and children from 16 to 42 months old from the countryside of Madagascar (n=3,361)</td>
</tr>
<tr>
<td>Mandiola et al. (2012)</td>
<td>Chile</td>
<td>Mothers of children below 11 years old, diagnosed with an Autism Spectrum Disorder (n=6)</td>
</tr>
<tr>
<td>Kroening et al. (2016)</td>
<td>United States</td>
<td>Refugee parents (n=7), medical interprets (n=9), clinicians caring for refugee pediatric patients (n=6) and collaborators from the community (n=7)</td>
</tr>
<tr>
<td>Torquato et al. (2019)</td>
<td>Brazil</td>
<td>Mothers of children under two years old, enrolled in centers specialized in child education (n=52)</td>
</tr>
<tr>
<td>Rikhy et al. (2010)</td>
<td>Canada</td>
<td>Adults who interacted with children under 14 years old in the last 6 months (n=1,443)</td>
</tr>
<tr>
<td>Fernández; Ampuero (2014)</td>
<td>Peru</td>
<td>Hospitalized women in the puerperium (n=65)</td>
</tr>
<tr>
<td>Overs et al. (2016)</td>
<td>Australia</td>
<td>Parents of children born in Sidney (n=510)</td>
</tr>
<tr>
<td>Gladstone et al. (2018)</td>
<td>Malawi</td>
<td>Mothers, parents, and grandparents of children from 0 to 2 years old (n=182)</td>
</tr>
</tbody>
</table>

Table 2 - Synthesis of the publications selected according to result and outcome. Parnaiba (PI), Brazil, 2020.

<table>
<thead>
<tr>
<th>References</th>
<th>Results</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wilson et al. (2012)</td>
<td>20% possuíam conhecimento dos distúrbios de desenvolvimento.</td>
<td>It is necessary to raise awareness about development disorders.</td>
</tr>
<tr>
<td>Magnusson et al. (2017)</td>
<td>Diferenças entre mães afroamericanas e hispânicas foram encontradas.</td>
<td>Children and maternal expectations about CD are essential to identify delays.</td>
</tr>
<tr>
<td>Chung et al. (2019)</td>
<td>8% of the caregivers underestimated and nearly 50% overestimated the abilities of their children.</td>
<td>It is not rare for parents to have an imprecise perception of the intelligence and abilities of their children.</td>
</tr>
<tr>
<td>Mandiola et al. (2012)</td>
<td>There is general knowledge about CD; lack of information and guidance from professionals.</td>
<td>The process of detections of alterations in the CD is late and long-lasting for the families.</td>
</tr>
<tr>
<td>Kroening et al. (2016)</td>
<td>Barriers to the identification of delays included limited education, little knowledge in health, language, and traditional healing practices.</td>
<td>Perspectives of refugees about the CD can influence the recognition and response of parents to the concerns about development.</td>
</tr>
<tr>
<td>Torquato et al. (2019)</td>
<td>After the intervention: the knowledge about children development and stimulation increased.</td>
<td>The importance of an educational intervention in the promotion of the health of the child at risk.</td>
</tr>
<tr>
<td>Rikhy et al. (2010)</td>
<td>Parents and women were capable of identifying milestones in the development, as opposed to non-parents and men.</td>
<td>Strategies were created to improve the knowledge about CD milestones.</td>
</tr>
<tr>
<td>Fernández; Ampuero (2014)</td>
<td>The level of knowledge of women in the puerperium about early stimulation was high for 36.9% of them, medium for 44.6%, and low for 35%.</td>
<td>Most mothers are indifferent regarding early stimulation, despite having regular knowledge.</td>
</tr>
<tr>
<td>Overs et al. (2016)</td>
<td>A better monitoring of CD was found in parents with higher educational levels and income.</td>
<td>Barriers found: economic level, linguistic diversity, and professional education.</td>
</tr>
<tr>
<td>Gladstone et al. (2018)</td>
<td>Playing was a consequence of good health and wellbeing; non-verbal communication and capacity of response with the babies; and knowledge about eating.</td>
<td>Strategies to provide advice about CD stimulus must include playing, early communication, understanding, and the ability to respond.</td>
</tr>
</tbody>
</table>
Among the interferences in the level of knowledge of parents/caregivers, as highlighted by the researches, the importance of the role of the health professional in educating them about the milestones of the development was emphasize, as was that of new methods to evaluate knowledge, the influence of beliefs and traditions, socioeconomic factors, and of the participation of parents in the stimulation of development.

The conclusions highlighted the importance of understanding the beliefs and expectancies of the parents about CD, the need to carry out educational interventions to improve this level of knowledge, and the importance of this knowledge to identify delays early and take effective measures.

**DISCUSSION**

The study of parent care has been receiving increasing attention from researchers. Part of this interest is related to the existence of many theories that try to uncover the nature of situations experienced in childhood, and the potential impact of these situations over the cognitive, emotional, and social spheres of the neuropsychomotor development. In addition, during their early development, children require care and the presence of adults to survive, which means that the role of parents is essential. (9)

**The role of professionals in health education**

To promote the health of the child, the understanding of their specificities is paramount, and the same is true for the appropriate environmental conditions for their development. (10) The studies selected point at the importance of the health professional as a subsidy for the acquisition of the information needed for the adequate development of the child. This information and this guidance are usually provided in the periodical consultations to monitor growth and CD, which are usually carried out primary care and, when necessary, in specialized services. (11)

The access to health services can be perceived as the ease to find an assistance that leads to better results in health. Regarding child health services, the early start to the attention is essential. This includes a minimum of seven consultations in the first year of life, as advocated by the Ministry of Health. Regular childcare consultations allow for a monitoring of the neuropsychomotor monitoring, in addition to serving as sources of information and to clarify doubts. (12)

Also, with regard to the actions of the professional, results have indicated that, when the focus is only on health professionals, on the importance of routinely tracking developmental delays, and to identify delays and provide early intervention, the knowledge of the perspective of the parents about this development is forgotten. (5)

With this regard, establishing educational interventions with close relatives, especially the mothers, about the evolution and guidance about the use of stimuli, is an essential strategy to optimize the child's potential for development, especially in the first 24 months. (13) Studies suggest that providing guidance to the main caregiver, in theory the mother, about aspects of the development, valuing their empirical knowledge about child stimulation, will facilitate the building of new opportunities to experiment at home. (11)

Strategies of operational groups are constantly observed within the Brazilian Primary Health Care An operational group is nothing more than a set of people connected in time and space, determined to carry out a task, interacting in a network of roles and establishing connections between them, thus making it easier to promote health and increasing the interaction between the health team and its clients. (14)

These groups can address many subjects and be organized in many different ways, depending on their objective. The creation of operational groups of parents and/or caregivers can be an effective tactic in the increase of the knowledge of the parents about the development of the child, thus disseminating the adequate information and making the work process easier.

**Methods to evaluate knowledge**

Diversos métodos têm sido utilizados para avaliar o conhecimento dos pais. In the study carried out in Australia, the monitoring of development is systematized, presenting satisfactory results in the identification of children at risk and on the early diagnosis of developmental delays. The triage of the child takes place from 1 to 4 weeks after delivery and is included in each verification, at 6 months and 4 years of age. The triage tool used for the parents is made up by 10 questions, which aid in the detection of developmental problems, exploring the prerequisite of the parents with regard to the development of their children. (15)

**Influence of beliefs and traditions in development**

Ainda dentro dos fatores que interferem nesse conhecimento, as crenças pessoais de determinados grupos e/ou etnias têm impacto negativo na tomada de decisão. The researches showed that mothers who were influenced by the belief that each child is different and develops in a different were affected in their ability to identify or not developmental delays. Frequently, the mothers compare their children to other children who also had developmental delays and end up treating this lack of ability as normal. (5)

In addition to common-sense beliefs, religious beliefs and spiritual traditions also had influence. In the communities that practice religions that have as many entities, deficiency is stigmatized, considered to be a curse, with generational implications and/or karma. This stigma isolates a family from relatives, community members, and potential sources of support. For the communities that practice Islam or Christianity, a deficient child is described as given by God. (16)
Socioeconomic factors

The socioeconomic profile was also, frequently, associated to the level of knowledge of the parents.\textsuperscript{17} This perception about progress and development in early childhood has been associated to parental practices and later child development results. In high income countries, mothers with higher knowledge about CD interact with their children in a more positive way and have a higher probability to provide cognitive stimulus. For example, among premature babies from the United States, the maternal knowledge of norms and milestones of the development was associated to a domestic environment with better quality, with less behavioral problems and better cognitive development.

The environment is an important factor for the development, and the family is the main social structure in which the child is inserted, especially in the first years of life, which means that it is extremely important for their global development. The family environment and its relations are the base for the promotion of the social-affective and cognitive development of the child.\textsuperscript{18}

Similar results were found by the studies carried out in Israel and Spain, in which mothers with more positive perceptions about average babies were associated to a better psychomotor and cognitive development in the first year of life.\textsuperscript{19,20}

When the environment of the child is not conducive to the development of the child, be it in the family and/or with affective figures, generating traumas, family negligence, affective and environmental instability, it can be a risk factor and function as a trigger for either a preexisting condition or of new issues.\textsuperscript{21}

In the research from Chile, it was found that all parents had general knowledge about CD, especially in regards to language and gross motor skills. Many parents reported that they do not have knowledge about the critical periods of the development of the child. Regarding the way in which they acquire said knowledge, it was found that most do comparing their child with children of the same age.\textsuperscript{22}

Considering the above, the two ways in which parents compare the development of the child can be seen, with a positive and a negative side. Once again, we point out that the provision of information about CD to the parents, by health professionals who monitor their children, is essential, to clarify what should or should not be compared, and whether the parents are understanding this adequately.

Participation of the parents in the development

Regarding the role of mother and father, the scholars state that women have more factors that support the ideal development of the child. In fact, the evidences showed that men have more gaps in their knowledge about development milestones, pathways in this development, and the importance of the initial social environment. This can be related to a greater participation of the mothers in the life of their children, since they are the ones who routinely accompany their children in medical consultations and are more involved in education and learning.\textsuperscript{23}

Regarding the knowledge related to early CD stimulation, the beliefs of the parents about these practices were shown. Caregivers describe playing as a something that can only happen when the basic needs of a child are attended. If the child is well, bathed, cared for, and happy, the child will play. Many parents and tutors also report that they did not know that children can see and listen from a very early age.\textsuperscript{24}

Through this identification of the national and international scientific production about the knowledge of parents about CD, it was possible to find that this theme is still seldom explored in Brazil. Therefore, through the results of this review, it was possible to map many scientifically proven factors that are positive or negative influences on their knowledge. This integrative review allows the incorporation of evidences in the field of child health, offering subsidies for the improvement of the quality of life of these children, through the knowledge of their parents/caregivers.

A limitation of this study was the fact that the authors only considered publications in three languages (Portuguese, English, and Spanish), which may have limited the access to other relevant findings. Another limitation of this study is the number of databases consulted, which may have diminished the number of studies selected to make up this integrative review.

CONCLUSION

CD problems are a growing economic and health preoccupation. This review led to the conclusion that the knowledge of parents about CD influences their expectancies and interactions with the children.

It was also observed that this knowledge has been positively correlated to parents' abilities to improve the development of their children. Evidences suggest that parents with little knowledge about the development of children overestimate their development rates, potentially leading to inadequate expectancies and intolerances.

Among the factors that affect or aid in this knowledge, the importance of medical consultations stands out, as does that of health promotion, child-development monitoring, personal and religious beliefs, in addition to the socioeconomic profile of the families.

The study of the knowledge of the parents, as well as that of the precise and appropriate expectations with regard to the behavior of children, are key factors of the efficacy of parents, which are associated to better results from the child.

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