



EVALUATION OF EDUCATIONAL MATERIALS TARGETED AT THE PSYCHOMOTOR DEVELOPMENT OF THE CHILD

Avaliação de materiais educativos direcionados para o desenvolvimento neuropsicomotor da criança

Evaluación de materiales educativos dirigidos al desarrollo neuropsicomotor del niño

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ABSTRACT

Objective: To evaluate in the literature the educational materials developed on printed or online versions that are targeted at the promotion, prevention or intervention regarding the psychomotor development of the child. **Methods:** The study consisted in an integrative review, where articles were searched in Portuguese and English languages, in the databases: Scientific Electronic Library Online (SciELO), Google Scholar, Regional Library of Medicine (Bireme), Physiotherapy evidence database (Pedro) e PubMed, between January and March 2017, using booklet (*cartilha*), children (*criança*) and motor development (*desenvolvimento motor*) as search terms. After reading the titles and abstracts, and based on the principles of an integrative review, 7,224 studies were excluded for not meeting the requested criteria, remaining a sample of 8 articles. **Results:** The studies that conducted the evaluation and analysis of educational booklets showed that these materials led to positive responses as an appropriate instrument to assist parents, families, students and health professionals in health education activities. It was observed that the early intervention performed by family members had positive results concerning the evolution of the child, influencing on their language and motor development in the cases studied. **Conclusion:** Scientific evidence points out that health education materials designed for guidance of parents and health professionals on the stimulation of child development are considered clear, objective and efficient.

Descriptors: Material Resources in Health; Child; Child Development; Health Promotion.

RESUMO

Objetivo: Avaliar na literatura materiais educativos desenvolvidos de modo impresso ou on-line que sejam direcionados para promoção, prevenção ou intervenção sobre o desenvolvimento neuropsicomotor da criança. **Métodos:** Tratou-se de um estudo de revisão integrativa, em que foram pesquisados artigos nos idiomas português e inglês nas bases de dados biblioteca virtual Scientific Electronic Library Online (SciELO), Google Acadêmico (GA), Biblioteca Regional de Medicina (Bireme), Physiotherapy evidence database (Pedro) e PubMed, entre janeiro e março de 2017, com os termos cartilha (booklet), criança (children) e desenvolvimento motor (motor development). Após leitura de títulos e resumos, e tomando como base os princípios de uma revisão integrativa, foram excluídos 7224 estudos por não contemplarem os critérios solicitados, permanecendo uma amostra de 8 artigos. **Resultados:** Os estudos que realizaram a avaliação e análise de cartilhas educativas mostraram que esses materiais têm respostas positivas como um instrumento adequado para auxiliar pais, famílias, estudantes e profissionais de saúde nas atividades de educação em saúde. Observou-se que a intervenção precoce realizada pelos familiares teve resultados positivos relacionados à evolução da criança, afetando seu desenvolvimento linguístico e motor nos casos estudados. **Conclusão:** As evidências científicas apontam que os materiais educativos em saúde elaborados para orientação de pais e profissionais de saúde sobre a estimulação do desenvolvimento infantil são considerados claros, objetivos e eficientes.

Descritores: Recursos Materiais em Saúde; Criança; Desenvolvimento Infantil; Promoção da Saúde.



RESUMEN

Objetivo: Evaluar los materiales educativos desarrollados de modo impreso u on-line en la literatura que sean dirigidos a la promoción, prevención o intervención del desarrollo neuropsicomotor del niño. **Métodos:** Se trató de un estudio de revisión integrativa en el cual fueron investigados artículos en los idiomas portugués y inglés de las bases de datos biblioteca virtual Scientific Electronic Library Online (SciELO), Google Académico (GA), Biblioteca Regional de Medicina (Bireme), Physiotherapy evidence database (Pedro) y PubMed entre enero y marzo de 2017 con los términos cartilla (booklet), niño (children) y desarrollo motor (motor development). Tras la lectura de los títulos y resúmenes y basado en los principios de una revisión integrativa se excluyeron 7224 estudios por el no cumplimiento a los criterios determinados quedándose una muestra de 8 artículos. **Resultados:** Los estudios que realizaron la evaluación y el análisis de las cartillas educativas mostraron que esos materiales tienen respuestas positivas de un instrumento adecuado para ayudar a los padres, las familias, los estudiantes y profesionales sanitarios en las actividades de educación en salud. Se observó que la intervención precoz realizada por parte de los familiares tuvo resultados positivos relacionados con la evolución del niño afectando su desarrollo lingüístico y motor de los casos estudiados. **Conclusión:** Las evidencias científicas señalan que los materiales educativos en salud elaborados para orientar a los padres y profesionales sanitarios sobre la estimulación del desarrollo infantil son considerados claros, objetivos y eficientes.

Descriptor: Recursos Materiales en Salud; Niño; Desarrollo Infantil; Promoción de la Salud.

INTRODUCTION

Child motor development (MD) encompasses the different motor components of motricity, such as coordination, balance and body schema⁽¹⁾. This is a sequential process related to the chronological age, brought about by the interaction between the abilities to perform tasks, the environment in which the child lives and the biology of the individual, and it can be influenced by social, intellectual and emotional changes⁽²⁾.

In order to promote the full development of children and prevent eventual delays resulting from a variety of pre-, peri- or postnatal factors, an arsenal of possibilities has been disseminated, among them, the increasing use of educational materials as a tool for health education that generates teaching-learning possibilities through the interaction between family and child, inducing positive prognoses⁽³⁾.

These written materials are instruments that facilitate the educational process, since they allow the reader to reinforce oral information and discussions provided through other means, serving as a guiding reference for more assertive decisions⁽⁴⁾.

Thus, booklets and information leaflets are described as part of health education or promotion, presenting as objectives the prevention, treatment and fulfillment of tasks. Some authors report, however, that if not properly prepared, they hamper the users' interpretation and understanding⁽⁵⁾. The educational material should be rendered in accessible language, considering that the lower the level of reading, the higher the likelihood of having them read by a large part of the target audience will read it⁽⁶⁾.

In addition to that, because of the technological advance, there is an increasing possibility of disseminating health information in the digital media, given that pamphlets and leaflets are limited with regard to access⁽⁷⁾.

Despite the arsenal of documents available in print or digital form, there is a gap in the knowledge of the quantity and, particularly, the quality of educational materials for children presenting health conditions or risks that might hinder the neuropsychomotor development.

Faced with these premises, the question is: How have educational materials been developed and disseminated to children who may come to present some injury in the course of their infant development?

Thus, the study aimed to evaluate in the literature the educational materials developed on printed or online versions that are targeted at the promotion, prevention or intervention regarding the psychomotor development of the child.

METHODS

The study consisted in an integrative review, seeking to evaluate in the current literature the educational materials developed for health promotion, prevention or intervention that address the child neuropsychomotor development.

The definition of the specific objective was followed by the formulation of the hypothesis that the educational materials developed on neuropsychomotor development are scarce and of little depth as to the clarity and richness of data provided to the family, caregivers and community about the child development, particularly with regard to the neuropsychomotor axis.

From then on, the search for identification and collection of the maximum of relevant primary research within the previously established inclusion and exclusion criteria was initiated. Articles that used and/or evaluated booklets, within the past 10 years, published in Portuguese and English, and available in full-text format were included. There was the exclusion of experience

reports, reviews, letters and articles that, despite approaching the proposed subject in the titles and abstracts, did not specify in the text which material, or methodology, had constituted the educational material.

With that intent, articles were searched in the Portuguese and English languages in the Scientific Electronic Library Online (SciELO), Google Scholar (GS), Regional Library of Medicine (Bireme), Physiotherapy evidence database (Pedro) and PubMed databases, between January and March 2017, with the terms “booklet”, “children” and “motor development”.

Initially, 7236 articles were identified [GS (n=7060); SciELO (n=94); Bireme (n=24); Pubmed (n=51); Pedro (n=7)], but after reading the title and abstract, and based on the principles of an integrative review, which advocate the evaluation of the criteria and methods adopted in the development of the selected studies in order to determine their methodological validity, 7,224 failed to meet the requested criteria, remaining a sample of 8 articles. The flowchart shows the extraction of the studies included in the research (Figure 1).

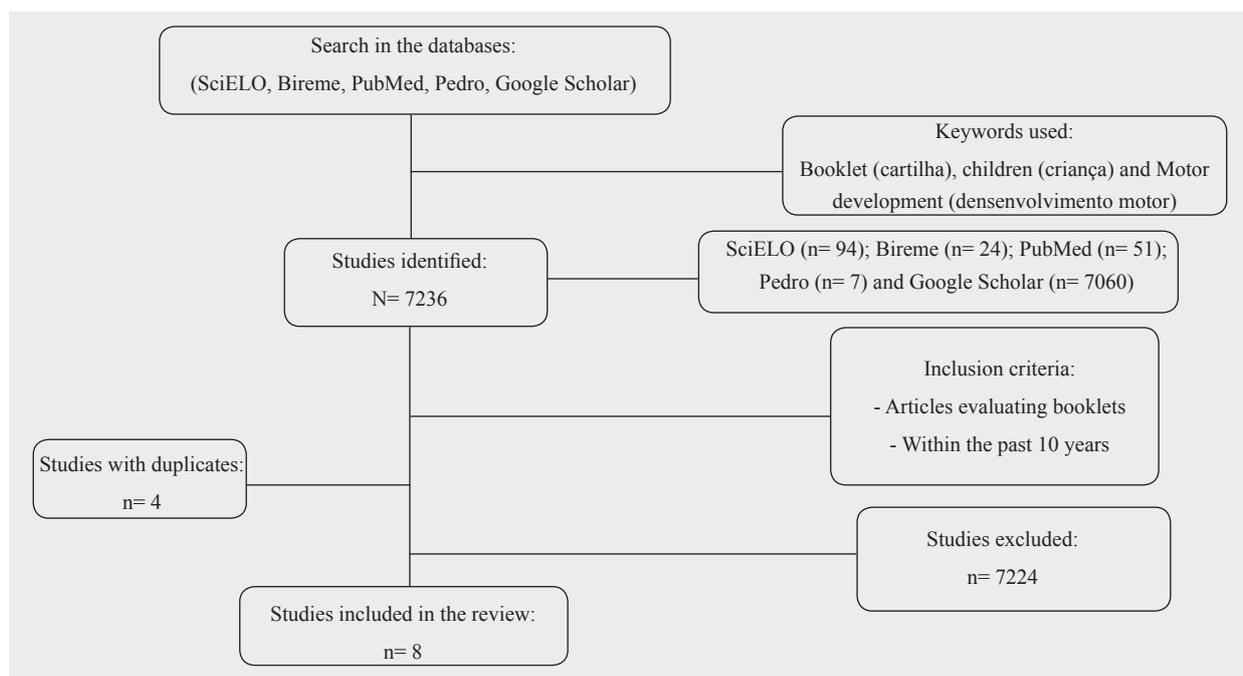


Figure 1 - Strategy of search and selection of studies.

RESULTS

Of the articles found, five evaluated or applied educational booklets and expressed the results demonstrated by the target audience. Three other studies applied therapeutic programs directly with the child and in the form of educational leaflets (Table I).

Table I - Descriptive analysis of the articles included in the study.

Author, Year	Developed material	Objectives	Main results	Conclusion
Grippo et al., 2008 ⁽⁸⁾	Evaluation of educational booklet.	To analyze the relatives' perception of the themes discussed in the booklet and identify the acceptance of the booklet by the population.	It was observed a predominance of mothers with incomplete elementary education who reported understanding of and interest in the booklet.	There is evidence of effectiveness of the booklet as a skill-promoting tool.
Guimarães et al., 2015 ⁽⁹⁾	Evaluation of educational booklet.	To evaluate the clarity and objectivity of a booklet with detailed explanations and illustrations on the neuropsychomotor development of children from 0 to 6 years old.	A large majority of the participants evaluated the booklet as good or excellent (96%).	The booklet has proved to be a practical and low-cost measure that can assist in the stimulation of child development.
Ichini et al., 2016 ⁽¹⁰⁾	Early intervention in child development.	To analyze and compare the parents' and therapists' perceptions of the effects of early intervention on the development of their children and on the care provided to them.	Of the nine subjects analyzed, seven presented similar parental and therapeutic perception of the developmental issues addressed and, in two cases, there was a divergence between the family members' and the therapists' perception of the children's development.	The therapists' and parents' perception demonstrated positive effects of the early interdisciplinary intervention, manifested in the agreement of points of view in relation to seven out of the nine subjects analyzed.
Fonseca et al., 2007 ⁽¹¹⁾	Educational booklet.	To describe the process of dissemination of the educational booklet and its repercussion on the media.	An excellent acceptance of the booklet was perceived, as it proved to meet the needs of the clientele, supporting the self-confidence, and making it possible for the knowledge produced to return to the society.	The booklet is a suitable tool to assist parents, families, students and health professionals in health education activities.
Ferecini et al., 2009 ⁽¹²⁾	Use of educational booklet.	To analyze how the mothers of premature infants perceive the experience in a Health Education Program.	Thematic nuclei were identified: the learning brought about by the Program; the creation of possibilities for sharing knowledge with the family, and the Program as a scenario for relaxation and listening.	It is recommended that educational programs of similar nature and extended with the participation of other members of the premature child's family be implanted in other neonatal units.
Fracolli et al., 2010 ⁽¹³⁾	Evaluation of educational booklet.	To evaluate the use of the booklet by families.	The results showed that the booklet was widely used by the families. At the time of the survey, 72.4% of the families still had the booklet and 81% talked about the content of the booklet with health professionals of the family health team.	It was concluded that the booklet proved to be an adequate tool for health education, since it enabled the dialogue on child development between families and health professionals.
Couto et al., 2012 ⁽¹⁴⁾	Maternal support at home.	To identify the in-home maternal support for the care of the premature newborn after leaving the neonatal unit.	The participants valued the instructional booklet offered by the service; and emphasized the relevance of social support for the care of the baby at home.	It is recommended the insertion of the family member in the nursing plan for discharge of the premature baby in the Neonatal Unit.
Farris et al., 2013 ⁽¹⁵⁾	Program of intervention with use of leaflet.	To assess the secondary effects of a parent training intervention program.	The findings indicated that all levels of intervention were associated with increased maternal well-being for participants with typically developing children.	The early identification of mothers facing problems of child behavior and the dissemination of cost-effective preventive intervention programs can lead to significant results.

DISCUSSION

The use of educational materials in health has shown positive results with regard to the assisting the parents in therapeutic approaches to be developed at home and in hospital environments in order to attenuate, or rather reverse, delays in the infant development.

The studies that conducted the evaluation and analysis of educational booklets showed that the educational materials have been positively regarded as an adequate tool for assistance of parents, families, students and health professionals in health education activities. It was observed that there is a predominance of mothers with incomplete elementary education who reported understanding of and interest in the contents presented through the materials⁽⁸⁾.

The article describing the analysis of a booklet by a group of evaluators composed of parents, teachers and physiotherapists showed that 96% of the participants evaluated the material as good or excellent for favoring the stimulation of child motor development. All parents and teachers concluded that they learned something new by reading the material, and almost half of the physiotherapists also reported this fact⁽⁹⁾.

The importance of in-home care was an item mentioned in the studies. It was observed that the early intervention performed by family members had positive results on the child's evolution, affecting their language and motor development in the cases studied⁽¹⁰⁾.

A study that made the material available through the Internet, by means of a wide communication network, facilitated the dissemination of the proposed content to all regions of the country, reaching a larger number of readers⁽¹¹⁾.

The health education programs applied to mothers of preterm infants, based on a series of group activities, discussing topics related to baby care, showed a contribution to the care of children, both in hospital and at home⁽¹²⁾.

The online booklet, that is, in digital format, proved to be an important resource for the readers, though not suitable to the population that attends public health units and to SUS users, who are generally people that do not have access to the digital media, making it necessary to use printed materials⁽¹⁶⁾.

This is a population at risk and vulnerable to impairments in the child development, which can be influenced by the environment, and aggravated by factors such as the financial conditions of parents, access to health, education, diet and housing. Children of low-income families are more likely to present suspected developmental delays than children of families with worse financial conditions⁽¹⁷⁾.

In a hospital environment, to which children are often subjected because of a variety of factors, it is also necessary for health professionals to interact with the parents in order to educate them, preventing their babies from facing growth delays in the future. Therefore, the professionals should use educational resources as an effective therapeutic strategy for learning consolidation on the part of the families in this space, with a consequent benefit for the child⁽¹⁸⁾.

The precariousness of studies and published research related to the theme of this study evidences the need for professionals to develop studies in the area that generate positive results in the health of the population.

Socializing the knowledge produced is a necessity, and current information technologies are necessary and capable of spreading such knowledge. With the technological advance, professionals should use additional resources in favor of health promotion education, developing tools such as applications programs, games, websites and online booklets, among others.

CONCLUSION

Scientific evidence points out that the health education materials designed for guidance of parents and health professionals on the stimulation of child development are considered clear, objective and efficient.

REFERENCES

1. Medina-Papst J, Marques I. Avaliação do desenvolvimento motor de crianças com dificuldades de aprendizagem. *Rev Bras Cineantropom Desempenho Hum.* 2010;12(1):36-42.
2. Rosa F Neto, Santos APM, Xavier RFC, Asmaro KN. A Importância da avaliação motora em escolares: análise da confiabilidade da Escala de Desenvolvimento Motor. *Rev Bras Cineantropom Desempenho Hum.* 2010;12(6):422-7.
3. Freitas AAS, Cabral IE. O cuidado à pessoa traqueostomizada: análise de um folheto educativo. *Esc Anna Nery Rev Enferm* 2008;12(1):84-9.
4. Moreira MF, Nóbrega MML, Silva MIT. Comunicação escrita: contribuição para a elaboração de material educativo em saúde. *Rev Bras Enferm.* 2003;56(2):184-8.
5. Protheroe J, Estacio EV, Saidy-Khan S. Patient information materials in general practices and promotion of health literacy: an observational study of their effectiveness. *Br J Gen Pract.* 2015;65(632):e192-7.

6. Moulton B, Franck LS, Brady H. Ensuring Quality Information for patients: development and preliminary validation of a new instrument to improve the quality of written health care information. *Health Expect*. 2004;7(2):165-75.
7. Armstrong AW, Idriss NZ, Kim RH. Effects of video-based, online education on behavioral and knowledge outcomes in sunscreen use: A randomized controlled trial. *Patient Educ Couns*. 2011;83(2):273-7.
8. Grippo MLVS, Fracolli LA. Avaliação de uma cartilha educativa de promoção ao cuidado da criança a partir da percepção da família sobre tema de saúde e cidadania. *Rev Esc Enferm USP* 2008;42(3):430-6.
9. Guimarães FAB, Assis CD, Vieira MEB, Formiga CKMR. Avaliação de material didático elaborado para orientação de cuidadores e professores de creches sobre o desenvolvimento infantil. *Rev Bras Crescimento Desenvol Hum*. 2015;25(1):27-40.
10. Pichine FS, Rodrigues NGS, Ambrós TMB, Souza APR. Percepção da família e do terapeuta sobre a evolução de crianças em uma abordagem interdisciplinar de intervenção precoce. *Rev CEFAC* 2016;18(1):55-66.
11. Fonseca LMM, Leite AM, Vasconcelos MGL, Castral TC, Scochi CGS. Cartilha educativa on line sobre os cuidados com o bebê prétermo: aceitação dos usuários. *Ciênc Cuid Saúde*. 2007;6(2):238-44.
12. Ferecini GM, Fonseca LMM, Leite AM, Daré MF, Assis CS, Scochi CGS. Percepções de mães de prematuros acerca da vivência em um programa educativo. *Acta Paul Enferm*. 2009;22(3):250-6.
13. Fracolli LA, Chiesa AM. A percepção das famílias sobre a cartilha “toda hora é hora de cuidar”. *Mundo Saúde*. 2010;34(1):36-42.
14. Couto ff, Praça NS. Recém-nascido prematuro: suporte materno domiciliar para o cuidado. *Rev Bras Enferm*. 2012;65(1):19-26.
15. Farris JR, Bert SSC, Nicholson JS, Glass K, Borkowski JG. Effective Intervention Programming: Improving Maternal Adjustment Through Parent Education. *Adm Policy Ment Health*. 2013;40(3):211-23.
16. Reberte LM, Hoga LAK, Gomes ALZ. O processo de construção de material educativo para a promoção da saúde da gestante. *Rev Latinoam Enferm [Internet]*. 2012 [acesso em 2017 Fev 16]; 20(1):1-8. Disponível em: http://www.scielo.br/pdf/rlae/v20n1/pt_14
17. Defilipo ÉC, Frônio JS, Teixeira MTB, Leite ICG, Bastos RR, Vieira MT, et al. Oportunidades do ambiente domiciliar para o desenvolvimento motor. *Rev Saúde Pública*. 2012;46(4):633-41.
18. Silva GRF, Cardoso MVLML. Percepção de mães sobre um manual educativo sobre estimulação visual da criança. *Rev Eletrônica Enferm [Internet]*. 2009 [acesso em 2017 Fev 16]; 11(4):847-57. Disponível em: <https://www.revistas.ufg.br/fen/article/view/3324>

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