



REVIEW ARTICLE

Application of tactile/kinesthetic stimulation in preterm infants: a systematic review^{☆,☆☆}



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KEYWORDS

Preterm infants;
Massage;
Review;
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Abstract

Objective: To verify the methods used by the clinical trials that assessed the effect of tactile/kinesthetic stimulation on weight gain in preterm infants and highlight the similarities and differences among such studies.

Sources: This review collected studies from two databases, PEDro and PubMed, in July of 2014, in addition to bibliographies. Two researchers assessed the relevant titles independently, and then chose which studies to read in full and include in this review by consensus. Clinical trials that studied tactile stimulation or massage therapy whether or not associated with kinesthetic stimulation of preterm infants; that assessed weight gain after the intervention; that had a control group and were composed in English, Portuguese, or Spanish were included.

Summary of the findings: A total of 520 titles were found and 108 were selected for manuscript reading. Repeated studies were excluded, resulting in 40 different studies. Of these, 31 met all the inclusion criteria. There were many differences in the application of tactile/kinesthetic stimulation techniques among studies, which hindered the accurate reproduction of the procedure. Also, many studies did not describe the adverse events that occurred during stimulation, the course of action taken when such events occurred, and their effect on the outcome.

Conclusions: These studies made a relevant contribution towards indicating tactile/kinesthetic stimulation as a promising tool. Nevertheless, there was no standard for application among them. Future studies should raise the level of methodological rigor and describe the adverse events. This may permit other researchers to be more aware of expected outcomes, and a standard technique could be established.

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PALAVRAS-CHAVE

Neonatos prematuros;
 Massagem;
 Análise;
 Ganho de peso;
 Estimulação
 tátil-cinestésica

Aplicação da estimulação tátil-cinestésica em neonatos prematuros: análise sistemática

Resumo

Objetivo: Verificar quais metodologias foram utilizadas por ensaios clínicos que avaliaram o efeito da estimulação tátil-cinestésica sobre o ganho de peso de neonatos prematuros e destacar as diferenças e semelhanças entre esses estudos.

Fontes dos dados: Esta análise coletou estudos de duas bases de dados, PEDro e PubMed, em julho de 2014, além de bibliografias. Dois pesquisadores avaliaram os títulos relevantes independentemente e, então, escolheram consensualmente quais estudos seriam lidos completamente e incluídos nesta análise. Foram incluídos os ensaios clínicos que estudaram a estimulação tátil ou a massagem terapêutica associada ou não à estimulação cinestésica em neonatos prematuros e avaliaram o ganho de peso após a intervenção, tiveram um grupo de controle e foram escritos em inglês, português ou espanhol.

Síntese dos dados: Foram encontrados 520 títulos no total, e foram selecionados 108 para leitura. Os estudos repetidos foram excluídos, resultando em 40 estudos diferentes. Destes, 31 atenderam a todos os critérios de inclusão. Há muitas diferenças na aplicação das técnicas de estimulação tátil-cinestésica entre os estudos, o que prejudica a reprodução precisa do procedimento. Além disso, muitos estudos não descreviam os eventos adversos ocorridos durante a estimulação, o procedimento realizado quando esses eventos ocorriam e seu efeito sobre o resultado.

Conclusões: Esses estudos fizeram uma contribuição relevante ao incluir a estimulação tátil-cinestésica como uma ferramenta promissora. Contudo, não houve padrão de aplicação entre eles. Estudos futuros podem aumentar o nível do rigor metodológicos e descrever os eventos adversos. Isso pode permitir que outros pesquisadores tenham mais ciência do que esperar e assim estabelecer uma técnica padrão.

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Introduction

Preterm infants (PI) are exposed daily to many stressors in the neonatal intensive care unit (NICU) inherent to the critical care they need to survive. The manner and intensity of exposure vary according to the individual PI condition and response. It has already been shown that such exposure leads to structural and functional changes in specific areas of the brain, affecting its development,¹ language, and social-emotional and adaptive behavior.²

Tactile stimulation (TS) or massage therapy (MT), sometimes associated with kinesthetic stimulation (KS), is used in PI along with the standard clinical treatment. TS have been the object of clinical studies since the 1960s,³ when it was proposed as a means of encouraging PI growth and development.³⁻¹⁰ Additionally, recent studies have shown that interventions such as tactile/kinesthetic stimulation (TKS) have the added benefit of reducing behavioral manifestations of stress.¹¹

The objective of this systematic review was to verify which methodologies were used by clinical trials that study the effects of some types of TS/MT, whether or not associated with KS, on weight gain of PI. Clinical trials were selected that studied the effects on weight gain, as this is a determinant variable for discharge from the NICU. The differences and similarities between the methods used by the reviewed clinical trials were highlighted in an attempt to improve the methodological quality of future trials.

Methods

Two databases were searched for this systematic review: the Physiotherapy Evidence Database (PEDro)¹² and the United States National Library of Medicine of the National Institutes of Health (PubMed).¹³ All studies listed on the date of search were accessed.

The PEDro database was searched by specifying the following fields in the advanced search option: therapy (stretching, mobilization, manipulation, massage); subdiscipline (pediatrics), and method (clinical trial).

PubMed was searched using six keyword combinations, as follows:

- Search 1: massage premature newborn
- Search 2: tactile kinesthetic stimulation premature
- Search 3: tactile stimulation premature
- Search 4: massage premature growth
- Search 5: kinesthetic stimulation premature growth
- Search 6: tactile kinesthetic stimulation premature growth

In addition to these searches, the references of the chosen articles were also checked, and another 12 relevant articles were selected for evaluation.

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