Elastic bandage as a functional therapeutic resource in speech therapy: an integrative literature review

Bandagem elástica como um recurso terapêutico funcional em terapia de falar: uma revisão integrativa da literatura

DOI:10.54022/shsv3n2-024

Recebimento dos originais: 21/02/2022
Aceitação para publicação: 31/03/2022

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ABSTRACT
Among the various means and techniques used in the rehabilitation process, the use of elastic bandage has gained prominence in the market and also reached the practice of the professional speech therapist, who has used these techniques to intervene more assertively in several areas of the same Speech Therapy. From this, the need arises to understand the methodological pathways that they see being developed with the use of the elastic bandage and to understand how Speech Therapy has accompanied this evolution. The objective of this study was to carry out a literature review at national and international level on the publications regarding the use of elastic bandage. To do so, a research was carried out on the Scielo platform using the terms "elastic bandage", "bandage" and "therapeutic taping" as the descriptors for the last 21 years. As a result, a total of 78 articles containing the bandage described in its summary were found on said platform. After the application of the relevance test I followed in the study the total of 38 articles, being excluded in the test of relevance II those that were not in full or were not exactly about the elastic bandage, but of other types of bandage. Therefore, the equivalent of 17 articles in the sample was added, with only 1 being produced by a team of speech therapists. It was concluded that there is a great need in scientific publications in all areas of knowledge about the use of elastic bandage, especially in Speech Therapy.

Keywords: elastic bandage, vendaje, therapeutic taping.
RESUMO
Dentre os diversos meios e técnicas utilizadas no processo de reabilitação, o uso da bandagem elástica tem ganhado destaque no mercado e alcançado também a prática do profissional fonoaudiólogo, profissional este que tem usufruído dessas técnicas para intervir de maneira mais assertiva nas mais diversas áreas da própria Fonoaudiologia. A partir disso, surge a necessidade em compreender os percursos metodológicos que veem sendo desenvolvidos com o uso da bandagem elástica e compreender como a Fonoaudiologia tem acompanhado tal evolução. O objetivo deste estudo foi de realizar uma revisão de literatura em nível nacional e internacional sobre as publicações quanto ao uso da bandagem elástica. Para tanto, realizou-se uma pesquisa na plataforma Scielo utilizando como descritores os termos “bandagem elástica”, “vendaje” e “therapeutic taping”, contemplando os últimos 21 anos. Como resultados encontrou-se na referida plataforma o total de 78 artigos que continham o uso da bandagem descrito em seu resumo. Após a aplicação do teste de relevância I seguiram no estudo o total de 38 artigos, sendo excluídos no teste de relevância II aqueles que não estavam na íntegra ou não se trataram exatamente sobre a bandagem elástica, mas de outros tipos de bandagem. Logo, totalizou-se o equivalente a 17 artigos na amostra, sendo eu apenas 1 fora produzido por uma equipe de fonoaudiólogas. Concluiu-se que há uma grande necessidade em publicações científicas em todas as áreas do conhecimento sobre o uso da bandagem elástica, em especial na Fonoaudiologia.

Palavras-chave: bandagem elástica, vendaje, therapeutic taping.

1 INTRODUCTION
Speech therapy as a rehabilitative science has gained prominence in the scientific environment and in the clinical area with many advances in techniques and resources that contribute to a better professional performance of the speech therapist in the treatment of muscle functional disorders. This is the case of the use of elastic bandage, a resource that was added to Speech Therapy as an important ally for the continuity of therapy.

There are many varieties of bandage that can be used on the human body, whether they are elastic, which have a great capacity for stretching, or rigid/inelastic, which have a low level of extension, all with different therapeutic goals (SILVA et al., 2014).

Kenzo Kase, in 1973, proposed to develop a therapeutic technique with the objective of “[...] proporcionar ao paciente um recurso terapêutico que auxiliasse o músculo e outros tecidos a buscarem sua homeostase no intervalo entre as sessões de quiropraxia”. This technique, called Kinesio Taping®, was presented to the world for the first time at the Seoul Olympics in 1988, with great emphasis on the use of athletes (KASE; LEMOS; DIAS, 2013). Remembering that this...
technique was created especially for the use of orthopedic injuries resulting from sport, being later used for various therapeutic purposes (ALONSO et al., 2015) in cases of neurological patients (GRAVE; AGUIAR; RIBEIRO, 2016), oncology (LEÃO, 2016), beyond aesthetics (BERGESCH, 2019; DAHER; SILVA, 2021) and sport (ARAÚJO et al., 2014; FERREIRA; SANTOS, 2018).

Another method also used with the application of elastic bandages is TherapyTaping, which is defended as being the closest to speech therapy because it has specific techniques for various dysfunctions of the oral motor sensory system (SILVA et al., 2014).

As can be seen, although the work instrument may be the same, the elastic bandage, there are different application methods and functional principles that guide the professional's performance.

The benefits of using the elastic bandage are diverse, namely: reduction of pain due to cutaneous sensory stimulation, correction of joint biomechanics and muscle functions; improved circulation of organic fluids (blood and lymph) and facilitation or limitations of movements (KASE; LEMOS; DIAS, 2013). Such purposes provide the Speech-Language Pathologist with the possibility of working in conditions that are difficult to handle for this professional, such as pain (RIBEIRO et al., 2009), better oral-motor control, repositioning of oral sensory motor system structures (RIBEIRO et al., 2009), lymphatic drainage and reduction of edema (EZZO et al., 2015; DELGADO et al., 2021), in addition to assisting in tactile and proprioceptive sensitivity, and facilitation or inhibition of muscle tone (CANESCHI et al., 2014).

Elastic bandages can be used at different levels of health care, that is, primary, secondary and tertiary levels, and are considered a safe resource with minimal side effects. However, it does not prevent the use of other therapeutic possibilities, as it is a complementary treatment resource and acts synergistically and reduces recovery time (KASE; LEMOS; DIAS, 2013).

In its application, the bandage, when removed from the paper, has the ability to be stretched, generating a tension that, when applied to the tissue, modifies the myofascial posture that, consequently, manipulates the muscle. Therefore, it becomes interesting for speech therapy.

The elastic bandage can be used in the treatment of oral sensory motor system disorders, assisting in swallowing functions and modifying inadequate
postural patterns for a more qualified assistance, being possible to contemplate the area of language, voice, orofacial motricity (HERNANDES et al., 2017; BARRERA; CÉSPEDES, 2019) and dysphagia (SILVA et al., 2014; SORDI et al., 2017), being possible to reduce the treatment time and stimulating in a continuous way in the musculature that is intended to act (RIBEIRO et al., 2009).

As argued by Nascimento et al. (2019) through elastic bandage it is possible to enhance the clinical evolution of a patient undergoing treatment for swallowing function, facilitating oral feeding and preventing pulmonary complications.

In the market it is possible to find different types and brands of elastic bandages, however, it is important to emphasize the attention that needs to be given to the particularities of each one, material, mode, color and application time, in addition to the specific objectives. Authors bring up the existence of specific types referring to biomechanical action only (and not functional) and relief of edema and pain (KASE; LEMOS; DIAS, 2013).

As for the time of fixation of the bandage on the skin, the literature is still quite divergent, being pointed out by some studies up to 3 days (ALONSO et al., 2015). The care that needs to be taken with the application of the bandage involves the risk of allergies, skin damage, hyperemia, itching.

Although relatively new, the use of bandages has been gaining popularity in the therapeutic environment (ALONSO et al., 2015) and requires greater research activity to prove its effectiveness, given the lack of studies addressing this resource (RIBEIRO et al., 2009).

Therefore, the work in question aims to carry out a survey in databases on the use of elastic bandage.

2 METODOLOGIA

This work has as its research strategy the Integrative Literature Review in which journals and other scientific publications were searched in the period from 2000 to 2021. The selection of content was based on the conformity of the subjects to the objective of the work and articles that, despite appearance in the search, did not address the subject in question.

In order to survey the articles in the literature, a search was carried out in the Scielo platform, which allowed access to articles published in good quality journals. The following descriptors were used to search for articles: elastic
bandage, bandage and therapeutic taping.

The studies were evaluated according to inclusion and exclusion criteria using the Relevance Test I, which was applied only to the abstracts of the articles, and those that did not present an abstract were excluded from the research. The articles considered relevant were submitted to the Relevance Test II applied to the articles in full. The above relevance tests were used because they are the most appropriate strategies for the present study, table 01. The studies included were those that addressed the subject of Elastic Bandage.

<table>
<thead>
<tr>
<th>Table 01 – Relevance Test Application Form</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RELEVANCE TEST I APPLICATION FORM</strong></td>
</tr>
<tr>
<td><strong>Inclusion criteria</strong></td>
</tr>
<tr>
<td>Does the study deal with elastic bandage?</td>
</tr>
<tr>
<td><strong>Exclusion criteria</strong></td>
</tr>
<tr>
<td>Is it editorial, letter or other scientific material that is not an article?</td>
</tr>
<tr>
<td>Is it possible to access the article in its entirety?</td>
</tr>
<tr>
<td><strong>RELEVANCE TEST II APPLICATION FORM</strong></td>
</tr>
<tr>
<td><strong>Inclusion criteria</strong></td>
</tr>
<tr>
<td>Is it a scientific production carried out in Portuguese, English or Spanish?</td>
</tr>
<tr>
<td>Contemplate the year 2000 to 2021?</td>
</tr>
</tbody>
</table>

**SOURCE:** produced by the study authors

3 RESULTADOS

Regarding the findings of scientific production on the platforms researched using the corresponding descriptors, it was possible to find 78 materials on the Scielo platform, with 10 articles for the term “elastic bandage”, 65 for “vendaje” and 3 for the term “therapeutic taping”, with a total of 78 articles. In Relevance Test I, 40 articles were excluded that did not address the issue of elastic bandages, 2 were excluded because they were conference proceedings and 1 because it was an editorial letter. In the Relevance Test II, 10 articles appeared more than once on the platform and therefore their copies were excluded, 3 were unavailable to be accessed in full, 1 had no year of publication and 2 did not contain all the journal data to be considered. Scientific materials. Therefore, a total of 17 articles remained in the sample by the Scielo platform.

The research script is presented in Figure 01, where the results found in the
The database used can be seen in general:

**Figure 01 - Flowchart of the design of the Integrative Literature Review**

1. Problem definition: what is there in the literature on the use of elastic bandage as a therapeutic resource in speech therapy?
2. Design of relevance tests (Table 01)
3. Definition of the platform (SciELO), keywords (elastic bandage, ventaja, therapeutic taping) for data collection
4. Search for relevant articles, 78 articles found in the defined database
5. 78 relevant articles
6. Application of the Relevance Test I - Summary
7. 38 relevant articles
8. Application of the Relevance Test II - full article
9. 17 relevant articles
10. Analysis of relevant articles - 17 articles

The electronic search reached a total of 78 relevant articles that contemplated the use of elastic bandage in the rehabilitation process, but only 17 corresponded to the criteria established in the Relevance Test II. The articles analyzed in this study are presented in the following Table II:
### Table 02 – Publications available in the Scielo database.

<table>
<thead>
<tr>
<th>Title</th>
<th>Method</th>
<th>Knowledge area</th>
<th>Language</th>
<th>Magazine</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comparison of the application of elastic bandage and medical tape in pain reduction in primary and secondary teachers</td>
<td>Experimental study, qualitative and descriptive</td>
<td>Physiotherapy</td>
<td>Portuguese</td>
<td>Brasilian Journal of Pain</td>
<td>2018</td>
</tr>
<tr>
<td>Dois métodos de hemostasia após cateterismo transradial: THEMATIC – protocolo de ensaio clínico randomizado</td>
<td>Randomized clinical trial</td>
<td>Nursin</td>
<td>Spanish</td>
<td>Revista Gaúcha de Enfermagem</td>
<td>2018</td>
</tr>
<tr>
<td>Efeito imediato do vendaje Dynamic Tape sobre la torsión tibial externa con dolor en un futbolista</td>
<td>Not specified</td>
<td>Physiotherapy</td>
<td>Spanish</td>
<td>Revista Andaluza de Medicina del Deporte</td>
<td>2016</td>
</tr>
<tr>
<td>Efectos del vendaje neuromuscular: uma revisión bibliográfica</td>
<td>Literature review</td>
<td>Physiotherapy</td>
<td>Spanish</td>
<td>Revista Ciências de la Salud</td>
<td>2012</td>
</tr>
<tr>
<td>Efectos del vendaje neuromuscular sobre la flexibilidad del raquis lumbar</td>
<td>Experimental study</td>
<td>Physiotherapy</td>
<td>Spanish</td>
<td>Sanidad Militar</td>
<td>2015</td>
</tr>
<tr>
<td>Efectos terapéuticos del vantage neuromuscular en parálisis cerebral infantil: una revisión sistemática</td>
<td>Systematic review of the literature</td>
<td>Physiotherapy</td>
<td>Spanish</td>
<td>Archivos Argentinos de Peditría</td>
<td>2017</td>
</tr>
<tr>
<td>Efeito da bandagem elástica no posicionamento da pelve com inclinação posterior</td>
<td>Randomized clinical trial</td>
<td>Physiotherapy</td>
<td>Portuguese</td>
<td>Revista Brasileira de Medicina do Esporte</td>
<td>2017</td>
</tr>
<tr>
<td>Effects of neuromuscular taping as na independente or complementary method to physiotherapeutic treatment in the management of cervical pain</td>
<td>experimental study</td>
<td>Physiotherapy</td>
<td>English</td>
<td>Revista de la Universidad Industrial de Santander</td>
<td>2018</td>
</tr>
<tr>
<td>ESTudo da Bota de Unna comparado a bandagem elástica em úlceras venosas: ensaio clínico randomizado</td>
<td>Randomized clinical trial</td>
<td>Nursen</td>
<td>Portuguese</td>
<td>Revista Latino-Americana de Enfermagem</td>
<td>2015</td>
</tr>
<tr>
<td>Evaluation of the effect of elastic bandage on the ankle basketball players with and without chronic instability</td>
<td>Randomized clinical trial of quantitative character</td>
<td>Physiotherapy</td>
<td>English</td>
<td>Revista Brasileira de Medicina do Esporte</td>
<td>2018</td>
</tr>
<tr>
<td>Peroneus longus activity in different types of taping: athletes with ankle instability</td>
<td>Not specified</td>
<td>Not specified</td>
<td>English</td>
<td>Revista Brasileira de Medicina do Esporte</td>
<td>2016</td>
</tr>
<tr>
<td>Semi-rigid and taping decrease variability of the ankle joint position sense</td>
<td>Not specified</td>
<td>Not specified</td>
<td>English</td>
<td>Motriz</td>
<td>2014</td>
</tr>
<tr>
<td>The impacto de decongestive physical therapy and elastic bandaging on the controlo of pain in patients with venous ulcers</td>
<td>Analytical and prospective randomized clinical trial</td>
<td>Physiotherapy</td>
<td>English</td>
<td>Revista do Colégio Brasileiro de Cirurgiões</td>
<td>2018</td>
</tr>
<tr>
<td>The influence of the external ankle support on the dynamic balance in volleyball athletes</td>
<td>Cross-sectional and quantitative study</td>
<td>Not specified</td>
<td>English</td>
<td>Motriz</td>
<td>2015</td>
</tr>
<tr>
<td>Uso da bandagem elástica associado ao tratamento fonoaudiológico no controle da sialorréia</td>
<td>Longitudinal study</td>
<td>Speech Therapy</td>
<td>Portuguese</td>
<td>Revista CEFAC</td>
<td>2014</td>
</tr>
<tr>
<td>Uso del taping en el manejo clínico de sujetos con pinzamiento subacromial: revisión sistemática</td>
<td>Systematic review</td>
<td>Physical Education</td>
<td>Spanish</td>
<td>Revista de la Sociedad Española de Dolor</td>
<td>2014</td>
</tr>
<tr>
<td>Vendaje neuromuscular: efectos neurofisiológicos y el papel de las fascias</td>
<td>Not specified</td>
<td>Not specified</td>
<td>Spanish</td>
<td>Ciencias de la Salud</td>
<td>2014</td>
</tr>
</tbody>
</table>

Source: Scielo Platform

### 4 DISCUSSION

The scientific productions published on the platform studied indicate the theoretical experience that is presented, but there is a lack of publications that
have as their object of study the use of elastic bandage in the therapeutic process.

With little literary data found, the importance of scientific publications regarding the use of elastic bandage is highlighted (RIBEIRO et al., 2009). Therefore, it is necessary to discuss the subject, the application methods, the most efficient cuts, colors and application time.

These results are consistent with the scientific literature that explains that although the use of elastic bandages is considered multidisciplinary, there is a predominance of studies in the area of Sports Medicine and Physiotherapy (SILVA et al., 2014).

Compression stockings, bandaging, compression bandage to minimize edema or scarring used in dressing, use of tape (non-elastic bandage) and ophthalmological treatment were some terms that designated the use of bandage and that’s why they appeared on the platform when using the keywords of this article, implying, consequently, in the exclusion of many articles. However, it can be observed in the studies found that the elastic bandage was also called “elastic adhesive tape” and “elastic athletic tape”.

5 FINAL CONSIDERATIONS

As can be seen, few articles of original character regarding field research were carried out, with no predominance of methodological technique used.

The scarcity of scientific literature covering the use of elastic bandage in rehabilitation, especially speech therapy, becomes evident, while at the national level only 1 study was identified as being from a Speech-Language Pathology team. Therefore, the need for further studies is also evident in order to contribute and enrich the theoretical contributions in the area of rehabilitation in Speech Therapy.
REFERENCES


