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A Topical Bibliography on Oral Motor Assessment and Treatment

To Help Address the Current Controversy Regarding Oral Motor Research

By Diane Bahr, MS, CCC-SLP, NCTMB, CIMI

Peer Reviewers: Leslie Faye Davis, MS, CCC-SLP; Daymon Gilbert, M Ed, CCC-SLP; Jennifer Gray, MS, CCC-SLP; Dave Hammer, MA, CCC-SLP; Mary Kennedy, EdD, CCC-SLP; Pam Marshalla, MA, CCC-SLP; Donna Ridley, M Ed, CCC-SLP; Daniela Rodrigues, MA, CCC-SLP

Abstract and Description of Problem

In 2002, Duchan wrote an article for *The [ASHA Leader](#)* regarding the history of speech-language pathology and why it is important. Knowing the history of a field is an integral part of understanding the field. Some within the field of speech-language pathology seem to have forgotten the rich supply of oral motor research that exists. This is of great concern, since students and young professionals in the field are frequently not exposed to this information. In recent years some graduate students, recent graduates, and working professionals have stated: (1) oral motor treatment does not work, (2) there is no research on oral motor treatment, and (3) [ASHA](#) does not support oral motor treatment. Such statements require serious investigation.

The purpose of this paper is to provide a rich sample of journal literature on the topic of oral motor assessment and treatment, discuss the trends within the literature, and suggest further research needed in the area. A topical bibliography containing articles from journals and selected papers (many with peer review) on oral motor assessment and treatment and related topics resulted from the study. Items were placed within the categories of the topical bibliography based on apparent relatedness to the topic. Some bibliography items were listed under more than one topic. The topical bibliography will assist speech-language pathologists, occupational therapists, and others in understanding the current state of oral motor literature and future research needs.

Key Words: oral motor, oral-motor, oromotor, oro-motor

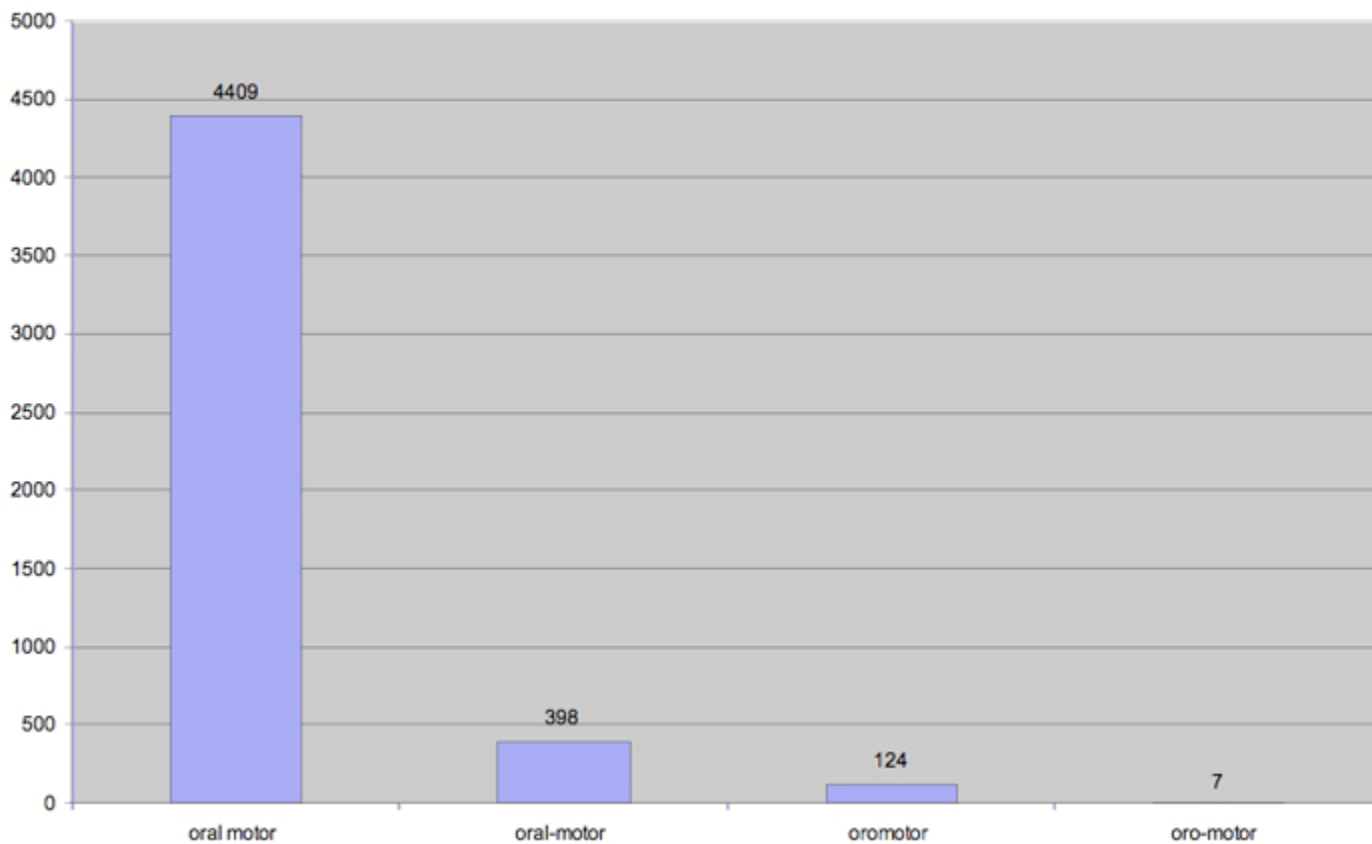
Method

In order to find the history of oral motor research, a survey of the many articles written on oral motor assessment and treatment was conducted. A previous [ASHA](#) (American Speech-Language-Hearing Association) “Building Blocks Module” on oral motor, feeding, swallowing, and respiratory-phonatory assessment and treatment served as a starting point for this study

(1990). After that, numerous other resources (books and journal articles) on feeding, motor speech, and related topics were used.

A search was also conducted using [PubMed](#), a service of the [National Library of Medicine](#) and the [National Institutes of Health](#). The terms “oral motor,” “oral-motor,” “oro-motor,” and “oromotor” were used in the search. As of November 7, 2007, PubMed had 4409 citations with the term “oral motor,” 398 citations with the term “oral-motor,” 124 citations with the term “oromotor,” and seven citations with the term “oro-motor.”

Citations from PubMed, November 7, 2007



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The subtopic areas for the survey were chosen based on definitions of “oral motor” from David W. Hammer, MA, CCC-SLP and Pamela Marshala, MA, CCC-SLP. According to Hammer (2007) the term “oral motor” is defined as “having to do with movements and placements of the oral structures such as the tongue, lips, palate, and teeth.” In his work with apraxia of speech in children, Hammer defines his oral motor strategies as “speech therapy... techniques which draw the child’s attention and effort to the oral musculature/articulators while simultaneously engaging the child in speech production practice.” According to Marshalla (2004, p. 10), “oral-motor therapy ... can be defined as the process of facilitating improved oral (jaw, lip, tongue) movements.” Based on these definitions, the following areas were included in the survey of the literature on oral motor assessment and treatment:

- Oral Motor Development
- Oral Motor Function
- Respiration (as it relates to oral motor function)
- Oral Motor Disorders (pediatric)
- Oral Motor Disorders (adult)
- Sensory Awareness and Discrimination/Sensory-Motor Facilitation
- Feeding, Eating, and Drinking (pediatric)
- Feeding, Eating, and Drinking (adult)
- Oral Activities and Exercises (related to oral motor function)
- Myofunctional Therapy
- Swallowing (pediatric – oral phase)
- Swallowing (adult – oral phase)
- Motor Speech (pediatric)
- Motor Speech (adult)

The definitions by Hammer (2007) and Marshalla (2004) along with the topics listed here may help the field of speech-language pathology develop a “working” or “operational” definition of the term “oral motor.” See the Discussion section of this article for some suggestions on how to approach this task.

Results

The results of the survey are listed in an extensive Appendix after the Discussion and Reference sections of the article.

Discussion

In reviewing the journal articles found in the Appendix, the terms “oral motor” and “oral-motor” were used most frequently, while the terms “oromotor” and “oro-motor” were found less often. Some form of the term “oral motor” appeared in the 1980s in the journal literature as a way of discussing mouth movement related to feeding and motor speech (Alexander, 1987; Morris, 1989). It has been used since that time to discuss development, function, and disorders related to mouth movement. The term was found frequently in the literature on feeding and swallowing; although, it also appeared in literature on motor speech. For example, a recent technical report from ASHA (2007) entitled *Childhood Apraxia of Speech: Ad Hoc Committee on Apraxia of Speech in Children* used the term “Oral-Motor Development” as a subtopic under the topic of “Motor Control.”

There is an overwhelming amount of research in the journal literature related to the topic of oral motor assessment and treatment. A significant number of articles were found for every subtopic selected. In fact, there were so many articles related to the topic or subtopics that the author decided to continue the search at a later date to develop future articles.

It is interesting to note that many of the articles were published outside of the field of speech-language pathology. There were numerous articles published in the fields of medicine, dentistry,

psychology, nutrition, and occupational therapy. Another survey of the literature could take a closer look at other fields conducting research and contributions made.

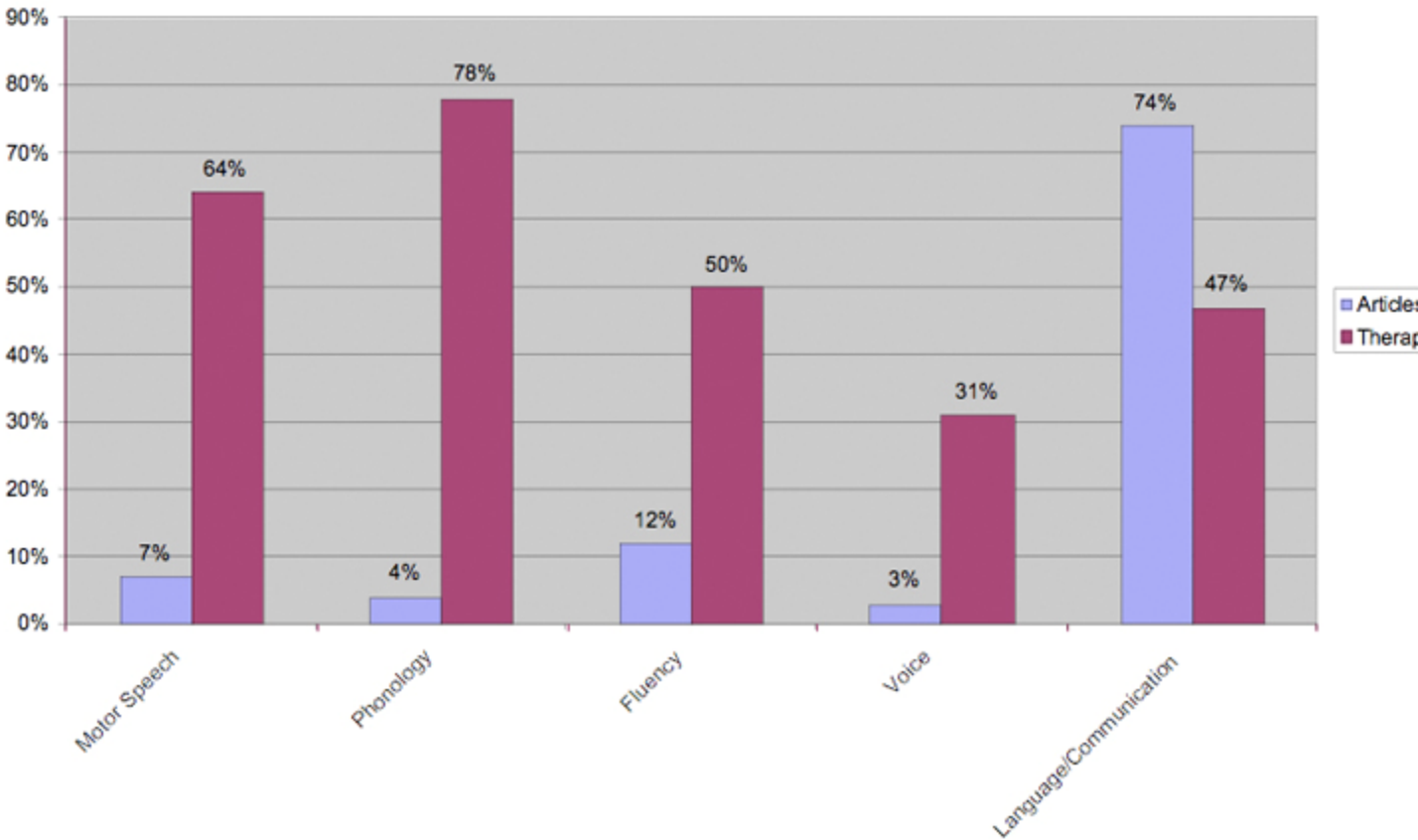
The current claims that oral motor treatment does not work, that there is no research on oral motor treatment, and that ASHA does not support oral motor treatment, seem to be unfounded based on the survey of the literature. Perhaps the field of speech-language pathology needs to look at the origins of such claims and the theoretical and clinical data provided for their perpetuation. The following hypotheses might be tested to help reveal the bases of these claims:

- The field is focused on language and not speech or feeding.
- Most of the recent studies in the field have been related to language and not the motor aspects of speech or feeding.
- Recently, there have been far fewer studies on all motor related disorders in the field. This includes voice, fluency, motor speech, and the oral phase of swallowing.
- The field does not have enough PhDs, and many university faculty members are not studying the motor aspects of speech and feeding.
- While ASHA has projects like NOMS (National Outcomes Measurement System), very few clinicians are participating in clinical research.

In a brief survey of 117 articles from the [*American Journal of Speech-Language Pathology*](#) (*AJSLP*) from February 2004 until August 2007, there were eight articles related to motor speech, five articles related to phonology, 14 articles related to fluency, and four related to voice. According to the *2008 ASHA Marketing Planner*, 78 percent of speech-language pathologists treat articulation and phonological disorders, 64 percent treat motor speech disorders, 50 percent treat fluency disorders, 30 percent treat dysphagia, 11 percent treat myofunctional disorders, and 31 percent treat voice and resonance disorders. These statistics reveal that speech-language pathologists treat a large numbers of clients with motor disorders. Colleagues in the fields of occupational therapy and physical therapy receive a motor-based training program in order to work with motor disorders in the body. This does not seem to be occurring in the field of speech-language pathology at this time.

It is understandable that the field of speech-language pathology has moved toward the study of language. The study of language is a relatively recent addition to the field. A “History of ASHA Membership and Certification Requirements” shows the addition of language assessment and treatment requirements in graduate programs beginning in 1965 (The ASHA Leader Online, 2007). This has been a vast undertaking. According to the *2008 ASHA Marketing Planner*, 47 percent of speech-language pathologists treat individuals with specific language impairment.

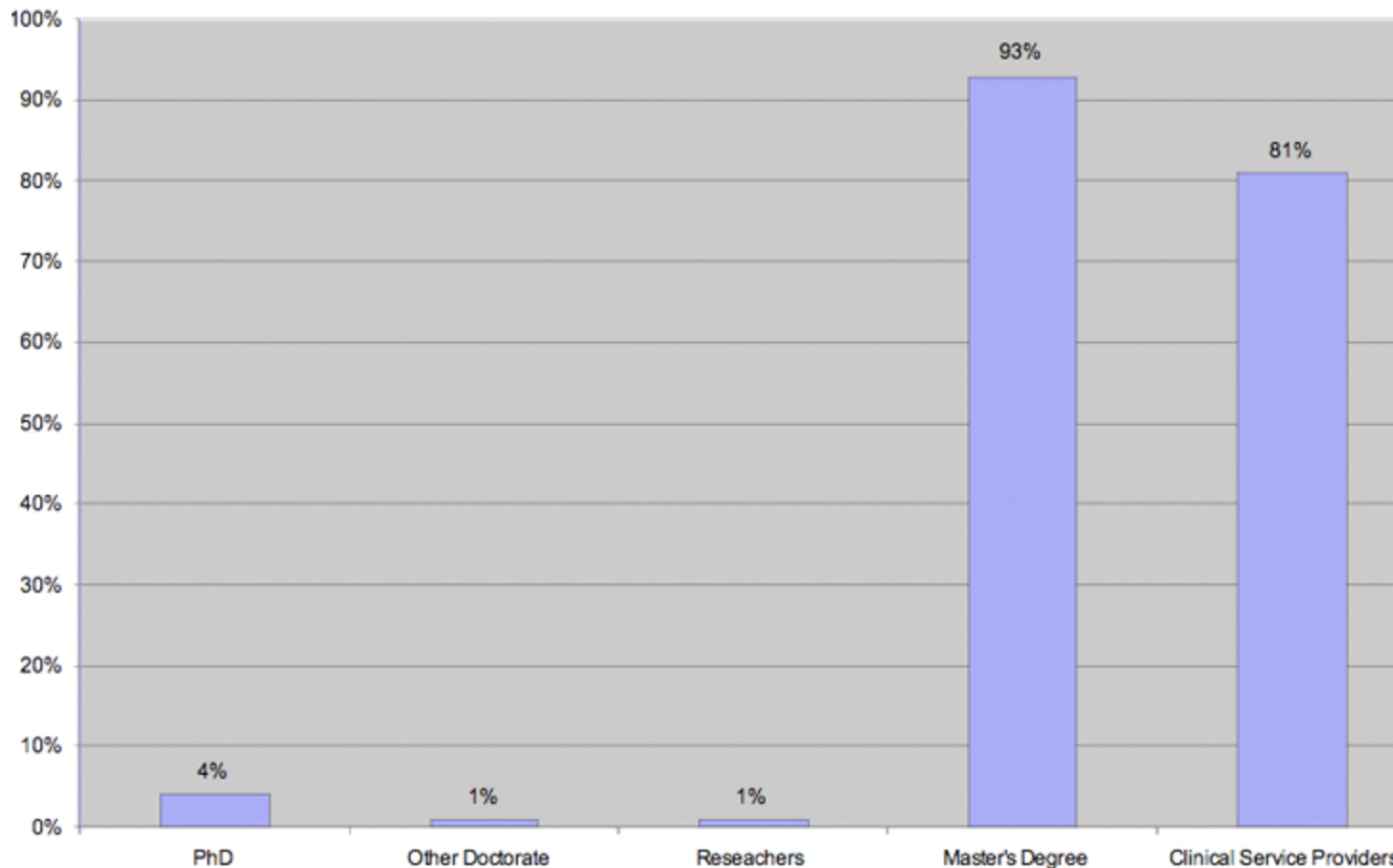
Percentage of Articles in AJSLP vs. Percentage of Therapists in Treatment Areas



(click on image to enlarge)

University training programs in speech-language pathology understandably struggle to teach all that students need to know as the field has continued to expand over time. However, it is a concern that graduate students may not be systematically learning from the wealth of existing oral motor information. The research itself is scattered (i.e., many different journals, many different fields). The exceptions are dysphagia and orofacial myology, which have their own journals and special interest groups. According to *Annual Counts of ASHA Membership and Affiliation* (Year-end 2006), only four percent of the membership and affiliates had a PhD and only one percent had another type of doctorate. Ninety-three percent of the membership and affiliates have Master's degrees. Regarding primary employment function, 81 percent of the membership and affiliates were clinical service providers and only one percent were researchers. These statistics do not bode well for those within the field who call for research to support applied treatment techniques.

ASHA Membership, Year-end 2006



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Recommendations to resolve the concerns discussed in this paper follow. Consider:

- A survey of graduate students and recent graduates of university program as well as other practicing clinicians to determine their understanding and knowledge of oral motor assessment and treatment. This survey would target areas based on a complete definition of oral motor treatment, “beyond non-speech oral exercise only” (e.g., Hodge, Salonka, & Kollias, 2005; Lof & Watson, 2004, 2008).
- The formation of an ASHA Ad Hoc Committee to define the role of the speech-language pathologist and the knowledge and skills needed by the speech-language pathologist in the variety of areas that encompass oral motor assessment and treatment (See ASHA documents on orofacial myofunctional disorders, dysphagia, and childhood apraxia of speech listed in reference section). It is suggested that an Ad Hoc Committee include both researchers and working clinicians with both PhD and Master’s levels of education.
- The development of graduate level and continuing education courses and curriculums based on the vast amount of oral motor literature that currently exists.
- A survey of university faculty willing to conduct research on oral motor topics (e.g., feeding and motor speech).

- ASHA support in setting up clinical research with interested clinicians (e.g., NOMS).
- The establishment of teams of researchers and working clinicians to complete needed peer-reviewed efficacy research on the use of oral motor treatment.

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Appendix

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SWALLOWING (PEDIATRIC)

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SWALLOWING (ADULT)

NOTE: See “Feeding” resources above for more information on the “Oral Phase” of swallowing. Also see *Dysphagia* journal and *Perspectives on Swallowing and Swallowing Disorders (Dysphagia)* American Speech-Language-Hearing Association Division 13.

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