

THE ORAL MOTOR DEBATE: WHERE DO WE GO FROM HERE?

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CONTENT AREA: Research Issues Across the Discipline (Speech-Language Pathology)

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Learning Outcomes: In this poster session, participants will:

1. Identify the apparent root of the problem and controversy in oral motor terminology.
2. Identify and discuss the areas that encompass oral motor treatment **beyond** nonspeech oral exercise/treatment (i.e., feeding, motor speech, orofacial myofunctional treatment).
3. Discuss journal research/literature within the field of speech-language pathology and outside of the field on oral motor topics.
4. Discuss current needs in undergraduate, graduate, and continuing education related to treatment areas involving oral motor function.
5. Discuss and problem-solve proactive approaches to resolve the current overall research crisis in speech-language pathology, particularly in the area of oral motor treatment.
6. Discuss ways to bring more cohesion to the field of speech-language pathology.

Abstract: To date, there has been no official definition of the term "oral motor treatment" within the speech-language pathology (SLP) profession. In recent presentations and articles, oral motor treatment has been **narrowly defined** and equated with nonspeech oral exercise and treatment by a small group of authors and researchers. This has caused **significant confusion and misunderstanding** within the field. From a historical perspective, oral motor treatment was

originally discussed in the context of **feeding and motor speech** by Alexander (1987), Morris (1989), and the ASHA “Building Blocks Module” (1990). A cohesive and proactive approach to work through differences in definition, promote critical future research, and develop appropriate training programs on this topic is recommended.

Introduction/Problem Statement:

In recent years the term **oral motor treatment** has been **narrowly equated with and defined as** nonspeech oral motor exercise and treatment (NSOME/NSOMT) **by some authors and researchers** (Banotai, 2007; Bowen, 2006; Clark, 2005; Flaherty & Bloom, 2007; Insalaco, Mann-Kahris, Bush, & Steger, 2004; Lass, Pannbacker, Carroll, & Fox, 2006; Pannbacker & Lass, 2002; Pannbacker & Lass, 2003; Pannbacker & Lass, 2004; Polmanteer & Fields, 2002; Pruett-Hayes, 2005; Ruscello, 2005; Williams, Stephens, & Connery, 2006). However, nonspeech oral exercise and other forms of nonspeech or nonfeeding treatment (e.g., oral massage and facilitation) **are only part of oral motor treatment.**¹

The majority of articles and presentations (listed above) discussed the use of nonspeech oral treatment with one specific population (i.e., **children with developmental speech sound disorders**).² However, SLPs also treat children with significant motor speech (i.e., dysarthria and apraxia of speech) and feeding disorders. These include children with Down syndrome, autism, cerebral palsy, and many other disorders (Bahr, 2001, pp. 35-38).

The narrow use of the term “oral motor treatment” by presenters and authors has apparently caused **significant misunderstanding and confusion** in the field of speech-language pathology regarding oral motor treatment. Generalized concerns and perceptions (without specific definition) have been expressed by SLPs across the United States.

Historically, the term **oral motor** originated as a descriptor of feeding and motor speech behaviors in journal literature in the 1980s (Alexander, 1987; Morris, 1989). ASHA created a “Building Blocks Module” in 1990 on oral motor, feeding, swallowing, and respiratory-phonatory treatment. Recently, the term **oral motor development** was used as a subtopic in a technical report on childhood apraxia of speech from ASHA (2007a).

This paper explores the current use of the term oral motor treatment as well as practice trends in oral motor treatment (i.e., feeding, motor speech, orofacial myofunctional treatment, oral awareness/discrimination, and oral activities/exercises). Five hundred SLPs were surveyed to determine what they had heard about oral motor treatment, what areas they used to define oral motor treatment, and how they spent their time in these treatment areas.

¹ While a small group of authors and researchers have used the terms nonspeech oral motor exercise/treatment (NSOME/NSOMT) to clarify their terminology, these are not standard terms. It is questionable whether oral exercise/treatment is accurately described as **motor only**. **Sensory motor** may better describe the treatment. Therefore, NSOME and NSOMT were only used to describe the work of the small group who use these terms.

² As defined by Ruscello (2008), “Developmental speech sound disorder is a collective term that refers to clinical differences in the development of a child’s sound system. A child may exhibit sensory motor-based phonetic errors, linguistic-based phonemic errors, or a combination of these two types of errors. The etiology of most developmental speech sound disorders is unknown.”

A previously completed survey of the journal literature (Bahr, 2008) also revealed a vast amount of research on oral motor topics. This contradicted the perception/generalization regarding lack of oral motor research. However, it was found that recent research does not match areas of SLP practice, and there is a great need for research and researchers in all areas of SLP.

Finally, the controversy on oral motor treatment has brought to light some important questions regarding the training of SLPs. Does the profession need to evaluate and provide more graduate and undergraduate training on topics related to oral motor function (i.e., feeding and motor speech)? Can continuing education programs be better coordinated with graduate and undergraduate training?

Methods:

The apparent root of the oral motor controversy, results of the “Survey on Oral Motor Treatment,” and the interrelated findings in the literature are presented in this paper. The methods for this process follow:

1. The current controversy and **narrow use** of the term **oral motor treatment** by some presenters and authors was researched, presented, and discussed. The findings are presented in Table 1.
2. A survey entitled “Survey on Oral Motor Treatment” (see Appendix A) was completed by 500 SLPs to determine their perceptions, definitions, and practices on the topic of oral motor treatment. To avoid participant bias, SLPs completed surveys **prior to** continuing education training programs, so information presented in trainings would not impact respondent answers. Surveys were also sent out to SLPs on website lists for the Oral Motor Institute (www.oral-motorinstitute.org) and other website lists from Marshalla Speech and Language. The stated purpose was presentation of results at the November 2008 ASHA Convention and an article for the Oral Motor Institute. Participants were consenting adults (i.e., SLPs) from all parts of the United States, and no human subjects review was required. Complete demographics will be presented in a future monograph to be submitted to the Oral Motor Institute for consideration. The Oral Motor Institute is a formal study group on the topic of oral motor assessment and treatment.
3. An **extensive survey of the oral motor journal literature** had previously been completed by the author (Bahr, 2008), and a summary of the results are presented. This information was published in a monograph entitled “A Topical Bibliography on Oral Motor Assessment and Treatment to Help Address the Current Controversy Regarding Oral Motor Research” (Bahr, 2008). Peer Reviewers were Leslie Faye Davis, MS, CCC-SLP; Daymon Gilbert, M Ed, CCC-SLP; Jennifer Gray, MS, CCC-SLP; Mary Kennedy, EdD, CCC-SLP; Pam Marshalla, MA, CCC-SLP; Donna Ridley, M Ed, CCC-SLP; and Daniela Rodrigues, MA, CCC-SLP.

Discussion of Results

The Problem and Apparent Root of the Controversy

Table 1: Comparison of Terminology Used in Articles and Presentations on Nonspeech Oral Exercise/Treatment and Developmental Speech Sound Disorders

<p>PROBLEMATIC NARROW USE OF TERMINOLOGY</p> <p>ORAL MOTOR TREATMENT=NONSPEECH ORAL TREATMENT</p>	<p>MORE SPECIFIC TERMINOLOGY USED (LSHSS, 2008)</p> <p>WORKING TOWARD CORRECTION OF THE PROBLEM IN TERMINOLOGY</p>
<p>Reviewing the Evidence: Gregory Lof's Critical Take on Oral-Motor Therapy (Banotai, 2007)</p>	<p>The Application of Evidence-Based Practice to Nonspeech Oral Motor Treatments (Lass & Pannbacker, 2008)</p>
<p>What is the Evidence for Oral Motor Therapy? (Bowen, 2006)</p>	<p>A Nationwide Survey of Nonspeech Oral Motor Exercise Use: Implications for Evidence-Based Practice (Lof & Watson, 2008)</p>
<p>Clinical Decision Making and Oral Motor Treatments (Clark, 2005)</p>	<p>The Use of Nonspeech Oral Motor Treatments for Developmental Speech Sound Production Disorders: Interventions and Interactions (Powell, 2008)</p>
<p>Current Practices & Oral Motor Treatment (Flaherty & Bloom, 2007)</p>	<p>An Integrated Evaluation of Nonspeech Oral Motor Treatments (Powell, 2008)</p>
<p>Equivocal Results of Oral Motor Treatment on a Child's Articulation (Insalaco, Mann-Kahris, Bush, & Steger, 2004)</p>	<p>Nonspeech Oral Motor Treatment Issues Related to Children with Developmental Speech Sound Disorders (Ruscello, 2008)</p>
<p>Speech-Language Pathologists' Use of Oral Motor Treatment (Lass, Pannbacker, Carroll, & Fox, 2006)</p>	
<p>The Use of Oral Motor Therapy in Speech-Language Pathology (Pannbacker & Lass, 2002)</p>	
<p>Effectiveness of Oral Motor Treatment in SLP (Pannbacker & Lass, 2003)</p>	
<p>Ethical issues in Oral Motor Treatment (Pannbacker & Lass, 2004)</p>	
<p>Effectiveness of Oral Motor Techniques in Articulation and Phonology Treatment. (Polmanteer & Fields, 2002)</p>	
<p>Comparison of Two Treatments: Oral Motor and Traditional Articulation Treatment (Pruett-Hayes, 2005)</p>	
<p>Oral Motor Treatment: Current State of The</p>	

Art (Ruscello, 2005)	
What's the Evidence for Oral Motor Therapy? (Williams, Stephens, & Connery, 2006)	

1. The articles listed in the left-hand column of Table 1 narrowly defined/equated oral motor treatment with nonspeech oral exercise/treatment. This narrow definition does not accurately reflect the historical use of the term (See Introduction) and results of “The Survey on Oral Motor Treatment” presented.
2. The **narrow use of the term oral motor treatment** is the most likely cause of the **confusion and misunderstanding** of the term among SLPs (left-hand column). This has likely lead to the generalizations communicated to SLPs across the United States via colleagues, professors/instructors, newsletters/magazines, and peer-reviewed journal articles (See Figures 2 and 3 from the “Survey on Oral Motor Treatment”).
3. The 2008 *Language, Speech, and Hearing in Schools (LSHSS)* articles in the right-hand column used terminology specifying areas of oral motor treatment being addressed (i.e., nonspeech oral motor exercise/treatment – NSOME/NSOMT) and the population being discussed (i.e., children with developmental speech sound disorders). While this clarifies the terminology used in these articles, it **does not rectify** the confusion and misunderstanding apparently caused by the terminology used in many previous articles and presentations (left-hand column).
4. The articles and presentations in Table 1 **do not** focus on children with feeding or motor speech disorders (e.g., children with Down syndrome, autism, cerebral palsy, etc). They, instead, focus on children with developmental speech sound disorders (e.g., language related phonological disorders, speech sound disorders of unknown etiology). Therefore, the findings cannot be generalized to children with feeding or motor speech disorders (i.e., dysarthria and apraxia of speech).
5. In contrast to the articles in Table 1:
 - The full range of oral motor assessment and treatment areas were covered in the textbook *Oral Motor Assessment and Treatment: Ages and Stages* (Bahr, 2001). The book discussed the interrelated nature of neurology, anatomy, physiology, and development with the treatment areas of **feeding, motor speech**, orofacial myofunctional, oral awareness/discrimination, and oral exercise/activities. It focused on integration of these areas, so SLPs could view the topic of oral motor assessment and treatment as a whole. The book was cited in the Clinical Forum in *LSHSS* (July, 2008), but only references to nonspeech oral treatment were mentioned. The book addresses assessment and treatment of **children with feeding and motor speech disorders**.
 - An extensive tutorial was published in the *American Journal of Speech-Language Pathology (AJSLP)*, August, 2008) entitled “Principles of Motor Learning in Treatment of Motor Speech Disorders” (Maas, Robin, Austermann Hula, Freedman, Wulf, Ballard, & Schmidt). This article presented information on motor speech from a **sound research and theoretical perspective**.
 - There are also many well-researched and informative textbooks on motor speech and feeding.
6. With regard to definition, Hammer (2007) defines the term “oral motor” as “having to do with movements and placements of the oral structures such as the tongue, lips, palate, and

teeth.” He treats children with childhood apraxia of speech (CAS) and defines his oral motor strategies as “speech therapy...techniques which draw the child’s attention and effort to the oral musculature and articulators while **simultaneously engaging** the child in speech production practice” (Bahr, 2008, p. 2). Marshalla (2004, p. 10) says “oral-motor therapy...can be defined as the process of **facilitating** improved oral (jaw, lip, tongue) movements.” People use oral movements in feeding and speech. These definitions **are very different from** the idea that “oral motor treatment = nonspeech oral exercise/treatment.”

Some questions for thought and future research arose from reviewing the articles and presentations in Table 1:

1. Could the following possibly be true? “Party horns...blow ticklers...bubbles...straws....Items such as these are being used by speech-language pathologists (SLPS) across America to treat a **wide range of communication disorders**” (Lof & Watson, 2008 as cited by Powell, 2008a).
2. Are continuing education courses really promoting nonspeech treatments **in place of speech treatment** as implied in the Clinical Forum articles in *LSHSS* (July, 2008)?
3. Do SLPs **trained, certified, and licensed according to ASHA standards** really provide therapy consisting largely or exclusively of nonspeech or nonfeeding work with the expectation of improvement in speech or feeding?
4. Would a properly trained SLP do oral awareness/discrimination and oral activities/exercises with children who do not need them as implied in the Clinical Forum (July, 2008, pp. 374-427)? If so, are these therapists properly trained?
5. Do nonspeech and/or nonfeeding oral, vocal, and respiratory treatments have a place in the treatment of children with **feeding and motor speech disorders** (e.g., children with Down syndrome, autism, cerebral palsy, etc.)? These children are **different from children with relatively typical oral structures/functions and developmental speech sound disorders** that may have a language base.
6. Could carefully and appropriately chosen nonspeech and nonfeeding activities be used as one-minute motor activities to keep the oral mechanism engaged while providing a break from the intensity of **feeding and motor speech work in appropriate populations**? Could this be a better choice than unrelated game activities for motivation (e.g., Candy Land)?
7. Aren’t activities like chewing, sipping, and blowing also organizing from a **sensory processing perspective** and engaging from a **motor perspective**? Haven’t blowing and chewing activities been standard and accepted methodology in **voice rehabilitation**?
8. Are nonspeech treatments used **only** to improve muscle tone and increase strength? Why is there so much discussion about increasing strength (i.e., exercising to failure to build muscle; Lof, & Watson, 2008) when graded strength is used for the tactile-kinesthetic acts of eating, drinking, and speaking? **What about dissociation, grading, and direction of movement?** Aren’t these just as important as adequate muscle tone and strength?
9. Regarding oral massage and facilitation, can a feeding or motor speech therapist (using a hands-on method such as PROMPT - Prompts for Restructuring Oral Muscular Phonetic

Targets, Hayden, 2006, 2004) **talk a child out of** a hyperresponsive gag, tactile defensiveness, or a tonic bite?

10. Would a **standard definition** of oral motor treatment help with the current confusion and misunderstanding regarding the term?

Survey on Oral Motor Treatment

Figures 1-6 represent the results from the “Survey on Oral Motor Treatment” (Appendix A). Five-hundred SLPs participated in the survey.

Figure 1: SLP Years of Experience Participating in Survey

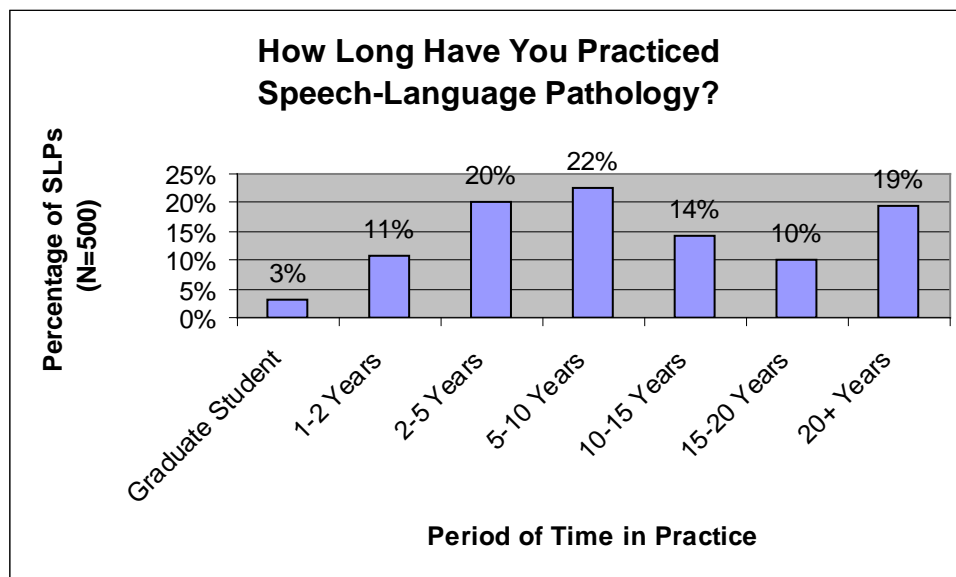


Figure 1: Years of Experience
(Results from “Survey on Oral Motor Treatment” completed by 500 SLPs)
Percentages Rounded

1. A wide distribution of time in practice was found among SLPs completing the survey.
2. The majority of SLPs completing the survey had more than five years of experience (i.e., 65%).
3. Thirty-four percent had less than five years of experience.

Figure 2: Statements/Perceptions/Generalizations Heard by SLPs across the United States

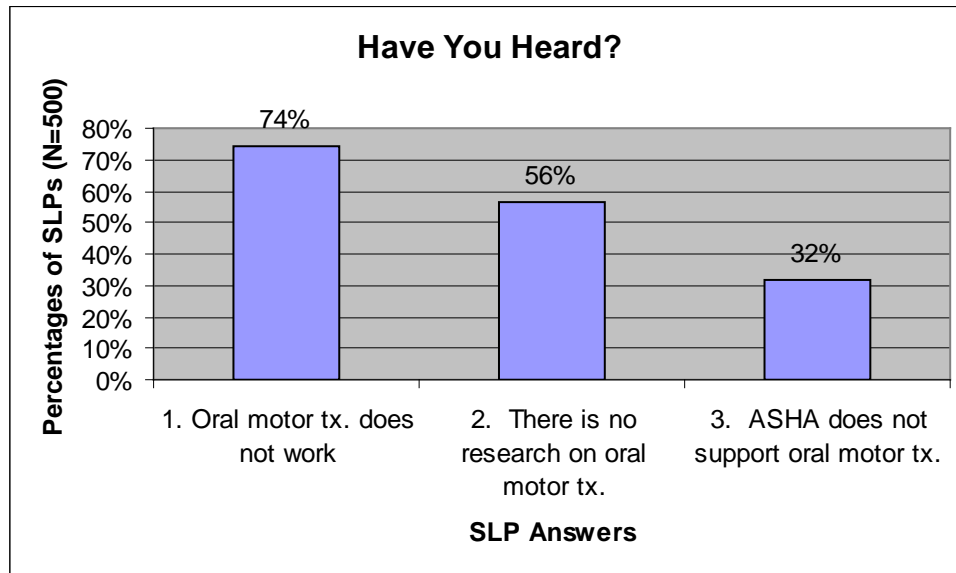


Figure 2: Perceptions of SLPs across USA
(Results from “Survey on Oral Motor Treatment” completed by 500 SLPs)
Percentages Rounded

1. A large number of the 500 SLPs surveyed had heard “Oral motor treatment does not work (74%) and “There is no research on oral motor treatment” (56%).
2. The perception “ASHA does not support oral motor treatment” was heard by approximately one-third of SLPs surveyed.
3. These gross generalizations were heard across the United States. **Gross generalizations are usually inaccurate and cause misunderstanding, confusion, concern.**
4. These generalizations are particularly troublesome, since there is no official or standard definition of the term oral motor treatment and the majority of SLPs surveyed said they use some form of oral motor treatment. See Figures 5 and 6.
5. As discussed under Table 1, the generalizations appeared to result from oral motor treatment being **narrowly defined and equated** with nonspeech oral exercise/treatment and discussed in the context of one pediatric population (i.e., children with developmental speech sound disorders). See Table 1.
6. Figure 3 provides more information about where therapists heard these generalizations.

Figure 3: Sources of Statements/Perceptions/Generalizations Heard in Figure 2

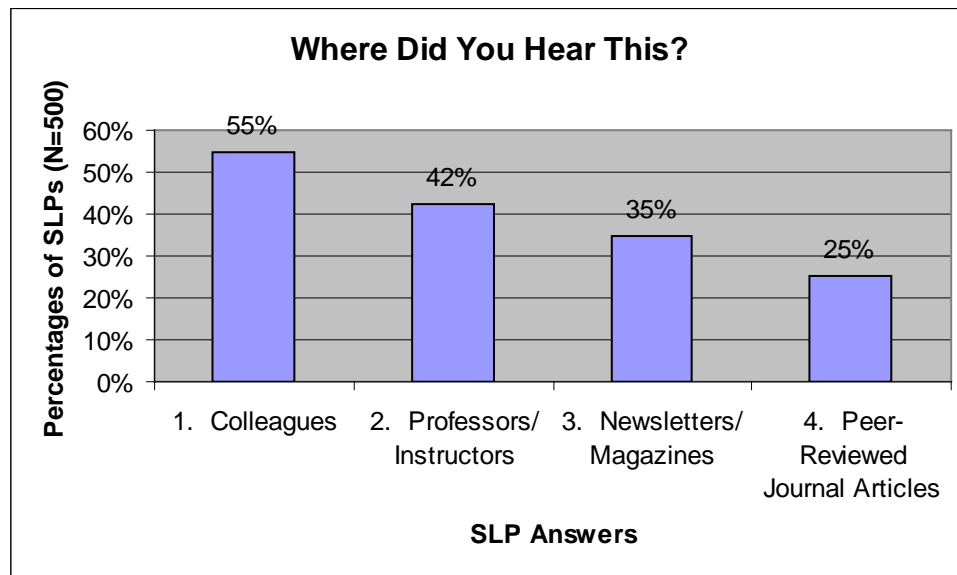


Figure 3: Sources for Perceptions Listed in Figure 2
(Results from "Survey on Oral Motor Treatment" completed by 500 SLPs)
Percentages Rounded

1. Speech-Language Pathologists most frequently heard the generalizations from colleagues (55%) and professors/instructors (42%). However, they also heard them from newsletters/magazines (35%) and peer-reviewed journal articles (25%).
2. As discussed under Table 1, the generalizations appeared to result from oral motor treatment being **narrowly defined and equated** with nonspeech oral exercise/treatment and discussed in the context of one pediatric population (i.e., children with developmental speech sound disorders). See Table 1.

Figure 4: Areas SLPs Define as Oral Motor Treatment and Techniques They Use

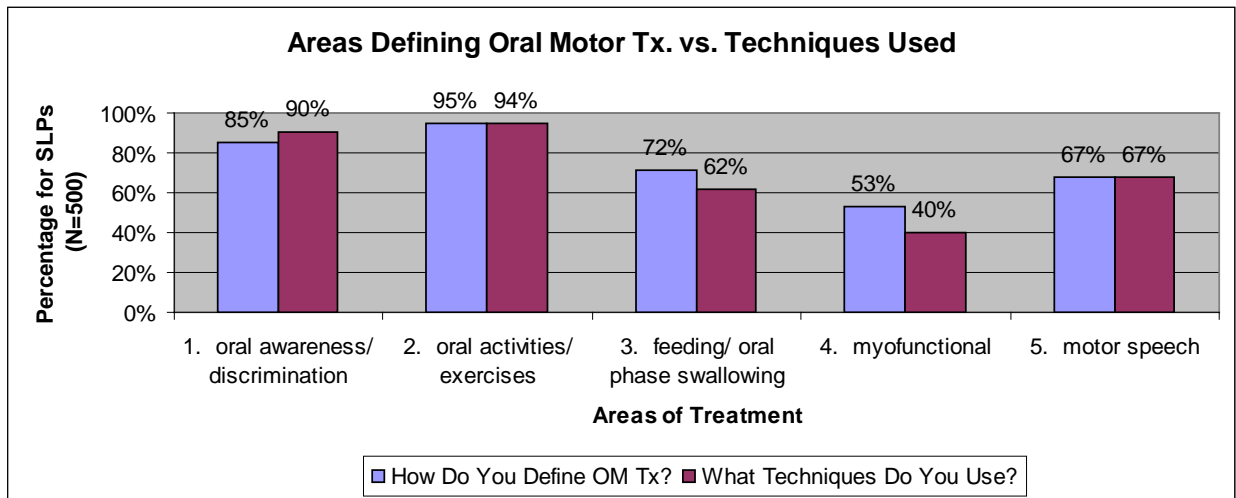


Figure 4: Areas Defining Oral Motor Treatment vs. Oral Motor Treatment Techniques SLPs Use (Results from “Survey on Oral Motor Treatment” completed by 500 SLPs)
Percentages Rounded

1. More than 50 percent of SLPs considered all areas surveyed as part of oral motor treatment. When orofacial myofunctional treatment was not counted, approximately 70 percent of SLPs considered oral awareness/discrimination, oral activities/exercises, feeding/oral phase swallowing, and motor speech as part of oral motor treatment.
2. While approximately 50 to 70 percent of SLPs considered most areas surveyed as part of oral motor treatment, more SLPs included oral awareness/discrimination (85%) and oral activities/exercises (95%) in their definitions. It is questioned whether the current controversy, misunderstanding, and confusion has contributed to this difference.
3. It is clear that many SLPs use treatment techniques other than nonspeech exercises/treatment and define these as oral motor treatment.
4. The techniques used by SLPs and the areas defined as part of treatment were the same or similar in distribution. For example, 67 percent of SLPs considered motor speech as part of oral motor treatment and 67 percent used motor speech techniques in treatment.

Figure 5: How Much Time are SLPs Spending in Oral Awareness/Discrimination and Oral Activities/Exercises?

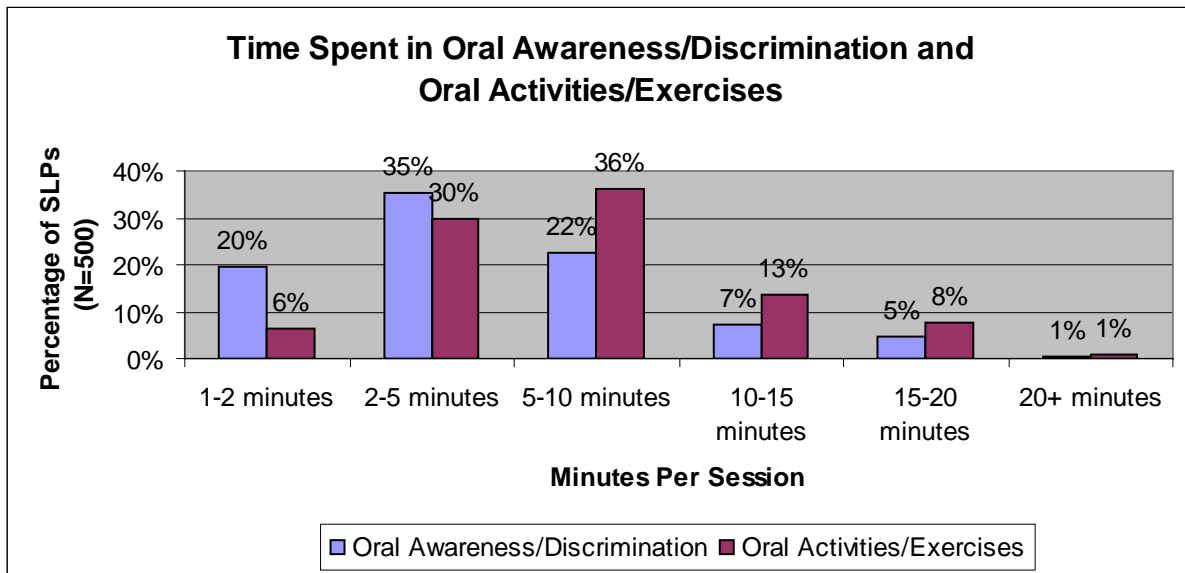


Figure 5: Time SLPs Report Spending in Oral Awareness/Discrimination and Oral Activities/Exercises
(Results from “Survey on Oral Motor Treatment” completed by 500 SLPs)
Percentages Rounded

1. Most SLPs surveyed spent two to five minutes or five to 10 minutes on oral awareness/discrimination and/or oral activities/exercises.
2. Twenty percent of SLPs spent one to two minutes on oral awareness/discrimination.
3. The use of these activities significantly decreased after five to 10 minutes.
4. This lead to a number of questions. Some of these were also discussed under Table 1 but are appropriately repeated here.
 - What specific activities are SLPs doing in these areas of treatment?
 - Does the use oral awareness/discrimination and oral activities/exercises **automatically mean** SLPs are using nonspeech or nonfeeding activities?
 - Is it both possible and probable that oral awareness/discrimination and oral activities/exercises involve speech and feeding activities?
 - Wouldn't the actual techniques used in these areas depend on the definition and training of the SLP?
 - Is it true that SLPs are doing oral awareness/discrimination work and oral activities/exercises in place of speech treatment as implied in the Clinical Forum (July, 2008, pp. 374-427)?
 - Would a properly trained SLP do oral awareness/discrimination and oral activities/exercises with children who do not need them as implied in the Clinical Forum (July, 2008, pp. 374-427)? If so, are these therapists properly trained?
 - Could carefully and appropriately chosen nonspeech and nonfeeding activities be used as one-minute motor activities to keep the oral mechanism engaged while providing a break from the intensity of **feeding and motor speech work in**

appropriate populations? Could this be a better choice than unrelated game activities for motivation (e.g., Candy Land)?

- Aren't activities like chewing, sipping, and blowing also organizing from a sensory processing perspective and engaging from a motor perspective? Haven't blowing and chewing activities been standard and accepted methodology in voice rehabilitation?
- Are nonspeech treatments used **only** to improve muscle tone and increase strength? Why is there so much discussion about increasing strength (i.e., exercising to failure to build muscle; Lof, & Watson, 2008) when graded strength is used for the tactile-kinesthetic acts of eating, drinking, and speaking? What about dissociation, grading, and direction of movement? Aren't these just as important as adequate muscle tone and strength?
- Regarding oral massage and facilitation, can a feeding or motor speech therapist (using a hands-on method such as PROMPT - Prompts for Restructuring Oral Muscular Phonetic Targets, Hayden, 2006, 2004) talk a child out of a hyperresponsive gag, tactile defensiveness, or a tonic bite?

Figure 6: Time Spent in the Functional Treatment Areas of Feeding and Motor Speech

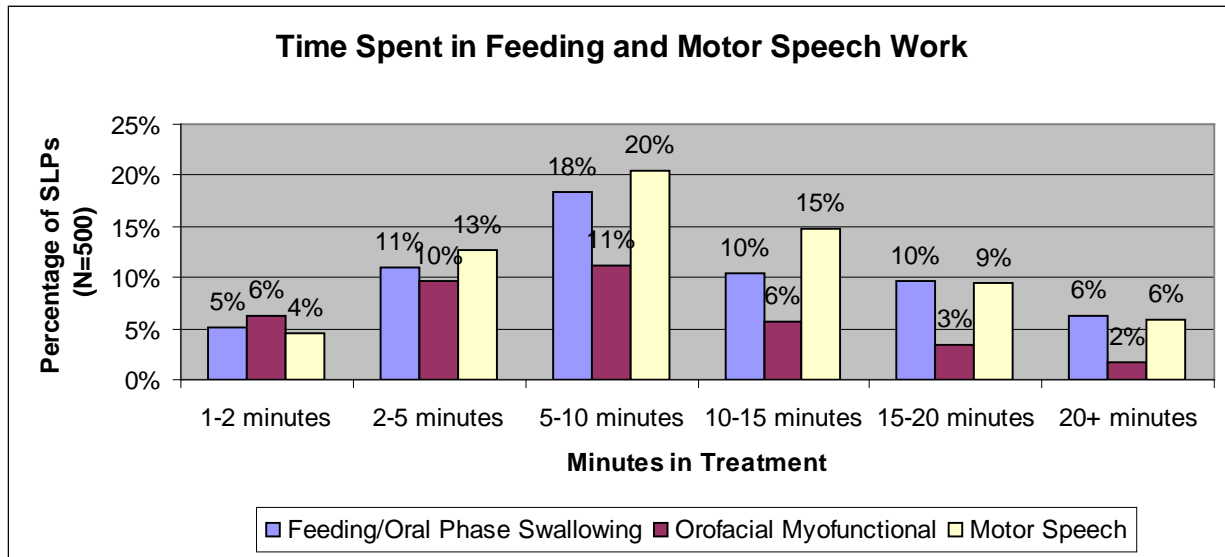


Figure 6: Time SLPs Report Spending on Feeding and Motor Speech Treatment
(Results from “Survey on Oral Motor Treatment” completed by 500 SLPs)
Percentages Rounded

1. Orofacial myofunctional treatment was included here because it is part of oral phase swallowing work.
2. A similar distribution of treatment time was noted in all three treatment areas.
3. The largest percentage of SLPs spent five to 10 minutes in the treatment of feeding, orofacial myofunctional, and motor speech disorders.
4. It is curious that **many SLPs spent only a small amount of time in feeding and motor speech work** (the functional aspects of oral motor treatment). Perhaps this is due to the fact that SLPs need to address these areas as well as language and language related areas (e.g., reading, writing, etc.)

Research

Figures 7-9 and Table 2 reveal the results of a literature survey completed by Bahr (2008) on available oral motor journal research.

Figure 7: Journal Research on Topic of Oral Motor (PubMed, November, 2007)

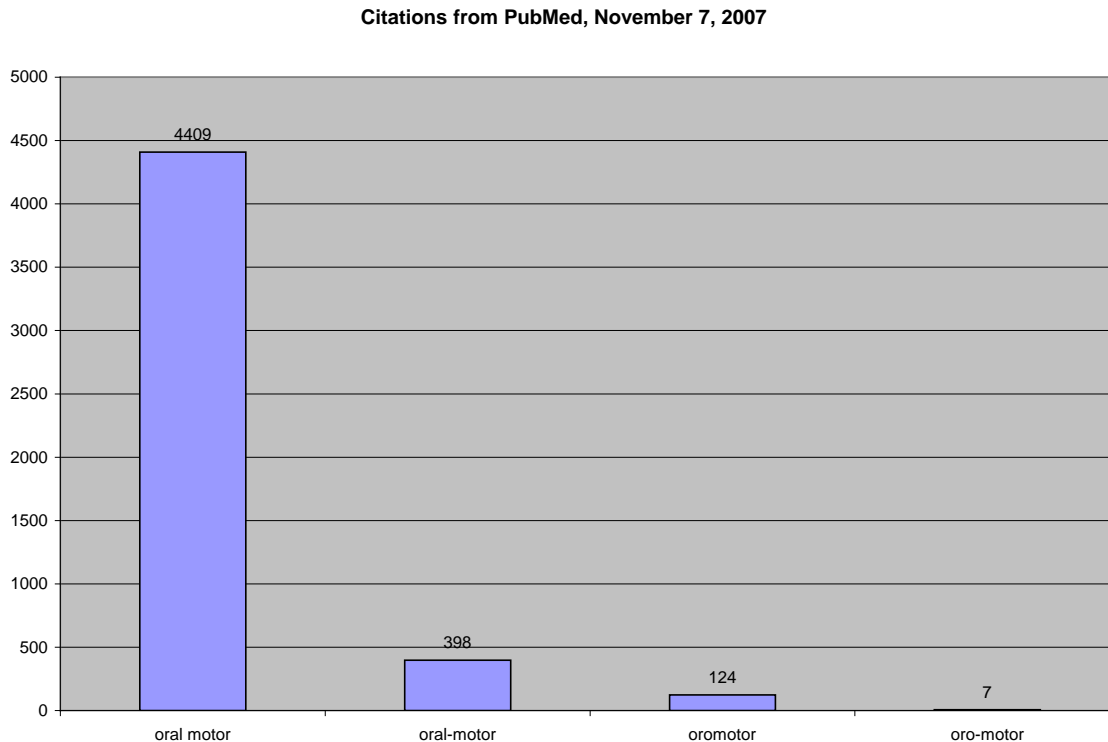


Figure 7: PubMed Citations Using Some Form of the Term Oral Motor (Bahr, 2008)
Chart reprinted with permission from the Oral Motor Institute

1. Almost 5000 journal articles used some form of the term “oral motor” on PubMed in November of 2007.
2. Many of these articles were published in fields such as medicine, dentistry, psychology, nutrition, occupational therapy, as well as speech-language pathology.
3. The articles addressed a wide range of topics related to oral motor assessment and treatment:
 - oral motor development,
 - oral motor function,
 - respiration as it relates to oral motor function,
 - oral motor disorders,
 - oral sensory awareness and discrimination/sensory-motor function,
 - feeding/eating/drinking,
 - oral activities and exercises,
 - orofacial myofunctional treatment,

- oral phase swallowing, and
 - motor speech.
4. Many articles were published in the 1960s, 1970s, 1980s, and 1990s on oral motor topics, but there were fewer recent articles on the topic. This led to the comparison of recent research in *AJSLP* and therapist practice patterns in Figure 8.

Table 2: Actual Articles Listed in “A Topical Bibliography on Oral Motor Assessment and Treatment” (Bahr, 2008, Appendix)

TOPIC	NUMBER OF ARTICLES
Oral Motor Development	76
Oral Motor Function	54
Respiration (as it relates to oral motor function)	21
Oral Motor Disorders (pediatric)	112
Oral Motor Disorders (adult)	48
Sensory Awareness and Discrimination/Sensory-Motor Facilitation	49
Feeding, Eating, Drinking (pediatric)	90
Feeding, Eating, Drinking (adult)	12
Oral Activities and Exercises (related to oral motor function)	42
Orofacial Myofunctional Therapy	11
Swallowing (pediatric-oral phase)	26
Swallowing (adult-oral phase)	29
Motor Speech (pediatric)	66
Motor Speech (adult)	47

1. The initial survey on Pub Med (Figure 7) by Bahr (2008) revealed a vast number of journal articles on many oral motor topics. This led to an actual listing of articles by topic in the appendix of the article entitled “A Topical Bibliography on Oral Motor Assessment and Treatment to Help Address the Current Controversy Regarding Oral Motor Research.” For example, 112 journal articles were listed on the topic of pediatric oral motor disorders in the article.
2. This was not an exhaustive sample. Therefore, more journal articles are available on these topics.
3. The generalization from the “Survey on Oral Motor Treatment” regarding the lack of oral motor research was found to be untrue based on information revealed in Figure 7 and Table 2.

Figure 8: Recent Research in AJSLP Compared to SLP Practice Patterns

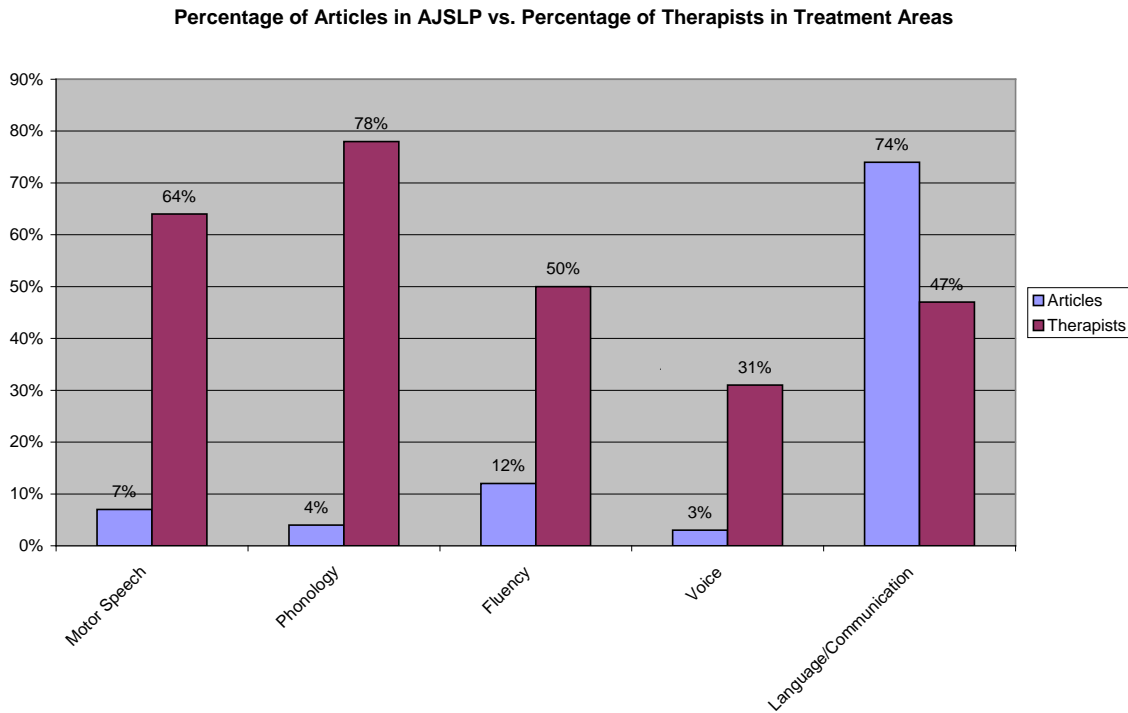


Figure 8: Percentage of Articles in *AJSLP* (2004-2007, N=117) by Topic vs. Percentage of SLPs in 2008 Treating These Areas (Bahr, 2008)
Percentages Rounded

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1. A survey of 117 articles (*AJSLP*, February 2004-August 2007) was conducted. This journal publishes research and information across the speech-language pathology profession. Very few articles were found in the areas of motor speech (one aspect of oral motor treatment), phonology, fluency, or voice compared to the number of SLPs who treat these areas (*2008 ASHA Marketing Planner*).
2. The published research in *AJSLP* from February 2004 to August 2007 did not match the areas of clinical practice in which SLPs were engaged.
3. An editorial by Laura Justice in *AJSLP* (August, 2008) discussed the limited number of group-design treatment studies **throughout the field** of SLP. Justice presented reasons doctoral students and their mentors may not be doing these studies and a suggested model used in educational sciences as a possible resolution.

Figure 9 “Need for Research and Researchers”

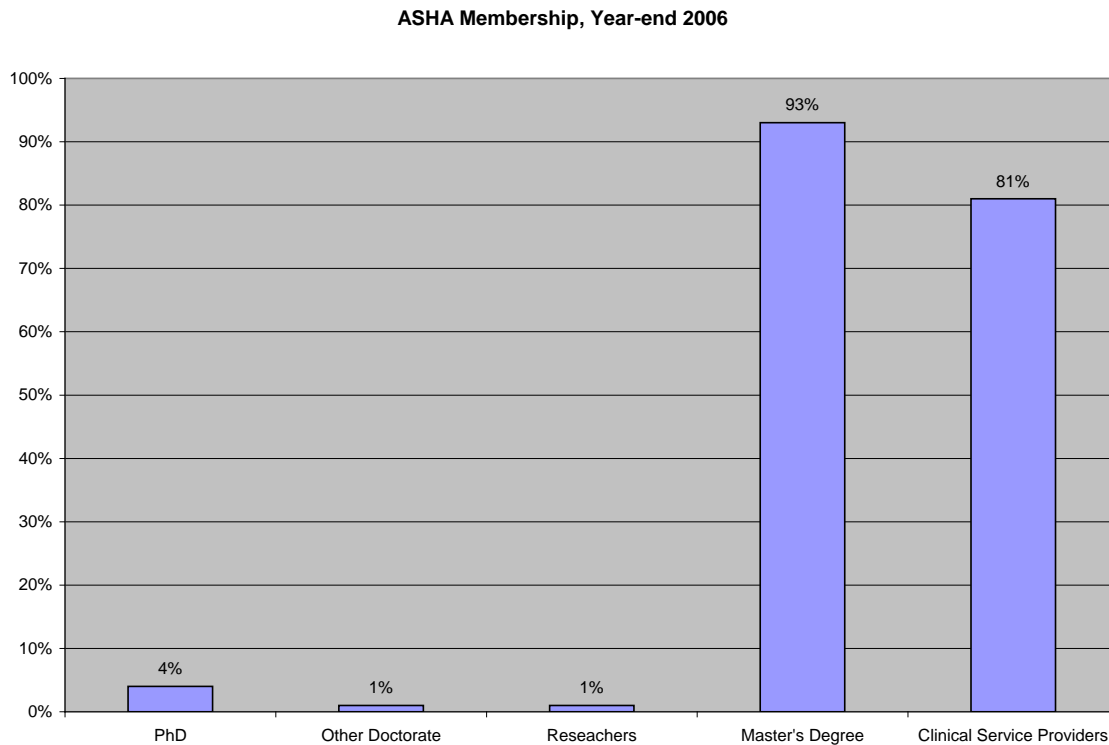


Figure 9: Percentage of ASHA Members in Various Aspects of the Profession in 2006
(Bahr, 2008)

Percentages Rounded

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1. The field of speech-language pathology lacks research and researchers. The area of oral motor assessment and treatment is not unique, as **all areas of the profession require group-design treatment studies** (Justice, 2008).
2. Only one percent of the ASHA membership define themselves as researchers (*Annual Counts of ASHA Membership and Affiliation, Year-end 2006*).
3. The field of speech-language pathology has broadened its scope of practice, yet there is not enough research being done or people to perform research in **many areas of speech-language pathology** as demonstrated in Figures 8 and 9. This has been a concern of numerous ASHA presidents.

Summary and Conclusions

It is becoming increasingly clear that the field of speech-language pathology needs standard definitions surrounding the term “oral motor.” The following definitions are suggested as a start:

Oral motor function is fine motor function of the oral mechanism (i.e., jaw, tongue, lips, and cheeks) for the purposes of eating, drinking, speaking, and other mouth activities. **Oral motor treatment** addresses sensory processing as well as dissociation, grading, direction, timing, and coordination of mouth movement for eating, drinking, speaking, and other mouth activities. The speech-language pathologist focuses treatment on eating, drinking, and speaking.

In particular, there has been significant **misunderstanding and confusion** regarding the definition of oral motor treatment. This appears directly related to some authors, presenters, and researchers using a **narrow definition** of oral motor treatment (i.e., non-speech oral treatment) while **discussing one pediatric population** (i.e., children with developmental speech sound disorders). In direct contrast to this narrow definition, approximately 70 percent of SLPs surveyed included feeding and motor speech treatment as part of their definition of oral motor treatment. This **disparity** reflects differences between some researchers and authors using a narrow definition of oral motor treatment and SLPs at large. The disparity also signifies problems with **cohesion in the field** of SLP.

However, the misunderstanding and confusion have brought to light some significant concerns within the profession:

Regarding research:

1. The field needs research and researchers.
2. The available research does not appear to match the practice patterns of SLPs in the areas of motor speech, phonology, fluency, or voice. Feeding was not evaluated.
3. There is a significant lack of group-design treatment studies **throughout the field** of SLP.

Regarding training:

1. SLPs may not be receiving appropriate training at the undergraduate and graduate levels on topics such as feeding and motor speech.
2. Continuing education programs may be attempting to provide training that was not provided in undergraduate and graduate programs.

This leads to some questions that may assist the profession in resolving these concerns (Appendix B):

1. Would a clear definition of oral motor function and the many aspects of oral motor treatment help researchers and clinicians use the terminology more accurately?

2. How can SLPs become more cohesive as a profession? Could group-design research projects combining the efforts of researchers (often doctoral level SLPs) with SLPs who carry active caseloads (often master's level SLPs) be developed?
3. What is being taught at the undergraduate and graduate levels on feeding, motor speech, and mouth function? Are students still being taught how to adequately conduct, interpret, and use the results of an oral examination?
4. How can continuing education better meet the needs of working therapists? Is there a way to better coordinate undergraduate, graduate, and continuing education on the topic of oral motor assessment and treatment as well as other topics?
5. Is there a professional interest in an updated text on oral motor assessment and treatment? Should researchers and practicing clinicians collaborate on this?

Here are some suggestions written in an article by Bahr (2008) to resolve the oral motor controversy:

1. Develop consistent “graduate level and continuing education courses and curriculums using the vast amount of oral motor literature that currently exists.”
2. Survey “university faculty willing to conduct research on oral motor topics” (e.g., feeding, motor speech, orofacial myofunctional, oral awareness/discrimination, and oral exercise/activity assessment and treatment).
3. Research ASHA’s capabilities and projects (e.g., NOMS) supporting clinical research and the training of interested clinicians.
4. Establish “teams of researchers and working clinicians to complete needed peer-reviewed efficacy research on all areas of oral motor treatment.”

References:

- Alexander, R. (1987). Oral-motor treatment for infants and young children with cerebral palsy. *Seminars in Speech and Language*, 8(1). 87-100.
- ASHA. (1990). *Issues in oral motor, feeding, swallowing, and respiratory-phonatory assessment and intervention*. [A Building Blocks Module].
- ASHA. (Year-end 2006). *Annual Counts of the ASHA Membership and Affiliation*. [ASHA’s Surveys and Information Team].
- ASHA. (2007a). *Childhood apraxia of speech* [Technical report].
- ASHA. (2007b). *2008 ASHA Marketing Planner*.
- Bahr, D. (2008). A topical bibliography on oral motor assessment and treatment. *Oral Motor Institute*, 2(1). Available from www.oralmotorinstitute.org.
- Bahr, D. C. (2001). *Oral motor assessment and treatment: Ages and Stages*, Boston: Allyn & Bacon.
- Banotai, A. (2007, September). Reviewing the evidence: Gregory Lof’s critical take on oral-motor therapy. *Advance for Speech-Language Pathologists & Audiologists*, 7-9.
- Bowen, C. (2006). What is the evidence for oral motor therapy? *Acquiring Knowledge in Speech, Language, and Hearing*, 7, 144-147.
- Clark, H. (2005, June 14). Clinical decision making and oral motor treatments. *The ASHA Leader*, 8-9, 34-35.

- Flaherty, K., & Bloom, R. (2007, November). Current practices & oral motor treatment. Poster session presented at the annual meeting of the American Speech-Language-Hearing Association, Boston, MA.
- Hayden, D. A. (2006). The PROMPT model: Use and application for children with mixed phonological-motor impairment. *Advances in Speech-Language Pathology*, 8(3), 265-281.
- Hayden, D. A. (2004). PROMPT: A tactually grounded treatment approach to speech production disorders. In I. Stockman (Ed.), *Movement and action in learning and development: Clinical implications for pervasive developmental disorders*, 255-297 (San Diego: Elsevier-Academic Press).
- Hammer, D. (2007). *Childhood apraxia of speech: New perspectives on assessment and treatment*. Las Vegas, NV: The Childhood Apraxia of Speech Association (workshop).
- Hodge, M., Salonka, R., & Kollias, S. (2005, November). *Use of nonspeech oral-motor exercises in children's speech therapy*. San Diego, CA: Annual meeting of the American Speech-Language-Hearing Association.
- Insalaco, D., Mann-Kahris, S., Bush, C., & Steger, M. (2004, November). Equivocal results of oral motor treatment on a child's articulation. Poster presented at the annual meeting of the American Speech-Language-Hearing Association, Philadelphia, PA.
- Justice, L. (2008, August). Treatment Research. *American Journal of Speech-Language Pathology*, 17(3), 210-211.
- Lass, N. J., & Pannbacker, M. (2008, July). The application of evidence-based practice to nonspeech oral motor treatments. *Language, Speech, and Hearing Services in Schools*, 39, 408-421
- Lass, N., Pannbacker, M., Carroll, A., & Fox, J. (2006, November). Speech-language pathologists' use of oral motor treatment. Poster session presented at the annual meeting of the American Speech-Language-Hearing Association, Miami, FL.
- Lof, G. L., & Watson, M. (2008, July). A nationwide survey of nonspeech oral motor exercise use: Implications for evidence-based practice. *Language, Speech, and Hearing Services in Schools*, 39, 392-407.
- Marshalla, P. (2004). *Oral-Motor techniques in articulation & phonological therapy*. Mill Creek, WA: Marshalla Speech and Language.
- Maas, E., Robin, D. A., Austermann Hula, S. N., Freedman, S. E., Wulf, G., Ballard, K. J., & Schmidt, R. A. (2008). Principles of Motor Learning in Treatment of Motor Speech Disorders. *American Journal of Speech-Language Pathology*, 17(3), 277-298.
- Morris, S. E. (1989). Development of oral-motor skills in the neurologically impaired child receiving non-oral feedings. *Dysphagia*, 3(3). 135-154.
- Mosheim, J., & Banotai, A. (2007). ASHA changes bear gifts for members. *Advance for Speech-Language Pathologists*, 17, 10-11, 18-19.
- Pannbacker, M., & Lass, N. (2002, November). The use of oral motor therapy in speech-language pathology. Poster session presented at the annual meeting of the American Speech-Language-Hearing Association, Atlanta, GA.
- Pannbacker, M., & Lass, N. (2003, November). Effectiveness of oral motor treatment in Slp. Poster session presented at the annual meeting of the American Speech-Language-Hearing Association, Chicago, IL.
- Pannbacker, M., & Lass, N. (2004, November). Ethical issues in oral motor treatment. Poster session presented at the annual meeting of the American Speech-Language-Hearing Association, Philadelphia, PA.

- Polmanteer, K., & Fields, D. (2002, November). Effectiveness of oral motor techniques in articulation and phonology treatment. Poster session presented at the annual meeting of the American Speech-Language-Hearing Association, Atlanta, GA.
- Powell, T. W., (2008a, July). The use of nonspeech oral motor treatments for developmental speech sound production disorders: Interventions and interactions. *Language, Speech, and Hearing Services in Schools, 39*, 374-379.
- Powell, T. W., (2008b, July). An integrated evaluation of nonspeech oral motor treatments. *Language, Speech, and Hearing Services in Schools, 39*, 422-427.
- Pruett-Hayes, S. (2005, November). Comparison of two treatments: Oral motor and traditional articulation treatment. Poster session presented at the annual meeting of the American Speech-Language-Hearing Association, San Diego, CA.
- Ruscello, D. (2005, November). Oral motor treatment: Current state of the art. Poster session presented at the annual meeting of the American Speech-Language-Hearing Association, San Diego, CA.
- Ruscello, D. M. (2008, July). Nonspeech oral motor treatment issues related to children with developmental speech sound disorders. *Language, Speech, and Hearing Services in Schools, 39*, 381-391.
- Williams, P., Stephens, H., & Connery, V. (2006). What's the evidence for oral motor therapy? *Acquiring Knowledge in Speech, Language and Hearing, Speech Pathology Australia, 8*, 89-90.

Appendix A

Survey on Oral Motor Treatment
Diane Bahr, MS, CCC-SLP

State of Residence: _____
Today's Date: _____

Circle all responses that apply to you.

Have you heard:
1. Oral motor treatment does not work?
2. There is no research on oral motor treatment?
3. ASHA does not support oral motor treatment?
Where did you hear the above comment(s)?
1. Colleagues
2. Professors/Instructors
3. Newsletters/Magazines
4. Peer Reviewed Journal Articles
How long have you practiced speech-language pathology?
1. Undergraduate or Graduate Student
2. 1-2 years
3. 2-5 years
4. 5-10 years
5. 10-15 years
6. 15-20 years
7. 20+ years

How do you define oral motor treatment?
1. oral awareness/discrimination
2. oral activities/exercises
3. feeding/oral phase swallowing
4. myofunctional
5. motor speech
If you use oral motor techniques, what type do you use?
1. oral awareness/discrimination
2. oral activities/exercises
3. feeding/oral phase swallowing
4. myofunctional
5. motor speech
Circle approximate number of minutes per session you spend on each aspect of oral motor treatment:
1. oral awareness/discrimination (1-2, 2-5, 5-10, 10-15, 15-20, 20+ minutes)
2. oral activities/exercises (1-2, 2-5, 5-10, 10-15, 15-20, 20+ minutes)
3. feeding/oral phase swallowing (1-2, 2-5, 5-10, 10-15, 15-20, 20+ minutes)
4. myofunctional (1-2, 2-5, 5-10, 10-15, 15-20, 20+ minutes)
5. motor speech (1-2, 2-5, 5-10, 10-15, 15-20, 20+ minutes)

Appendix B

Survey for Future Research:
 Diane Bahr, MS, CCC-SLP

State of Residence: _____
 Today's Date: _____

Many specific questions regarding oral motor treatment became apparent from studying the likely root of the oral motor controversy, the "Survey on Oral Motor Treatment," and the review of oral motor journal literature.

Circle questions important to you. Write other questions you have.

1. Would a clear definition of oral motor function and the **many aspects of oral motor treatment** (i.e., feeding/oral phase swallowing, motor speech, orofacial myofunctional treatment, oral awareness/discrimination, and oral activities/exercises) help researchers and clinicians use the terminology more accurately?
2. How can SLPs become more cohesive as a profession? Could group-design research projects combining the efforts of researchers (often doctoral level SLPs) with SLPs who carry active caseloads (often master's level SLPs) be developed?
3. What is being taught at the undergraduate and graduate levels on feeding, motor speech, and mouth function? Are students still being taught how to adequately conduct, interpret, and use the results of an oral examination?

4. How can continuing education better meet the needs of working therapists? Is there a way to better coordinate undergraduate, graduate, and continuing education on the topic of oral motor assessment and treatment as well as other topics?
5. Is there a professional interest in an updated text on oral motor assessment and treatment? Should researchers and practicing clinicians collaborate on this?
6. Is there an appropriate place and use of nonspeech and/or nonfeeding oral treatments with appropriate populations? What is this place and use?
7. What other related questions do you have?