

Clinical Perspective

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CLINICAL COLUMN: INCLUSION OF OROFACIAL MYOFUNCTIONAL DISORDERS CONTENT FOR COMMUNICATION SCIENCES AND DISORDERS STUDENTS

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ABSTRACT

Including orofacial myofunctional disorders (OMDs)-related content in Communication Sciences and Disorders (CSD) curricula is vital to meeting the demands of the profession. The author was prompted to investigate this issue further as a result of her own observations of the resulting benefits from the past 12 years. Student training continues to evolve in order to address this need. This article seeks to substantiate the importance of this content and offer methods for inclusion and possible benefits. The investigation revealed the important role OMDs can play in the preparation of speech-language pathologists. University programs are encouraged to consider including the fundamentals of OMDs in order to best meet the needs of public school students and patients, as well as university students who are the future professionals. Appendices containing related data and an outline of content that could be featured in a course or workshop are provided.

KEYWORDS: orofacial myofunctional disorders, speech sound disorders, university training programs, speech-language pathologists

INTRODUCTION

In 2001, Pierce and Taylor, sounded a call to action for university training programs in Communicative Sciences and Disorders (CSD) by substantiating the need to include orofacial myofunctional disorders (OMDs) in the curricula. Their perspective is relevant 15 years later. In examining the literature, there is a strong basis for integrating OMDs into CSD coursework. For almost 60 years, the fields of orofacial myology, speech-language pathology, dentistry, and orthodontics have recognized this, particularly by acknowledging the relationship of OMDs with speech sound, motor speech, and swallowing disorders and dental abnormalities (Ackerman & Klapper, 1981; Bell & Hale, 1963; Benkert, 1997; Blyth, 1959; Christensen & Hanson, 1981; D'Asaro, Shapiro, Baum, & Jacoby, 1961; Fletcher, Casteel, & Bradley 1961; Jann, Ward, & Jann, 1964; Pierce, 1980, 1996, 1999; Pierce & Taylor, 2001; Ray, 2002, 2003; Ronson, 1965; Straub, 1960; Subtelney & Subtelney, 1962; Umberger & Johnston, 1997; Ward, Malone, Jann, & Jann, 1961). Many of the International Association of Orofacial Myology's own

members have pioneered and contributed greatly to this knowledge base.

However, this perspective is not shared by everyone. Some controversy remains in relation to the impact of OMDs and speech sound disorders. Tilakraj (2003) notes that this topic has triggered generations of debate. Specifically, there are professionals who maintain that the impact of OMDs is minimal, even rare, and that the normal course of child development resolves any issues that could exist (Rogers, 2015). Much of the controversy seems to stem from the use of nonspeech oral motor exercises (Bowen, 2005, 2016; Lof, 2006, 2007, 2009). According to Bahr and Rosenfeld-Johnson (2010), oral-motor therapy became an umbrella term that led to some confusion, with myofunctional therapy and swallowing exercises being associated with the term *oral-motor therapy* (Marshalla, 2007). There is a growing consensus and distinction within speech-language pathology that oral-motor exercises can positively impact swallowing disorders (Marshalla).

Need for Training in OMDs

In addressing the need to include OMDs in university training programs, Pierce and Taylor (2001) found that 97.7% of their respondents felt that orofacial myofunctional training is necessary, yet only 7.9% rated their own training as adequate. Follow-up research by P. M. Taylor concluded that an even broader range of clinical diagnoses were impacted by OMDs and/or existed comorbidly, including childhood and adult onset apraxia of speech, childhood and adult onset fluency disorders, speech sound disorders, dysphagia, language disorders, organic disorders such as cleft palate and velopharyngeal insufficiency, neurological disorders such as stroke, Parkinson's, Alzheimer's, and ALS, and obstructive sleep disorders (personal communication, February 12, 2016). See Appendix A for more specific findings from P. M. Taylor's unpublished raw data. The American Speech-Language-Hearing Association (ASHA) formally recognized the relationship of OMDs to speech sound errors in 1991 and highlighted their relevance to breathing and rest posture, tethered oral tissues, mastication, and feeding and swallowing in later years (1993, 2004, and 2016).

OMDs in CSD Textbooks

Courses that this author has found to be well-suited for this content include speech sound disorders, methods and materials courses for school-based clinicians, and craniofacial anomalies. There has been an evolution of sorts in moving towards inclusion of OMDs in textbooks relating to these areas, particularly with speech sound disorders and craniofacial anomalies. Numerous textbooks from the past 32 years on the subject reveal a range of inclusion levels: (1) no mention, (2) devotion of multiple pages to the topic, and (3) integration of the topic across multiple chapters.

Textbook authors are increasingly addressing the topic, but inclusion is not guaranteed with time alone. In the area of speech sound disorders, Bleile (2004), Creaghead, Newman, & Secord (1985, 1989), and Smit (2004) do not

address the topic. Bernthal & Bankson (1998) devote almost five pages to tongue thrust, including its impact on dentition, its relationship with articulation errors, treatment, and ASHA's perspectives. In a subsequent edition, Bernthal, Bankson, & Flipsen (2013) kept the previous content, updated their terminology (e.g., tongue thrust is listed with oral myofunctional disorders) and added information about pacifier use and related research findings. Peña-Brooks & Hegde (2007) address the basics of tongue thrust, but their 2015 edition also offers a case study of a child with tongue thrust. Most notably, they highlight tongue thrust as 1 of the 8-major research-based categories affecting the acquisition of speech sounds and articulatory performance.

In regards to craniofacial anomalies, Bzoch (1997) discusses tongue thrust, finger sucking, and other oral habits. Here, tongue thrust, or an "abnormal forward tongue carriage," is detailed in terms of dental, occlusal, and skeletal issues. Kummer (2014) discusses tongue thrust in the context of cleft palate and provides a three-page supplementary handout devoted entirely to tongue thrust.

The author has taught OMDs in school-based methods and material coursework. She was encouraged to do so by her administrators' due to the impact that they felt OMDs have on school children. This topic is addressed in the next section. School-based textbooks do not appear to commonly discuss the subject of OMDs (Moore-Brown & Montgomery, 2001; Neidecker & Blosser, 1993, 2002).

Progress is being made within textbooks, recognizing the impact of OMDs and substantiating their connection to other conditions. Inclusion of such information in textbooks is encouraging but does not guarantee the information is actually being addressed in courses.

OMDs in CSD Coursework

When examining the need for OMDs to be addressed in speech sound disorders coursework, questions arise. First, at what level, graduate and/or undergraduate, should

the information be taught? Second, at what point in the respective curriculum or class should the content be addressed? Third, to what extent should OMDs be covered, or how much detail should there be? The author, having taught about OMDs to undergraduate students for approximately 12 years, attests to the fact that they are capable of grasping the introductory concepts. OMDs can be taught to graduate and undergraduate students. In many states, bachelor's-level clinicians are permitted to work in the public schools. It would be beneficial for them to have a fundamental understanding of OMDs, even though OMDs alone often do not qualify a student for treatment. However, a coexisting speech sound disorder frequently occurs (Wadsworth, Maul, & Stevens, 1998). Students within their first year of CSD coursework, or during their speech sound disorders course, are ready for an introduction to OMDs. In the author's experience, a course in speech sound disorders is especially well-suited for OMDs content. For undergraduate students studying these conditions, the material can be addressed in 3 – 4, 1.5-hour class sessions, similar to the total amount of time needed for a day-long presentation at conferences. Appendix B offers an outline.

At the graduate level, a more in-depth focus would better prepare students. Programs could expand on content from undergraduate coursework by including advanced diagnostic and treatment principles and techniques, including instrumentation. Rest posture, sleep, breathing, and airway issues should also be addressed. Problem-based learning using case studies could aid students in their grasp and application of the subject matter. Clinical practica could provide opportunities to apply the information. Specialty clinics at Alabama A & M University and Idaho State University offer undergraduate and graduate students opportunities to engage in the diagnosis and treatment of OMDs. It is particularly helpful when administrators, particularly Program Directors, in CSD training programs acknowledge the academic and clinical value of incorporating OMDs into their curricula.

Potential Benefits

By integrating and focusing on OMDs in CSD coursework, many stakeholders potentially benefit. Students can be better prepared to prevent certain conditions from worsening and be more adept at identifying, diagnosing, and treating a wide range of disorders and conditions. The author finds that students who have taken courses with her that include OMDs go into their externships and share their knowledge and experiences with their off-campus clinical supervisors. These practicum supervisors then call or email wanting to know more, as they have found a resource to address their clinical cases, want to make a referral, need additional information, and are curious. The author notes common themes that have emerged over the years from these discussions. First, colleagues are quite honest and candid in expressing their lack of knowledge, confidence, and comfort level in this area. They have typically heard of tongue thrust, but really do not seem to know how to begin evaluating and treating it. Second, they express an understanding of the significance of this clinical area. Third, there is a wonderful and refreshing willingness to learn more by talking with the author, asking questions, and requesting to observe her work. Colleagues are eager to learn more and many conclude conversations with a common question, "When could you do a training in my area?" SLPs want and need to learn more about OMDs. They see the relevance and impact this area has on their daily clinical work.

Future Research

Future research should expand upon, update, and increasingly validate our findings regarding how OMDs being included in CSD curricula is necessary and beneficial across students, professionals, and the consumers of our services. Studies could explore to what extent the content is being addressed at the undergraduate and graduate levels in the classroom and clinical practica courses in which the material should be covered and the

rationale, and the variables that would promote such coverage. Data from graduates who have taken courses highlighting OMDs to ascertain how the information impacted their clinical work would be helpful. Future studies should also seek to reveal how the content is being integrated into craniofacial and feeding and swallowing coursework.

CONCLUSION

CSD programs are a burgeoning ground for introducing, promoting, teaching about, and advocating the science of orofacial myology. The disciplines of speech-language pathology, dentistry, and orthodontics that are heavily involved in orofacial myology can benefit from it. Ultimately, patients, school-age children, and

their caregivers stand to gain the most from the inclusion of OMDs in CSD coursework, making this the ultimate advantage of teaching and training this content.

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APPENDIX A

SLP SURVEY

Purpose: This informal survey was used to collect information on the perceptions of speech-language pathologists who were also trained in the treatment of orofacial myofunctional disorders. **Method:** Survey questions addressed the co-occurrence of speech-language disorders with orofacial myofunctional disorders. Respondents provided their perception of several speech-language disorders with any orofacial myofunctional disorder. Respondents were asked to indicate the approximate percentage of co-occurrence they observed in their client base from the time they received education about orofacial myofunctional disorders. All respondent surveys used in this study were from individuals who had taken a training course in orofacial myofunctional disorders, many of whom were Certified Orofacial Myologists by the International Association of Orofacial Myology. **Results:** Respondents to the survey included 45 speech-language pathologists who were in attendance at the 2015 Annual IAOM Convention. Not all respondents replied to each question as their client base did not include individuals with a particular speech disorder. **Conclusions:** The results of the survey support the idea that there is a co-occurrence across many speech-language disorders with orofacial myofunctional disorders. The data collected demonstrates the need to assess this co-occurrence more depth in a prospective research study.

PART 2. OMDs and SPEECH DISORDERS

From the time you were first **trained in orofacial myology**, please indicate the approximate percentage of individuals with the following speech-language disorders who also present with orofacial myofunctional disorders: [each respondent checked only one % box per speech disorder]

	0%*	1-24%	25-49%	50-74%	75-99%	100%	Total Occurrence of OMD/Percent of 45 Replies	Total of NO Occurrence of OMD/Percent of 45 Replies
Childhood Apraxia of Speech	5	16	6	2	6	3	33 (73.33%)	5 (11.11%)
Adult onset Apraxia of Speech	10	6	1	1	0	1	9 (20%)	10 (22.22%)
Childhood fluency disorders	11	16	1	3	1	1	23 (51.11%)	11 (24.44%)
Adult onset fluency disorders	8	6	0	1	1	0	8 (17.77%)	8 (17.77%)
Articulation disorders	1	3	6	11	19	5	44 (97.77%)	1 (2.22%)
Dysphagia	0	9	1	4	6	7	18 (40.0%)	0 (0%)
Language disorders	4	18	4	3	3	1	29 (64.44%)	4 (8.88%)
Structural disorders such as: cleft palate, velopharyngeal insufficiency	4	13	4	3	7	2	29 (64.44%)	4 (8.88%)
Other neurological disorders such as: stroke, Parkinson's Disease, Alzheimer's, ALS	4	11	2	1	2	1	17 (37.77%)	4 (8.88%)

Due to the current interest in Sleep Breathing Disorders the following was also included. Respondents indicated the percent of clients with orofacial myofunctional disorders who also presented with OSD.

Obstructive Sleep Disorders	3	8	5	2	2	3	20 (44.44%)	3 (6.66%)
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P. M. Taylor's unpublished raw data (personal communication, February 12, 2016)

APPENDIX B

LECTURE/CONFERENCE PRESENTATION TOPICS

- I. Defining tongue thrust and other OMDs
- II. Correct versus incorrect swallowing patterns
- III. Incidence and prevalence
- IV. Etiologies
- V. OMDs
- VI. Anatomy and physiology
- VII. Dentition and eruption
- VIII. Force and pressure
- IX. Orthodontic and maxillofacial principles
- X. Occlusion and malocclusion
- XI. The relationship between OMDs, teeth, and speech sound disorders
- XII. Diagnosis
- XIII. Treatment
- XIV. Treatment: Patient variables
- XV. Insurance and documentation
- XVI. Thumb and digit sucking habits
- XVII. Before and after photographs
- XVIII. How and where to obtain more information
- XIX. Becoming a C.O.M.
- XX. Obtaining more information
- XXI. IAOM
- XXII. Continuing education and convention
- XXIII. *IJOM* and research