



Building Bridges Between Dentistry & Occupational Therapy: Summary Report 2024

PREPARED BY :

Thomas J. Pinto, B.S., OT/s
Doctoral Experiential Component

Tufts University
Department of Occupational Therapy
Graduate School of Arts & Sciences
School of Dental Medicine

TABLE OF CONTENTS



Abstract.....01

Project Purpose & Aims.....02

Methods.....03

Literature Review.....04

Needs Assessment.....05

Interprofessional Learning Module07

Recommendations.....11

Key Takeaways.....13

Author Background.....14

Acknowledgments.....15

References.....16

Appendix/Accessing the Learning Module

ABSTRACT

In the United States, individuals with complex medical needs, such as those with physical disabilities or intellectual and developmental disabilities, have statistically higher odds of having unmet dental needs (Como et al., 2020; da Rosa et al., 2020; Morgan et al., 2012). The Tufts University School of Dental Medicine (TUSDM) provides specialized care to patients with complex medical needs in the Medically Complex Patient (MCP) Clinic.

This Doctoral Experiential Component (DEC) project aimed to enhance interprofessional collaboration between dental professionals and occupational therapists (OTs) to improve oral health outcomes for patients at TUSDM. A needs assessment was performed in the MCP Clinic to identify barriers to accessing dental care, as well as challenges with performing oral hygiene at home.

Based on these findings, an interactive interprofessional learning module was designed for dental faculty to describe how OTs and dental professionals can collaborate to meet the needs of medically complex patients in the dental setting. A pilot group consisting of TUSDM dental faculty (N=6) completed the learning module, with 100% of participants showing an increase in confidence from pre- to post-assessment, feeling more confident in their ability to describe the role of an OT in the dental setting, identify the need for an OT evaluation, and refer patients to OT services.

This study provided the initial steps for increasing knowledge about opportunities for interprofessional collaboration between OTs and dental professionals, calling for future efforts for furthering these collaboration opportunities, such as including occupational therapists within the TUSDM to address the various needs of patients, dental faculty, and dental students.



Purpose

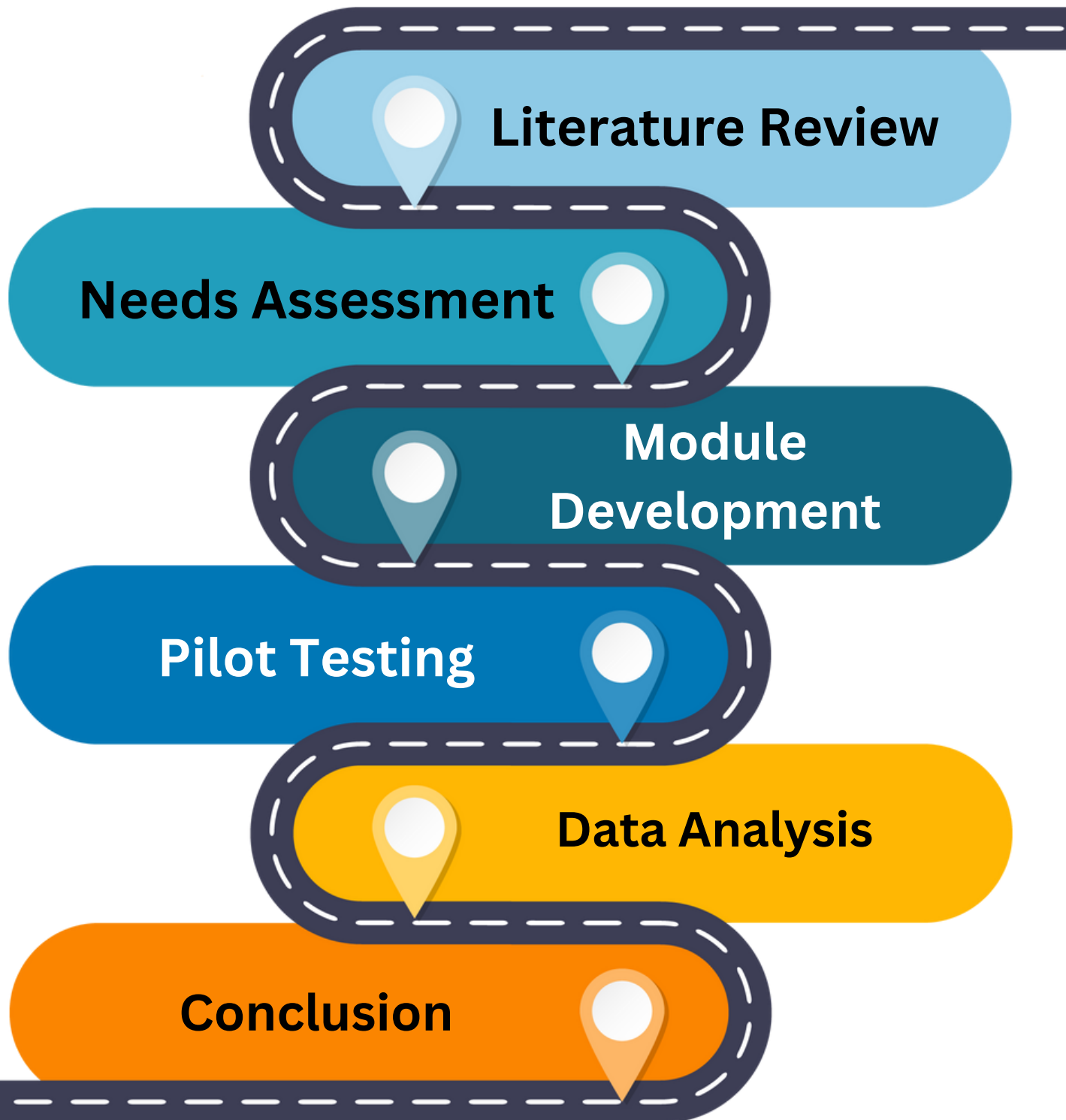
Enhance interprofessional collaboration and communication between dental professionals and occupational therapists (OTs) to improve oral hygiene practices.

Aims

- Implement learning experiences for dental professionals that are aimed at increasing the knowledge that dental professionals have about occupational therapy and how collaborating with OTs can improve dental care.
- Analyze meaningful data about learning experience effectiveness, the quality and aesthetics of materials, and participant satisfaction.
- Disseminate key data and experiences to guide TUSDM with potential steps for moving forward.

METHODS

The overall process of this OT Doctoral Experiential Component (DEC) project is outlined below.



LITERATURE REVIEW

Evidence Base

Gaps/Barriers to Dental Care for Individuals with Disabilities

- Individuals with disabilities have statistically higher odds of having unmet medical, dental, and prescription medication needs.
- Barriers to dental care include physical barriers (i.e., lack of wheelchair accessibility in clinics) and non-physical barriers (i.e., dentists not feeling trained to care for patients with disabilities).

Como et al., 2020; da Rosa et al., 2020; Koistinen et al., 2021; Mahmoudi & Meade, 2015; Morgan et al., 2012

Previous OT & Dentistry Collaborations

- Developing Sensory Adapted Dental Environments (SADE) to improve dental care for children with Autism Spectrum Disorder (ASD).
- Collaborating to create dental assistive technology for patients.
- Conducting group sessions to improve oral hygiene practices in inpatient psychiatric patients.

Cermak et al., 2015; Ferreira et al., 2018; Schwartzberg et al., 2013

Medication Management

- There are numerous methods that patients may use to manage their daily medications, including strategic placement of medications throughout one's home to fit one's daily routine and social supports.
- OTs have a special skill set to help individuals with creating habits for remembering to perform medication management regularly.

Sanders & Van Oss, 2013

NEEDS ASSESSMENT

Process

Observations were performed over 4 weeks in the TUSDM Medically Complex Patient (MCP) Clinic. Patient treatments were observed and dental faculty and students were interviewed. Common environmental barriers impacting accessibility for patients within the clinic, as well as individual challenges verbalized by patients with performing oral hygiene at home, were noted. Once needs were identified, OT recommendations were created and have been shared below.

Observed Challenges Within the Dental Clinic

Identified Needs	Recommendations to Address Needs
Difficulty with transfers to/from chair	<ul style="list-style-type: none">• Stand near/Guard patients when performing sit-to-stand from chair in case there is a loss of balance• May want to refer to OT/PT to address balance, functional mobility, etc.
Barriers to communicating with individuals that are Deaf or hard of hearing	<ul style="list-style-type: none">• Turn off saliva ejector/HVE when providing instructions• Break up instructions into shorter chunks rather than long, wordy explanations• Wear masks with mouth window if available, for lip reading
Lack of physical supports for individuals with decreased balance	<ul style="list-style-type: none">• Advise patients to use assistive devices if they have them.• Don't assume patients can take stairs when walking to a different floor (i.e., Radiology)• May want to refer to OT/PT to address balance, functional mobility, etc.
Considerations related to cognition and patient education	<ul style="list-style-type: none">• Provide various alternatives for patient education (i.e., visual aids, such as a handout with images or videos)
Discomfort for patients with cervical pain, fusions, etc.	<ul style="list-style-type: none">• Use of neck supports that strap around headrest rather than rolled-up gowns that often slide down
Clinic barriers for individuals that are wheelchair users	<ul style="list-style-type: none">• Plan out how you may maneuver the dental operator<ul style="list-style-type: none">◦ Should you enter forward/backward? Which side of dental chair will the patient be located on?

NEEDS ASSESSMENT

Common Challenges with Performing Oral Hygiene at Home

Needs Identified	Recommendations to Address Needs
Routine/habit formation difficulties	<ul style="list-style-type: none">• Ask patients why they may not be taking medications<ul style="list-style-type: none">◦ Are they having trouble remembering to take them?◦ Are they not able to pick up prescriptions from the pharmacy?◦ Do they not understand why they are taking medications and when they should be taking them?• Ask patients why they may not be performing oral hygiene<ul style="list-style-type: none">◦ When do they normally brush their teeth (is it before/after any other activities)?◦ Are they performing oral hygiene regularly?• May want to refer to OT to address cognition/functional challenges related to routine/habit formation and medication/oral hygiene adherence.
Decreased hand function/sensation	<ul style="list-style-type: none">• With patients, discuss specific functional challenges/barriers to performing oral hygiene at home• May want to refer to OT if upper extremity strength, range of motion, or sensation is impacting one's ability to do so.
Balance difficulty when performing oral hygiene	<ul style="list-style-type: none">• If balance difficulties are apparent, ask patients how/where they perform oral hygiene and if there is difficulty doing so<ul style="list-style-type: none">◦ It may be safer to perform oral hygiene in sitting• May want to refer to OT/PT to address balance, functional mobility, etc.
Patients requiring significant assistance for various ADLs, including oral hygiene.	<ul style="list-style-type: none">• Discuss occupational performance challenges, such as with oral hygiene, showering, feeding, etc.• Does the person have a caregiver? If so, how often are they able to assist patient with oral hygiene tasks, medication management, etc.?• May want to refer to OT to address functional performance with various occupations.

INTERPROFESSIONAL LEARNING MODULE

Overview

- Based on the needs identified in the needs assessment, an interactive learning module was developed to educate dental professionals about what occupational therapy is and how to collaborate with OTs to meet the needs of medically complex patients.
- A case scenario, involving a patient named Jan, was threaded throughout so that learners could apply gained knowledge.

Module Layout

- **What is Occupational Therapy?**
 - What is OT?
 - What are occupations?
 - What is the role of an OT?
 - Where do OTs work?
- **Occupational Therapy & Dentistry**
 - What OTs can address in the dental setting
 - Relevant Research
 - Collaboration Opportunities
 - Assistive Technology for Oral Hygiene
 - Performing Oral Hygiene at Home
 - Medication Management
 - Ambulation, Balance, & Safety
- **How/When to Refer to OT Services**
- **Case Scenario Review**

Jan



Older Woman Vectors by Vecteezy

*****Specific steps on how to access the learning module can be found in the Appendix.***

INTERPROFESSIONAL LEARNING MODULE

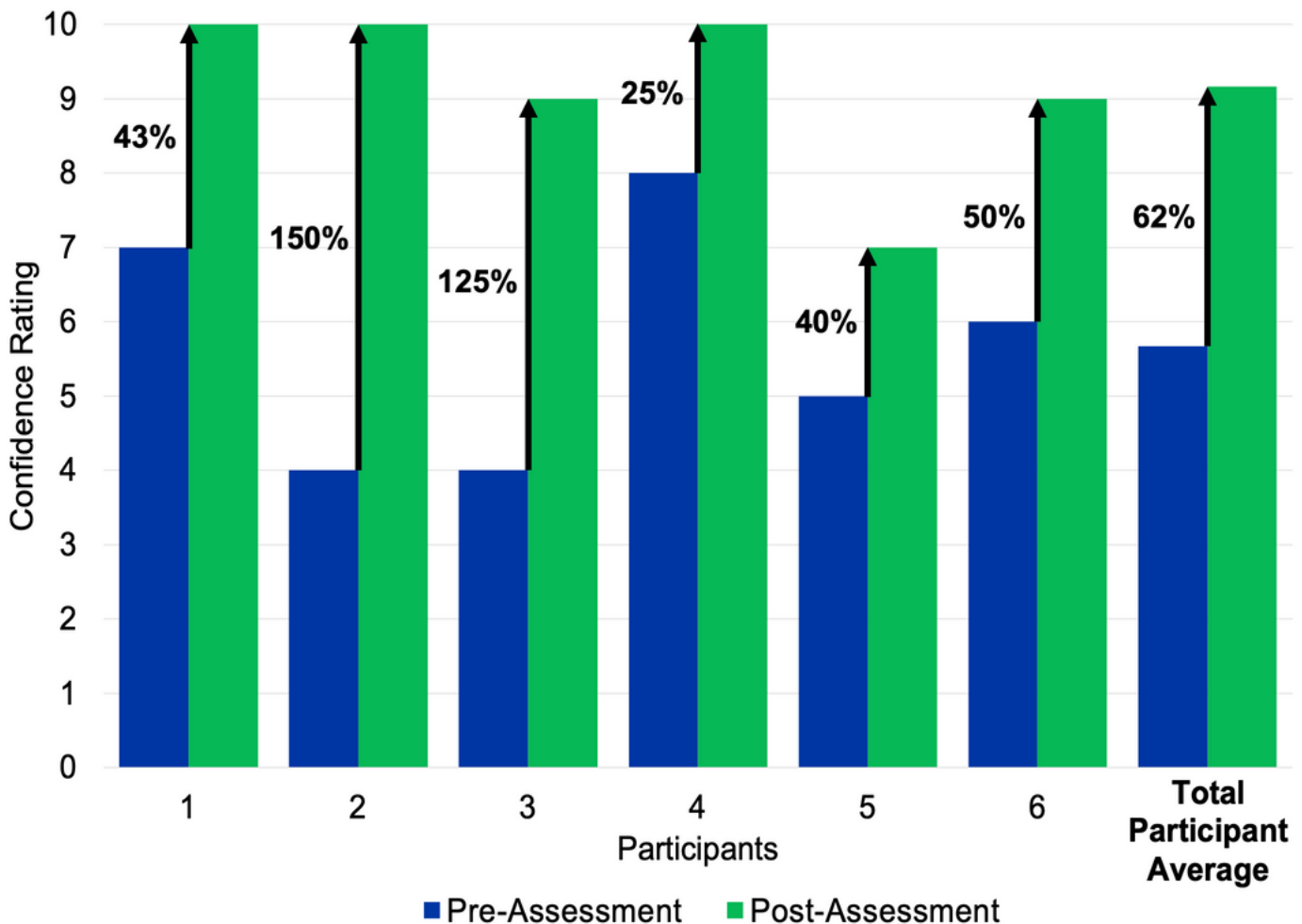
Participants (N=6)

- Dental faculty at Tufts University School of Dental Medicine.
- All work with a wide range of patient populations, with various dental specialties.

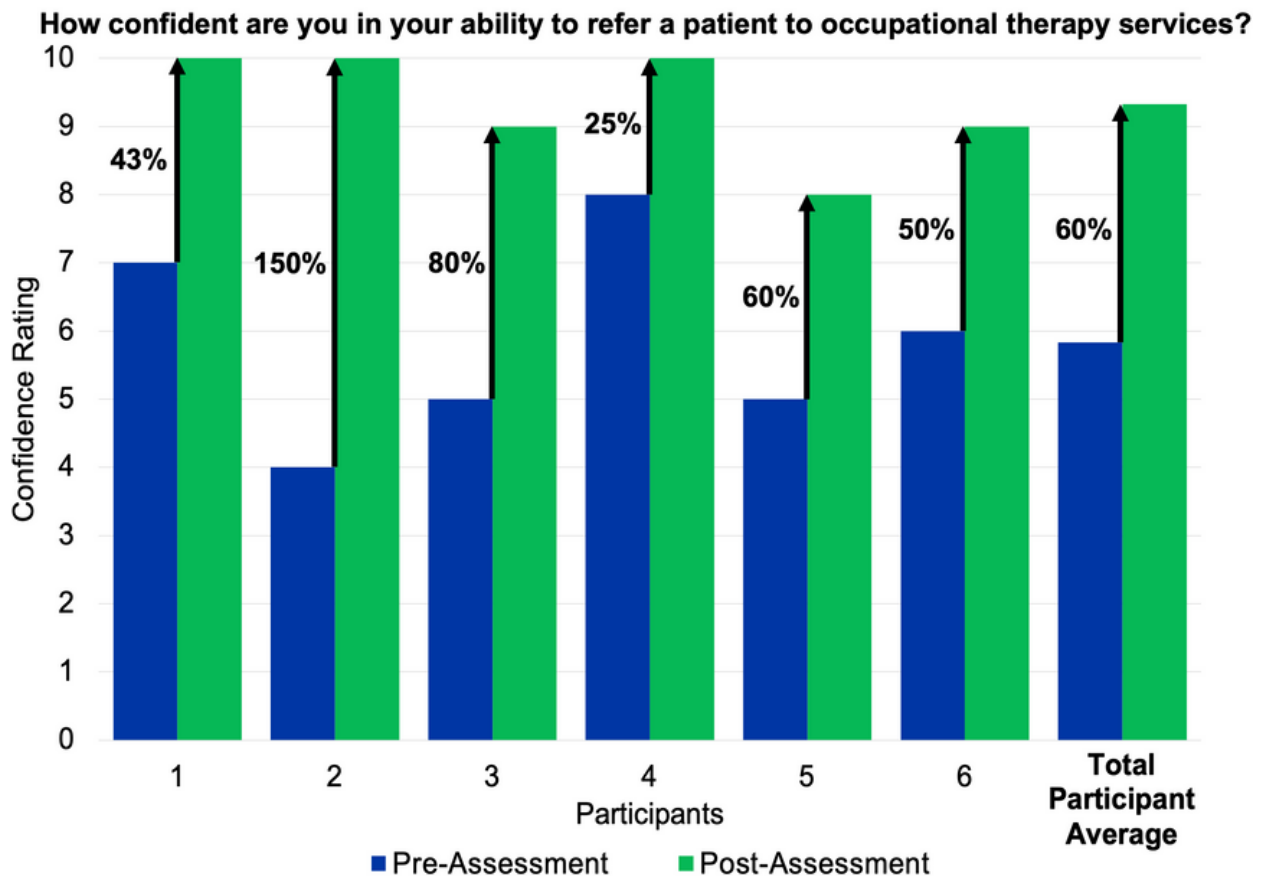
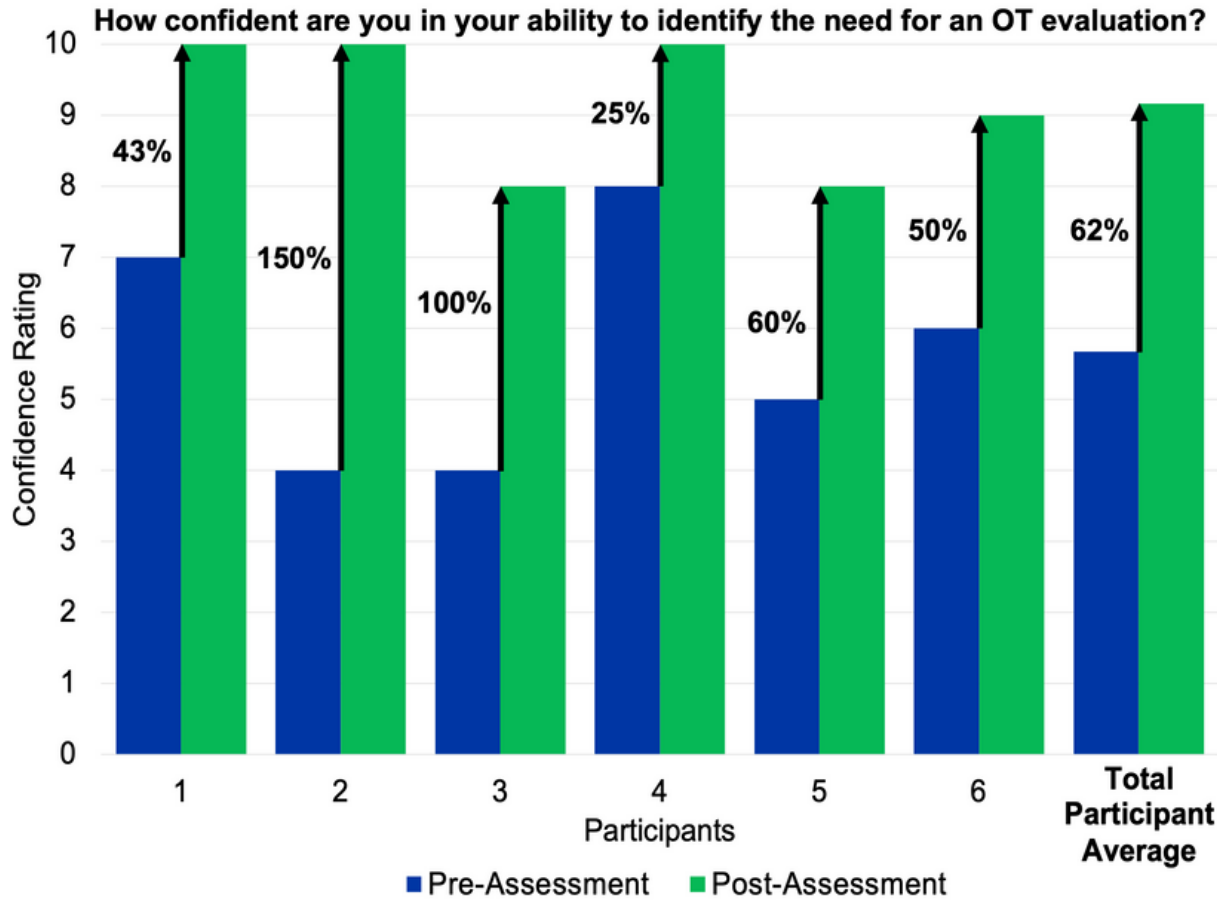
Module Effectiveness

- 100% Response Rate
- For each of the questions provided, 100% of participants showed increased confidence after completing the module.

How confident are you in your ability to describe the role of an OT in the dental setting?



INTERPROFESSIONAL LEARNING MODULE



INTERPROFESSIONAL LEARNING MODULE

Faculty Feedback

After completing the learning module, individual faculty members reported:

- Collaboration between OTs and dental professionals is important and could improve patient overall quality of life.
- The case study was the most effective aspect of the module for influencing their learning.

“I am eager to explore the possibility of incorporating this module in my curriculum.”
- Faculty Participant

“All aspects of the presentation were excellent, very comprehensive, well organized, clear, and effective use of patient case.” - Faculty Participant

RECOMMENDATIONS

Based on the findings from the needs assessment performed (See pages 5 & 6 for more details) and the positive feedback from participants, several recommendations/suggestions were created to further improve interprofessional collaboration and oral health outcomes for TUSDM patients. For example, additional intake/initial evaluation questions could help dental professionals to determine if a referral to OT services is necessary.

Additional Questions at Intake/Initial Evaluations

- 1) Are you currently receiving any occupational therapy/physical therapy/speech-language pathology services?** If yes, are you addressing any potential challenges related to arm, wrist, or finger strength or range of motion and/or feeding, eating, and swallowing?

This could provide context into potential functional/physical limitations impacting one's ability to perform oral hygiene, medication management, etc.

- 2) Do you currently have any challenges with performing oral hygiene at home?** Examples include difficulty grasping small items, limited mobility in one's fingers, wrist, elbow, or shoulder, or challenges with remembering to perform oral hygiene regularly.

This could provide insight into challenges one may have with performing occupations, including but not limited to ADLs (like oral hygiene), IADLs, health management, and more. These challenges may cue one to refer a patient to their PCP to be assessed for a referral to OT services.

- 3) Have you had any recent falls?** If yes, does this occur frequently? Are you able to get up on your own? Is there someone there to assist you if you need it or do you know how to call for help?

This could cue one to reach out to a patient's PCP to inquire about PT/OT services to address balance, practice using assistive devices with functional tasks (i.e., walkers, canes, wheelchairs, etc.), and more.

RECOMMENDATIONS

Based on the needs identified in the needs assessment of this project (See pages 5 & 6 for more details), an on-site OT could benefit patients with medically complex conditions, dental faculty, and dental students at TUSDM, whether this is a full-time, part-time, or student OT practitioner.

Integrating OTs into the dental practice setting to:

1) Create environmental modifications to the dental clinic.

An OT could address aspects of the dental environment that are not as accessible for wheelchair users, patients with sensory processing difficulties, and more.

2) Recommend Assistive Technology (AT).

When patients present with functional challenges that are impacting their ability to perform oral hygiene (and other occupations), an OT could collaborate with patients to select and use AT that supports their ability to perform these occupations. OTs can suggest pre-fabricated AT that can be purchased online or in-store, or can fabricate custom AT for patients when necessary.

3) Oversee transfers to/from dental chair, assistive device use, etc.

OTs can assist with patient transfers to/from the dental chair, observe and make recommendations for safe transfers and assistive device use, and discuss/practice how one can safely perform oral hygiene (and other occupations) at home when balance difficulties are present.

4) Perform ergonomic evaluations to prevent injuries in the workplace.

OTs can perform ergonomic evaluations for dental faculty and students working in the clinics, educating individuals on proper biomechanics and work practices to limit pain and strain on one's body over time.

KEY TAKEAWAYS

1

Several patients in the MCP Clinic reported/ displayed physical or cognitive limitations impacting oral hygiene performance and medication management.

2

All faculty participants demonstrated improved confidence across all areas addressed from pre- to post-assessment.

3

Faculty participants reported the learning module to be effective in improving their knowledge of collaboration opportunities between OTs and dental professionals.

4

Additional intake/evaluation questions could help to better understand patient-perceived challenges with performing oral hygiene.

5

Regular collaborations with an OT on-site could provide numerous benefits to dental faculty, dental students, and patients.



Thomas Pinto, B.S., OT/s

Mr. Pinto is an occupational therapy doctoral student at Tufts University, having completed his doctoral capstone at TUSDM in the spring of 2024. His capstone was focused on increasing opportunities for interprofessional collaboration between occupational therapists and dental professionals, primarily working in the Medically Complex Patient Clinic. This is not Thomas' first time working in the dental setting, as he completed a dental assisting program in high school. He initially pursued dentistry in his undergraduate studies, however, after observing his mother's resilience and recovery following a tragedy that occurred during his junior year, he found a great appreciation for what her occupational therapists did to help her gain her life back, ultimately deciding to shift careers to pursue OT. He completed two 12-week fieldwork placements: one in inpatient acute care at Tufts Medical Center and another in outpatient hand and upper extremity rehabilitation at NYU Langone. He is excited to graduate this May and to begin his professional career as an occupational therapist.

ACKNOWLEDGMENTS

Tufts University

I would like to thank the following team members for their involvement and contributions to this project:

- Maria Dolce, PhD, RN
- Nancy Baker, ScD, MPH, OTR, FAOTA
- Samantha Parad, DMD, RN, PNAP
- Khaled Shaikhi, BDS, MS
- Gardner Bassett, DMD
- William Lobel, DMD
- Karin Arsenault, DMD, MPH, FACD, FPFA
- Aikaterini Papathanasiou, DMD, DDS, MBA, FICD
- Ellen Patterson, MD, MA
- Mary Barnes, OTD
- Melanie Morris, LCSW
- Rebecca Kaplan, BS
- Justin Horvath, M.Ed
- Susan Remondi, BS
- Karen Gratiano, M.Ed
- Pamela Thomas, MLIS

I would not have been able to complete this project without the support of numerous individuals. First and foremost, I am incredibly appreciative of both of my mentors, Dr. Dolce and Dr. Baker, as your guidance, expertise, and support during both the planning and implementation phases of this project was critical for being able to complete all that I did in the time allotted. Thank you to the various team members from Project SOCIAL: Integrating Social & Oral Care Across the Lifespan, including Melanie Morris and Rebecca Kaplan, for inviting me in with open arms and making me feel welcome and at home throughout my time at Tufts University School of Dental Medicine (TUSDM). I also cannot thank each of the dental faculty within the Department of Comprehensive Care and the Medically Complex Patient Clinic enough, including Dr. Parad, Dr. Shaikhi, Dr. Bassett, Dr. Lobel, and Dr. Papathanasiou, for allowing me to observe and answering all of my questions. Thank you to Dr. Arsenault for allowing me to participate in the Aging/Disability Simulation and for providing me with valuable experiences, knowledge, and support throughout this project and beyond. A special thanks to everyone who assisted me in creating my learning modules and making sure they included Instructional Design principles and were accessible, including Dr. Patterson, Dr. Barnes, Justin Horvath, Susan Remondi, Karen Gratiano, and Pamela Thomas. Finally, thank you to the pilot participants who completed the learning module I created and for providing such valuable feedback. This project would not be what it was without each and every one of you!

REFERENCES

- Cermak, S. A., Stein Duker, L. I., Williams, M. E., Dawson, M. E., Lane, C. J., & Polido, J. C. (2015). Sensory adapted dental environments to enhance oral care for children with autism spectrum disorders: A randomized controlled pilot study. *Journal of autism and developmental disorders*, 45(9), 2876–2888. <https://doi.org/10.1007/s10803-015-2450-5>
- Como, D. H., Stein Duker, L. I., Polido, J. C., & Cermak, S. A. (2020). Oral health and autism spectrum disorders: A unique collaboration between dentistry and occupational therapy. *International Journal of Environmental Research and Public Health*, 18(1), 135. <https://doi.org/10.3390/ijerph18010135>
- da Rosa, S. V., Moysés, S. J., Theis, L. C., Soares, R. C., Moysés, S. T., Werneck, R. I., & Rocha, J. S. (2020). Barriers in access to dental services hindering the treatment of people with disabilities: A systematic review. *International Journal of Dentistry*, 1–17. <https://doi.org/10.1155/2020/9074618>
- Ferreira, R. C., Ribeiro, M. T. de F., Vargas-Ferreira, F., Sampaio, A. A., Pereira, A. C. M., Vargas, A. M. D., Jesus, R. M. de, & Ferreira, E. F. e. (2018). Assistive technologies for improving the oral hygiene of leprosy patients residing in a former leprosy colony in Betim, Minas Gerais, Brazil. *PLOS ONE*, 13(7), e0200503. <https://doi.org/10.1371/journal.pone.0200503>
- Koistinen, S., Ståhlacke, K., Olai, L., Ehrenberg, A., & Carlsson, E. (2021). Older people's experiences of oral health and assisted daily oral care in short-term facilities. *BMC Geriatrics*, 21(1), 388. <https://doi.org/10.1186/s12877-021-02281-z>
- Mahmoudi, E., & Meade, M. A. (2015). Disparities in access to health care among adults with physical disabilities: Analysis of a representative national sample for a ten-year period. *Disability and Health Journal*, 8(2), 182–190. <https://doi.org/10.1016/j.dhjo.2014.08.007>
- Morgan, J. P., Minihan, P. M., Stark, P. C., Finkelman, M. D., Yantsides, K. E., Park, A., Nobles, C. J., Tao, W., & Must, A. (2012). The oral health status of 4,732 adults with intellectual and developmental disabilities. *The Journal of the American Dental Association*, 143(8), 838–846. <https://doi.org/10.14219/jada.archive.2012.0288>
- Sanders, M. J., & Van Oss, T. (2013). Using Daily Routines to Promote Medication Adherence in Older Adults. *The American Journal of Occupational Therapy*, 67(1), 91–99. <https://doi.org/10.5014/ajot.2013.005033>
- Schwartzberg, S. L., Lane, G., & Levin, S. Self-perceived oral health-related quality of life in psychiatric inpatients. July 2013. Unpublished paper.

IMAGE REFERENCES

Andres Ramos (n.d.), Older woman icon Free Vector [Online Image].

<https://www.vecteezy.com/vector-art/4622543-older-woman-icon>

FatCamera (2022), Small Group Therapy Session stock photo [Online Image].

<https://www.istockphoto.com/photo/small-group-therapy-session-gm1392944216-449021856?phrase=group+therapy+support+meeting>

FatCamera (2023), Working on Balance at Therapy stock photo [Online Image].

<https://www.istockphoto.com/photo/working-on-balance-at-therapy-gm1468087658-499702746?phrase=sensory+clinic+occupational+therapy>

GaryRadler (2010), Senior Man with a Disability being helped in kitchen stock photo [Online Image].

<https://www.istockphoto.com/photo/senior-man-with-a-disability-being-helped-in-kitchen-gm471274863-14321265?phrase=occupational+therapist+orthosis>

kali9 (2012), Healthcare workers helping patient into wheelchair stock photo [Online Image].

<https://www.istockphoto.com/photo/healthcare-workers-helping-patient-into-wheelchair-gm185119404-19432409?phrase=hospital%2Boccupational%2Btherapy>

Natee127 (2023), Hand occupational therapist making assistive device for immobilize patient hand. Splint service for hand injury rehabilitation of occupational therapy clinic. stock photo [Online Image].

<https://www.istockphoto.com/photo/hand-occupational-therapist-making-assistive-device-for-immobilize-patient-hand-gm1585144792-528984915?phrase=occupational+therapy&searchscope=image%2Cfilm>

SDI Productions (2022), Therapist smiles as senior man learns to use elastic band stock photo [Online Image].

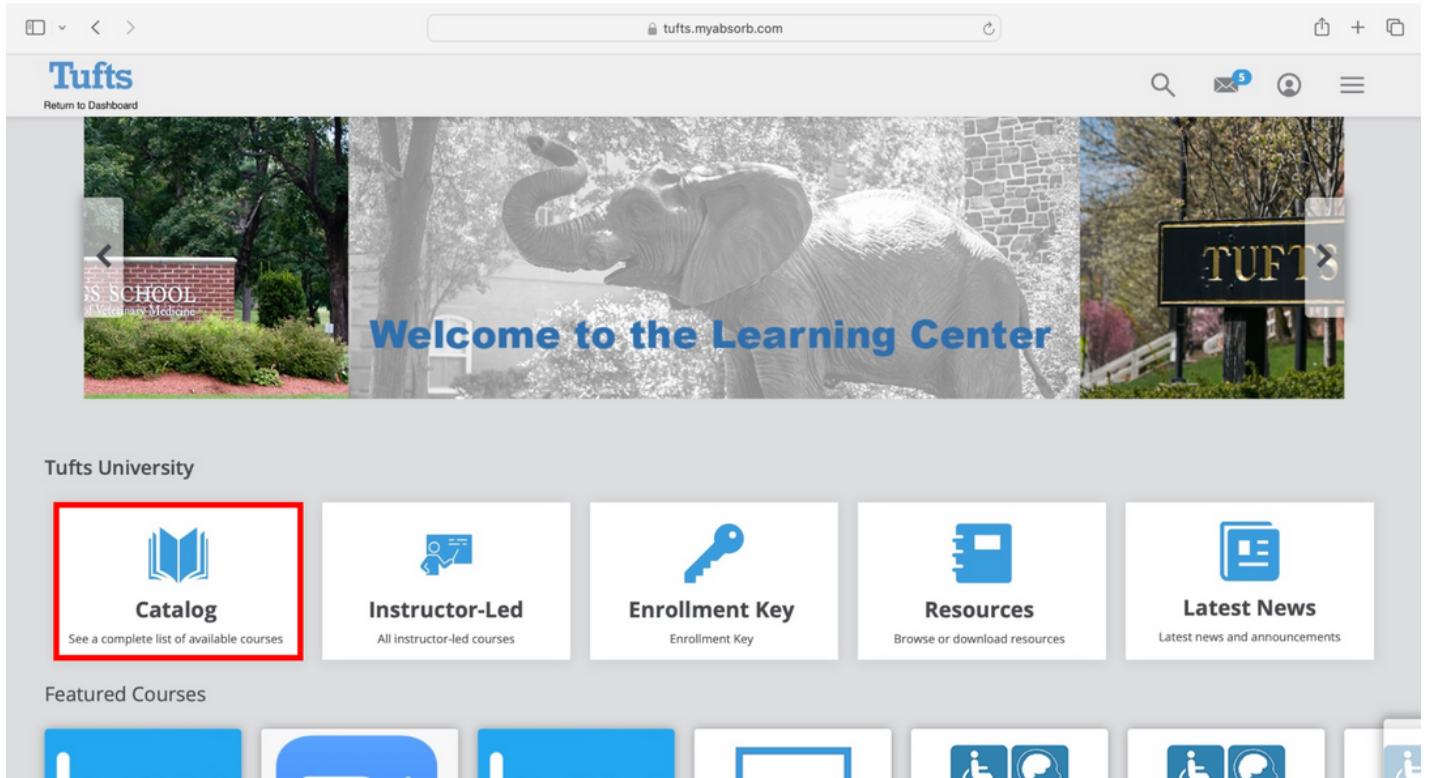
<https://www.istockphoto.com/photo/therapist-smiles-as-senior-man-learns-to-use-elastic-band-gm1366650874-437122530?phrase=occupational+therapist+hospital>

Appendix

Accessing the Interprofessional Learning Module

- Go to the [Tufts Learning Center](https://tufts.myabsorb.com/) (<https://tufts.myabsorb.com/>)

(1) On the Dashboard, click the “Catalog” box.



(2) Scroll down to the “Building Bridges Between Dentistry & Occupational Therapy” course, then click “Enroll.”



Tags: [Dental](#)

This learning module explores the collaboration opportunities that exist between occupational therapists (OTs) and dental professionals. You will discover the ways in which OTs address physical, cognitive, social, and emotional challenges to facilitate one's performance in daily activities. You will also learn about the various ways in which OTs and dental professionals can work together to optimize holistic care and promote overall health and wellness.

Accessing the Interprofessional Learning Module

(3) Once enrolled, click the “Start” button to open the course.



Tags: **Dental**

This learning module explores the collaboration opportunities that exist between occupational therapists (OTs) and dental professionals. You will discover the ways in which OTs address physical, cognitive, social, and emotional challenges to facilitate one's performance in daily activities. You will also learn about the various ways in which OTs and dental professionals can work together to optimize holistic care and promote overall health and wellness.

(4) Once in the course, begin with Section 1 by clicking on the “Section 1” box.

