Beginner's Guide To Orthosis Fabrication: Manual and Course

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Description of DCE Site

Advanced Therapy Center, Torrance, CA

- Treat a variety of hand and upper extremity diagnoses
- Therapist-owned, outpatient clinic
- Mission Statement: ATC's mission statement is to "provide evidenced-based, high level care to ensure optimal recovery in their patients" (Advanced Therapy Center, 2023)

Literature Review

Orthosis fabrication is integral to hand therapy practice

- Study participants deemed custom-fabricated orthotic techniques as "critical to hand therapy practice" (Keller et al., 2022)
- Upon initial certification, CHTs must be proficient in fabrication techniques and possess "foundational knowledge of anatomy; time frames for wound, bone, and tissue healing; biomechanics; and pathomechanics of the limb" (Keller et al., 2022)

Takes Priority in Research

- There is an abundance of evidence in orthotic-based interventions for carpal tunnel syndrome, osteoarthritis, and tendon injuries (Takata et al., 2019)
- Results showed that orthotics continue to take "a strong priority in hand therapy research" (Takata et al., 2019).

Valued Skill In Occupational Therapy

- Students who received additional instruction during their didactic programs reported increased confidence in their fabrication skills (Schofield and Schwartz, 2020).
- Study results indicated that students who received hands-on instruction during their didactic courses felt more prepared during their hand therapy fieldwork placements and during practice (Schofield and Schwartz, 2020)

Needs Assessment Results

Limited Opportunities For Learning

- Participants unanimously expressed that they felt "they did not receive enough instruction during didactic programs"

Desire for Additional Instruction

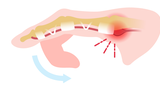
- Fieldwork students stated that "they would like additional experience in splinting" because they lack confidence in that area of practice

Course Improvements

- Need for the course to be a certified continuing education, revision of course skills lecture and lab, and advertisement brochures

Learning Objectives

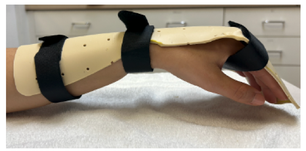
- In 14 weeks, the capstone student will increase clinical knowledge by expanding upon the current orthosis fabrication manual.
- In 14 weeks, the capstone student will update and implement the clinic's orthosis fabrication course.
- In 14 weeks, the capstone student will increase clinical practice skills in the field of hand therapy.



Project Description and Implementation

Capstone Focus Areas: Clinical Practice Skills, Education, Administration

Orthosis Fabrication Manual (Distributed Week 10)



- 77 pages
- Categorized by digit-based, hand-based, and forearm-based orthoses
- Created step-by-step instructions on how to fabricate common orthoses seen in the clinic
- Outlined indication, purpose, materials, sample patterns, and provided visual examples
- Information on Low Temperature Thermoplastic Material (LLT) handling and performance characteristics
- General Tips to Fabrication
- Patient Education Template

Orthosis Fabrication Course (Conducted on February 10, 2024)

- Planned and taught orthosis fabrication course
- Updated skills lab and lecture (trigger finger and mallet finger orthoses)
- Conducted administrative duties (advertisement, budgeting, course certification)

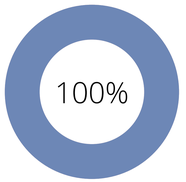
Patient Caseload (Week 1-14)

- Gained additional knowledge in the field of hand therapy

Evaluation and Outcomes

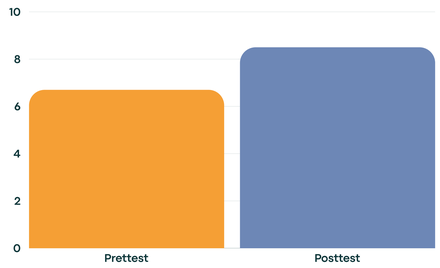
Orthosis Fabrication Manual

- **Manual Feedback Survey** (10 questions)
  - Total of 4 participants
  - 8 multiple choice, 2 open-ended questions
- **Results:**
  - 75% reported "I am more confident in orthosis fabrication, I just need more practice"
  - 100% reported the manual supported their learning



Orthosis Fabrication Course

- **Preliminary (pre-test) and Final (post-test) Knowledge Quizzes** (10 questions)
- **Course Feedback Survey** (9 questions)
  - Total of 6 participants
- **Results:**
  - Increase in pre-test and post-test scores by 2 points
  - Increase confidence in clinical reasoning skills and handling thermoplastic material
  - 100% reported the course to be "excellent" and "would reccomend to collegues"



Conclusion

- Unaminous report of the manual and course materials being "useful" and "supported their learning"
- Findings from this capstone project support significance in orthosis fabrication in occupational therapy practice
- Growing demand for additional opportunities for hands-on experience in OT curricula

Implications

- Online fabrication tutorials can be appended for each orthotic section, as videos can supplement student learning (Schofield and Schwartz, 2020)
- The orthosis fabrication course could be formatted with a lecture section dedicated for asynchronous learning, and the skills section reserved for live demonstration

Scholarly Deliverables

Orthosis Fabrication Manual

- Checklist Log
- Manual Feedback Survey

Orthosis Fabrication Course

- Updated Lecture and Skills Lab
- Brochures and Certification
- Certified Continuing Education
- Checklist Log

Clinical Competency Checklist

- Novel Diagnoses Log

Acknowledgements

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References available upon request