



Enhancing Hand Therapy: A Comprehensive Guide of Assistive Technology and Aids for Upper Extremity Injuries

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Introduction

- Common upper extremity (UE) diagnoses often limit range of motion (ROM), grip strength, dexterity, and coordination, affecting performance in ADLs and self care (McDonald et al., 2016).
 - Because these limitations affect everyday function, many hand therapy patients can benefit from tools that support task performance and promote independence.
 - Assistive technology (AT) includes any item, equipment, or system used to enhance functional capabilities of individuals with disabilities (Dishman et al., 2021).
 - However, many outpatient hand therapy patients, especially in rural areas, are unaware of AT available that can support their independence. This gap indicates a need for a clear, visually engaging resource that helps patients understand available AT and how it supports daily activities.
- Purpose:* To develop a comprehensive and visually engaging AT guide tailored to orthopedic hand therapy at Encore Rehabilitation in Dothan, AL. This resource is designed to educate patients about their conditions, demonstrate how AT devices can support areas of occupation, and ultimately enhance patient understanding and use of assistive technology.

Methods

Program/Guide Design

- The first two weeks focused on observing treatment sessions and gathering informal feedback from site mentor and patients to identify common functional challenges and gaps in AT knowledge.
- Insights from observation along with OTPF-4 guided the development of a comprehensive digital AT guide, which was later formatted into a physical copy for daily clinic use.
- The guide categorizes AT by occupational performance areas, ADLs, IADLs, work, and leisure, and includes product details, costs, and purchasing information to support clinical decision making and patient follow through.
- Visual examples were included to improve patient comprehension and support therapists during education.

Participants

- Adults aged 18 years or older
- Receiving hand therapy services at Encore Rehabilitation in Dothan, AL
- Diagnoses included a range of UE conditions and injuries commonly treated in OT

Program Implementation

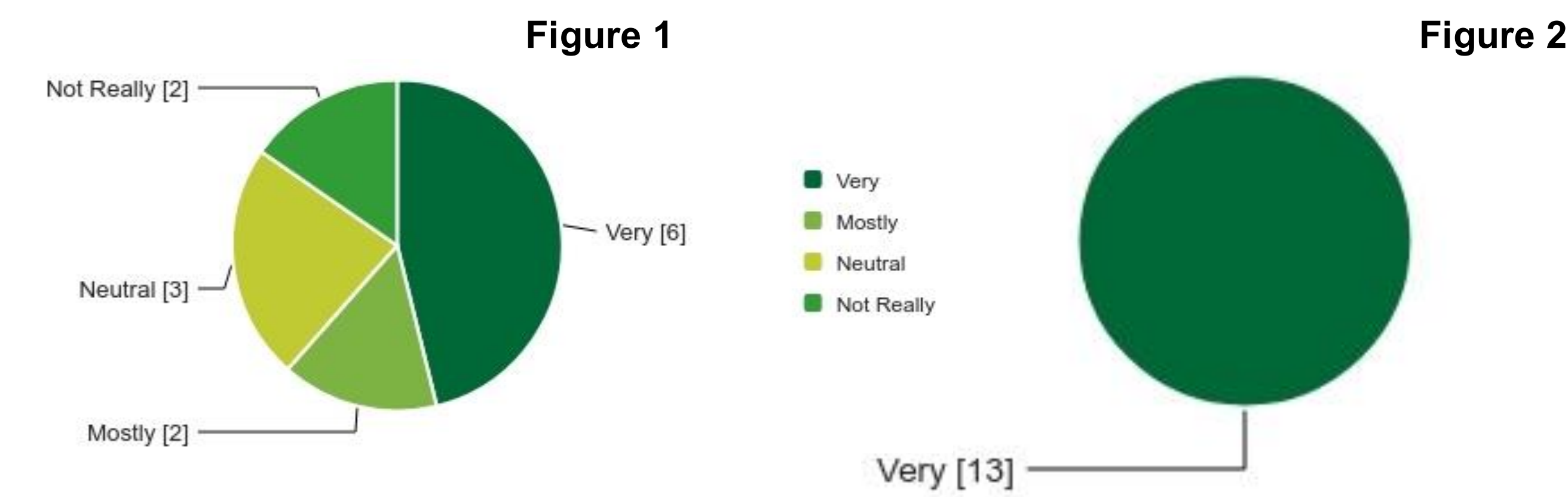
- Hand therapy patients were informally screened with onsite OTs to identify those who would benefit from AT education based on functional limitations and diagnosis-specific needs.
- Thirteen participants received individualized AT education using the guide and completed a brief survey assessing clarity, usefulness, and awareness after viewing the comprehensive guide.
- Two onsite OTs received training on both the digital and physical versions of the guide and were surveyed on its effectiveness, organization, ease of implementation into practice.

Results

- Thirteen participants were included in the educational program.
- All participants received an AT device recommendation.
- Participants reported high satisfaction with AT education provided.
- Figures 1 & 2 illustrate improved AT knowledge following education.

Table 1: Patient Survey Responses

Survey Questions	Frequency Responses (n=13)
How satisfied are you with the assistive technology (AT) education you received today?	Not at All = 0% Not Really = 0% Neutral = 0% Mostly = 8% Very = 92%
Was an AT device recommended to you?	Yes = 100% If No, do not continue = 0%
What is the likelihood you would purchase an AT device?	Not at All = 0% Not Really = 0% Neutral = 8% Mostly = 38% Very = 54%
If you chose Not at All or Not Really for the previous question, explain why (e.g., cost, availability, not clear on how to use, no need)	0% responses



- Two OTs were included in the AT educational training and surveyed after.
- Both reported the AT guide was mostly effective in supporting patient needs.
- Both noted strong ease of use, high relevance, and confidence with using the guide.
- Overall, both expressed high satisfaction with the guide's implementation.

Table 2: Therapist Survey Responses

Survey Questions	Frequency Responses (n=2)
How effective do you feel the AT catalog is in addressing common challenges faced by patients?	Mostly = 100%
How easy is it to incorporate the AT catalog into treatment sessions?	Very = 100%
Do you believe the AT options provided are relevant to the conditions you most commonly treat?	Very = 100%
How confident do you feel in delivering AT education to your educational resource catalog?	Very = 100%
How satisfied are you with the overall implementation and utility of this education program regarding AT?	Very = 100%

Discussion

Findings

Integrating AT education into hand therapy enhances patient outcomes by increasing their understanding and use of supportive AT. By incorporating AT education into sessions, OTs can identify individual patient needs and guide them towards AT devices that improve their daily function. This targeted AT education supports patient independence, while also enhancing OTs' clinical reasoning, confidence, and ability to make quick recommendations. One of the most recommended AT devices was a button hook and zipper pull, since many patients reported difficulty with fastening shirts or pants. These findings highlight the value of integrating AT education into hand therapy to promote functional independence and support OTs in delivering individualized, patient-centered care, while expanding AT access in rural areas.

Limitations

Because new AT products are constantly emerging, the printed guide may become outdated quickly and lack the accessibility of the digital format. Additionally, limited local medical supply stores reduce the opportunities for patients to see and/or try AT devices, which may lower their interest in purchasing or using AT.

Conclusion

This project highlights OT's role in bridging functional limitations and participation through AT by:

- Improving patient understanding and independence
- Supporting therapist decision making and recommendations

To support sustainability, the guide could grow to include diagnosis-specific content, more AT options, and structured new hire training.

References

American Occupational Therapy Association. (2020). Occupational therapy practice framework: domain and process- fourth edition. American Journal of Occupational Therapy, 74(Supplement_2), 7412410010p1–7412410010p87. <https://doi.org/10.5014/ajot.2020.74S200>

Dishman, K. M., Duckart, J., & Hardman, L. J. (2021). Perceptions of assistive technology education from occupational therapists certified as assistive technology professionals. *The American Journal of Occupational Therapy*, 75(2), 75022051101–75022051108. <https://doi.org/10.5014/ajot.2021.041541>

McDonald, S. S., Levine, D., Richards, J., & Aguilar, L. (2016). Effectiveness of adaptive silverware on range of motion of the hand. *PeerJ*, 4, e1667. <https://doi.org/10.7717/peerj.1667>

Acknowledgement & Contact information

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