

# Role of Occupational Therapist in Wheelchair Service Provision



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**Dr. Hassan Sarsak, PhD, OT**

**May 12, 2022**







This certificate recognizes

**Hassan Sarsak**

has successfully met the requirements, agreed to abide by the ISWP Ethical Standards of Practice,  
and is hereby certified by the ISWP Professional Standards Board as an ISWP Wheelchair Service Provider

**Effective from 26 April 2021 – 25 April 2023**



Dr. Jonathan Pearlman  
Director, ISWP

USAID'S HEALTH EVALUATION AND APPLIED RESEARCH DEVELOPMENT (HEARD) PROJECT



[www.wheelchairnetwork.org](http://www.wheelchairnetwork.org)



## ISWP – INTERMEDIATE LEVEL – TRAINER

This certificate recognizes

**Hassan Sarsak**

for completing the ISWP Training of Trainer process for the  
Intermediate level on May 2nd, 2022.

The Training of Trainer program, which is part of the World Health Organization (WHO) Wheelchair Service Training Package, prepares personnel to train wheelchair service providers to provide complex wheelchairs and cushions for children and adults who need additional postural support to sit upright.



ADVANCING PARTNERS  
& COMMUNITIES

Dr. Jonathan Pearlman  
Director, ISWP



# Outline

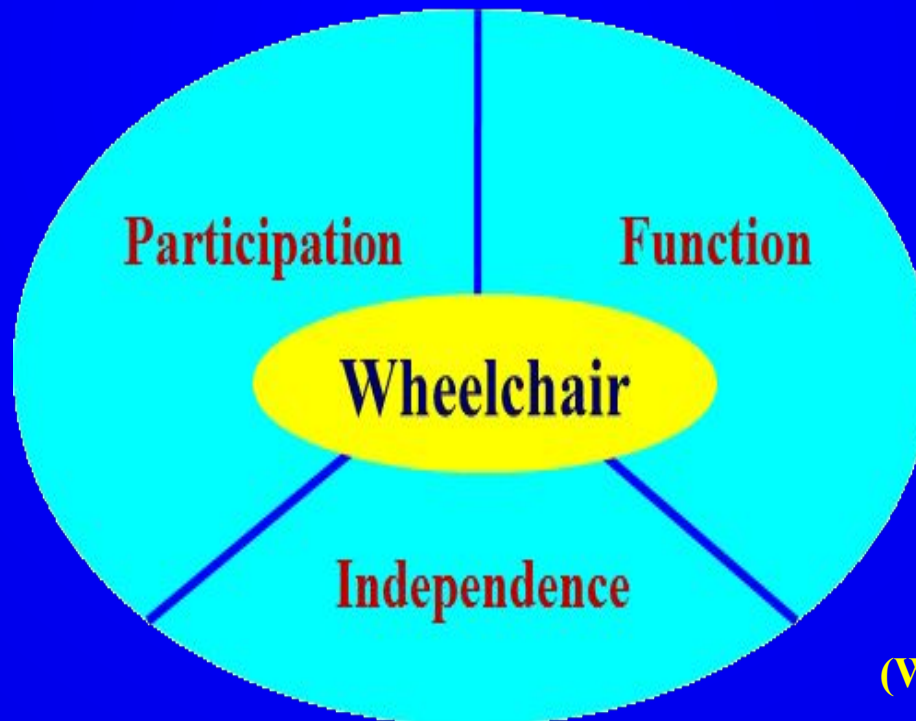
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- **Wheelchairs: Background**
- **Wheelchair Training Program (WTP)**
  - **Significance / Rationale**
  - **Purpose**
  - **Who can benefit from**
- **Role of OT in wheelchair service provision**
  - **Impact on Practice and Clinical Implications**
- **Clinical resources**
- **Take home message!**

# Background

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- **Assistive Technology (AT)** devices enable people with disabilities to function in multiple contexts and activities (Arthanat, Nochajski, Lenker, & Bauer, 2009)
- **The wheelchair** is viewed as one of the most important AT devices used in rehabilitation (Kirby, Swuste, Dupuis, MacLeod, & Monroe, 2002)



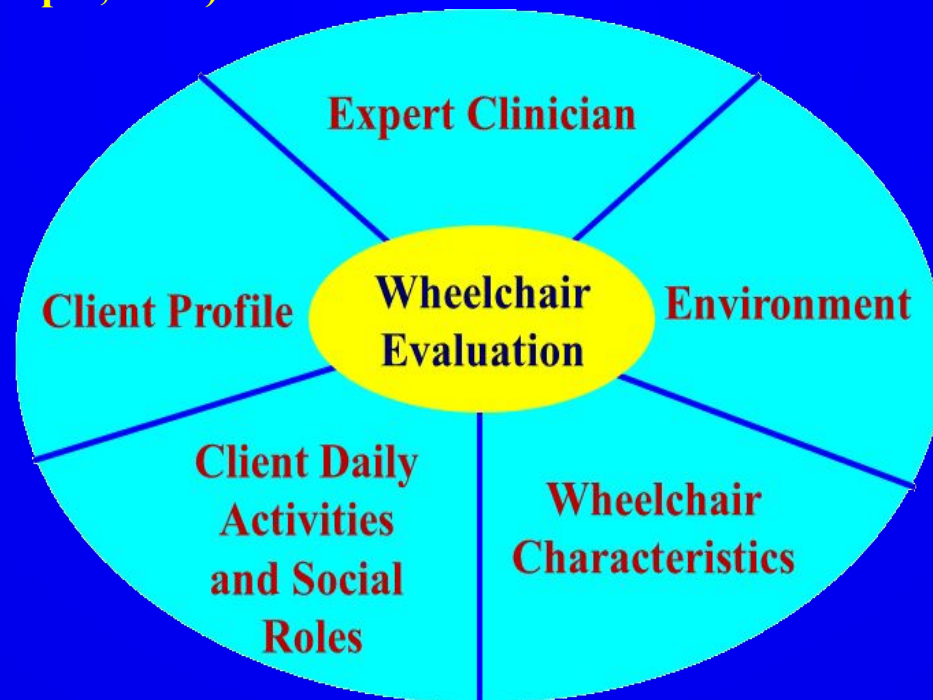
(Wee & Lysaght, 2009)



# Background

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- **Wheelchair evaluation is a continuous process requiring re-assessment of wheelchair fit as users age and their functional conditions change (Karmarkar, Collins, Kelleher, & Cooper, 2009).**



(Oyster et al., 2011)

# WFOT Position Statement ...

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## POSITION STATEMENT

### Occupational Therapy and Wheeled Mobility and Seating Devices

#### Statement of the position being taken

Personal mobility and environmental accessibility are considered a fundamental human right<sup>1</sup>. People with mobility impairments benefit from the use of wheeled mobility and seating devices to improve access to their environment and allow them to engage in their occupations of daily living<sup>2</sup>.

The World Federation of Occupational Therapists (WFOT) advocates for access to quality provision of services for people requiring mobility devices that are based on guidelines using best available evidence. Occupational therapists respect the autonomy and central role of individuals, their families, and/or caregivers throughout the service provision process. By promoting access to appropriate and affordable wheeled mobility and seating devices, occupational therapists enable people to become more productive, feel empowered, enjoy leisure, and enhance their participation in their social and cultural environment.

#### Statement of the significance of position or issue to occupational therapy

Occupational therapists have the expertise to provide holistic service delivery for wheeled mobility and seating devices, recognising that needs of individuals vary for a wide continuum of products. Occupational therapists use a continuous and comprehensive client-centred approach that considers an individual's profile, priorities, needs, occupations, and environment in order to obtain a properly fitted device<sup>3</sup>.



# Wheelchair Outcome Measures

| Method | Subjective<br>(Self/Proxy)                                                                                                                        | Objective<br>(Performance-based)                                                                                                                                                                    |
|--------|---------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Pros   | <ul style="list-style-type: none"><li>✓ The quickest</li><li>✓ Easy to learn</li><li>✓ Less time consuming</li><li>✓ Cost effective</li></ul>     | <ul style="list-style-type: none"><li>✓ Directly observe function</li><li>✓ Minimize subjective aspects</li></ul>                                                                                   |
| Cons   | <ul style="list-style-type: none"><li>• Highly vulnerable to subjective bias</li><li>• Influenced by cognitive and perceptual abilities</li></ul> | <ul style="list-style-type: none"><li>• Limited by dependence on: client's motivation &amp; frequency of performance</li><li>• Might be costly, require more time, space, &amp; equipment</li></ul> |

# The FEW Measures (FEW, FEW-C, FEW-P)

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- **The Functioning Everyday with a Wheelchair (FEW, a self-report measure)**  
(Mills et al., 2002; Mills, Holm, & Schmeler, 2007)
- **The FEW-Capacity**  
(FEW-C, a performance-based measure for the clinic)  
(Schmeler, 2005)
- **The FEW-Performance**  
(FEW-P, a performance-based measure for the home; the criterion)  
(Mills, et al., 2002)

| Items (FEW, FEW-C, FEW-P)               |
|-----------------------------------------|
| 1. Stability, Durability, Dependability |
| 2. Comfort Needs                        |
| 3. Health Needs                         |
| 4. Operate                              |
| 5. Reach                                |
| 6. Transfer                             |
| 7. Personal Care                        |
| 8. Indoor Mobility                      |
| 9. Outdoor Mobility                     |
| 10. Transportation                      |

# Clinical Resources

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- **Clinical Tools (examples):**
  - FSA pressure mapping system
  - Clinical SmartWheel



# More Resources

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## ● Outcome Measures (examples):

- Functioning Everyday with a Wheelchair (FEW)

- <http://www.few.pitt.edu/>

- FEW Arabic version!**

- Power Wheelchair Skills Driving Test
- Manual Wheelchair Skills Evaluation (subset of WST)

- <http://www.wheelchairskillsprogram.ca/>

- Timed Up & Go (TUG) Evaluation



## The Open Journal of Occupational Therapy

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Article 6

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January 2021

### Validation of an Arabic Translation of the Functioning Everyday with a Wheelchair Self-Report Tool: A Pilot Study

Hassan I. Sarsak

*Batterjee Medical College, Saudi Arabia, sarsakhassan@gmail.com*

# **Wheelchair Service Provision**

**What is the Current Situation:  
Worldwide, Arab World?!**



# Rationale: Significance of the Problem; Worldwide!

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- **70** million people require wheelchairs worldwide;
  - yet only **5-15%** of people have access  
(World Health Organization, 2008)
- A need for wheelchair personnel
- Lack of trained wc professionals is universal
- Furthermore, wheelchair service provision is very underdeveloped across the world



## **Rationale: Significance of the Problem; Worldwide!**

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- **Additionally, people in developing countries often depend on the donation of wheelchairs, which are frequently of poor quality and not customized either for the users or their environment**
- **Health and rehabilitation professionals are not always trained adequately to ensure people with disabilities get a quality wheelchair**  
**(WHO, 2011)**



# Rationale: Significance of the Problem; Worldwide!

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- In addition, there is a great variability and inconsistency in what and how wheelchair related content is taught and evaluated
- A need for global standardization of wheelchair service provision education is crucial;
  - Therefore, standardized training packages were developed by a team of experts around the world by the **WHO** in partnership with **USAID**.
  - WHO training packages serve as guides for wheelchair service provision education worldwide.
  - However, not yet taught in all countries especially in low-resourced countries (**Fung et al., 2017**)



# **Rationale: Significance of the Problem; in Arab World!**

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- **There is a lack of comprehensive wc service provision training.**
- **Clinical applications of wheeled mobility and seating interventions are not well-integrated into the rehabilitation curricula at many clinical and academic institutions due to lack of clinicians and faculty interest and expertise.**

# **Wheelchair Training Program (WTP)**

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**In response to the need of more competent wheelchair professionals and to enhance the quality of service delivery to wheelchair users, in 2017 we developed **The Wheelchair Training Program (WTP).****

**Jordan**

**Saudi Arabia**

## CONTEXT SETTING



Country: Jordan  
Resource Setting: Middle



## PREMISE OF WHEELCHAIR-SPECIFIC TOPIC



Instructor: Dr. Hassan Sarsak  
Contact: h.sarsak@ju.edu.jo  
Program: 4 yr BSc in Occupational Therapy (OT)  
Language: English  
Approach: Lecture and labs  
Type: Mandatory  
Credit: 5 credits - 40 hours  
Schedule: 4h class/week for 10 weeks

**Historical Context:** Prior to 2018, the wheelchair content included in the University of Jordan occupational therapy bachelor program was insufficient (1 x 3h class per week for 2 weeks) and integrated in only one mandatory course in the curriculum.  
**Learning Objectives:** To develop students' knowledge and hands-on skills in the process of identifying and providing wheeled mobility and seating assessments and interventions to people of all ages and disability types.

## WHEELCHAIR SERVICE PROVISION TOPICS based on WHO 8-Step Model

Step 1 Appointment & Referral  
Step 2 Assessment

Step 3 Prescription  
Step 4 Funding & Ordering

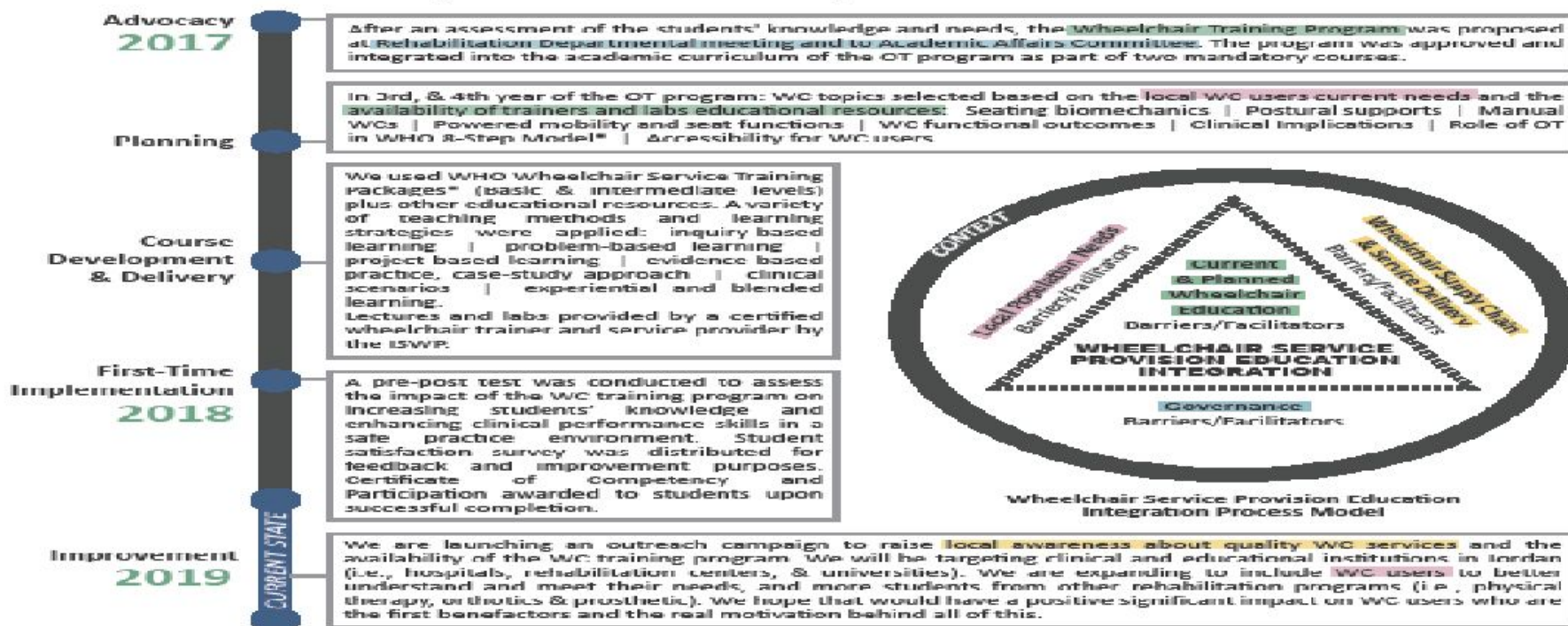
Step 5 Product (Wheelchair) Preparation  
Step 6 Fitting

Step 7 User Training  
Step 8 Maintenance & Follow-Up

## INTEGRATION PROCESS for Batterjee Medical College

At every state of wheelchair (WC) service provision, education integration were elements from (1) local population needs, (2) governance, (3) wheelchair supply chain & service delivery and current & planned wheelchair education.

The timeline below includes resources found in ISWP SMART as denoted by \*.





## CONTEXT SETTING



Country: Saudi Arabia  
Resource Setting: High



## PREMISE OF WHEELCHAIR-SPECIFIC TOPIC



Instructor: Dr. Hassan Sarsak  
Contact: hassan.sarsak@bmc.edu.sa  
Program: 5 yr BSc in Occupational Therapy (OT)  
5 yr BSc in Physical Therapy (PT)  
Language: English  
Approach: Lecture and labs  
Type: Mandatory  
Credit: 12 credits - 45 hours  
Schedule: 3h class/week for 15 weeks

**Historical Context:** Prior to 2018, the wheelchair content included in both OT and PT BSc programs at Batterjee Medical College was insufficient (1 x 2h class per week for 3 weeks at each program) and integrated in only 2 mandatory courses in the curricula.  
**Learning Objectives:** to develop students' knowledge and hands on skills in the process of identifying and providing wheeled mobility and seating assessments and interventions to people of all ages and disability types.

## WHEELCHAIR SERVICE PROVISION TOPICS based on WHO 8-Step Model

Step 1 Appointment & Referral  
Step 2 Assessment

Step 3 Prescription  
Step 4 Funding & Ordering

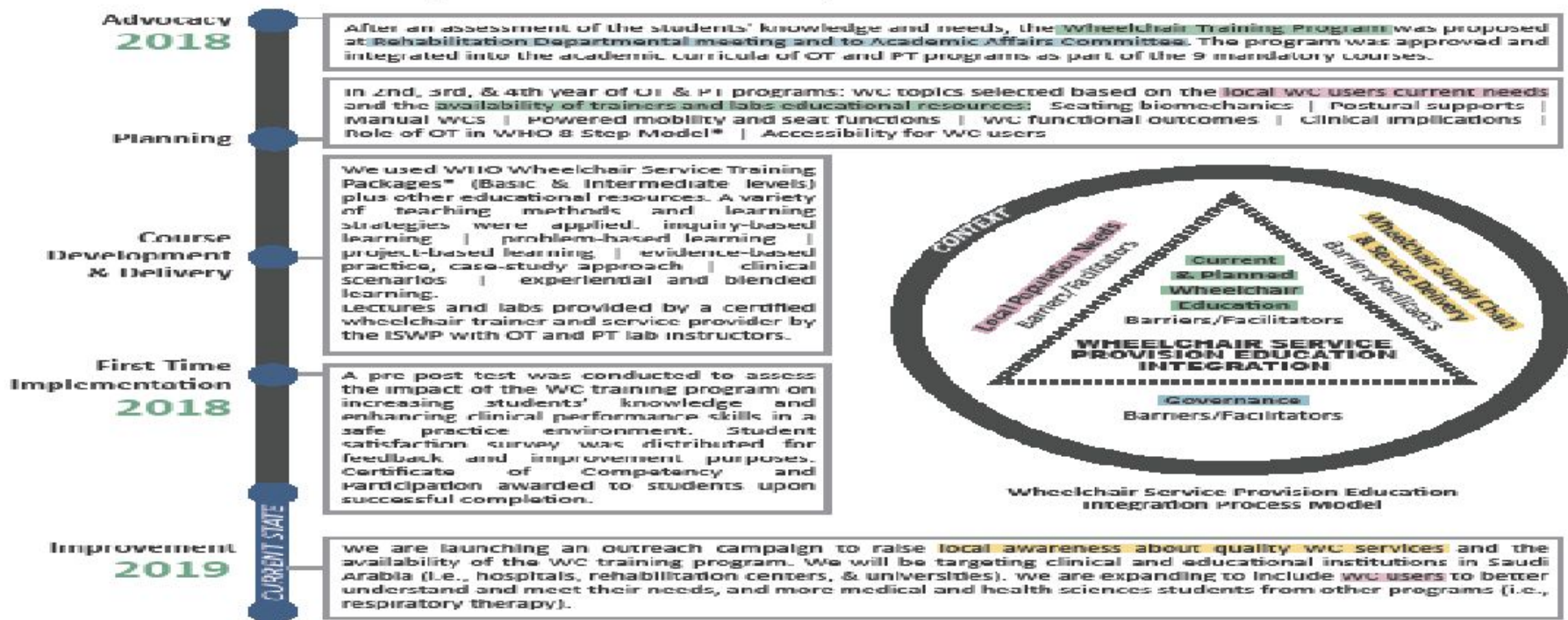
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# WTP: Description

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- **WHO packages**
  - ❑ **Basic level (WSTP-b) and**
  - ❑ **Intermediate Level (WSTP-I)**
  - ❑ **Other resources**
- **Appropriate for clinicians with introductory knowledge**
- **Provides fundamentals of wheeled mobility and seating interventions**
- **A minimum of 20 contact hours**
- **WTP Topics**

| WTP Topics                                            |
|-------------------------------------------------------|
| 1. Seating biomechanics                               |
| 2. Postural supports                                  |
| 3. Manual, power wheelchairs                          |
| 4. Seat functions                                     |
| 5. Wheelchair functional outcomes                     |
| 6. Clinical Implications                              |
| 7. OT role in wheelchair assessments and prescription |
| 8. Accessibility issues                               |
| 9. Wheelchair adjustments                             |
| 10. Wheelchair fitting &Customization                 |

# WTP: Purpose “Who Can Benefit from?”

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For students/professionals (**OT, PT, and OP**), to develop knowledge and hands-on skills in the process of identifying and providing wheeled mobility and seating interventions to people of all ages and disability type.



# **WTP: Teaching Methods**

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- **Evidence-based practice learning**
- **Case-study approach**
  - **Clinical scenarios**
- **Interactive discussions**
- **Direct instruction, PPPs, handouts**
- **Group work**
- **Experiential and blended learning**
- **Simulated interviews**





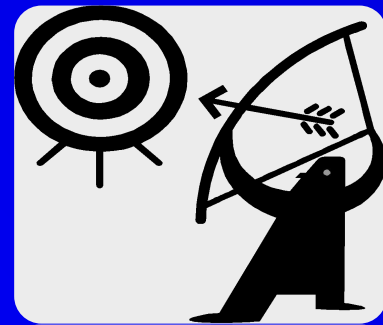






# WTP: Specific Objectives

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- ☐ **Develop fundamental knowledge and the minimum skills required by personnel involved in wheelchair service delivery**
- ☐ **Get WTP integrated into the regular rehabilitation training programs and curricula such as U of J and BMC.**

# Methods (Procedure)

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Pre-Test

WTP

Post-Test

Mean of 7 days

Mean of 7 days

Mean of 4 weeks

## Baseline Data:

- ☐ Consent form
- ☐ Demographics
- ☐ Pre-Test

# Method

## Study Design:

Quasi-experimental

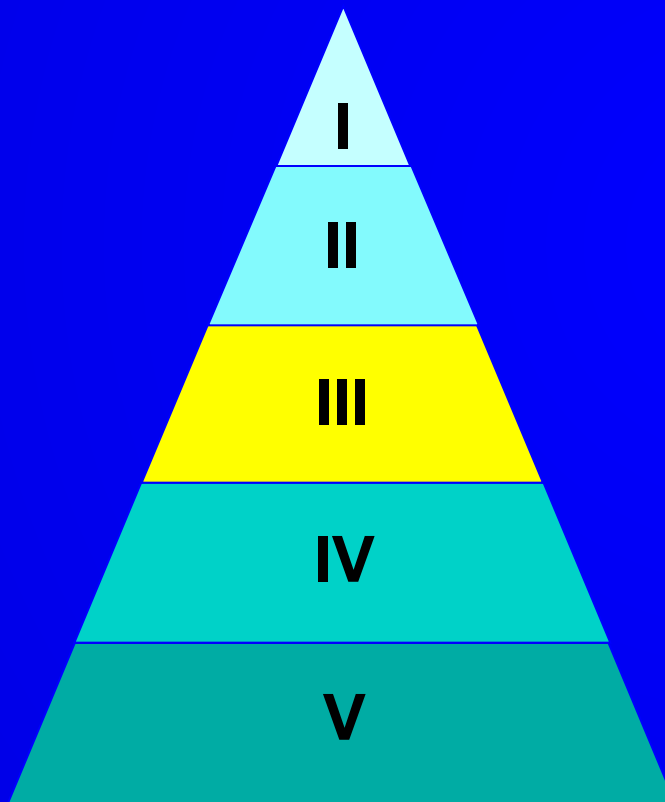
-- One Group (pre-post) research study design

## Instrument:

WTP Test

# Level III Evidence

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**“Evidence from  
well-designed trials  
without randomization,  
single group  
pre-posttest”**

**(Holm, 2001; Moore et al., 1995)**

# Pre-Post WTP Test

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- **Posttest:** to measure knowledge improvement and ensure that the WTP provides a successful learning experience
- **20 MCQs**
  - Paper-based
  - **30** minutes to complete
  - Grade: **10** points
  - Derived and modified from a valid and reliable test  
; ISWP basic test (**Fung et al., 2017**)
- Those who completed the WTP and passed the WTP posttest were acknowledged with a certificate of competency and participation.



# WTP Certificate



BASIC LEVEL

## WHEELCHAIR SERVICE TRAINING PACKAGE

This is to certify that

**XY**

has completed a 20 hour theoretical and practical training in the continuing education program:

### **“Wheelchair Training Program for Occupational Therapy Students”**

Completed: October 19, 2017

Department of Occupational Therapy, University of Jordan

The program provides fundamental training in wheeled mobility and seating assessments and interventions. The content includes:

- Seating biomechanics and postural supports;
- Manual wheelchairs and powered mobility seat functions;
- Assessing a wheelchair user to identify the best possible mobility solution;
- Wheelchair fitting measurements and wheelchair functional outcomes;
- Clinical implications on prescribing a manual / power wheelchair with an appropriate cushion
- Problem solving to identify simple modifications / adjustments to the wheelchair that can help to ensure the best fit;
- International accessibility standards related to wheelchairs;
- Role of interdisciplinary rehabilitation team in seating assessments and interventions

**Dr. Hassan I. Sarsak**  
PhD, Occupational Therapist



# Demographics of Students (N=40)

| Demographics                                                                                           | Mean (SD)<br>[range]                    | n            |
|--------------------------------------------------------------------------------------------------------|-----------------------------------------|--------------|
| Age (mean, SD)<br>[range]                                                                              | 20.83 ( $\pm 1.49$ )<br>[19.10 - 27.70] |              |
| Gender<br>Male (n)<br>Female (n)                                                                       |                                         | 5<br>35      |
| Race<br>Jordanian (n)<br>Non-Jordanian (n)                                                             |                                         | 36<br>4      |
| Years of education (mean, SD)<br>[range]                                                               | 16.125 ( $\pm 1.36$ )<br>[14 - 22]      |              |
| Independence in everyday life activities<br>Independent (n)<br>Needs assistance (n)                    |                                         | 39<br>1      |
| Experience in wheeled mobility and<br>seating interventions?<br>Yes (n)<br>No (n)                      |                                         | 40<br>0      |
| If yes, how many years of experience do<br>you have?<br>< 1 year (n)<br>1-2 years (n)<br>2-3 years (n) |                                         | 40<br>0<br>0 |

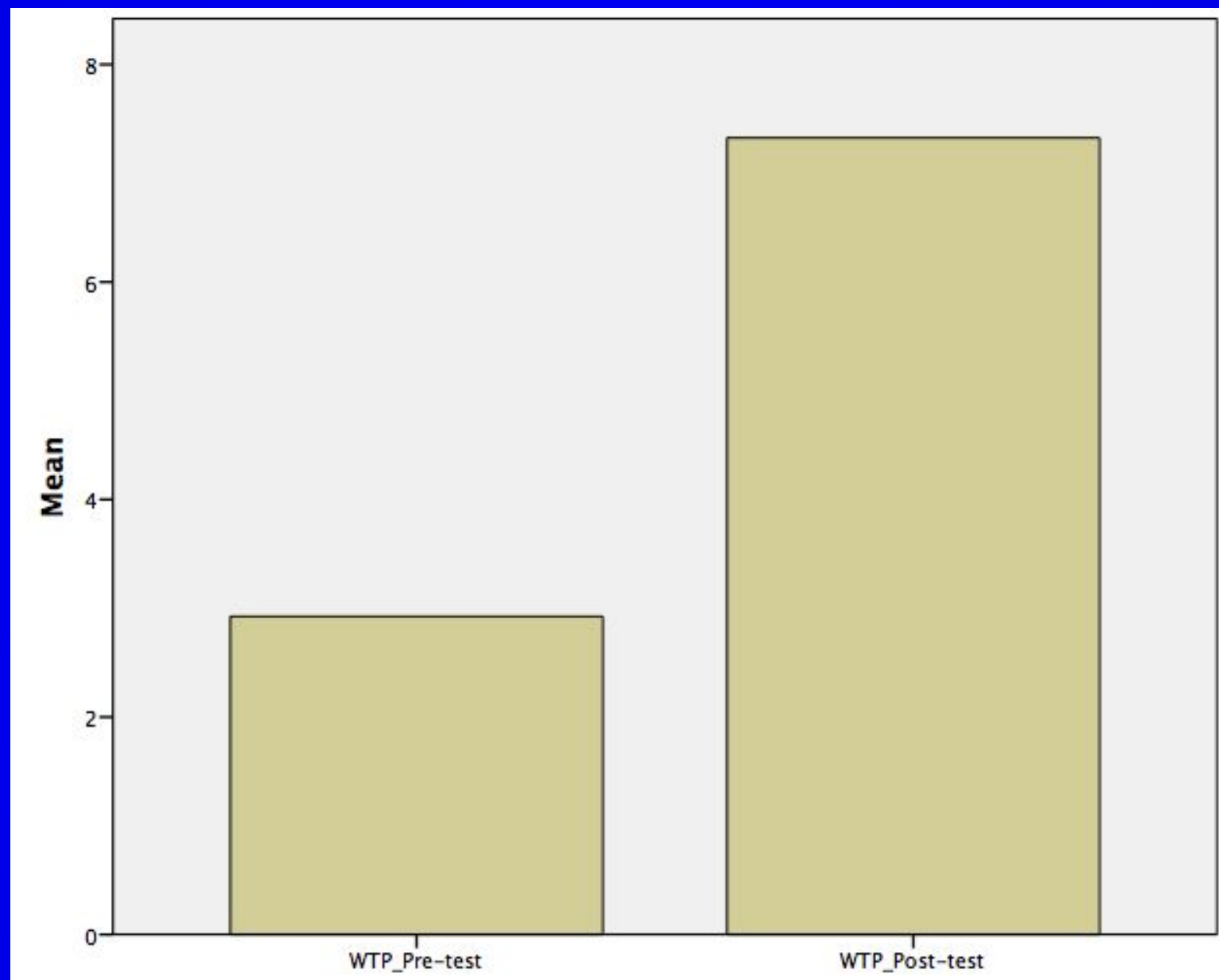
## Descriptive Statistics (Pre-WTP and Post-WTP Test)



### Results

|               | N  | Mean | SD    | Minimum | Maximum | p Value |
|---------------|----|------|-------|---------|---------|---------|
| Pre-WTP Test  | 40 | 2.92 | 1.023 | 1       | 4       | < 0.001 |
| Post-WTP Test | 40 | 7.32 | 1.403 | 4       | 10      |         |

**Pre-WTP and Post-WTP Test Results for all OT Students (N=40)**





## Results

| OT Students                       | Average Pre-WTP<br>Score<br>(% correct) | Average Post-WTP<br>Score<br>(% correct) | p Value           |
|-----------------------------------|-----------------------------------------|------------------------------------------|-------------------|
| <b>3<sup>rd</sup> year (n=31)</b> | <b>2.83</b><br><b>28.30 %</b>           | <b>7.16</b><br><b>71.60 %</b>            | <b>&lt; 0.001</b> |
| <b>4<sup>th</sup> year (n=9)</b>  | <b>3.22</b><br><b>32.20 %</b>           | <b>8.05</b><br><b>80.50 %</b>            | <b>&lt; 0.001</b> |
|                                   |                                         |                                          |                   |

**Pre-WTP and Post-WTP Test Results for 3<sup>rd</sup> and 4<sup>th</sup> year OT Students (N=40)**

# Discussion

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**Our hypothesis that the Wheelchair Training Program would enhance fundamental knowledge and clinical skills for occupational therapy students was confirmed**

**Overall, 100% of the students in the WTP showed significant improvement in WTP Post-test ( $p < 0.001$ )**



## **Discussion (cont'd)**

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- **Majority of students indicated an interest in integrating the WTP into their curricula which was offered on an extracurricular and research basis.**
  - **This interest aligns with students' enthusiasm in wheelchair education**
  - **This interest may also reflect the importance of wheelchair service provision education as perceived by students in health professional programs in Jordan/KSA.**

## **Discussion (cont'd)**

---

- **From our findings, students received training through WTP acquired the basic knowledge and skills necessary to provide wheelchair service and benefitted from the program.**
- **This promising finding suggests an opportunity for WTP to initiate partnerships for the integration of wheelchair service provision education into curricula of other universities in Jordan/KSA.**

# Conclusions

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- **WTP reported successful learning experience and is useful and helpful and could bring unique information to wheeled mobility and seating assessments and interventions**
- **WTP is a key component of a comprehensive wheelchair basic training and meets the WHO global standards**
- **WTP helps professionals in prescribing properly fitted wheelchairs and may enhance users satisfaction and functional independence**
- **WTP may suggest priorities and focus areas of wheeled mobility and seating interventions**

# Conclusions (cont'd)

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- **WTP, along with the WHO training packages, could serve as a guide for wheelchair service provision education in the Arab world.**
- **Results of this study inform the integration of wheelchair education to guide rehabilitative educational curricula development, with the ultimate goal of improving the quality of wheelchair service provision in Jordan/KSA.**

# Innovation

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- **To date**, the WTP is the only readily available basic wheelchair educational tool for students that focuses on developing skills and integrating wheelchair training into rehabilitation curricula at universities in Jordan/KSA.
- **FIRST** to apply the WTP for this purpose among occupational therapy students in Jordan/KSA
  - Pilot Study

# Impact

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- **Providing a better understanding of wheelchair users needs, wheeled mobility assessment, and seating interventions**
- **Enabling practitioners to better understand the person-wheelchair-environment match**
- **Improving the clinical practice for future wheeled mobility and seating interventions through the introduction of the WTP**
- **Positive significant impact on wheelchair users, practitioners and suppliers**



# Impact (cont'd)

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- **Developing skills as a wc professional and evidence-based practitioner.**
- **Enhancing quality of wc service provision.**
- **Improving independence, safety, and quality of everyday functional performance for wc users in Arab countries.**

# **Future Mission: what is NEXT???**

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- **We are continuing to evaluate the WTP effectiveness following this successful experience**
  - **Satisfaction survey**
- **We are launching an outreach campaign to raise local awareness about quality wheelchair services and the availability of the WTP**
  - Target of these awareness campaigns could be clinical and educational institutions and universities in Jordan/KSA
  - **Roundtable discussions at Al Hussein Society in November, 2017 was our first.**
    - **In collaboration with ISWP and USAID.**

# **Future Mission: what is NEXT???**

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- **Inclusion of wheelchair users**
  - **Get trained on the use of their wheelchairs**
  - **Better understand and meet their needs**
  - **Qualitative focus groups**
- **Positive significant impact on w/c users who are the first benefactors and the REAL motivation behind all of this!**

# Meet Our Team ...

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## Research Article



# Developing wheelchair training program for rehabilitation and occupational therapy students

## Abstract

**Background:** There is a critical need for trained wheelchair service provision professionals. Wheelchair service provision is underdeveloped across the world. People in developing countries often depend on the donation of wheelchairs, which are frequently of poor quality and neither suitable nor customized either for the users or their environment. Health and rehabilitation professionals are not always trained adequately to ensure people with disabilities get a quality and custom-fitted wheelchair. Furthermore, there is a great variability and inconsistency in what and how wheelchair-related content is taught and evaluated. Therefore, in 2015 until 2017 standardized training packages were developed by a team of experts around the world by the World Health Organization (WHO) in partnership with the United States Agency for International Development (USAID). There is a lack of comprehensive wheelchair service provision training in Jordan, and the clinical applications of wheeled mobility and seating interventions are not well-integrated into rehabilitation curricula at many clinical and academic institutions. In response to the need of more competent wheelchair professionals and to enhance the quality of service delivery to wheelchair users, a team of researchers in the Department of Occupational Therapy at the University of Jordan developed The Wheelchair Training Program (WTP).

**Keywords:** wheelchair, wheelchair user, training program, occupational therapy

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# **The OT Role in Wheelchair Assessment and Prescription for Individuals with Neuro-physical Dysfunctions**

**What do we actually do???**



# What do we call 'em?!

The concept to move toward more positive language was more than an effort to be politically correct!



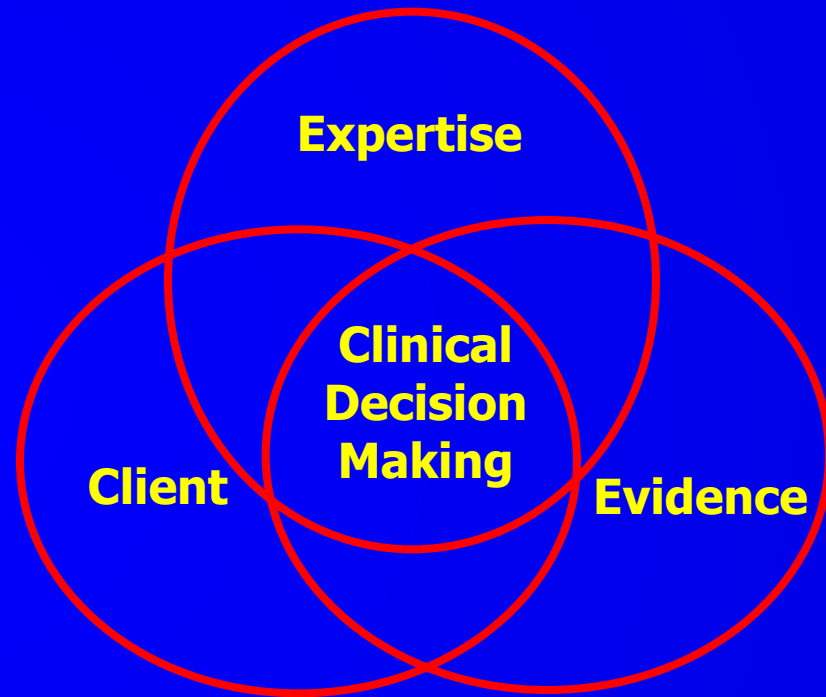




# Evidence-based Practice

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1. Client Evidence
2. Research Evidence
3. Professional Expertise



**Integration with Clinical Decision Making**

# Never Underestimate your Client!

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**Make your client aware of all options**



# Case Study

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We had the pleasure of seeing XXX for a comprehensive Mobility Assistive Equipment (MAE) evaluation. She is an 84 year old female with osteoarthritis, bilateral knee surgeries, right ankle surgeries, borderline diabetes, obesity, severe back and LE pain, peripheral edema in both LE, broken Rt ankle (difficulty in standing, unable to walk), and decreased sensation in Lf UE and Rt LE. These conditions result in her having significant limitations in all mobility needs both in the home and community. She currently uses Tracer EX2 manual wheelchair that is no longer appropriate in meeting her needs as it is falling apart, and too heavy to maneuver.

## the WHO 8-steps in Wheelchair Service Provision

| #  | Step                              |
|----|-----------------------------------|
| 1. | Referral                          |
| 2. | Assessment                        |
| 3. | Prescription                      |
| 4. | Funding and ordering              |
| 5. | Product preparation               |
| 6. | Fitting and adjusting             |
| 7. | User training                     |
| 8. | Follow-up and maintenance/repairs |

# *An OT taking wheelchair measurements*

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# *An OT supporting a wheelchair user while doing an exercise*

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# *OTs helping adults while doing wheelchair transfers on different surfaces, levels, & objects*

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# *An OT adjusting the wheelchair footrest for an older adult*

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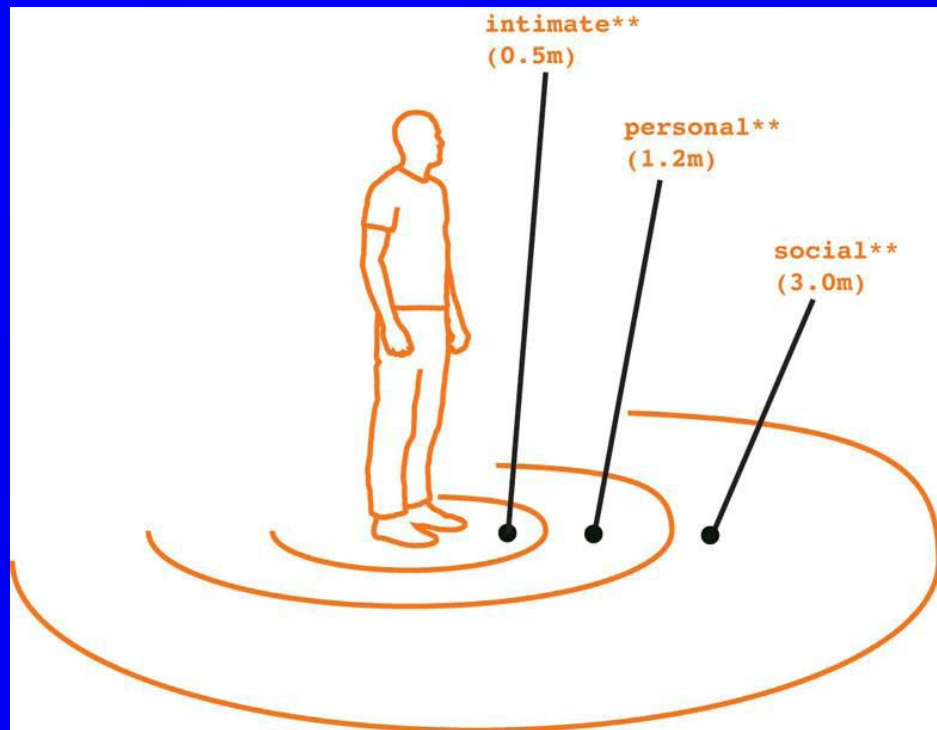


# Interview Skills

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## Physical Environment

- Room layout
- Minimize distractions
- Privacy
- Personal space
  - w/c is an extension of ones self



# Establish Therapeutic Rapport

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- **Respect**
- **Empathy**
- **Restatement what client has communicated to you**
- **Speak directly to the person**
- **Clearly identify self and professional role**
- **Hand shake?!!**
- **Do not make “assumptions”**
- **Respect cultural differences**





# Terminology



**Put the person first!**

- ❑ “person with a disability”

**Avoid outdated terms**

- ❑ (handicap, crippled)

**Say “wheelchair user”**

- ❑ (not w/c bound or confined to w/c)

**Avoid negative words**

- ❑ (suffering, victim)





# Getting Started

---

- **Ensure client's comfort**
- **Provide overview of visit with timeframe**
- **Document...but maintain adequate eye contact**
- **Direct questions directly to client**
- **Be objective-eliminate biases from observations**
- **Respond to your client in a way that shows you have heard what he or she has said**

# Active Listening

Remain quiet

Observe the client

Let the client talk

Listen to the words the client uses



## Nonverbal communication

Facial expressions

Eye contact

Body gestures

Posture



# Types of Questions



## Open ended

- ❑ “Can you tell me more about that?”
- ❑ Minimal Facilitators (i.e. “yes, uh huh, and?”)

## “Wh”

- ❑ Where, What, When, How, Why, Who

## Closed ended or Directive

- ❑ Checklists
- ❑ “Yes/No”

## Avoid

- ❑ Leading questions
- ❑ Multiple questions



# OT Documentation: SOAP Note

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**S:** Subjective (Diagnoses, Functional, Social, and Environmental History, Personal goals, etc. )

**O:** Objective (Physical Motor Examination)

**A:** Therapy Assessment (ADLs, IADLs, etc.)

**P:** Plan (Driving evaluation, SLP referral, Client Education and Follow-up visits, Mobility device; what to choose:

- Orthoses/Prostheses/cane/walker/crutches...
- Manual wheelchair
- Pushrim Activated Power Assist Wheelchair
- Scooter
- Power wheelchair (Power seat functions? Input/control device?)

# SUBJECTIVE???

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# Subjective Questions

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- **Chief complaint**
  - “How can I help you today?”
  - “Tell me why you came today?”
- **Medical History**
  - “Now I’d like to ask you about any medical problems that you have had in the past. How has your health been?”
- **Social History**
  - “Tell me about your living situation?”
- **Vocation**
  - “Do you work outside of your home?”
  - “What kind of work do you do?”
  - “Tell me what the job is like for you?”



# Subjective Questions (cont'd)

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- **Functional History**
  - “Tell me about your daily routine?”
  - “Describe what a typical day is for you?”
- **Current Assistive Technology**
  - “What type of equipment do you use to help with your daily routine?”
- **Environmental History**
  - “What kind of home do you live in”?
  - “How often do you fall”?
- **Transportation**
  - “Transportation resources?, accessible van?”
- **Personal Goals**
  - “What do you feel is most important to you when considering a mobility device?”

# Subjective Answers

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**AGE:** 84 years old

**OCCUPATION:** Does not work.

**PRIMARY DIAGNOSIS:** osteoarthritis, bilateral knee surgeries, right ankle surgeries, borderline diabetes.

**SECONDARY DIAGNOSIS:** Obesity, severe back and LE pain, peripheral edema in both LE, decreased sensation in Lf UE and Rt LE, & broken right ankle.

- **INSURANCE:** Full coverage if mobility device is justified!!!!
- **REFERRAL SOURCE:** Center for Assistive Technology
- **PRIMARY CARE PHYSICIAN:** Dr. XY
- **REASON FOR REFERRAL:** New Mobility Assistive Equipment (MAE)
- **TYPE OF CURRENT MAE:** Tracer EX2 manual wheelchair
- **HOURS PER DAY IN MAE:** 12 hours/day. She has a lazy-boy (recliner) chair at house.
- **AGE OF MAE:** She has been using the current wheelchair for 2-3 yrs

# Subjective Answers (cont'd)

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- **PROBLEMS WITH CURRENT MAE:** It is falling apart, cannot self propel (too heavy).
- **HEIGHT:** 5.4”
- **WEIGHT:** 250 lbs.
- **TRANSPORTATION RESOURCES:** Her sons and grandsons drive her all the time. They have both accessible van and Minivan
- **EDUCATION/EMPLOYMENT:** Does not work
- **LIVING SITUATION:** Accessible 2-story house with a ramp. She lives in the first floor. Lives with her husband and son (husband has heart issues, the son has bad back, and as a result both cannot help in transfers). Grab bars are installed in the bathroom close to the shower and toilet. She uses a chair while taking shower with no backrest, and handles located at the bottom (she reported that she has good balance when sitting on the chair while taking shower, but it would be great if she can get a shower chair with backrest)

# **XXX Goals for a New Seating & Mobility Device**

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- **To enhance her functional mobility within the home, independence, safety, and efficiency in conducting with all of her daily activities**
- **To be able to maneuver inside her house from her bedroom to other rooms and to get inside and outside the bathroom safely & independently**
- **To be able to go again to the mosque**
- **To feel more comfortable while sitting on her wheelchair**
- **To feel safer by reducing the number of the transfers that she has to do every day**

# OBJECTIVE???

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# Objective Questions

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## PHYSICAL MOTOR ASSESSMENT:

- UPPER EXTREMITY FUNCTION?
- LOWER EXTREMITY FUNCTION?
- POSTURE (SITTING & SUPINE)?



# Objective Answers

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## PHYSICAL MOTOR ASSESSMENT:

- **UPPER EXTREMITY FUNCTION:** MMT reveals 4/5 throughout. She is unable to fully abduct right shoulder to 90'. Tone is normal throughout. Sensation is decreased on the left UE.
- **LOWER EXTREMITY FUNCTION:** MMT reveals 4/5 throughout except right hip which is 2/5 due to osteoarthritis and pain. Tone is normal throughout. Sensation is decreased on the right LE.
- **POSTURE (SITTING & SUPINE):** Sits Symmetrically with good static and dynamic sitting balance. There is bilateral knee medial lateral instability. Her right LE is externally rotated at rest and she is unable to turn her right foot to midline.

# THERAPY ASSESSMENT???

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# Therapy Assessment Questions

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- ADL, IADL?
- Transfer status?
- Weight shift?
- Functional mobility?
- Community mobility?
- Cognition?
- Leisure?
- Home accessibility?

# Therapy Assessment Answers

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**ADL STATUS:** XXX reports to be dependent to modified independent, requires assistance, and performs most ADLs from a seated position. All activities require extra time; non-essential activities are often deferred if ambulation compromises her safety and exposes her to a risk for falling

- **Bath Safety Issues:** Dependent with assistance, and uses shower chair
- **Hygiene:** Dependent with assistance
- **Dressing:** Modified independent, and takes at least 30-45 minutes to finish
- **Self-Feeding:** Modified independent

# **Therapy Assessment Answers (cont'd)**

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## **IADL Status:**

- **Meal Preparation:** Modified independent from a seated position
- **Housecleaning:** Dependent and requires assistance
- **Laundry:** Dependent and requires assistance
- **TRANSFER STATUS:** Modified independent with lateral transfers, and requires assistance in stand pivot. Safety during transfers is compromised due to a history of falling (she fell down a week ago, and had to call the emergency to get her off the ground)

# Therapy Assessment Answers (cont'd)

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- **WEIGHT SHIFT:** She can shift her weight
- **Functional Mobility:** She relies on her manual wheelchair. She can barely stand, and is unable to walk (she has not been walking for about 2 years). She is unsafe while standing due to her broken right ankle, knee pain and peripheral edema bilaterally.
- **COMMUNITY MOBILITY:** She is getting pushed all the time in her manual wheelchair to move around in the community
- **COGNITION:** Intact
- **LEISURE INTERESTS:** Watching TV, playing puzzles, and likes to bake cakes
- **HOME ACCESSIBILITY:** Accessible

# PLAN???

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# Plan Questions

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## **EVALUATION PROCEDURES:**

- **CLINICAL TRIALS/SIMULATION?**
- **Devices to Try?**
- **Client Impressions?**
- **Home Assessment?**

# Plan Answers

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## Devices Tried:

**XXX was provided with an opportunity to try at first Group 3 Quantum 600 with no seat functions, and then she tried the Group 3 Permobil M300 multi-functions PWC. She was able to drive both the systems in a safe and effective manner within the clinic, corridors as well as maneuver in tight spaces such as the bathroom and elevator.**



# Plan Answers (cont'd)

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- **Client Impressions:** XXX reported that she was more satisfied with the performance of the Permobil M300 multi-functions PWC and wishes to pursue it as a reasonable alternative for safe and effective mobility within the home and community.
- **Home Assessment:** A visit to the home was conducted by our OT. Reports from the visit indicate that ??? is compatible and will fit within the environment.

# Elimination Process...Low to High AT

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# Justification Letter to Insurance

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**This equipment is needed for the following reasons:**

- She cannot ambulate even with the use of an assistive device due to her osteoarthritis, severe bilateral knee pain, bilateral peripheral edema, her broken Rt ankle, and obesity.**
- She does not have sufficient upper extremity function to self-propel an optimally configured manual wheelchair due to UE pain and fatigue.**
- She is not a candidate for a scooter as she would not be able to get benefit due to the limited static seat options/functions provided by the scooter, and because that she will not be safe during the transfers as observed in our clinic.**

# Justification Letter (cont'd)

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- The use of a powered mobility device will significantly improve her ability to participate in mobility related ADL and she has not expressed an unwillingness to use one.
- She is not a candidate for a Group 1 power wheelchair as she will use the device continuously throughout the day as well as on surfaces that a Group 1 power wheelchair is not designed for.
- A group 2 single power option wheelchair will not meet her needs of transferring safely and independently and therefore is not recommended.

# Justification Letter (cont'd)

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- A GROUP 3 Permobil M300 multi-functions PWC (tilt in space, recline, elevated leg rests, & seat elevator) is recommended as she has a mobility limitation due to osteoarthritis, severe pain in her UE and knees, limited ROM, fatigue, edema, obesity, and her condition is expected to progress.
- Power tilt-in-space and recline are necessary as she would be able to stay longer on her wheelchair in a comfortable way, and as a result that would reduce the frequency of transfers that she has to do every day.



# **Justification Letter (cont'd)**

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- **Elevating leg rests are necessary as she has edema, and the elevated leg rests in combination with tilt & recline help manage edema and elevate the legs above the heart.**
- **A seat elevator will allow her to transfer more safely and efficiently and will also allow her to reach and carry out tasks at different surface heights given her limited ROM.**

# The Winner is ...

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**Permobil M300 multi-functions PWC**

# Implementation Plan

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- The specifications of this prescription will be submitted to XXX's primary care physician and insurance carrier for authorization.
- Upon approval the specifications will be provided by our clinician and delivered to our clinic for fitting and delivery.
- Upon delivery, she will be trained to demonstrate safe and effective use.
- Follow-up appointments will be scheduled as needed to modify the equipment (maintenance) and to verify that it continues to meet her needs.

# Exemplars



## Clinical and Medical Case Reports & Studies



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Case Report

Sarsak HI. Cli Med Cas Rep Stu: CMCRS-122

### Mobility Assistive Equipment Evaluation for Polyarticular Osteoarthritis: Clinical Case Report

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Citation: Sarsak HI (2019) Mobility Assistive Equipment Evaluation for Polyarticular Osteoarthritis: Clinical Case Report. Cli Med Cas Rep Stu: CMCRS-122.

## Annals of Clinical Case Reports

Case Report  
Published: 16 Mar, 2020



### Wheelchair Evaluation Process for a Patient with Spinocerebellar Disorder: A Case Report

*Hassan Izzeddin Sarsak\**

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#### Abstract

This article reports a comprehensive wheelchair evaluation for a 48 year old female with spinocerebellar disorder resulting in complete quadriplegia. A thorough wheelchair evaluation process was conducted by an interdisciplinary rehabilitation team consisted of a physician, an occupational therapist, a physical therapist, and a rehabilitation technology supplier. The WHO guidelines for wheelchair evaluation process and the SOAP note documentation format were followed. This is a 46 year old who is in need of a new power wheelchair. This is needed because the current wheelchair is no longer functional and further modifications are not cost-effective and will not correct the problem. Our wheeled mobility and seating intervention team prescribed a new power wheelchair with multiple power seat functions as the most reasonable and cost effective wheelchair in meeting the patient needs, goals, and priorities.

**Keywords:** Spinocerebellar; Wheelchair evaluation; Interdisciplinary; Rehabilitation; Occupational therapy

# Take-home message!

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- OT has proven to be useful and effective and contributes significantly in providing properly fitted wheelchairs.
- OT applies intervention models that integrate the client, occupation, and environment.
- The inclusion of OT professionals to the existing interdisciplinary medical and rehabilitation team when working with wheelchair users and their families fosters collaboration and integrated intervention planning and improve their overall satisfaction.

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# Thank you...

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# Questions?

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