

Wheel chair a Freedom for living



WHEELCHAIR SERVICE & TRAINING FOR PATIENT WITH SCI: CRP BANGLADESH

Wheel chair a Freedom for living

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Wheel chair a Freedom for living

Objectives

- ❑ To give an overview of CRP wheelchair service and basic education
- ❑ To give brief discussion about wheel chair professionals practice in CRP.
- ❑ To give idea about wheel chair skills training and use for spinal cord injury patients



Content

- Background
- Wheelchair types
- wheel chair customization
- Wheel chair fitting
- Wheel chair skills training
- Wheel chair maintenance training and education
- Success story
- Study findings
- Chllengeses



Bangladesh where occupational performances and contexts are diverse!



Background

- ❑ Wheelchair is one of the most commonly used assistive device and possible best mobility solution for a person with disability.
- ❑ On the other hand, there is growing gratitude that Occupational Therapist has a significant role along with other professionals in wheelchair skills training.
- ❑ In rehabilitation centre, wheelchair skills are provided as a part of community re-integration process for people with spinal cord injury.



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- ❑ In Bangladesh, Centre for the Rehabilitation of the Paralysed (CRP) provides rehabilitation service along with medical treatment.
- ❑ It promotes the development of skilled personnel in health care and rehabilitation in the country.
- ❑ Bangladesh Health Professions Institute (BHPI) is an academic institute of CRP.



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- ❑ Here, Occupational Therapy Course is affiliated to Faculty of Medicine of the University of Dhaka and also approved by the World Federation of Occupational Therapists(WFOT) ensure standard Occupational Therapy education and practice around the world.



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- ❑ CRP Spinal Cord Injury unit is a 100 bed rehabilitation unit where multidisciplinary team based practice ongoing.
- ❑ Here, Occupational Therapists and Physiotherapist are Providing therapy and Wheelchair assessment, with Wheelchair Skills training, Wheelchair fitting check and finally follow up through home visit.
- ❑ Each year CRP provides approximately **255 wheelchairs only for Spinal Cord Injury patients.**



Basic education about wheel chair provided by BHPI

- In the first year Occupational Therapy academic curriculum students covers a module on Wheelchair (introduction, parts and purpose) with the
- During the 2nd year clinical placement, BHPI students get wheelchair skill training with the collaboration of clinician and educator.
- On the other hand, lectures are taken on wheelchair measurement with Practical demonstration.



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- In the 4th year curriculum , lectures are taken on advance level wheelchair skills with practical demonstration.
- Recently BHPI started 32 hours CPD course on wheelchair service provision with the help of expert clinician



Types of wheelchair provided by CRP

- Fixed wheelchair
- Folding wheelchair
- Three wheeler
- Tricycle
- Low Wheelchair
- Hemiplegic wheelchair



Four wheeler fixed wheelchair



It is sustainable due to its design

**Cost: 13000 BDT
(154.78 USD)**



Customized 4 wheeler (with Supportive seat)



Wheelchair with Tray

User can use its table in various purpose such as eating, reading, writing and hand activity



Wheelchair with umbrella stand



This wheelchair protect a user from rain



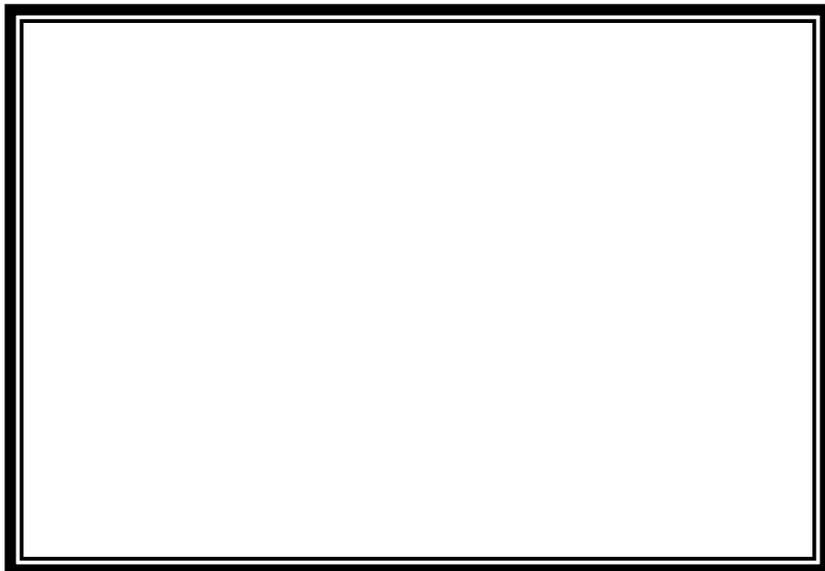
Modified Rim



Modified Toilet Pot



Four wheeler Folding Wheelchair



**Cost : 15000 BDT
(179.30 USD)**



Three wheeler



- Move easily; and speedily
- Easy to move within obstacle
- Cost: 13000BDT (154.78 USD)



Tricycle



- It is easy for moving with using less energy
- Easy for travel far distance within few minutes
- Front part is easy to open and keep separately
- Cost: 21000 BDT (249.17 USD)



Low Wheelchair



Benefits of low wheelchair

- It is Useful for doing ground level activity. Such as: cooking, washing, household chores, gardening, livestock caring etc.
- Specially design for female client who are living in rural area in Bangladesh and have to do house hold work at ground level.
- A large number of spinal cord injury patients of Bangladesh come from agricultural background and this wheelchair also helpful for farming activity
- Cost: 9000 BDT (106.78USD)

Tilting wheelchair



It is useful for the acute spinal cord injury patient who have postural hypotension.

Hemiplegic wheel chair

- It is useful for a person who have one hand function(stroke or amputee).



4-wheeler (for upper limb unilateral amputee)



- It is suitable for individual with one hand paralyzed or one hand amputee
- Cost : 14000 BDT (180.60 USD)



Sports Wheelchair

- It is not our own products
- We are using this Wheelchair for Wheelchair basketball.
- We do some modification on it according to users needs



Motorized Wheelchair

- It is easy to move from one place to another.
- Individual can easily move long distance with less effort
- It is also easy for individual with poor muscle strength in Upper extremity.



wheelchair customization

It start from appointment and referral

- Assessment
- Prescription
- Order
- Product preparation
- Fitting check
- User training
- Maintenance repair and follow-up



Wheelchair fitting check by clinician



Wheelchair skills training

Problems without skills

- Isolation
- Low self esteem
- Depression
- Dependence on family
- Extreme poverty

Benefit of skills

- Independent lifestyle
- less dependence on family
- Increased confidence
- Healthier lifestyle
- Brighter outlook for the future
- More motivated



Skills List

- Pushing posture
- Pushing forwards
- Pushing backwards
- Turning
- One handed pushing
- Spotting
- Flicking Casters
- Flicking over
- Line/rope/threshold
- Up/down ramps
- Up/down kerbs
- Down steps backward
- Back wheel balance
- Floor to chair
- Cultural skills
- Game ideas
- Learning resources



Pushing posture

- Hips as far back as possible – pressure lift and move head forward to reach this position
- Back as upright as possible



Pushing forward

The first push should be smooth and solid, ensuring that casters do not leave the ground



Pushing backward

- You will need to continuously look over your shoulder to make sure that your path is clear for your safety.



Turning

Depending on a persons environment there will be a different need for the turning technique that is most appropriate.



One handed pushing

- Banana pushing – by pushing on only one wheel the chair will move arc shape,
- Wall pushing – this is a good technique for moving about indoors. The starting position should be within arms reach of a wall then push on the wheel.



- Forearm pushing
- Cross pushing
- Hand swapping



Flicking Casters

This is a basic skill that will later be developed to allow access to more skills so the idea is to start at a very low level to increase chair users confidence



Continue...

- Make sure that you set the objective to only raise the casters an inch or so off the ground
- If they find this difficult then try pushing backwards and flicking forwards immediately without stopping.



Spotting

Spotting is when an able bodied person stands behind the wheelchair, this is to ensure the safety of chair users whenever they are doing a task where they could fall, they should have a spotter behind them if they feel they require assistance.



Flicking over line/rope/threshold

- When people are confident flicking their casters up it will be time to put it into practice while moving
- To start off easily they should just use a line that is painted on the floor such as one that has been marked out in the sports hall, so they can flick them up at the right time to clear the object



Continue...

- When going over the threshold need to have enough momentum prior to flicking the casters to get the big wheels over as well, if its found difficult then, can wait for their casters to land, lean forwards slightly and give another push to clear the object



Pushing up ramps

- Body should be positioned forwards with the chest on the knees if the ramp is too steep.
- The push rims should be gripped in a comfortable position when the elbows are bent then pushed until the arms are extended.
- If the chair user is finding it difficult to push up a hill because it is too steep then a zigzag approach should be used



Down ramps

- ❑ To avoid falling out of the wheelchair when going down a hill then lean backwards into the seat, for more security you can wrap your arm around a handle on the backrest then reach down to the wheel
- ❑ NEVER push down a ramp, only rest your hands on your push rims in order to control your speed.



Pushing up kerbs



Down stairs backward



Back wheel balance

- Back wheel balance is when weight is equally distributed across the axle enabling you to hold the casters off the ground
- Spotters are essential for this as while you are trying to find your point of balance there is a chance you will fall
- It is the same principal as flicking your casters but now instead of lifting them a couple of inches from the ground they will need to be lifted higher, at the same time as you flick you should arch your shoulders forward and keep looking ahead at all times
- Any corrective movement on the push rims should be MINIMAL, any big movements will throw you off balance



Continue...

- Put your chest on your knees, one hand on the rail and one hand on the push rim
- With the hand on the push rim start pushing on a small section of the push rim that is comfortable for you to reach
- With the hand that is on the rail you should slide this back but always keeping your grip tight



Floor to chair transferring

- ❑ **There may be occasions when you either fall out of your chair or you need to get out of your chair to do something, when you are on the floor you will either need to get back in your chair on your own or best advise someone on how to help you**





Wheel chair maintenance training

- Wheel chair maintenance training start from basic education about different parts of the wheelchair body, different bearing numbers and place where to repair.
- Our wheelchair is easy to repair in any rickshaw garage
- Clean regular wheel chair and cushion.
- Oil moving part of wheel chair.
- Pump up tyers if pneumatic.
- Tighten nuts and bolts if loos.
- Tighten spokes.
- Make regular clean rest and upholstery, cushion



Wheelchair skills training at different level of CRP

- ❑ **Student:** Students from Bangladesh health professions institute got wheel chair skills training from the collaboration with clinician and educators
- ❑ **Intern:** Intern also get hands on training on wheel chair measurement, prescription and wheel chair skills training from the experience clinicians.
- ❑ **For staff :** when a employee join in CRP he or she have to take part of wheel chair propelling session as a part of their induction program (aim of this session is to give the fillings of a wheel chair user)



Success story of Ruble

Ruble was 32 years young man who worked at abroad as a construction worker. Due to fall from height he got Spinal Cord Injury. which made him paraplegic. After injury he came to Bangladesh.

Due to lack of information he didn't got proper treatment and rehabilitation. Presser ulcer made his condition dangerous and again he lost his both lower limb. It takes 4years for him to sit in a wheel chair.

Considering all aspects of his grafted skin we made a customized wheel chair for him. Finally he is able to sit. His smiling face is the achievement of our team work.



Success story



Before



After





Community Use



Continous professional Development

- Recently clinician helps the BHPI to take a 32 hours CPD course on theoretical and practical training on basic level wheelchair service provision and the Content includes.....
- Assessing wheel chair user needs and providing wheelchair cushion
- Problem solving and simple modification follow-up assessment
- Basic wheelchair repair and maintenance
- Fabrication of counter cushion

Study Findings

- A study by Hossain S, Akter S, Nayan, JM (2018) '*Wheelchair Skills Capacity, Confidence And Performance of Manual Wheelchair Users with Spinal Cord Injury in Selected Communities of Bangladesh*' found that many people with spinal cord injuries are unable to perform some of the wheelchair skills that restrict them to participate in functional activities at their community.



Challenges

- Our wheelchair is too heavy approximately 30kg so it is difficult to carry.
- Low cost power wheel chair production for tetraplegia patient.
- Still we are unable to make sports wheel chairs.
- Our wheelchair height is too high that some times users feel difficulty to transfer from floor to wheelchair.
- Professionals are aware about basic level training now our current need is intermediate level training.



Continue...

- Turn over of trained staffs
- Lack of opportunity to promote community based W/C skills training
- No research and evaluation related with effectiveness of W/C training program
- Lack of funding clinical research regarding this field



For further information

- www.crp-bangladesh.org
- www.bhpi.edu.bd

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Thank You



Question?