MODULE 10:

Assistive Devices and Resources

Facilitator note: This module is a little different from the other modules. It can be delivered as part of the training to parents as a stand-alone session or integrated into one of the other modules, such as positioning. It can also be used as additional resource information for facilitators with useful top tips for providing assistive devices, particularly in poorer resource settings, where there are limited or no rehabilitation services available.

This Module is divided into two sections:
Section 1: Assistive devices
Section 2: References and resources

Outcomes of the module on Assistive Devices

- For project staff to understand lessons learnt on the provision of assistive devices in poor resource settings.
- Caregivers will understand what assistive devices are and how some children can benefit from locally produced aids.

Lessons learnt on effective provision of assistive devices

Lessons learnt are drawn from experience in rural Bangladesh, from literature available, and from direct correspondence with organisations working with assistive devices in low and middle income countries [1].

1. If you provide an assistive device you **MUST provide some follow up** to the family about how it can be best used and maintained. Research in Bangladesh [2] found that without follow up parents often did not use the assistive devices appropriately, or more commonly didn't use them at all! For example, corner sitting chairs were rarely used, in part because parents did not fully understand their benefits, and in part because the corner chair was of poor quality.

Photo: A poorly made corner chair without padding – never used!

2. Manage expectations from the beginning! It's important to take time explaining to parents that **Not ALL CHILDREN will benefit from assistive devices**, and it is not that every child will benefit from an expensive wheelchair!

3. Project staff need to build up a relationship with a local carpenter for making low cost simple assistive devices such as corner chairs. The quality of the equipment should be monitored by staff. If the devices are of poor quality we found that they were not used.

4. Do not prescribe indiscriminate assistive devices. This might limit functional performance. For example, a wheelchair might inhibit a child from trying or practicing walking.

5. Always assess the home environment before giving an assistive device. For example, a paper based chair is not appropriate in a rural village of Bangladesh because of muddy floor and tropical weather. It gets soaked with water easily and become unhygienic and unusable in a short time. If there is not enough space at home or outside to manoeuvre a costly wheelchair perhaps a cheaper alternative such as modified wooden chair is reasonable.

6. It is preferable to use local products to manufacture assistive devices so that people can mend when required locally. For example in Bangladesh wheelchairs were made with rickshaw wheels, and Motivation has used bicycle wheels in their Africa programmes. If there is any problem with wheels people can then get it easily repaired.

WHAT ARE ASSISTIVE DEVICES?

Materials

Pictures of children with different types of assistive devices.

Ask *What are assistive devices?*
Are you able to name some assistive devices?

Explain that anything that assists a person with a disability in completing everyday activities independently is an 'assistive device'. This is important not only for someone's independence, but for their integration and access into society. Assistive devices can come in all sorts of shapes and sizes.

Ask Are you able to name some assistive devices? This is not an exhaustive list but some examples are:

- Glasses
- Walking frame
- Wheelchair
- Adapted cutlery
- Toileting Aid
- Walking stick
- Communication board

Activity Post up pictures of children with assistive devices. Ask parents: *What can you see in these pictures? What materials are some of the assistive devices made of? Why do some children have certain types of devices and not others? Are there some which appear to be made locally of low cost resources? Are there any children without 'assistive devices'? Why?*

Cover in the discussion:

- Some children won't benefit from having any kind of 'assistive device'.
- Identify the individual needs of each child and to see whether the use of assistive devices would assist in encouraging independence.
- Each child's abilities are different, and different assistive devices should be used. E.g. a child who has some difficulties in walking may not require the use of a wheelchair, but will benefit from the use of a walking stick or frame.

Photo Left: Child using walking stick, Bangladesh

Photo Right: Child in wheelchair, Bangladesh,

Photo Below: Child in special sitting chair

Diagram left: Home-made assistive device to help with toileting. Reproduced with permission from CBM International

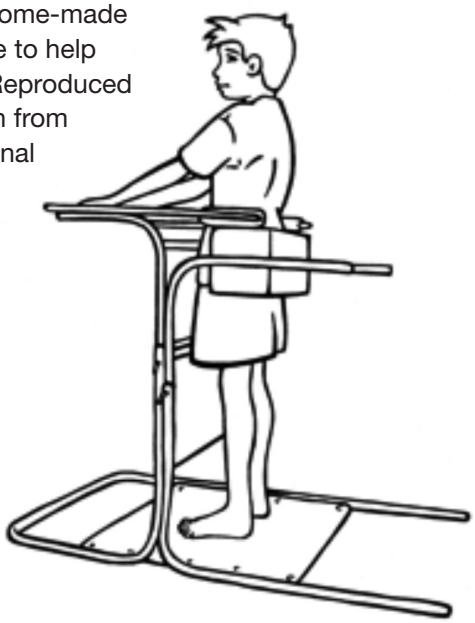


Photo above: Child with standing frame

Photo above: Child walking with locally made parallel bars

Photo above: Child with home-made plank of wood to aid with standing

BENEFITS OF ASSISTIVE DEVICES

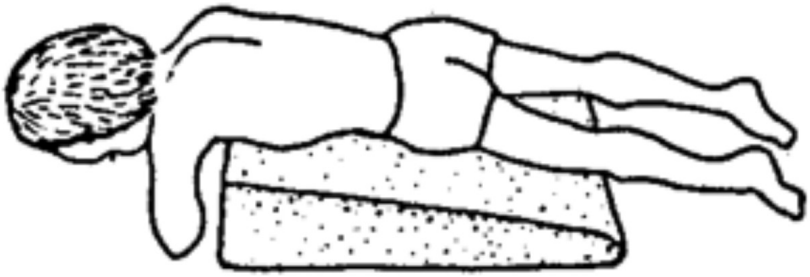
1. Standing Frames

Ask *What benefits do you think a standing frame can bring?*

In discussion cover the following points:

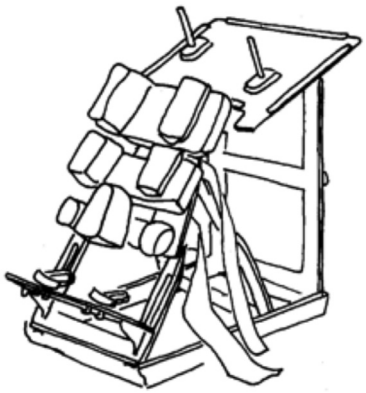
- Standing Frames assist in providing support for children with disabilities in standing.
- Standing is an important position for children with cerebral palsy to be in. Remind the group of the positioning module and the benefits of standing.
- Many children with disability who are unable to stand spend their time lying or sitting. By placing a child into a standing frame, he/she is able to observe the world around them from a different perspective, they are able to engage and interact with others from a different level. This offers broader stimulation for the child, and will contribute to overall social and cognitive development.
- Prone stander: child leans forward on the device which is angled slightly forward. Good for children with lower levels of ability, who struggle to keep their body/head upright or who have spinal deformities. The position will make it easier to lift the head and trunk.
- Discuss the 'good' and 'poor' positions in the diagrams below

Child is unable to lift head up in prone



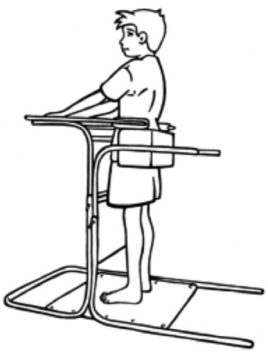
Head control easier on prone standing board

Prone stander



Child standing badly in an upright standing frame

Child standing well in a standing frame



2. Supportive Seating – corner seat/special seat or 'CP chair'

Ask *What benefits can a child gain from sitting in a supportive seat?*

Photo: Example of a seat made from Appropriate Paper Technology (APT)[1]

In discussion cover the following points:

- Prevents or slows down the development of contractures or deformities which can disable the child further. It can also help the bones to grow strong.
- Spending a lot of time lying down or sitting in a slumped posture is unhealthy for everyone. Upright sitting can help to maintain a person's health by improving breathing, digestion and blood circulation
- The child is able to make eye contact with those around him/her. This makes verbal and non-verbal communication easier and contributes to dignity and self-esteem.
- Providing a child with support while sitting can help them to control their head, hands and to concentrate for longer. This can have a positive effect on the following activities: self care (eating, toileting, dressing); playing; learning; reading; writing
- In order to benefit from a seat, the child should be supported to sit upright. Use the diagram below to cover main points. This covers material from the positioning module.

- **Pelvis:** upright
- **Hip joints:** 900, knees slightly apart
- **Knees and ankles:** 900
- **Back:** up straight
- **Shoulders:** relaxed with arms free to move
- **Head:** upright in the middle, chin tucked in
- **Side view:** Ear, shoulder, hip – in line
- **From the front:** Eyes, shoulders, hips, knees are all level

A corner seat may be used for children with a higher level of ability as it gives less support. Useful for young children up to five years old for floor activities or for long-sitting with or without leg splints.

1 For more information on Appropriate Paper Technology (APT) for making assistive devices please see http://www.paperfurnitureenterprise.com/

3. Wheelchairs

Ask *How can your child benefit from using a wheelchair?*

- Provides mobility for children who are not otherwise able to move around independently.
- Children may be able to go to school
- Get out in the community to play with other children,

However remember that not all children with difficulties with mobility will benefit from a wheelchair.

Explain In order for someone to gain maximum benefit from a wheelchair, it must be appropriate for them. The World Health Organisation (WHO) has defined an appropriate wheelchair as one that:

- Meets the wheelchair user's needs
- Can be used in their home environment
- Fits well and provides good support
- Is safe and lasts well
- Is available and can be maintained at an affordable cost.

Wheelchairs come in all different shapes and sizes, and should be properly prescribed and fitted to ensure it meets the child's needs. This requires an assessment by someone who is trained to provide appropriate seating. If you feel your child needs a wheelchair, consult a therapist or wheelchair service.

Children who are unable to sit upright on their own, require special adaptations to a wheelchair which will support them to sit upright. Putting them into a standard wheelchair in which they sit badly, will cause further disability.

4. Walking Frame

Ask *What benefits can they see from using a walking frame?*

A walking frame is useful for children who will are able to stand on their own, but require assistance to take steps and walk. The use of the frame will allow the child to walk independently and provides mobility around the community. A walking frame brings the child to the same level as his/her peers and allows him/her to interact with those around them.

5. Glasses

In Bangladesh 180 children with cerebral palsy were tested for visual impairment. An estimated 32% were visually impaired, of which 18% required glasses. For the remaining children, the problem was associated with processing vision in the brain (REF).

Photo: Child with cerebral palsy having an eye test, Bangladesh

6. Adapted cutlery

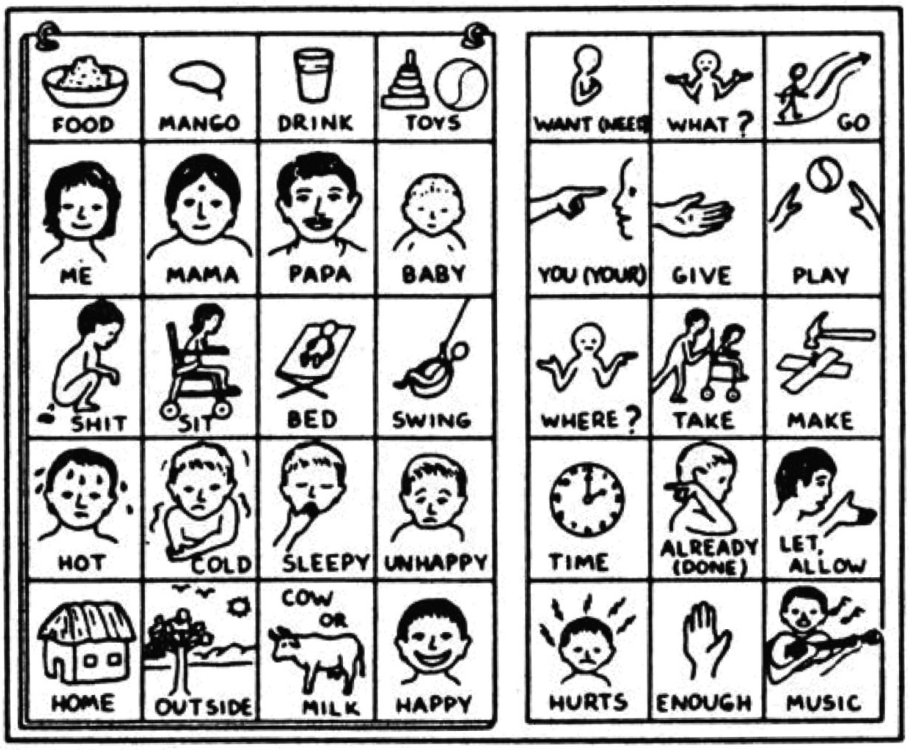
Ask *When would you use adapted cutlery?*

For a child who struggles to hold a spoon or fork. The handle is built up to make it easier to hold. If completely unable to grip, the child's hand could be gently held in place by tying a scarf around the hand.

7. Communication boards

Ask *When might you use a communication board and why?*

- Communication boards offer an alternative communication method to children who are unable to communicate verbally. This is generally in the form of pictures
- A communication board offers children a way to communicate with their peers
- Enables them to express themselves and be better understood by others.
- Communicate is a great tool for empowering children by allowing them to interact with others, thereby providing an avenue for inclusion in the community.



References

1. Motivation, *Motivation is an international NGO that support people with mobility disabilities. It has specific expertise in designing low cost wheeelchairs for use in developing countries.* More information available at **www.motivation.org.uk**. 2013.
2. Bedford, J., et al., *Reasons for non-uptake of referral: children with disabilities identified through the Key Informant Method in Bangladesh*. Disability & Rehabilitation, 2013(0): p. 1-7.

SECTION 2 – RESOURCES AND REFERENCES

This list is not exhaustive but covers the key references and resources which were used to develop and adapt this manual. In some cases references were used to inform for more than one module.

General Core References

1 Badas, et al. *Community Mobilisation through women's groups to Improve the health of mothers and babies*. 2011; Available from: **http://www.wcf-uk.org/attachments/article/363/Good%20Practice%20Guide.pdf**.

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24. WHO, *Let's communicate: a handbook for people working with children with communication difficulties 1997 at* **http://www.who.int/disabilities/publications/care/en/index.html**

Module 5

25. The Path Resource Centre, *Toilet Training Your Child*, The Path Resource Centre (From the original material by the Caribbean Institute on Mental Retardation and Other Developmental Disabilities), Editor. No date: Kingston Jamaica.
26. Indian Institute of cerebral palsy, *Dressing for the child with cerebral palsy* 1995 at **http://www.iicpindia.org/**. This site has some useful simple resource booklets on different aspects of caring for a child with cerebral palsy.

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Modules 8-9

These are two quite overlapping Modules which address Disability and Rights

39. CREATE. *This is a non-government organisation based in Pietermaritzburg, South Africa which focuses on advocacy for disability rights and community based rehabilitation. They have a number of resources related to disability and rights available at* **http://www.create-cbr.co.za/**.
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Monitoring and Evaluation

These participatory M&E references informed all modules.

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Original Hambisela References

Ideas from many sources have helped us to develop the Hambisela programme. The following material and references have been particularly helpful, either as sources or as inspiration on how to present training, and we gratefully acknowledge their use. In many cases we have been given permission to use photographs. Where permission could not be obtained, the faces have been re-touched in order to protect identity.

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- "The Education of Mid-Level Rehabilitation Workers", World Health Organisation, Geneva (1992).
- "Disability Prevention and Rehabilitation in Primary Health Care – A guide for district health and rehabilitation managers", World Health Organisation, Geneva (1995).
- "Disability Prevention and Rehabilitation – A guide for strengthening the basic nursing curriculum", World Health Organisation, Geneva (1996).

Additional Useful Websites for Accessing Reources

EENET (Enabling Education Network) website **http://www.eenet.org.uk/**
SOURCE **http://www.asksource.info/res_library/disability.htm**
MAITS at **http://www.maits.org.uk/**. MAITS exists to empower education and health professionals to enhance and develop the services they provide to individuals with disabilities in resource-poor settings through sharing knowledge and practice.