Mobility Aids For Children with Cerebral Palsy

Ling Sui Hui
Physiotherapist
Lau King Howe Memorial Children Clinic, Agape.

Children with cerebral palsy are often prescribed Mobility & Seating Systems (MSS).

WHY?

Aims:
- to assist in daily activities
- to improve posture and general health
- to prevent muscular-skeletal complication
- to prevent aspiration

The Challenges in District/Rural Malaysia
- Not readily available - need to be flown/shipped in
- Costly (at least RM4000-8000)
- 38% of Malaysian family has monthly income < RM3000
- Adult wheel chairs
- Imported systems may not suit the child
  - size, child grows, material/weather
- Less than 5 between 1998-2004 (150+ children)
- Sarawak - mix of urban, suburban and rural areas

MSS Project in Sibu, Sarawak

...... started with a person with dedicated and kind heart

Mr Tatsumi Kondo
(18 April 1965 - 8 January 2010)

Volunteer physiotherapist under Japan International Corporation Agency (JICA) 1996 - 2000

- Inspired by Children with CP without any systems, lying on the floor
- Learnt carpentry for 3 years in Japan
- Back to Sarawak in 2004

http://www.theedgedaily.com/cms/content.jsp?id=com.tms.cms.article.Article_af703730-cb73c03a-1b092820-e338574e
**Tatsumi Kondo Memorial Workshop**

- works with paediatrics & physiotherapists
- transferring skills to employed workers
- using locally available materials:
  - wheelchair, wood, cushion
  - some 2nd hand buggy chairs
- subsidized rate by ACSNS, Agape Centre

**Referral System**

LKH MCC receive referral from multi-sources:

- Hospital
- Parents
- School
- NGO (Non Governmental Organization)
- PDK (Pusat Pemulihan Dalam Komuniti)

**Financial Assessment**

LKH MCC Nurses (DHO) + ACSNS Staff (NGO)

- 50% by ACSNS Sibu
- 50% by Parent
- NGO
- Donor
*By installment, if necessary
*Sometime, fully paid by JKM/JPA

**Assessment**

- MDT Assessment
  (Pediatrician/Doctor, PT, Nurses, +/-OT)
- Measurement
  (PT, Workers from ACSN)
- Dispenser + Fine-adjustment
  (PT, Workers from ACSN)

**Modified Wheel Chair**

Rehabilitation & Mobility Aids Workshop
custom-made for the children

**Modified Wheel Chair**
Wooden Chair

Corner Chair

Corner Chair

Buggy Chair

Buggy Chair

- Wooden Chair
- Modified WC
- Buggy Chair

To help the child function better (reading, writing, drawing & eating) in an upright sitting posture.

To go outside the room or house.

Rehabilitation & Mobility Aids Workshop custom-made for the children
Standing Frame ~Supine Board~

To help child to have sensory input of the lower limb, proper standing posture & to stretch the lower limbs.

Standing Frame ~Prone Board~

Standing Stool

To stretch the cuff muscle

Standing Stool

Climbing Bar

Rehabilitation & Mobility Aids Workshop custom-made for the children
Objective of the Study:

- to document the effect of systems on time spent by children sitting up and being outdoor
- to determine the usefulness of systems for children and their families
- to assess the feasibility of this partnership program

Design & Method:

- Retrospective audit
- Used MSS for at least 3 months between July 2004 and September 2008
- 5-point Global Parental Perception Questionnaire

Sitting Up Time (in a day), n = 73

<table>
<thead>
<tr>
<th>Before systems available</th>
<th>After systems available</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt; 4 hrs</td>
</tr>
<tr>
<td>Never</td>
<td>8</td>
</tr>
<tr>
<td>&lt; 4 hours</td>
<td>49</td>
</tr>
<tr>
<td>4-8 hours</td>
<td>13</td>
</tr>
<tr>
<td>&gt; 8 hours</td>
<td>3</td>
</tr>
</tbody>
</table>

Significant numbers improved in sitting up time (exclude > 8 hours group), p = 0.031, Fisher Exact test

Bringing Child Outside the House / "Bilik", n = 51 (for BC & MWC only)

<table>
<thead>
<tr>
<th>Before systems available</th>
<th>After systems available</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Never / Monthly</td>
</tr>
<tr>
<td>Never / Monthly</td>
<td>21</td>
</tr>
<tr>
<td>1-2 x weekly</td>
<td>15</td>
</tr>
<tr>
<td>Daily</td>
<td>15</td>
</tr>
</tbody>
</table>

Significant numbers improved being outdoor (exclude Daily group), p < 0.001, Fisher Exact test
Sit longer

Amongst those who paid for the system in full: (n=47)

Recommended MSS for other children with similar condition? (n=73)

Easier UL physio
Easier LL physio
Sit better
Sit longer

Sit better

Smiles/Happier

THANK YOU