TechKids and TechTeens: Introducing technology today to create greater independence tomorrow
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Introduction

The Assistive Technology Program at the Ottawa Children’s Treatment Centre (OCTC) provides specialized service to children and youth up to the age of 18 years across Eastern Ontario. The program is comprised of three teams: the Seating and Mobility Service, the Clinic for Augmentative Communication (CAC), and Technical Services.

The program identified that the assessment, prescription and training of power mobility (PM) and/or augmentative communication (defined as assistive technology (AT)) for the purpose of this poster, is a practive and evolving process, involving the client, family, various clinicians and vendors. With the advancement of technology, complex AT systems are being explored and prescribed for children and youth with multiple needs, which potentially allow for independent participation in all aspects of daily life. However, due to the existing structure of the Assistive Technology Program, limitations in service delivery are evident in:
- lengthy waitlists for evaluation;
- minimal resources for long-term training and followup in the community to refine skills, and ensure maximal and safe usage of the AT.

The camp was developed by the Assistive Technology Program to provide an intensive week-long program for children and youth to explore, learn and integrate AT in a realistic context. Two pilot years were conducted at OCTC.

Targeted Clientele

- Clients were recommended for participation by primary therapists within the Assistive Technology Program.
- Profiles of potential campers were reviewed and invitations to participate in camp were based on the following eligibility criteria:
  - school-aged
  - complex physical disability presenting with motor and/or communication impairments
  - ability or potential to direct own care and capacity to participate and engage in a group activity
- Exclusion criteria:
  - unstable medical status
  - major pain issues which interfere with daily functioning

Table 1: Camper Demographics

<table>
<thead>
<tr>
<th></th>
<th>2011 (n=14)</th>
<th>2014 (n=12)</th>
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</thead>
<tbody>
<tr>
<td>Age</td>
<td>7 (5-10 years old)</td>
<td>3 (5-15 years old)</td>
</tr>
<tr>
<td></td>
<td>5 (11-15 years old)</td>
<td>12 (11-15 years old)</td>
</tr>
<tr>
<td>Gender</td>
<td>Male</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>12</td>
</tr>
</tbody>
</table>
| Diagnosis
  - Cerebral Palsy        | 2 (GMFCS Level II) | 6 (GMFCS Level II) |
  - Other                  | 6 (GMFCS Level IV) | 1 (GMFCS Level IV) |
| Other                  | 1 (Cerebral Dysplasia) | 2 (Residual/motor, Speech Language Pathologists) |
| AT Equipment
  - Power Mobility        | 6 (client-owned) | 10 (client-owned) |
  - 6 borrowed            | 4 (client-owned) | 3 (client-owned) |
  - 1 ambulatory 1            |                 |
| Speech Generating Device (SGD)
  - 2 client-owned         | 10 verbal campers | 10 verbal campers |
| - 2 client-owned         | 10 verbal campers | 10 verbal campers |
| Computer System (adapted/hardware/software)
  - 2 client-owned         | 8 (client-owned) | 3 (client-owned) |
  - 3 borrowed             | 6 (client-owned) | 7 (client-owned) |
|      - no adaptation required |                 |  

Table 2: AT Level of Attainment

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<tr>
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<th>2014 (n=12)</th>
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<tr>
<td>PM</td>
<td>referral for PM evaluation</td>
<td>referral for PM evaluation</td>
</tr>
<tr>
<td></td>
<td>power add-on device</td>
<td>power add-on device</td>
</tr>
<tr>
<td></td>
<td>prescription of PM</td>
<td>prescription of PM</td>
</tr>
<tr>
<td></td>
<td>not eligible for PM, re-eval in future</td>
<td>not eligible for PM, re-eval in future</td>
</tr>
<tr>
<td>CAC</td>
<td>referral to CAC for evaluation</td>
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GAS GOALS

At the completion of the camp week, campers were scored on their individualized GAS goals in the areas of power mobility, communication, socialization and/or selfadvocacy. A total of 25 goals were scored in the 2011 camps and 54 goals were scored in the 2014 camps. A score of 0 to 2 was noted to reflect the outcome of camp intervention (Table 2). In 2011, 64% of GAS scores were at a level of 0 or higher, and in 2014, 44% of GAS scores were at a level of 0 or higher (Figures 1 and 2).

RECOMMENDATIONS FOR ASSISTIVE TECHNOLOGY FOLLOW-UP

Based on clinical observations at the camp, Table 3 depicts recommendations follow-up for the campers in the areas of power mobility and augmentative communication through OCTC’s Assistive Technology Program.

Table 3: AT Recommendations

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SUBJECTIVE FEEDBACK

Campers: self-reported enjoyment of outings and activities, and exposure to new technology.

Families: pleased with camp’s focus on independence and life skills; relayed that campers greatly enjoyed getting together with peers, appreciated that therapists could gain a better understanding of the child’s functional usage of AT.

Clinicians: camp was an “eye-opening” experience to observe their clients’ usage of devices in the “real world,” some staff reported difficulty limiting their assistance and remaining in a passive role while campers engaged.

Discussion

CAMP IMPACT ON SERVICE DELIVERY

• The TechKids and TechTeens camp allowed for comprehensive clinical observations regarding campers’ fatigue levels, attention span, motivation and usage of AT in various environments. It also served to expedite the process for assessment and training with AT. As such, clinicians acclimated if AT prescription was warranted, if further training was required, it changed the existing AT plan to become an impairment, or if re-assessment and training should be re-considered in the future.

• The camp also provided opportunity for thorough screening of potential client referrals to OCTC’s Assistive Technology Program. This screening process contributed to future planning for AT equipment and staffing resources, and decision-making regarding waitlist management.

NOTABLE CHALLENGES

• Environmental barriers and safety risks were identified in accessible public facilities (e.g., no automatic door openers, stairs proximal to doorways).

• Observed limitations of AT in public settings (e.g., insufficient volume of SGD, breakdown of AT devices, inexperience of the public interacting with SGD users).

• Scheduling and duration of activities were often adjusted to accommodate the extended time required for some campers to ‘use’ their AT for mobility, communication, and/or to practice selfadvocacy skills for the purpose of directing their own care.

GROUP DYNAMICS

• Campers in socialization were identified:
  - campers’ selfinitiated communication was often directed towards staff
  - conversations between peers were typically superficial or staff facilitated
  - some campers demonstrated inappropriate physical and social interactions with staff and unfamiliar persons.

• Some campers had limited face-to-face interactions with their peers (may be due to required assistance by staff for ADL’s, physical boundaries of AT).

• Improvement in activity performance was noted for campers when similar goals were paired together, or when campers were provided with mentoring opportunities.

UNANTICIPATED OUTCOMES

• Camp provided information regarding other medical and functional/ADL concerns that were relayed to campers’ families, and therapy/medical teams.

LIMITATIONS

• GAS goals were initially developed based on clinician’s understanding of campers’ functional status in a clinical or school environment. The goals were revised at the end of the first day of camp to reflect the functional status in a full day community setting.

• GAS goals for writing activities were difficult to score as there were insufficient opportunities to provide practice within a one week camp.

CONCLUSION

Outcomes of camp suggests that greater emphasis should be placed on assessment and training of AT in authentic settings for children and youth with complex needs, to ensure appropriate prescriptions, and long-term functional usage of AT for the purpose of directing self-care, community integration and independent living.

Use of AT devices in a group community full-day setting provides a more accurate representation of skill level than clinical, school and home milieu.

Group format for AT assessment and training is a more effective use of resources.

Future Directions

• Incorporate community-based training session(s) as part of AT service delivery for individual clients.

• Secured funding for an annual summer camp program for additional attendant care support.

• Include speech language pathologist, social worker and psychologist to facilitate peer interaction/socialization component of the camp.

• Offer follow-up group sessions to address safe driving and use of SGD in community settings.

• Creation of a formalized feedback form to send to campers and their families.

References


Acknowledgements

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