The Canadian Association of Occupational Therapists (CAOT) believes that all Canadians need access to appropriate assistive technology. This will allow them to engage in and achieve their desired potential in life’s occupations. Appropriate use of assistive technology can promote independence and health. Occupational therapists have expertise to assist Canadians with selecting, training and using assistive technology, which will facilitate their occupational performance.

Recommendations for occupational therapists:

1. Implement a client-centered process that considers the interaction of the client, their occupations, and environments in the recommendation of assistive technology.
2. Educate Canadians on the benefits assistive technologies have in promoting health and well-being.
3. Promote the use and social acceptance of assistive technologies.
4. Advocate for access to, and funding for, all aspects of the assistive technology acquisition process, including assessment, purchase, training in device-use and follow-up, across all sectors and regions of Canadian society.
5. Be knowledgeable of the ethical use of assistive technology, particularly with regard to technology that has the potential to limit the client’s freedom (e.g., restraints, pervasive computing technology), and advocate for the ethical application of this technology, balancing the right of the client to independence with the need to enhance their safety.
6. Conduct and share results of research regarding the development of assistive technology and the evaluation of the outcome of assistive technology use in daily life.
7. Educate Canadians of their right to access environments, devices, and services under relevant legislation.

Initiatives

To increase access to assistive technology, CAOT will:

1. Promote awareness of assistive technology and its influence on occupational performance to consumers and other stakeholders, such as older adults, persons with disabilities, caregivers and other health professionals, educators, employers, policy makers, and funders.
2. Work in collaboration with other national groups to advocate for greater access to funding of assistive technology and related training and follow-up. CAOT will advocate
for more consistent access to assistive technology funding across the country to minimize the discrepancies that currently exist for such access. CAOT will also advocate for funding for devices such as electronic aids to daily living that are currently not supported by provincial/territorial funding plans.

3. Advocate for the participation of occupational therapists in a continuum of health services that incorporate assistive technology services and products including: primary health, health promotion, home and community care, as well as in specialty assistive technology clinics.

4. Provide continuing professional education and practice resources to support the continued professional development of occupational therapists in the area of assistive technology.

5. Promote research in the evaluation of assistive technology including access, utilization, and health-related outcomes.

Background

1. Assistive technology is any device or product that is useful for a person’s enhanced functioning and participation (Scherer, 2001). These products include devices that are designed or modified specifically for individuals with disabilities and those which are commercially available to the general population, which are also useable by persons with disabilities (WHO, 2001). Assistive devices can range from low technology devices that are relatively simple to construct and use, such as communication boards and dressing aids, to more complex high technology devices such as powered wheelchairs and myoelectric prostheses (Cook & Miller Polgar, 2008). Assistive technology includes the promotion of environmental access for all persons, including those with disabilities. Judicious use of assistive technology can minimize the need for assistance from another individual and may enable individuals with disabilities to remain in their homes.

2. Research has suggested that an individual’s health and well-being are influenced by his/her ability to engage in life’s occupations (Vrklijan & Miller Polgar, 2001). Withdrawal or changes in occupation can lead to increased dependency, lack of confidence, and depression. Conversely, it has been proven that restoring an individual’s ability to function independently and exercise choice and control over his/her daily activities increases productivity and life satisfaction (Law, Steinwender, & Leclair, 1998).

3. Assistive technology can play a major role in enabling a person to engage in his/her occupations of choice and participate fully in their community (Miller Polgar, 2001). For example, the appropriate use of assistive technology promotes independence (Dahlin Ivanoff & Sonn, 2005) and enables participation in occupations through augmentation or replacement of sensory, mobility, communication, manipulation, or cognitive functions (Cook & Miller Polgar, 2008; Auger et al., 2010; Batorowicz, McDougall & Shepherd, 2006; Huber et al., 2008).

4. Occupational therapists are graduates of accredited university programs in Canada and are regulated professionals in all 10 provinces. They have expertise in the area of occupational performance. Occupational therapists enable individuals of all ages, groups, and communities to develop the means and opportunities to identify, engage in, and achieve

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desired potential in occupations of life (CAOT, 2002). They work to maximize productivity, reduce lifestyle restrictions, and avoid dependency in activities involved in earning a living, volunteer work, homemaking, leisure, and personal care.

Occupational therapists’ understanding of the interaction of personal abilities, environmental factors, and desired occupations influence occupational performance. Assistive technology is a component of the environment that facilitates occupational performance (WHO, 2001). This integrated perspective makes occupational therapists an important member of an assistive technology development team (Cook & Miller Polgar, 2008). Occupational therapists’ knowledge of activity analysis makes a significant contribution in the development of technology that is useable for the intended population.

Occupational therapists apply a client-centred philosophy to their practice. This philosophy is relevant to assistive technology services by addressing the ethical issues relevant to the client’s rights to privacy, freedom from restriction of movement, and ability to direct their occupations. Assistive technology has the potential to enable greater freedom, privacy and choice, but it can also be restrictive. Ethical provision of assistive technology balances the client’s rights with rights of their caregivers, community, and society (Astell, 2006; Cook, 2009).

5. Occupational therapists have expertise in assessing clients for assistive technology and outlining recommendations of devices/modifications that meet the needs of the client within their environment (Petty et al, 2005). They provide training, support, and fine-tuning to ensure fit between the person, the technology, and their occupations (Miller Polgar, 2001; Hastings Kraskowsky & Finlayson, 2001).

Occupational therapy assessments for assistive technology involve a review of the client’s occupational roles, physical and cognitive abilities, as well as preferences and intended use of the technology. The client’s receptiveness to the device/modification and their social, cultural and physical environment are important factors that are considered. A trial is often recommended for complex devices to ensure the suitability of the technology for the client’s needs. Occupational therapists provide instruction in the use and proper care of assistive technology, as well as inform the client, and others involved in the use of the technology, how it promotes independence and safety in occupational performance. The Human Activity Assistive Technology Model (Cook & Miller Polgar, 2008) articulates a useful process to guide the assessment, identification/recommendation, fitting, and evaluation of assistive technology services.

6. Studies have indicated many individuals do not have the use of available assistive technology that would help them attain their desired potential in daily occupations. Reasons may include:
   i. Cost of the technology
   ii. Lack of outside funding from sources such as government programs or third-party payment systems.
   iii. Limited access to vendors who sell assistive devices particularly outside large metropolitan areas.

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iv. Limited access to occupational therapists and other experts for assistance in the selection and use of assistive technology mainly in rural and remote areas.

v. Lack of recognition of the need or the availability of assistive technology (Copley & Ziviani, 2004; Miller Polgar, 2001).

vi. Fear of stigma associated with the use of assistive technology (Miller Polgar, 2010).

vii. Provision of assistive technology that is not useful or desired by the client.

7. High rates of discontinued use of owned assistive technology have been reported for the following reasons (Reimer-Weiss & Wacker, 2000; Scherer et al., 2005):
   i. Personal issues:
      a) The device is no longer needed because the client’s condition has either improved or declined.
      b) The client never wanted the device in the first place (Fisk et al., 2009).
      c) The client does not have the opportunity for effective training in the use of the device. d) Client (including caregivers) was not included in the device recommendation process
   ii. Device issues:
      a) Devices do not provide the type or extent of assistance required (Mann, Hurren, Tomita, 1993)
      b) The device is unreliable.
      c) The device is difficult to use.
      d) The device cannot be used across multiple environments or the device does not work well in the client’s primary environment (Hastings Kraskowsky & Finlayson, 2001).
      e) The device is costly to maintain and/or repair (Fisk et al., 2009).

8. Research is needed to develop evidence-based practices that inform effective use of assistive technology (Lenker, 2005). While there are continued efforts to establish a strong evidence base to support assistive technology provision, several studies demonstrate the positive influence of assistive technology on occupational performance. These include: greater community mobility following power wheelchair acquisition (Auger et al., 2010, Sonenblum et al., 2008), integration of children with communication disorders into a community activity (Batorowicz et al., 2006), improved activities of daily living (ADL) with the use of devices that aid vision in the presence of age-related macular degeneration (Dahlin Ivanoff & Sonn, 2005), and satisfaction with occupational performance following use of powered mobility (Buning, Angelo & Schmeler, 2001) such as electronic aids to daily living (Jutai et al., 2000; Ripat, 2006) and closed circuit televisions (Huber et al., 2008).

9. Development of reliable instruments for the evaluation of device use and outcomes are needed to develop the evidence-base supporting assistive technology (Furher et al., 2003). Currently, non-device specific outcome measures have been developed for the evaluation of user satisfaction (Quebec User Evaluation of Satisfaction with Assistive Technology, Demers, Weiss-Lambrou & Ska, 2002), psychosocial impact (Psychosocial Impact of Assistive Devices Scale, Jutai & Day, 2002), and family impact (Family Impact of Assistive Technology Scale, Ryan, Campbell & Rigby, 2007). Evaluation of outcomes of mobility device use are also

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available including the Wheelchair Outcome Measure (Mortenson, Miller & Polgar, 2007), Assistive Technology Outcomes Profile-Mobility (Bode et al., 2010), Functioning Everyday in a Wheelchair Seating-Mobility Outcomes Measure (Holm, Mills, Schmeler & Trefler, 2003), and the Wheelchair Skills Test and Program (Kirby et al., n.d.). However, the development of additional device-specific outcome measures is still required.

Assitive technology use, such as the technology that can monitor an individual’s movement and behaviours (e.g., sensor technology, telehealth technology), is important for occupational therapists because of the impact on the client’s abilities to perform daily occupations.

Glossary

Occupation: Everything people do to occupy themselves, including looking after themselves (self-care), enjoying life (leisure) and contributing to the social and economic fabric of their communities (CAOT, 2002).

Occupational performance: The ability to choose, organize and satisfactorily perform meaningful occupations (CAOT, 2002).

References


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