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Irish occupational therapists' views of electronic assistive technology

Michele Verdonck,[1] Cathy McCormack[2] and Gill Chard[3]

Key words:
Electronic assistive technology, environmental control systems (ECS), electronic aids to daily living (EADL), computers, occupational therapy.

Introduction: Electronic assistive technology (EAT) includes computers, environmental control systems and information technology systems and is widely considered to be an important part of present-day life.

Method: Fifty-six Irish community occupational therapists completed a questionnaire on EAT. All surveyed were able to identify the benefits of EAT.

Results: While respondents reported that they should be able to assess for and prescribe EATs, only a third (19) were able to do so, and half (28) had not been able to do so in the past. Community occupational therapists identified themselves as having a role in a multidisciplinary team to assess for and prescribe EAT.

Conclusion: Results suggest that it is important for occupational therapists to have up-to-date knowledge and training in assistive and computer technologies in order to respond to the occupational needs of clients.

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Introduction

Technological advances in the last decade have shaped the world in which we live. Information and communication technology, including mobile phones, satellite navigation systems and the internet, is an integral part of our daily lives. These developments have led to other innovative applications, such as telehealth, telemedicine, smart housing and home automation (Doughty et al 2007). Innovative applications of these technologies have resulted in greater freedom for people living at home with disabilities, including frail and older people (Curry et al 2002, Hoogerwerf et al 2002, Stead 2002). It follows that these advances in technology are slowly being reflected in occupational therapy literature (Chard 2007, Gentry 2008, Verdonck and Ryan 2008, Bodell et al 2009).

Provision of electronic assistive technology services

The scope of assistive technology is extensive and includes thousands of devices (Scherer 2000). High technology devices can be grouped together as electronic assistive technology (EAT), which is defined as:

> … a subset of assistive technology which comprises communication devices, environmental control systems, personal computers and the interface which permit their integration with information technology and with wheelchair control systems (Royal College of Physicians 2000, p3).

In Ireland and in the United Kingdom, there is a two-tier system for the provision of assistive technology (AT). Low technology devices are issued by local community services while EAT is the role of specialists (Stead 2002). In addition, EAT can be funded by a variety of sources, including charities and health, employment and education services, making the delivery of an integrated EAT service very difficult. For example, powered wheelchairs, environmental control systems and augmentative assisted communication are all provided through different sources, thus making an integrated service less

likely (Stead 2002). EAT services have been described as inconsistent, fragmented and uncoordinated, and specialist services in particular are difficult to access and not available to everyone (Hoogerwerf et al 2002). Similarly, local professionals in health, education and social care have been described as lacking knowledge of AT (Curry et al 2002, Hoogerwerf et al 2002). Despite this, the implementation and expansion of EAT and AT is supported by government policy and projects across Europe (Curry et al 2002, Roe 2007).

Providers of AT may include occupational therapists, engineers, speech and language therapists and teachers, as well as individuals and families (Curry et al 2002, Cook and Polgar 2008). As Smith (2000) pointed out, AT has had a substantial effect on defining the role of occupational therapy practitioners in the past. With the continuing development and sophistication of EAT, it is likely that the role of occupational therapists and others in the interdisciplinary team in relation to AT will continue to grow (Hawley 2002). Additionally, users of occupational therapy services will require more sophisticated equipment provision if they are to live independent lives in their own homes and on their own terms.

Occupational therapists' knowledge and use of EAT

Occupational therapists are actively involved in the assessment and prescription, as well as the supply and maintenance, of all ATs, ranging from low technology devices, such as raised toilet seats, to high technology devices, such as powered wheelchairs. Daily challenges when dealing with AT include maintaining a client-centred focus, limiting abandonment and keeping up to date with emerging products, while also adhering to funding restrictions and organisational procedures (Galvin and Donnell 2002, Cook and Polgar 2008). Orton (2008) surveyed 36 occupational therapists and found that more general AT training and better information about environmental control systems were needed. As some technologies are readily available as mainstream products, occupational therapists need to be familiar with, and open-minded about, the use of such products (Verdonck and Ryan 2008). Keeping up to date with technological advances is also important in order to assess, prescribe and make appropriate referrals for EAT (Galvin and Donnell 2002). Once in place, therapists also need to understand how to maintain and update these items as appropriate (Cook and Polgar 2008).

The benefits of EAT, such as environmental control systems, have been described in the literature and include positive perception of self-esteem; increased competence by the user; increased adaptability and self-worth (Jutai et al 2000, Rigby et al 2005); decreased levels of frustration (Croser et al 2001); decreased personal assistance time (Harmer and Bakheit 1999); improved quality of life (Harmer and Bakheit 1999, Jutai et al 2000); and time alone and changed relationships (Verdonck et al 2011). While the need for further AT training, including computer applications, for allied health professionals has been identified, little research has been undertaken in the area of knowledge and use of EAT by occupational therapists (Gitlow and Sanford 2003, Gitlow et al 2007, Long and Perry 2008, Orton 2008). If occupational therapists are to deliver occupation-focused and person-centred services, they will, at the very least, need to know what is available and how to access and use EAT with clients. Therefore, the purpose of this small-scale study was to:

- Explore Irish occupational therapists' views on the benefits of EAT
- Explore their perceived competence in this area
- Identify their understanding of whose role it is to assess for and prescribe EAT.

Method

The 2007 Association of Occupational Therapists of Ireland's Housing Advisory Group Conference, entitled 'Meeting the needs of changing populations' and held in Dublin, was attended by 107 occupational therapists, commercial suppliers and service users. This conference included a seminar entitled 'Electronic assistive technology for persons with physical and sensory disabilities in their home', which was presented by the first two authors. All seminar attendees were invited to complete a self-report multiple-choice paper questionnaire on EAT at the beginning of the seminar. A survey was chosen because it is a flexible and easy method of gathering data from a large group of individuals (Fink 2009). The questions were based on the clinical experience of the authors and were not intended to be exhaustive.

Eighty-nine questionnaires were collected. Respondents included 56 community occupational therapists, 25 occupational therapists who did not work in the community, seven people who worked in the field of AT, and one client. The results from the 56 community occupational therapists are presented here as they formed the largest homogeneous subgroup with sufficient numbers for analysis.

The short questionnaire comprised five closed questions, without space for qualitative comments, and took approximately 5 minutes to complete. Detailed demographic data were not collected.

The questionnaire was part of a larger study exploring users' experiences of EATs, which had been approved by the Clinical Research Ethics Committee of Cork University and the National Rehabilitation Hospital committees. Seminar participants were assured that completing the questionnaire was optional and consent was therefore assumed for those who chose to do so.

Results

As the study primarily sought to survey respondents' views, simple quantitative descriptive analysis was used. Results are presented under the three themes that related to the focus of the questions: benefits, competence and roles. Each is discussed in more detail in the discussion section.

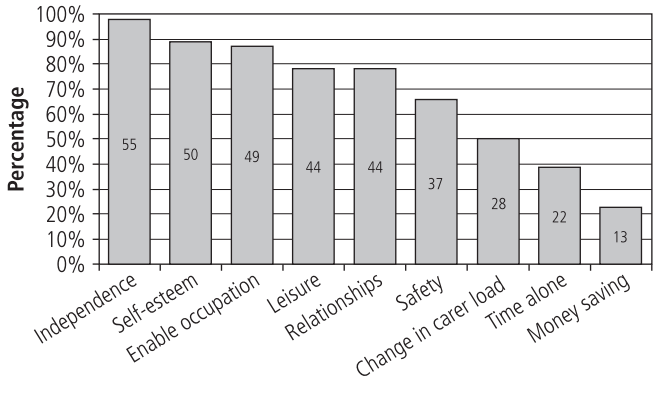
Table 1. Questionnaire

What are the benefits of electronic assistive technology? (Please check all that apply)								
Independence	Self-esteem	Enabling occupation	Leisure	Improved relationships	Safety	Change in carer load	Time alone	Money saving
Should occupational therapists be able to assess for and prescribe electronic assistive technology?								
Yes			No			Not sure		
Are you able to assess for and prescribe electronic assistive technology?								
Yes			No			Not sure		
Have you ever not been able to do so when asked?								
Yes				No				
Whose role is it to assess for and prescribe electronic assistive technology? (Please check all that apply)								
Technician	Specialised occupational therapist	Community occupational therapist	Engineer	Assistive technology service	Physiotherapist	Client		

Benefits

Participants selected from a list of benefits of EAT (Fig. 1). EAT was considered to improve independence by 55 (98%) respondents and to enhance self-esteem by 50 (89%) respondents. Enabling occupation was identified as a benefit by 49 (88%) and improving leisure and interpersonal relationships by 44 (79%) respondents. Half of respondents (28, 50%) thought it would change a carer's workload. Potential financial savings were considered a benefit by just under a quarter of respondents (13, 23%).

Fig. 1. Benefits of electronic assistive technology (n = 56).



Participants could select more than one benefit.

Competence

Three questions related to the experiences of assessing for, prescribing and advising on EAT (Table 1). While the majority of respondents (47, 84%) said that occupational therapists should be able to assess for and prescribe EAT (Fig. 2), only a third (19, 34%) stated that they were able to do so (Fig. 3). Just under half (27, 48%) had not been able to do so (Fig. 4).

Roles

When asked whose role it is to assess for and prescribe EAT, most respondents chose more than one professional, indicating a multidisciplinary focus. Over two-thirds of respondents (39, 70%) thought that it was the role of a specialised occupational therapist, and a further 35 (63%) thought that it was the role of a community occupational therapist. In addition, over half of the respondents (29, 52%) thought that it was the role of the client to assess his or her own needs (Fig. 5).

Fig. 2. Should occupational therapists be able to assess for and prescribe electronic assistive technology? (n = 56)

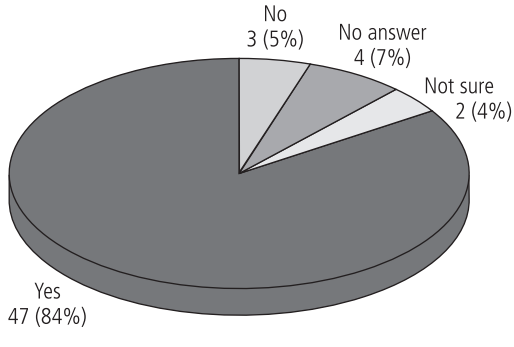


Fig. 3. Are you (as an occupational therapist) able to assess for and prescribe electronic assistive technology? (n = 56)

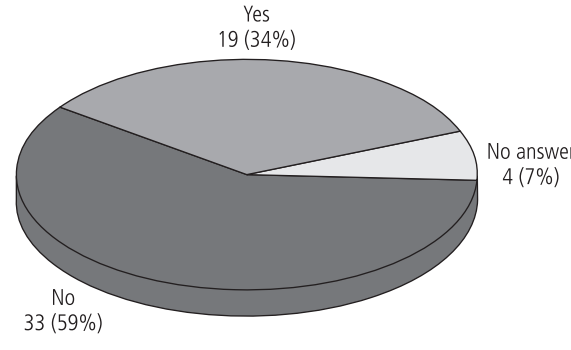


Fig. 4. Have you ever been asked to assess for and prescribe electronic assistive technology and not been able to do so? (n = 56)

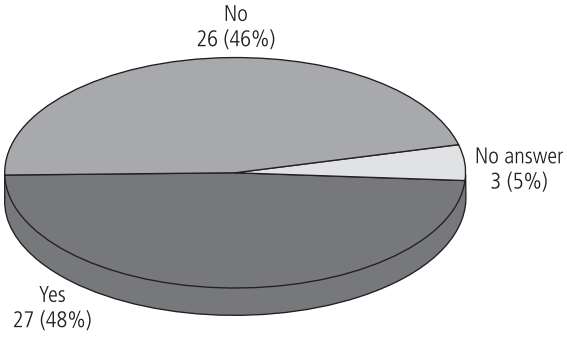
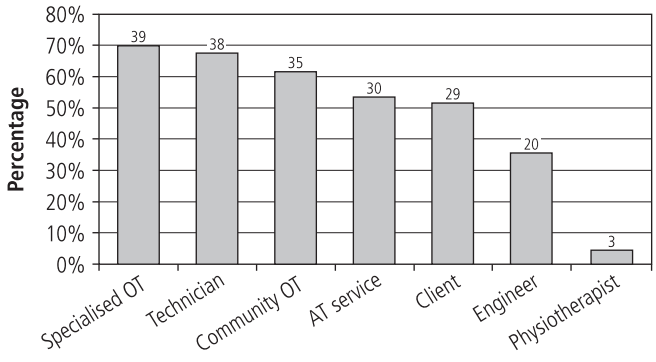


Fig. 5. Whose role is it to assess for and prescribe electronic assistive technology? (n = 56)



OT = Occupational therapist, AT = Assistive technology.
Participants could select more than one category.

Discussion

Benefits

Perceived benefits of EAT for independence, self-esteem and improved relationships are supported by previous studies (Jutai et al 2000, Rigby et al 2005, Verdonck et al 2011). Lower ranked benefits of financial savings and changes in carer workload have been discussed in previous studies, but with inconclusive results (McDonald et al 1989, Stickel et al 2002, Vincent et al 2002). While time alone was a key element of the meaning of living with environmental control systems for Irish people with high cervical spinal cord injuries (Verdonck et al 2011), only 22 respondents (29%) identified this as a benefit.

Competence

While 47 (84%) respondents believed that they should be able to assess for and prescribe EAT, only a third (19, 34%) were able to do so. This difference gives rise to concern, possibly indicating a lack of opportunity to be involved and/or training and knowledge in the area. As EAT has developed and continues to develop and is becoming more widely available, it is important that occupational therapists maintain currency with these technological advances and integrate them into their daily practice (Verdonck and Ryan 2008). This requires training at both undergraduate and post-professional levels (Smith 2000). AT training in occupational therapy curricula (level and content) has previously been identified as insufficient (Somerville et al 1990, Kanny et al 1991, Hammel and Smith 1993, Green 1996) and, more recently, Orton (2008) confirmed that this is still an issue. Many of these studies are more than 10 years old and, although occupational therapy curricula now include AT modules, the findings of this Irish study may reflect the occupational therapy education and training of more experienced, senior-level therapists.

While university occupational therapy programmes have improved AT curricula, further research is needed to clarify the present situation and to explore the best way to address the AT training needs of practising therapists and those at post-professional level. Although there is a willingness within the profession to engage with EAT, in practice there may be a lack of confidence or expertise in assessment and prescription skills. Accordingly, almost half the respondents reported that they had not been able to assess and prescribe EAT when asked to do so previously. The reasons for this were not elicited in the current survey. Scherer (2000) pointed out that rehabilitation professionals who do not perceive themselves as technically skilled may avoid learning new technologies, and thus not prescribe them as viable options for clients.

Roles

EAT is a multidisciplinary field and occupational therapists must be an integral part of it if they are to enable occupation (Smith 2000). Orton (2008) found that United Kingdom occupational therapists expressed a preference for 'increased working with other agencies' (p18). While the present study focused on community occupational therapists, others have noted that EAT has clinical relevance for a variety of professionals, including physiotherapists and certified psychiatric rehabilitation practitioners, working in a range of clinical settings (Gitlow and Sanford 2003, Gitlow et al 2007, Long and Perry 2008).

Despite services for EAT being perceived and administered as specialist services, it is encouraging to note that these services were not seen as an exclusively specialist area. While occupational therapists cannot be experts in all ATs, they need to be aware of a range of technologies so that they can act as gatekeepers for specialised services (Hoogerwerf et al 2002). The generalist is an important gatekeeper of AT too, thus community occupational therapists should be involved in the provision of EAT. As Stead (2002) pointed out, there is a need for a balance between the generalist and the specialist.

Limitations of the study and further research

This small-scale study cannot be considered representative of all occupational therapists in Ireland. The convenience sample only included community occupational therapists, and the short questionnaire instrument was designed as a

presentation tool to engage attendees at a seminar on EAT. However, it does raise some questions for further research and highlights the need for further study in this area. There is a need for appropriate exposure to EAT and training, both at undergraduate and postgraduate levels and as part of continuing professional development, as well as a greater familiarity with, and confidence in, using the more sophisticated technology currently available.

Conclusion

While 35 respondents (63%) acknowledged that they had a role to play in EAT assessment and prescription, it appears that there may be a long way to go before occupational therapists feel both confident and competent in using EAT as a routine part of their client-centred approach. Occupational therapists need to seek out and take advantage of appropriate EAT training, as well as to collaborate with engineers, designers, manufacturers and researchers to ensure that clients' needs are being fully met in a client-centred way (Lange and Smith 2002).

Acknowledgements

This study has been completed as part of a doctoral thesis supported by the Health Research Board, Ireland, who sponsor the first author's HRB research fellowship for the Clinical Therapies, CTFP-06-15. We would like to thank the respondents for their participation and the Association of Occupational Therapists of Ireland's Housing Advisory Group Conference Committee 2007 for their invitation and for facilitating this survey. Thanks to the anonymous *BJOT* article reviewers for their helpful comments, which aided in the revision of this manuscript.

Conflict of interest: None declared.

Key findings

- Irish occupational therapists acknowledge the benefits of electronic assistive technology (EAT), but many are unable to perform their perceived role in the assessment for and prescription of EAT.
- Education and training in EAT should be reviewed at pre-professional and post-professional levels.

What the study had added

This survey demonstrates that while occupational therapists acknowledge the benefits of and their role with EAT, they are unable to use EAT as a routine part of occupation-focused, client-centred practice.

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Focus on research

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Hannah Lord-Vince

Using multidisciplinary perspectives and proposals to reduce the length of hospital admission – the case of a short stay older people's ward.

University Campus Suffolk validated by the University of Essex and the University of East Anglia, 2010. Master of Arts in Clinical Practice.

The research takes the form of case study methodology where the short stay ward and its multidisciplinary team (MDT) are the 'case' under examination. Two focus group interviews were held with members of the MDT and service user representatives where discussion was facilitated by the researcher. From data analysis and coding of the participants' perspectives on factors influencing length of hospital admission, four key themes emerged: type of patients admitted to the ward, availability of community services, pressure on the bed capacity of the hospital and family and carer issues.

Findings are analysed and a discussion formulated comparing and contrasting findings to the emergent literature. Finally, recommendations are made resulting from the focus group interviews in order to assist in reducing the length of stay for those older people admitted to the short stay ward. Recommendations include:

- The need for regular monthly ward meetings where all members of the 'core' MDT can attend to improve outcomes regarding length of stay and assist in increasing a sense of empowerment and staff morale.
- The ward operational policy and admission criteria need to be re-written and the ward should be re-launched to raise awareness of its remit and re-educate all hospital staff of the short stay ward's potential to reduce length of stay.
- A 'patient and carer information leaflet' should be devised in order to set expectations for the hospital stay and to assist patients and carers in making informed, timely decisions for discharge.
- Educational sessions for the healthcare assistants and nursing staff are required to promote the importance of facilitating independence with older people while they are in hospital.
- All core professional groups to review their working practices and cover arrangements to ensure timely assessment occurs with no delays and to explore the potential for extended hours and weekend working.

It is hoped that the findings and recommendations of the study will be of value to the MDT members of the ward, the managers, service providers and stakeholders of the acute hospital NHS trust and other short stay older people's wards nationally. [Author abstract]