



The use of Information and Communication technology when completing instrumental activities of daily living



Rebecca J. Melrose^{a, b, *}, Jessica A. Brommelhoff^{a, b}, Theresa Narvaez^a, Laura Natta^a, Hannah H. Riskin-Jones^a, Sherwin Sakhai^a, Lawrence Wong^a, Stacey Curtis^a, Sheena M. Horning^{a, c}

^a VA Greater Los Angeles Healthcare System, West LA VA, Los Angeles, CA, USA

^b Dept. of Psychiatry & Biobehavioral Sciences, David Geffen School of Medicine at UCLA, Los Angeles, CA, USA

^c University of Cincinnati College of Medicine, Department of Neurology, Cincinnati, OH, USA

ARTICLE INFO

Article history:

Received 16 January 2016

Received in revised form

6 May 2016

Accepted 13 May 2016

Keywords:

ICT

Technology

Activities of daily living

Aging

Memory

ABSTRACT

Purpose of the study: An important aspect of cognitive assessment is inquiry of the patient's ability to manage instrumental activities of daily living (IADLs), including finances, medication, and transportation. Information and Communication technology (ICT, e.g. smartphones, computers) has become increasingly prevalent in American culture. We aimed to characterize what IADLs were being completed with ICT, and what factors predict ICT use to manage IADLs.

Design and methods: We administered a self-report survey to 505 Veterans seeking care at the VA Greater Los Angeles Healthcare System.

Results: Seventy percent reported regular ICT use. Of ICT users, 76% reported use for finances, 86% for shopping, 72% for health management, 75% for transportation, and 97% for communication. Logistic regression was used to identify predictors of high ICT use. Longer duration of computer use was significant in all models. Younger age, higher education, and better self-reported memory were associated with greater use for a subset of IADLs. Veterans with more health problems were more likely to use ICT to manage their healthcare.

Implications: These findings suggest that Veterans are using ICT to support IADLs. It appears appropriate for clinicians to incorporate questions about ICT use into IADLs assessment, which may assist in detecting subtle changes to day to day functioning and improve the accurate diagnosis of cognitive disorders.

Published by Elsevier Ltd.

1. The use of Information and Communication technology when completing instrumental activities of daily living

1.1. The assessment of day to day functioning in clinical settings

In the fields of geriatrics and cognitive disorders, clinicians routinely inquire about the ability for patients to complete important day to day activities. The Lawton and Brody model of

instrumental activities of daily living (IADLs) remains a dominant framework for this assessment. This assessment tool was developed in 1969 to capture activities in the home and community (Lawton & Brody, 1969). It was premised on the model that humans must attend to a multitude of complex tasks, and that objective assessment of these tasks would greatly assist in diagnosis and treatment planning. The authors outlined sets of tasks older adults must attend to in their day to day lives. Tasks for women included shopping, cooking, and laundry. Tasks for men included use of transportation and handling finances. The final version of the assessment instrument, which is still used today, assesses whether individuals (irrespective of gender) can complete the following eight tasks independently: financial management, medication management, transportation needs, shopping, cooking, cleaning, laundry, and use of the telephone. Each item is rated as either independent or dependent. For example, under medication

* Corresponding author. VA Greater Los Angeles Healthcare System, West LA VA 11301, Wilshire Blvd. 116AE, Los Angeles, CA, USA.

E-mail addresses: Rebecca.Melrose@va.gov (R.J. Melrose), Jbrommelhoff@gmail.com (J.A. Brommelhoff), Theresa.Narvaez@va.gov (T. Narvaez), Lnatta@altamirarecovery.com (L. Natta), Hannah.Riskin-Jones@va.gov (H.H. Riskin-Jones), Ssakhai@paloalto.edu (S. Sakhai), Lawrence.Wong@va.gov (L. Wong), Stacey.Curtis@va.gov (S. Curtis), SheenaHorning@gmail.com (S.M. Horning).

compliance, an individual is considered independent if they are responsible for taking medications at the correct time; an individual is rated as dependent if someone else needs to set up medication doses for the patient.

In the clinical setting, if a patient is found to be dependent upon others for any of these tasks due to cognitive (e.g. memory) problems, he/she is diagnosed with Major Neurocognitive Disorder or dementia (American Psychiatric Association, 2013). A patient who has cognitive problems but retains independence is instead diagnosed with Mild Neurocognitive Disorder or Mild Cognitive Impairment (MCI) (Albert et al., 2011; American Psychiatric Association, 2013; Winblad et al., 2004). The distinction between dependence and independence can be difficult to ascertain. In the recent diagnostic criteria for Mild Cognitive Impairment due to Alzheimer's Disease, the authors state that patients with MCI may have mild difficulties completing complex tasks, such as taking more time, making more errors, or working less efficiently (Albert et al., 2011). However they retain independence with minimal aids or assistance. The authors specify, "It is recognized that the application of this criterion is challenging, as it requires knowledge about an individual's level of function at the current phase of their life (p.271-2)."

1.2. The role of technology in day to day functioning

Since the initial development of the Lawton & Brody scale, technology use has become even more prevalent in day to day life. Recognizing this shift, it has been proposed that questions about personal technology use be incorporated into the clinical assessment of day-to-day functioning (Kottorp & Nygard, 2011). This is important for inter-related reasons. First, it should enable more realistic assessment of the day to day activities individuals actually engage in, including potential problems or declines in ability to complete IADLs. Consequently, the ability for clinicians to accurately diagnose cognitive disorders increases. Finally, accurate diagnosis then improves treatment planning.

A few researchers have begun to incorporate technology use into day to day functioning assessment measures. Significant work has been done around the concept of Everyday Technology (ET). ET refers to the ability to use technological devices found in our environment, such as ATMs, electronic stoves, remote controls, coffee makers, and Information and Communication technology (ICTs), such as computers and smartphones. New day to day functioning scales have been developed that include asking patients about ET use (Kottorp & Nygard, 2011; Malinowsky, Nygard, & Kottorp, 2011). An alternative approach to incorporating technology use is presented in the Technology-Activities of Daily Living Questionnaire (T-ADLQ), which appended questions to an existing ADL scale regarding computer, cellphone, ATM, internet, and email use (Munoz-Neira et al., 2012). In the Amsterdam IADL Questionnaire, a series of new items interrogating activities including computer, smartphone, and household appliances is queried (Sikkes et al., 2012). In their justification for creating this scale the authors referenced that considerable change in daily activities that has occurred since the 60s largely due to changes in technology.

In the past few years ICT, and the mobile technology market specifically, have gained considerable popularity in many parts of the world. Many aspects of IADLs can now be managed with ICTs, and recent statistics from the National Telecommunications and Information Administration (NTIA) and PEW Institute suggest that adults are indeed using devices for this reason. For example, roughly 50% of Americans use the internet for financial tasks (Fox, 2013; Morris et al., 2013). Adults aged 65 and over use ICT to support online shopping (53%), online auctions (14%), and managing stocks (13%; Vroman, Arthanat, & Lysack, 2015). One of the more

comprehensive research studies addressing this topic was conducted by Czaja and colleagues in 2006 (Czaja et al., 2006). They examined computer use and frequency of web use to support a number of everyday tasks, including communication, news and weather, information gathering, community resources information, health, travel, leisure/entertainment, and shopping. Across all domains older adults had numerically lower rates of internet use, but at least 45% of this group reported use for one of the aforementioned tasks. Thus while there is evidence to suggest that many aspects of day to day life are being managed via ICTs, the full extent of ICT use to complete IADLs remains unclear.

1.3. Predictors of ICT use

A host of research has been conducted examining factors associated with ICT use in general. ICT use appears generational, with younger adults reporting higher use than older adults (Kottorp & Nygard, 2011; Morris et al., 2013; Nagle & Schmidt, 2012; Pew, 2014). Higher income/SES, greater education, and urban vs. rural living (Malinowsky et al., 2011; Morris et al., 2013; Vroman et al., 2015; Werner, Carlson, Jordan-Marsh, & Clark, 2011) are associated with use. Also, knowledge of ICT, knowledge of the internet and technology, and experience with ICT are predictors of its use (Hallgren, Nygard, & Kottorp, 2011; Linden, Lexell, & Lund, 2010; Malinowsky et al., 2011; Nagle & Schmidt, 2012; Nygard & Starkhammar, 2007; Xie, 2003). Attitudes, such as perceived benefit of ICT, appear important, as do perceptions about ease of use or availability of others to provide assistance (Mitzner et al., 2010; Nagle & Schmidt, 2012).

1.4. Health-related factors are associated with ICT use

Researchers have also begun to examine health-related factors that are associated with ICT use. Using objective measures, higher cognitive ability has been found to predict ICT use (Czaja et al., 2006; Tun & Lachman, 2010). In general, those with cognitive disorders are either less likely to use ICT or report more difficulty using technology, including patients with acquired brain injury (Kassberg, Prellwitz, & Larsson Lund, 2013; Linden et al., 2010), dementia (Nygard & Starkhammar, 2007), and MCI (Malinowsky, Almkvist, Kottorp, & Nygard, 2010; Malinowsky, Almkvist, Nygard, & Kottorp, 2012). Higher health literacy (Echt & Burrigge, 2011) and better self-reported health is also associated with increased ICT use in many samples (Tun & Lachman, 2010; Werner et al., 2011). This has been found to interact with age, such that older adults with good health are more likely to use ICT than their less healthy counterparts (Heart & Kalderon, 2013). It has also been observed that the association between internet use and health may be partially mediated by social class (Gracia & Herrero, 2009). In sum, it appears that healthier individuals are more likely to use ICT.

1.5. Purpose of the present study

If an accurate assessment of day to day functioning is to be conducted, it is important to understand how individuals are managing IADLs. Building upon previous work that updated IADL assessment measures to include technology use, we were specifically interested in understanding how often a patient population was turning to ICT to complete the eight domains of functioning outlined by Lawton & Brody. We intentionally framed our work within the Lawton & Brody model because of its popularity in clinical settings. We reasoned that if a high proportion of adults were indeed using ICTs to complete daily tasks, it would be important for clinicians to begin asking about ICT to support specific IADLs when conducting cognitive assessments. This would in

Download English Version:

<https://daneshyari.com/en/article/6836744>

Download Persian Version:

<https://daneshyari.com/article/6836744>

[Daneshyari.com](https://daneshyari.com)