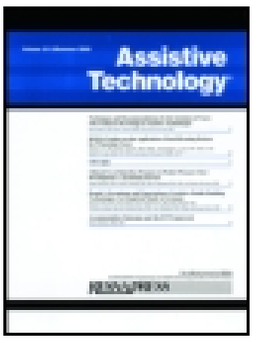

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The use of everyday information communication technologies in the lives of older adults living with and without dementia in Sweden

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ABSTRACT

Background: Increasingly services and interventions involve everyday information communication technologies (EICTs) in provision, however, use of EICTs among people with dementia is little known. Therefore, this study aimed to investigate the relevance, use, and ability to use EICTs between a group of older adults with dementia and a comparison group with no known cognitive impairment.
Method: Interviews with 35 people with dementia, 34 comparison participants using the standardized Everyday Technology Use Questionnaire. Variables were compared using descriptive statistics, *t*-tests and correlation analyses.
Results: Median 7 EICTs (maximum 31) were relevant to the group with dementia; significantly less than the comparison group's 11 ($p < .05$, $d = 0.64$). The difference in use appeared more pronounced (group with dementia 5, comparison group 10.5; $p < .001$, $d = 0.93$). Large, significant relationships were evident between ability to use technology, and relevant or used EICTs in the group with dementia. No such relationships in the comparison group.
Conclusion: Differences in the amounts of EICTs relevant and used among people with and without dementia are further reflected in the dementia group's ability to use technology. Accommodating the demands that EICTs place on users and harnessing the dominant EICT relevancies and abilities of people with dementia better contributes towards an inclusive, dementia-friendly society.

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KEYWORDS
activities of daily living; cognitive impairment; information technology and telecommunications; older adults

Background

In Europe, 10.5 million people were estimated to be living with dementia in 2015 (Prince et al., 2015) including 160,000 in Sweden. With the number globally expected to triple and reach 152 million in 2050, improving opportunities for people with dementia to live independently and experience dignified life in society has become a priority (World Health Organization, 2017). Around Europe organizations such as the Swedish National Board of Health and Welfare are attending to this challenge by calling upon providers to develop dementia-friendly services (Socialstyrelsen, 2017). Notwithstanding opposing results, inclusivity is the general goal of dementia-friendly initiatives with the aim to facilitate access to services and enable participation of cognitively complex instrumental activities of daily living (IADL) and accessing public places, e.g. grocery stores and public transport systems (Rahman & Swaffer, 2018). This implies that dementia-friendly adjustments can alleviate the cognitive consequences of dementia, which include impairments to memory, planning, orientation, attention and other vital faculties required for IADL.

In the present study, the term Everyday Technologies (ETs) refers to those used in IADL and other activities, e.g. microwaves, televisions, ticket machines, ATMs. These commonplace artifacts and systems found in homes and in society comprise the 'technological landscape' (Hagberg, 2008; Nygård & Starkhammar, 2007). Indeed, the amount of ET used by people with cognitive impairments has been shown to reduce over time as cognition deteriorates (Hedman, Nygård, Almkvist, & Kottorp, 2015) and the abilities of people living with dementia to use ET, although overlapping, have been found to be generally lower than the ability of older adults without cognitive impairment of the same age (Malinowsky, Almkvist, Kottorp, & Nygård, 2010; Nygård, Pantzar, Uppgard, & Kottorp, 2012).

Everyday Information Communication Technologies (EICTs) are a subset of ETs which have been shown to be more challenging to use, but increasingly relevant to older adults with and without cognitive impairments (Malinowsky, Kottorp, Patomella, Rosenberg, & Nygård, 2015; Patomella, Kottorp, & Nygård, 2013). EICTs include landline telephones, automated phone systems, mobile and smart phones, computers, laptops, and tablets, which each facilitate the capture, storage and exchange of information (Gagnon et al., 2009). EICT ownership and use is increasing globally, including among older adults in Sweden with 72% of 66–75 year olds and 33% of people aged 76+ owning a smartphone in 2017 (Davisson & Thoresson, 2017) compared with 50% and 19%, respectively, having access in 2015 (Davisson & Findahl, 2016). Burgeoning digital strategies aim to improve cost efficiency and convenience in service delivery by capitalizing upon the increasing ownership and functionality of

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EICTs. Sweden is considered advanced with respect to digital services, and the national digital agenda tasks these services with creating simpler daily life for citizens (OECD, 2016; Regeringskansliet, 2011). This digital agenda states that disability should not be a barrier to services, whilst acknowledging there are no statistics to inform citizens with disabilities' access to and use of EICTs (Regeringskansliet, 2011).

The technical ability demanded by ETs, including EICTs, has been discussed as burdensome, exclusionary, and undermining the autonomy of some people with disabilities, including those living with dementia (Kottorp et al., 2016). Yet EICTs are often justified as suitable platforms for services and assistive interventions, without acknowledging the possibility of exclusion. More often, it is argued that ownership will continue to increase to the point that non-use may become obsolete in all age groups (Brown et al., 2017). Consequently, it is often assumed that EICT-based services and interventions are inclusive for all older adults, including those growing numbers of people with dementia, who are less able to function independently in society. However, it has been previously discussed that neither ownership nor longstanding competence with EICTs should be conflated with the ongoing relevance of, use of, or ability to use these devices (Selwyn, 2004). Therefore, the broad and current perspective of older people living with dementia on EICTs is needed. Such perspectives would usefully inform the context for age- and dementia-friendly digital services and interventions, and support efforts towards inclusive EICT design.

To contribute towards gathering perspectives on EICTs, this study aims to answer the following two questions:

(1) How does the relevance of, use of, and ability to use EICTs compare between two groups of older adults living in Sweden with mild stage dementia, and with no known cognitive impairment?
(2) What level of challenge is perceived by both groups of older adults in using EICTs?

Methods

Study design

The participants in this cross-sectional study were two groups of similarly matched older adults living in Sweden. One group were living with mild stage dementia, and the comparison group had no known cognitive impairment.

The study investigates the amount of available EICTs participants reported as relevant (definition to follow in; *instruments*, ETUQ), and the subset amount of those relevant EICTs participants reported were actually in use. Hereafter these two differing amounts of EICTs are referred to as the variables 'EICTs relevant' and 'EICTs used'. The participants' 'Ability to use ET', comprises the third variable for comparison, and the data collected also provides information on the level of challenge presented by each EICT.

Data collection took place took place in the participants' own homes, or at a location of their choosing between August 2015 and October 2017. To ensure comfort and control for the participants and to mitigate for fatigue; interviews lasted no more than 90 min and were staged over a maximum of two occasions. All participants were invited to have another trusted person present for the interview as they wished. Five especially trained occupational therapists collected data for the study. Ethical permission was granted from the Stockholm regional ethics board (Dnr 2015/77–31/5).

Participants

Older adults with mild or moderate stage dementia (n= 35) were recruited through memory investigation clinics and activity groups offered by Stockholm area municipalities for people who had received a dementia diagnosis. The diagnosis of dementia was given by a physician according to the standardized DSM-IV criteria (American Psychiatric Association, 2000), or as major neurocognitive disorder according to the DSM-V (American Psychiatric Association, 2013). A further group of comparison participants with no known cognitive impairment (n= 34) were invited to participate and matched by group as enrolment proceeded for age, gender, living situation and years of education (Table 1). Information about the research was presented at open municipality-run activities for people in retirement, and leisure and social activity groups known to the interviewers. The sample size is based on an estimation using an earlier study (Nygård et al., 2012), showing that n= 33 per sub-sample is needed to ensure a difference of 4.0 logits (interval measures of a person's ability to use ET derived from the ETUQ) (p< .05 with a power of 0.90).

Table 1. Demographic characteristics of the two groups.

		Group with dementia (n= 35)	Group with no known cognitive impairment (n= 34)	Comparison test
Gender	Male	13 (37.1%)	13 (38.2%)	Pearson χ^2
	Female	22 (62.9%)	21 (61.8%)	p> .05
Age	Mean (SD)	74.43 (7.18)	76.71 (8.04)	Independent t-test
	Min-Max.	59–90	62–96	p> .05
Living situation	Alone	19 (54.3%)	21 (61.8%)	Pearson χ^2
	Co-habiting	16 (45.7%)	13 (38.2%)	p> .05
Years spent in education	Mean (SD)	11.13 (3.29)	12.37 (3.35)	Independent t-test p> .05
Other health conditions (not dementia)	No impairment or diagnosis	3 (8.6%)	1 (2.9%)	Fisher's Exact Test p> .05
	Medical diagnosis	5 (14.3%)	6 (17.6%)	
	One impairment	6 (17.1%)	5 (17.1%)	
	Medical diagnosis, one impairment	13 (37.1%)	8 (37.1%)	
	Two impairments	8 (22.9%)	11 (22.9%)	
	Medical diagnosis, two impairments	0 (0%)	3 (8.8%)	
MoCA* score	Mean (SD)	17.57 (5.32)	26.32 (2.29)	Mann-Whitney U
	Min-Max	4–30	21–29	Test p< .01

*Montreal Cognitive Assessment (Nasreddine et al., 2005) lower scores indicate increased cognitive impairment.

Participants were included if they were (a) aged 55 and over, (b) living in ordinary community housing, (c) going to at least some places outside their homes (i.e. shop, doctor's surgery) whether independently or with others, (d) a user of at least some ETs (not EICTs specifically), (e) not experiencing any visual or hearing impairment that could not be compensated for using aids, (f) able to communicate in Swedish. Participants were excluded if they had received diagnoses of for example; stroke, AIDS, multiple sclerosis, Parkinson's which could result in similar cognitive impairments.

Instruments and data collection

The Everyday Technology Use Questionnaire (ETUQ) assesses the relevance of and perceived ability to use ET for each respondent (Nygård, Rosenberg, & Kottorp, 2016). The ETUQ has been regularly revised in response to data collected in order to reflect an up-to-date and accurate view of the current technological landscape. It comprises 90+ ET items (e.g. kettle, washing machine, ticket machine, petrol pump) categorized into seven distinct areas of daily life (e.g. home maintenance, travel). Within this latest version of the ETUQ, the area labeled 'Information/Communication' includes 31 EICT functions, listed in Figures 2 and 3 (e.g. make a call, receive a call, email or text, internet banking). The term "EICTs" in this paper refers these 31 functions which correspond to five EICT devices; landline telephone, mobile phone, smartphone, tablet (also known as touchscreen computer) and computer or laptop. The interview is administered by an occupational therapist, after a one-day training, in a face-to-face interview of approximately 40 minutes. Using participants' self-reports; an ET is identified as relevant based on (1) it is available to the person, and (2) the person reports it (a) previously used, (b) currently used, or (c) intended for use. Once relevance is ascertained, the participant's perceived ability to use that ET item is rated by the occupational therapist

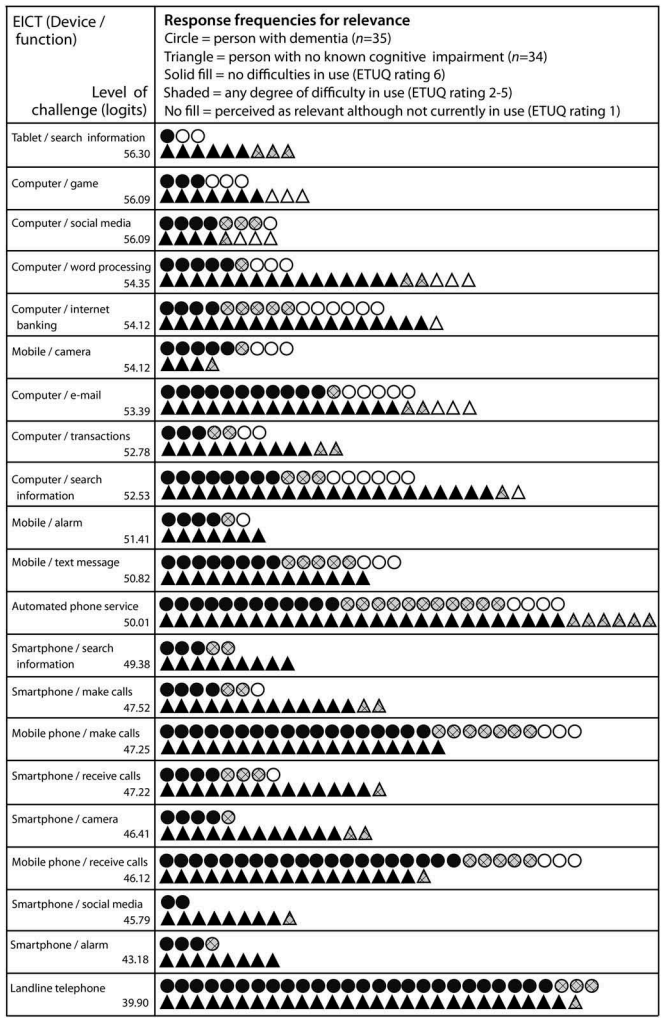

Figure 2. Frequency of responses given as 'relevant' to each EICT shown between the two groups and corresponding each EICT's level of challenge, where a high logit value indicates greater challenge. Relevant is reflected by its component parts of 'used with no difficulty or hesitation', 'used with any degree of difficulty' and 'not currently in use'.

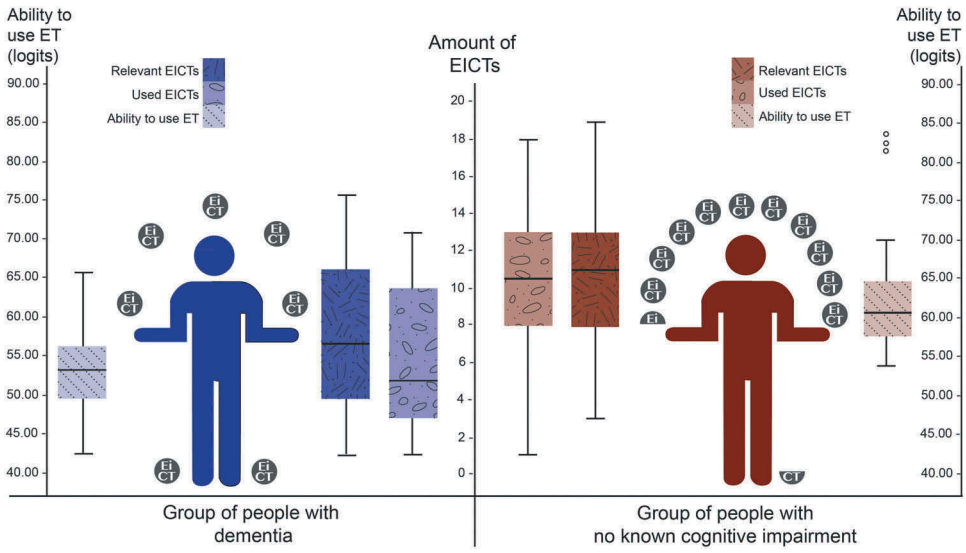

Figure 1. Pictographs and boxplots by group of the variables "EICTs relevant", "EICTs used" and "Ability to use ET". Each EICT symbol signifies one relevant EICT. The total symbols around each 'person' signify the median amount of EICTs relevant for that group. Only the symbols above the 'arms' signify EICTs used.

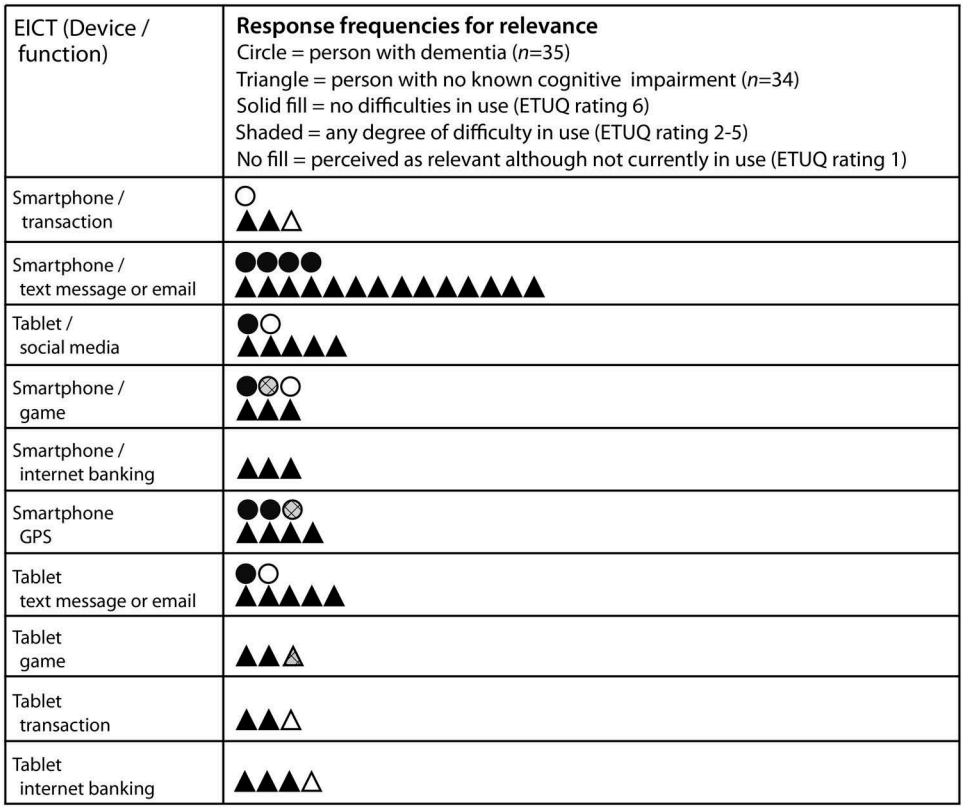

Figure 3. The remainder of EICTs for which no item calibration measure could be generated due to insufficient response frequencies for 'relevant' or due to a floor effect resulting from insufficient variation in the responses. Relevant is reflected as per Figure 2.

on a 5 step scale (Table 2). The count of relevant ETs includes all items rated across all five steps, whereas the count of ETs in use excludes items rated at the fifth scale step ("technology is not used anymore, or has not yet come into use"). The ETUQ therefore accommodates situations where an EICT device may be reported by a respondent as relevant (i.e. smartphone), without assuming that all EICT functions on that device are relevant (i.e. the person may report the smartphone as relevant for making a phone call and not relevant for social media). The ETUQ has earlier demonstrated acceptable internal scale and person response validity with groups of people living with different conditions including dementia, and in different countries including Sweden (Kaptain, Kottorp, Patomella, & Helle, 2017; Malinowsky et al., 2015; Nygård et al., 2012).

Since is it particularly sensitive to mild stage dementia, the Montreal Cognitive Assessment (MoCA) was used to describe each participant's cognition (Nasreddine et al., 2005). Data from two comparison participants with scores of 22 and 21, respectively, were retained in the comparison group since recent studies have suggested that the proposed MoCA cut-off score of 26 is too strict and leads to false-positive rates of cognitive impairment (Carson, Leach, & Murphy, 2018). These suggestions together with the clinical judgment of the interviewer formed the rationale for retaining these two participants.

In addition to cognition, a range of demographic factors were anticipated to interact with participants' use of ET (Table 1). These were formulated into a non-standard questionnaire to collect information about; age, gender, number of years spent in education, other physical health impairments or diagnoses, and living situation (i.e. cohabitation arrangements).

Data analysis

Preparatory data analysis

The distribution of all variables were checked by visual inspection and using Shapiro Wilks. Age, gender, and years of education were shown to be approximately normally distributed. All other variables, including living situation, the amounts of EICTs relevant and used, and ability to use ET showed evidence of

Table 2. ETUQ response ratings and how they aggregate into the two categories "EICTs relevant" and "EICTs used".

Aggregated rating	Not relevant	EICTs relevant				
		EICTs used				
ETUQ rating	Technology not present. Or technology never used and/or no intention of use.	Technology is used with no difficulties or hesitation.	Technology used with limited difficulties or hesitation.	Technology used with extensive difficulties that arise often.	Technology used only together with another person.	Technology not used anymore or has not come into use, even if it is relevant.

being not normally distributed. Corresponding parametric and non-parametric descriptive statistics were used to compare the demographic characteristics between the two groups (Table 1) as these were anticipated to influence the relevance and use of EICTs and the ability to use ET. The significance level in all instances was set to $p< .05$.

The raw score ETUQ ratings of the 31 EICTs were aggregated as shown in Table 2 to allow for comparison between the amount that were relevant and the sub-category of the amount that were used (Table 2).

In a Rasch rating scale model (Bond, 2012), the computer program Winsteps version 3.92.1 (Linacre, 2016) logarithmically transformed the ETUQ raw score ordinal data from each participant's relevant ET items. This transformation produced a scaled person measure of ability to use ET for each participant where a higher logit score indicates greater ability. This process has been reported elsewhere (Nygård et al., 2012). A similar transformation generated item calibration measures in logits, associated to each ET on the ETUQ. Referred as ET "level of challenge", higher measures indicate more challenging items (refer to Figure 2). ETs that had not been assessed by at least 10 people were removed from the analysis (see Figure 3).

Primary data analysis

The amount of EICTs relevant and used together with the ETUQ person measures of ability to use ET were compared between the two groups using Mann–Whitney significance testing. Effect sizes expressed in Cohen's d (transformed from η^2 derived from U) were evaluated as negligible (<0.2), small (≥0.2 < 0.5), medium (≥0.5 < 0.8), or large (≥0.8), in conjunction with p-values (Cohen, 1988).

Relationships within groups between EICTs relevant and used, and ability to use ET were also investigated using Spearman's rank correlation analyses. Cohen's recommended adjustments for the proximate magnitude of the association (r) in the context of social settings were applied (0.1–0.3 = small, 0.3–0.5 = medium, and 0.5–1.0 = large) in combination with 95% confidence intervals, p-values and q-effect sizes, evaluated using the same criteria as d (Cohen, 1988). To further evaluate the differences between the correlation coefficients, Fisher's r-to-Z transformation and Steiger's Z calculators were used (Silver & Dunlap, 1987; Steiger, 1980; Weiss, 2011).

The challenge measures for the EICTs generated in the preparatory analysis were arranged hierarchically and evaluated together with the frequency of participants in each group that considered each EICT relevant. This frequency was further detailed to show the number of participants in each group using the EICT; with no difficulty, with any degree of difficulty, and not using the relevant EICT.

Results

The group of people with dementia did not significantly differ from the group with no known cognitive impairment with respect to gender, age, health conditions, living situation and years spent in education (refer to Table 1). The groups differed significantly in their MoCA scores (Table 1).

Differences between the amount of relevant and used EICTs, and ability to use ET

The findings given in Table 3 and shown in Figure 1 show that the group of people with dementia perceived a median of 7 of the total 31 EICTs to be relevant. With a large effect size, this was significantly less than the comparison group's median 11 EICTs relevant ($p< .001$, $d= 0.64$).

With a larger effect size, the comparison group used a median of 10.5 EICTs compared to the group of people with dementia's median 5 ($p< .001$, $d= 0.93$). The median ability to use ET of the group of people with dementia (53.24) was significantly lower (median 7.47 logits less, $p< .001$, $d= 1.85$) than the comparison group (60.71) (Table 3, Figure 1).

Relationships between the variables EICTs relevant, EICTs used and ability to use ET

The relationship between EICTs relevant and EICTs used was shown to be high in both groups. However, this relationship was significantly smaller in the group of people with dementia ($r_s= 0.877$, 95% CI [0.768, 0.937], $p< .01$) than in the comparison group ($r_s= 0.986$, 85% CI [0.972, 0.983], $p< .01$). Fisher $Z = 4.424$, $q = -1.115$, $p< .001$.

In the group of people with dementia, the measure of ability to use ET had a medium to large correlation with the amount of EICTs relevant ($r_s = 0.587$, 95% CI [0.315, 0.770], $q< 0.01$) and EICTs used ($r_s = 0.735$, 95% CI [0.532, 0.858], $p < .01$). There was no significant difference between these correlations (Steiger $Z = 0.798$, $p> .05$). It appears there was no significant correlation between the comparison group's ability to use ET and relevant EICTs ($r_s = 0.026$, 95% CI [−0.315, 0.361], $p> .05$) or EICTs used (0.102, 95% CI [−0.191, 0.378], $p > .05$). These relationships between ability to use ET and EICTs relevant (Fisher $Z= 2.568$, $q = 0.647$, $p< .05$) and EICTs used (Fisher $Z= 3.322$, $q = 0.837$, $p< .001$), were significantly different between the two groups.

Table 3. Comparisons between groups of the variables EICTs relevant and used, and ability to use ET.

		Group with dementia ($n= 35$)	Group with no known cognitive impairment ($n= 34$)	Median difference	Mann-Whitney U Comparison Test	Effect size (Cohen's d)
EICTs Relevant (max. 31)	Median (IQR)	7 (4–11)	11 (8–13)	4	$p < .05$	0.64
	Min-Max.	1–15	3–19			
EICTs Used (max. 31)	Median (IQR)	5 (3–10)	10.5 (7.75–13)	5.5	$p < .001$	0.93
	Min-Max.	1–13	1–18			
Ability to use ET (logits)	Median (IQR)	53.27 (49.49–56.63)	60.71 (57.68–65.06)	7.47	$p < .001$	1.85
	Min-Max.	42.44–65.75	53.88–83.61			

Hierarchy of challenge related to EICTs

The 31 EICTs are listed in Figure 2 together with the challenge measures generated for the 21 EICTs that had responses from at least 10 participants. The Rasch analysis did not generate a valid item calibration measure for the EICT "smartphone – SMS/email", as all participants who reported this item relevant also perceived no difficulties using it, which produced a floor effect. Figure 2 also summarizes the raw responses for relevant EICTs, showing how many participants reported the EICT to be in use and whether there was any degree of difficulty perceived by participants in using that EICT.

The landline telephone was perceived by the whole sample as having the lowest level of challenge (39.90 logits) and searching for information on a tablet received the highest (56.30 logits) (Figure 2).

Using Figure 2 to compare the functions of making and receiving a phone call and the camera, it appeared that the mobile phone was more relevant and used among the group of people with dementia; and the smartphone more relevant and used among the comparison group. The level of challenge in making a mobile phone call in comparison to making and receiving a smartphone call appeared relatively even between devices, whereas receiving a call on a mobile phone appeared to present a comparatively lower level of challenge. However, the mobile phone camera and alarm looked to present a higher level of challenge than the same functions on a smartphone.

Discussion

Mapping the EICT landscape as captured by the ETUQ data showed that among both these subgroups of older adults, a minority of the EICT landscape was perceived relevant. This results from the group's perceived lack of relevance of particularly two devices; smartphone and tablet, which together comprise 18 of the 31 investigated EICTs. This may be a product not only of lack of ownership or access, but also, of situations where the device is available to the person, but there is no intention to use it and it has never been used before.

The strong correlations between the amount of EICTs relevant and EICTs used in both subgroups was expected since relevance is a prerequisite for use. However, a perfect correlation coefficient of 1 would not be expected since the nature of a changing technological landscape is that people's habits and preferences may change with it. For example, a smartphone may become the preferred device for internet banking, where formerly a computer was preferred. Such a situation would result in an ETUQ assessment that the smartphone is relevant and used for internet banking, but relevant and not used on the computer. However, the ability to use a function on a device may become a factor, particularly when living with dementia (Malinowsky et al., 2010; Nygård et al., 2012). In addition, that the results showed statistically similar and strong relationships between ability to use ET and EICTs relevant and used only in the group with dementia, indicates that ability may not affect only the use of EICT but equally the perception of relevance. This could mean that a person with no known cognitive impairment could perceive as relevant and use any number of EICTs irrespective of their ability, whereas a person with dementia's ability to use technology is likelier to be reflected in the mapping and use of their EICT landscape. A smaller EICT landscape corresponding with lower ability to use technology may not then be a product of an individual with dementia's choice. Therefore, support or adaptations may be needed to improve the EICTs' ease of use, and potentially to make EICTs relevant. In this scenario, ethical facilitation of EICT use itself becomes the goal of intervention. To mitigate these support needs, continued efforts towards socially responsible design that reduces the challenge experienced to improve equitable EICT use are warranted.

More often, however, EICTs are regarded as a potential solution to facilitate independence in instrumental, leisure or social activities of daily living, or as a means to mediate interventions and services. The rationale for developing EICT-facilitated health interventions has rarely been underpinned by factors such as the relevance and use of EICTs as currently recognized by older adults, including people with dementia. Studies often cite increasing ownership, technological expansion, or the benefits of EICTs among older adults more broadly, and subsequently draw a sample of predominantly or exclusively EICT users (Göransson et al., 2018; Lilje, Olander, Berglund, Skillgate, & Anderberg, 2017; Pothier et al., 2018). This can create an impression that EICT-based interventions may be suitable to implement across a potentially large proportion of older adults, including those living with dementia. On this basis, one proposed web-based intervention for tablet aims to be acceptable to more than 70% of a sample of older adults with subjective memory complaint who have ready access to the internet (Pothier et al., 2018). Our study indicates that not only might tablet devices be perceived as relevant to a minority of older adults, but also, using a tablet to search for information could present highest level of challenge compared to other ETs. Searching for information and using a web-based intervention on a tablet may not be directly comparable. However, taking into account the levels of challenge and overall proportional relevance of EICTs as it they pertain to older adults, particularly those with dementia would be prudent before scale-up or investment into a wider range of interventions and services.

An earlier study broadly showed that over time, the relevance of EICTs increased and the level of EICT challenge relating to mobile phone and internet functions decreased among comparable cohorts of older adults with and without cognitive impairments (Malinowsky et al., 2015). That study used an older version of the ETUQ and the resulting challenge measures located EICTs throughout the top half of the ET hierarchy. This study, using the new version of the ETUQ, locates EICTs throughout the whole ET challenge hierarchy with nine in the lower half including the bottom position. This infers that the EICT challenge level perceived by older adults may be decreasing, which would be an encouraging indication towards the intended ease of use of these devices by older people. Smartphone functions are newly added to the ETUQ and the close comparative challenge with mobile phone functions holds promise for a straightforward transition between devices, particularly for those people with dementia who perceive updating their technologies to fit

with their preferences (Rosenberg & Nygård, 2017) or who wish to blend in among the ubiquity of smartphone users (Nygård, 2008). In addition, it may be possible to improve upon this level of perceived ease of use should a greater number of smartphone users emerge as predicted in future.

Methodological considerations

The power of this study was calculated based upon demonstrating the difference between each groups' measure of ability to use all ET. The sample size allowed an exploratory investigation into sub-amounts of EICTs used and relevant. The resulting differences and similarities indicate that the ETUQ administered with large enough samples could be used to generate knowledge about the relevance and use of specific EICTs, devices, and functions, for the general population of older adults living with dementia. A further consideration regards the recruitment of people from memory investigation clinics and then a range of activity groups. It could be contended that a sampling bias exists towards recruitment of people who consider a minority of the technological landscape relevant, but equally such bias could be in the opposite direction.

Conclusion

This study demonstrates that, although overlapping, a significant gap emerges between older adults with dementia, who perceive less EICT devices and functions to be relevant and less still in use, and people with no known cognitive impairment. Digital strategies, services, and interventions which harness the dominant EICT relevancies and abilities of people with dementia will better contribute towards an inclusive, dementia-friendly society. In this situation, older people could be supported by the most enabling dimensions of the technological landscape to be optimally independent. Tapering the demands placed to use EICT to the strengths and capabilities of all citizens addresses a pertinent issue of people with dementia's dignity and right to be included in society.

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Disclosure statement

The Authors declare that there is no conflict of interest.

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