The Role of the Internet and Technology in the Well-being of People with Physical Disabilities

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Abstract— Online activity can play an important role in the lifestyle and well-being of people living with physical disabilities. This mixed methods study involving 45 participants from around Nottinghamshire serves to illustrate the multiple roles Information Technology (IT) and the Internet can play in supporting the mental and physical well-being of people with lifetime disabilities. 44 of the 45 participants were active users of IT, to a greater or lesser extent, with uses ranging from vital communication devices, to hobbies and small business use.

Keywords- Physical Disability; Internet; Information Communication Technologies; ICT; Information Technology; IT; Well-being.

I. INTRODUCTION

The Internet and technology play an increasingly important role in the day to day lives of people across the UK. This change certainly includes people living with physical disabilities. The trend continues to increase with a wider range of adaptive and assistive technologies becoming available and affordable, with smartphones becoming almost ubiquitous. As more information from the government and health services is nowadays located online, this is a trend not just built from want, but also from necessity.

The research presented is an exploratory study, looking at how people with physical disabilities are using the Internet on a day to day basis, and the role this has on well-being, rather than focusing on interventions or specific activities. Research in this area is sparse and inconclusive [1][2], with the majority of the literature looking at a specific aspect of Internet use or well-being, such as improvements in the classroom [3], or promotion of physical activity and peer connection through online resources [4], [5]. The literature also supports a similar focus on information sharing and social support, with little insight into how this fits into people's daily Internet activities [6][7][8][9].

The rest of the paper is structured as followed; in section 2 we describe the recruitment and analysis methods used in this study. In section 3 we cover the results of data collection, and discuss the findings of the study, and the limitations of the methods utilized. In section 4 we concluded what impact the Internet had on the physical and mental well-being of participants in this study. Section 5 covers further work, and how the findings of this study have been fed into a wider project on Internet use and well-being.

II. METHODS

The data for this study were collected using a mix of face to face interviews, and online questionnaires.

Participants for the interview study were contacted through collaboration with Nottinghamshire County Council. In order to protect the anonymity of potential participants, the Council was supplied with the inclusion criteria (over 18, receiving assistance from the adult social services department for a physical disability, and living in their own home rather than residential care), and asked to send out an information letter inviting people to respond and participate in the study. People receiving these letters were then free to respond, or not, if they were interested in the study. In all, 18 participants were recruited from 150 total responses across phone, email, text and post, with interested parties making contact through email being directed to the questionnaire after the interview study was filled. However, in the end, 16 interviews were completed due to two participants withdrawing. The interviews were semi-structured and lasted between 30 and 120 minutes. The interviews were audio recorded and then transcribed for analysis in NVivo [10][11], first using a grounded theory approach [12], and then thematic analysis based on emergent themes from the first coding, as well as those from the questionnaire data for comparison.

Participants for the online questionnaire were recruited through link sharing on social media (Twitter, Reddit, and Facebook), an advertisement on a participant recruitment website, and word of mouth. Some participants were also directed to the questionnaire after expressing interest in the interview study after it was filled. The questionnaire followed the same outline as the interview script, with a mix of open and closed questions, allowing participants to elaborate on answers or leave comments where appropriate. This allowed the answers to be more directly comparable to those given in the face to face interviews, and create a more useful data source. In total, 29 questionnaires were completed over a two month period. Free text entries in the questionnaire were analysed in a similar way to the questionnaire transcripts in order to create a level of

comparison in the emergent themes between the two data sources.

III. RESULTS AND DISCUSSION

In total, 45 people participated across the two streams, with 16 participating in interviews and 29 completing the online questionnaire. The participants were from a broad age range, spanning from 18 to 85 across the two groups, and had a variety of different physical disabilities; it is significant to note here that people were not asked what diagnosis or disability they had, and any data on this was disclosed freely either in the interview or using a free text option in the questionnaire. Significantly, the group of participants was made up of a mix of people who had experienced the disability their whole lives, and people who had become disabled later in life, either through an accident or the onset of a related condition. This allowed a greater level of insight into the role the Internet had played during the rehabilitation and adaptation process, and how the use had changed over time. The comparison between people who had always lived with a disability, and those who had come disabled allowed a view into the use of technology and the uptake of and acceptance of it between the two groups.

The data from both groups showed clearly that the Internet and technology play a significant role in the daily activities of the people who took part in this study. This included learning about how to adapt products to suit the individuals' specific needs, and reaching out and finding, or forming peer support groups; of 29 questionnaire participants, 18 used time on the Internet to find peer support groups. Over three quarters of participants used at least one form of social media every day, for a mix of purposes, including peer support and charity information. One participant cited the Internet as "a lifeline" that had allowed them to adapt to their disability, moving from a tool for occasional shopping and emails, to something which has allowed them to adapt existing items in the house for continued use. Another participant had a voice controlled 'possum' unit set up to operate their computer, as well as to control the television, door locks, and phone from their wheelchair in order to retain a greater level of independence during the day between assistant visits. Apart from one participant who did not have access to the Internet, all the participants across the interviews and questionnaire group used the Internet to connect with family and friends, and to continue to access hobbies and support networks, for example through writing, singing groups, online gaming, and social media. Alongside information finding, the accessing of support networks was found to be a key theme, and thus should be considered in routine rehabilitation practice.

As mentioned, only one participant did not use the Internet or any technology, beyond television and radio, and had no interest in doing so for either social or rehabilitation purposes. Otherwise, all participants were active users of different technologies, covering a range of devices from smart phones to multiple desktop computers, or multiple devices in use. However, there is likely to be considerable bias arising from the recruitment of the participants. Questionnaire participants were recruited through social media and sharing in charity forums, and the survey itself was hosted online, requiring a certain level of engagement on the Internet in order to find, or receive, the survey link, and interest in order to complete it. Although interview participants did not need to have online access, the recruitment letter for the interviews specifically asked about Internet use for accessing social services and support, which probably discouraged other people who had limited Internet use. Of the people who received information letters about the study from the County Council, about 100 replied saying that they felt unable to participate in a face-to-face interview because of lack of access to laptops, smartphones and/or the Internet. A further 40 of the responses were from people who used the Internet but felt that they did not use it enough, or to access social services support, and would therefore not be of any help in the study.

IV. CONCLUSIONS

Although the number of participants was small across both the questionnaire and interview elements of the study, the nature of the responses indicates that the Internet and communication technologies play a significant role in the ability to adapt existing resources to fit condition specific needs, and in supporting mental well-being of people with physical disabilities. For many of the participants, it allowed a way to connect with peers and expand existing support networks in ways which may not have been possible due to travel accessibility, or indeed geographic distance from peers with a similar condition. It is therefore important to consider the potential positive influence of online sources of support and information, and the roles they can play beyond normal Internet usage for adults living with physical disabilities.

V. FURTHER WORK

Building on the findings in this study, further work is planned to understand the impact of Internet use on the well-being and information seeking practices of people diagnosed with early onset dementia, and how this use changes as the condition progresses and changes interactions with technology.

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