ADVANCECRT

The use of Connected Health Technology by Caregivers of Children with Illness – An Analysis of Sociodemographic Barriers and Enablers

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Introduction

Connected Health (CH) is a sociotechnical approach in which people, processes and technology are linked (Barr et al 2014).Families living with or beyond pediatric cancer experience may challenges. CH may reduce these challenges by facilitating communication, aiding support seeking (Chi & Demiris, 2015) and, establishing communities of caregivers (Newman et al., 2019). Despite efforts to encourage CH adoption (Blumenthal & Tavenner, 2010), use remains low (Government Accountability Office, 2017). Reasons for non-use include accessibility (Gell et al., 2015) and privacy (Campos-Castillo & Anthony, 2014).

Digital Divide: The impact of digitalisation on equity of service provision (Parsons & Hick, 2008) or the gap between those who have access to technologies and those who do not (Van Dijk & Hacker, 2003).

The impact of digitalisation on equity of service provision is termed the 'digital divide' (Parsons & Hick, 2008). Inequalities in access may, in turn, lead to inequalities in health-seeking behaviour (Viswanath & Kreuter, 2007). To ensure CH benefits caregivers of children, it is important to analyse the implications of technological development more widely (Barclay et al., 2014).

Research Question

1. What associations exist between technology access, demographic factors and CH use for caregivers of children, in comparison to caregivers of adults and non-caregivers?
2. How willing are caregivers of children to share their data and communicating using CH?

Methods

Data: Data derived from the 2019 Health Information National Trends Survey (HINTS). This survey, administered by the National Institute of Health, seeks to examine health-related topics, behaviours, views, technology use and health information seeking. Ethical approval was obtained from the Maynooth University Social Research Ethics Committee (Reference number: 2408297).
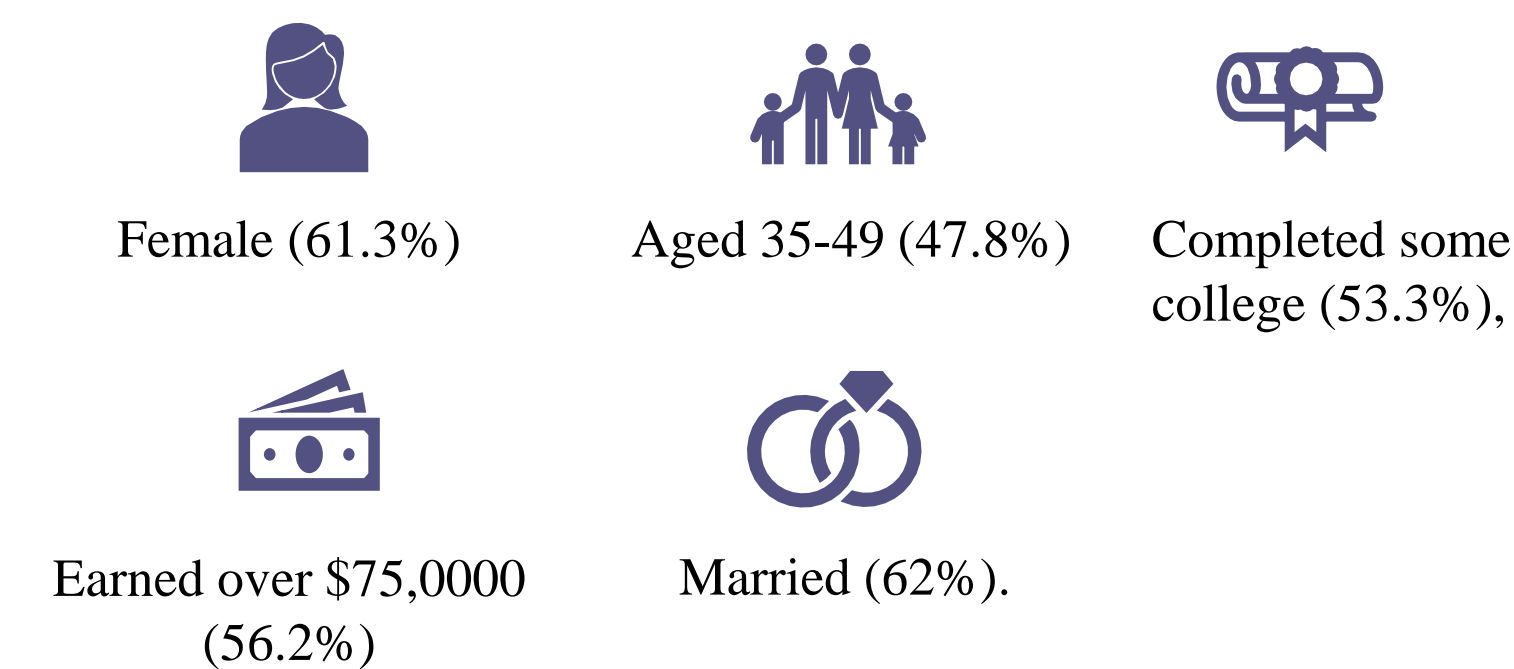
Participants: Participants were non-institutionalised US civilian adults. Of participants (n=5438), 4.8% were caregivers of children (n=247), 8% were caregivers of adults (n=410), 1.6% had multiple caregiving responsibilities (n=85) and 85.6% were non-caregivers (n=4413).

Data Analysis
The complex samples application of the Statistical Package for Social Sciences (SPSS) was used. Full sample weights were used for accurate calculations of national population estimates and to compute standard errors. Descriptive analysis was used to examine the use of CH technologies. Logistic regression were used to examine whether a) sensor frequency of use and b) electronic sharing health data could be explained by demographic variables and frequency of internet use. General linear analysis was performed to determine how well a) eHealth use and b) EHR use could be explained by independent variables.

Results

Caregivers of children were:

Female (61.3%) Aged 35-49 (47.8%) Completed some college (53.3%),

Earned over $75,0000 (56.2%) Married (62%).

Results

Associations between CH use and Socio-Demographic Factors

eHealth:
High mean use of eHealth (3.51, SE=.20)

− Earning between $20-35,000 (t=--3.29, p=0.02)

USED A SENSOR
No 51% Yes 49%
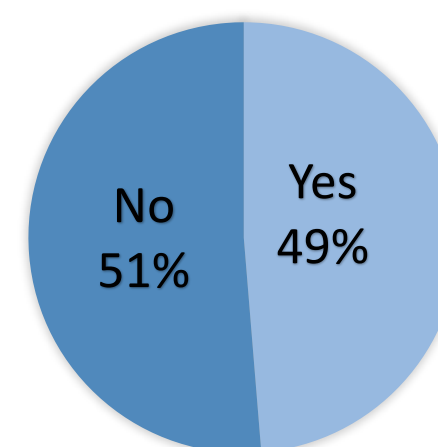
Sensor:
− having graduated high school (t=-2.80, p=0.01)
+ Earning between $20-35,000 (t=3.03, p<.001)
+ Being male (t=2.01, p=0.05)
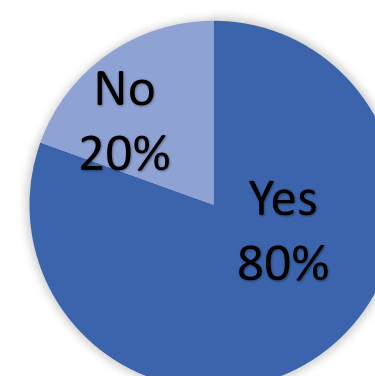
EHR:
Mean EHR use (2.86, SE=.24) suggested some use.

− household incomes of less than $20,000 (OR=.14, p=.05),
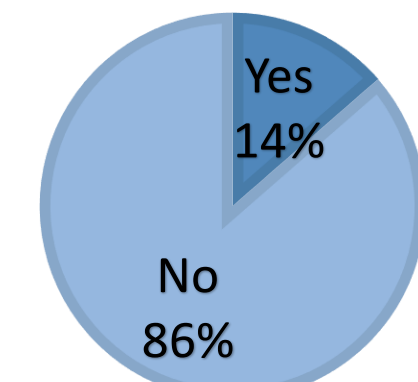− having completed some college (OR=.13, p=.04)
− being male (OR=.07, p<.001)

Health Data:

WILLING TO SHARE
No 20% Yes 80%

ACTUALLY SHARED
Yes 14% No 86%

− household incomes of less than $20,000 (OR=.68, p=.002).
+ Completing some college (OR=17.69, p=.01).

Conclusion

- Results suggest a role of CH in expanding the digital divide and, through it, health inequality.
- Strategies to promote digital inclusion should be considered within CH design

References

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