FOSTERING INCLUSIVITY WITHIN DIGITAL INNOVATION: WHY SHOULD DIGITAL EXCLUSION BE A PRIORITY?

Dr Gemma Wilson-Menzfeld, CPsychol, PhD, MSc, BSc (Hons), FHEA
Associate Professor in Digital Health; Health Psychologist
Faculty of Health and Life Sciences, Northumbria University

Dr Goran Erfani, PhD, MSc, BSc, FHEA
Research Fellow
Faculty of Health and Life Sciences, Northumbria University

DIGITAL INNOVATION IN THE HEALTH SECTOR

Digital connectivity continues to be critical for employment, education, finance, and both civic and social citizenship. In the health sector, digital transformation was a key part of the NHS long-term plan, published in 2019, particularly focusing on prevention, care, and treatment [1]. Patients across the UK have already witnessed these changes, from digital triage and consultation within primary care to monitoring daily health and well-being. Whilst evidence indicates the benefits of using digital methods throughout the healthcare system [2,3] only those who are 'digitally included' have access to / can benefit from these digital solutions. For example, services across many sectors are now online only or 'digital by default' [4-6] removing an individual's choice, and in many cases ability, to access this information or these services offline. Digital exclusion is complex and comprises digital access, skills, confidence, and the value people assign to digital technology in their daily lives [7].

Understanding digitally excluded groups locally, regionally, and nationally is critical when developing digital policy initiatives in healthcare, and beyond. However, a recent House of Lords report identified that the UK government does not currently have an adequate strategy to tackle digital exclusion [8]. While digital policies exist across the health and social care sector, much of this is not evidence-based. It is, therefore, critical to build evidence to guide the development of social policy which aims to tackle digital exclusion for those most at risk. Furthermore, this evidence base must include the most digitally excluded communities, so that real, lived experience is at the forefront of this evidence base. This is often overlooked in current research studies through inappropriate (and often online) methods.

WHAT EVIDENCE DO WE HAVE?

We know that those most at risk of digital exclusion are those who already experience other inequalities [6, 9-11]. Therefore, those who are in most need of health and social care information and support are being further digitally excluded through fast-paced digital transformation [6]. We also know that this digital inequity is highest in the North-East of England through challenges with affordability, lack of digital access, and lack of digital skills [12]. The North East of England currently has the largest internet usage gap across the UK [13].

A recent research project, funded by the former North Tyneside Clinical Commissioning Group (now NHS North East North Cumbria ICB), and led by Dr Gemma Wilson-Menzfeld, achieved the largest study focussed on digital exclusion at a borough level across the globe [6]. Aiming to explore and gain a more in-depth understanding of

digital poverty across North Tyneside, this project used an innovative research methodology, recruiting participants using a household survey distributed across the borough, to capture data from 9,181 participants. Of these, 1,130 individuals (12.31%) were classified as being most digitally excluded. The research corroborated international evidence by highlighting the following predictors of digital exclusion: Increased age; Lower income; Lower (or no) education levels; Living with a disability, or living in a household with someone else living with a disability; and/or living in a smaller household[6].

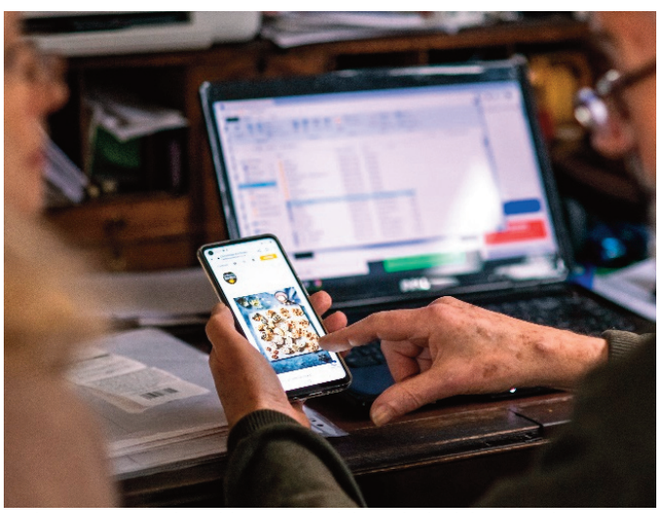
Within current evidence, geographical differences are typically considered as urban vs. rural, or North vs. South, however a pioneering finding of this study in North Tyneside was based on micro-geographical factors of digital exclusion[6]. Despite the demographic predictors of digital exclusion presented above, residing in higher socio-economic geographical areas did not necessarily equate to being more digitally included. For example, residents of one locality within the most affluent area of North Tyneside self-reported the least digital access, least use of technology, least digital confidence, and least digital skills across the borough. This has a major impact on local, regional, and national decision-making. Further research is needed across wider populations to recognise additional micro-geographical differences in digital exclusion. Without this evidence, government funding is being spent on incorrect solutions in the wrong communities and those at most risk of digital exclusion may be missed at a local, regional, and national level.

BUT WON'T THIS PROBLEM BECOME A THING OF THE PAST?

Digital exclusion is a dynamic phenomenon that varies in time and space. Our research carried out in North Tyneside showed that certain social groups may experience digital exclusion at different stages of their life and/or places[6]. For example, statistical evidence in this study shows that older retired adults with disability, no or low-level education, residing in some specific (micro) geographical areas, are more likely to drift into digital exclusion[6]. School children from lower socio-economic families often reported digital exclusion at home during the protracted period of remote learning during the COVID-19 pandemic due to a lack of access to the internet or sharing the limited number of digital devices with multiple family members in their household[14]. Whilst generations will increasingly become more familiar with technology, as they have been perhaps introduced to this at an earlier age, the problem will not go away entirely. It may shift from generational exclusion to exclusion based on other factors, such as existing health and geographical inequalities.

There is also the ever-shifting nature of digital exclusion and fear prevented many individuals in our study from using digital tools, particularly the internet[6]. As technology rapidly develops, it has the potential to exclude existing digital users more, through technophobia e.g., fear around Artificial Intelligence (AI) or increasing cost of digital services/products. This will mean that digital exclusion is likely to be problematic for a long time. Therefore, long-term policies are needed to ensure the availability and accessibility of affordable digital resources within the home and community. This indicates the need for increased investment in facilitating access to digital resources for all, supporting the choice of working and learning from home during future lockdowns and restrictions.

Regional and national policy initiatives should reduce these inequalities and increase individuals' skills, use, and access to digital resources to bridge the existing digital divide across the country. Active engagement and involvement of the digitally excluded and marginalised groups in local collaborative planning processes provide an opportunity to reduce the digital gap. We must also keep digital exclusion in mind whilst developing digital solutions, as opposed to designing digital-only or digital-by-default offers. The training programmes and advice services should adequately and constantly meet the rapidly changing needs of new digital services introduced by healthcare facilities and other services. In addition, investment in equitable and inclusive access to digital resources is crucial for the success of any digital transformations and infrastructure developments.



Evidence suggests that older retired adults with disabilities residing in specific geographical areas are at higher risk of digital exclusion *(photo from the image published library via The Centre for Ageing Better)*.

CONCLUSION

Digital innovation benefits patient and public health outcomes. However, digital transformation across health and social care sectors can lead to further exclusion for those who are already digitally excluded, and issues of digital exclusion should be considered throughout all digital transformation decisions. We will not be successful in digital health/healthcare transformation unless we reduce the scale and extent of digital exclusion.

Including digitally excluded individuals within research is critical in understanding the complexity of digital exclusion. We need to continue building the evidence base to support social policy and practice implementation throughout the UK. This empirical data can subsequently serve as a basis for the judicious deployment of appropriate interventions in suitable geographical and demographic contexts, thereby mitigating the allocation of financial resources towards expensive and ineffectual remedies targeting inappropriate target groups.

This article is written on behalf of a larger research team: Dr Gemma Wilson-Menzfeld (project lead), Dr Goran Erfani, Wally Charlton, Dr Lesley-Young

Murphy, Professor Alison Steven, Dr Holly De Luca, and Professor Katie Brittain.

References

1. NHS. The NHS long term plan 2019 [Available from: https://www.longtermplan.nhs.uk/.
2. Imison C, Castle-Clarke S, Watson R, Edwards N. Delivering the benefits of digital health care: Nuffield Trust London; 2016.
3. Sheikh A, Anderson M, Albala S, Casadei B, Franklin BD, Richards M, et al. Health information technology and digital innovation for national learning health and care systems. The Lancet Digital Health. 2021;3(6):e383-e96.
4. Age UK. Later life in a digital world. London: Age UK; 2018.
5. Munford L, et al. Overcoming health inequalities in 'left behind' neighbourhoods. London: Northern Health Science Alliance and the APPG for 'left behind' neighbourhoods; 2022.
6. Wilson-Menzfeld G, Erfani G, Charlton W, De Luca H, Brittain K, Steven A, et al. Understanding Digital Exclusion across North Tyneside. Newcastle, UK: Northumbria University; 2023.
7. van Deursen AJAM, Helsper EJ. The Third-Level Digital Divide: Who Benefits Most from Being Online? Communication and Information Technologies Annual. Studies in Media and Communications. 10: Emerald Group Publishing Limited; 2015. p. 29-52.
8. House of Lords. Digital exclusion. In: Communications and Digital Committee, editor. London: Authority of the House of Lords; 2023.
9. Hargittai E. Second-level digital divide: Mapping differences in people's online skills. arXiv preprint cs/0109068. 2001.
10. Matthews K, Nazroo J, Marshall A. Digital inclusion in later life: cohort changes in internet use over a ten-year period in England. Ageing & Society. 2019;39(9):1914-32.
11. Yu RP, Ellison NB, McCammon RJ, Langa KM. Mapping the two levels of digital divide: Internet access and social network site adoption among older adults in the USA. Information, Communication & Society. 2016;19(10):1445-64.
12. Office for National Statistics. Exploring the UK's Digital Divide London: Office for National Statistics; 2019 [Available from: https://www.ons.gov.uk/peoplepopulationandcommunity/householdcharacteristics/homeinternetandsocialmediausage/articles/exploringtheuksdigitaldivide/2019-03-04.
13. Yates SJ, Carmi E, Lockley E, Pawluczuk A, French T, Vincent S. Who are the limited users of digital systems and media? An examination of UK evidence. First Monday. 2020;25(7).
14. Ofcom. Children and parents: media use and attitudes report. London: Ofcom; 2021.