Smarter social housing: user perspectives on technology adoption for healthy homes

Walker, Tim; Menneer, Tamaryn; Tu, Gengyang; Mueller, Markus; Leyshon, Catherine; Leyshon, Michael; Morrissey, Karyn; Bland, Emma; Buckingham, Sarah

Published in: Journal of Epidemiology and Community Health

Link to article, DOI: 10.1136/jech-2022-SSMabstracts.138

Publication date: 2022

Document Version
Publisher's PDF, also known as Version of record

Link back to DTU Orbit

Citation (APA):

General rights
Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.
A NATIONAL AUDIT OF SMOKING CESSATION SERVICES IN ADULT SPECIALIST CANCER CARE HOSPITALS IN IRELAND

1Patricia Fitzpatrick, 2Nancy Bhardwaj*, 3Ailis Lyons, 4Mouyad Masalkhi, 4Kate Frazier, 5Amanda McCann, 4Shrazi Syed, 6Vikram Niranjan, 2Cecily Kelleher, 7Paul Kavanagh, 4Patricia Fox, 3School of Public Health, Physiotherapy and Sports Science, University College Dublin, Dublin, Ireland; 1Department of Preventive Medicine and Health Promotion, St. Vincent’s University Hospital, Dublin, Ireland; 2School of Medicine, University College Dublin, Dublin, Ireland; 3School of Nursing, Midwifery and Health Systems, University College Dublin, Dublin, Ireland; 4Conway Institute of Biomolecular and Biomedical Research, University College Dublin, Dublin, Ireland; 5College of Health and Agricultural Sciences, University College Dublin, Dublin, Ireland; 6Tobacco Free Ireland Programme, Strategy and Research, Health Service Executive, Dublin, Ireland

Background Despite the progress made in smoking reduction in Ireland, smoking remains a challenge, particularly in cancer patients where post-diagnosis smoking has detrimental impacts on treatment and survival. This audit was of existing hospital smoking cessation services (SCS) for all patients (including cancer) at the eight specialist adult cancer hospitals (tertiary referral university hospitals) and one specialist radiotherapy hospital.

Methods An audit was conducted online, completed by smoking cessation (SC)/health promotion officers at each hospital in 2021, with questions based on literature review and the (first) consultative National Clinical Stop Smoking Guideline (published 2022).

Results One hospital did not participate due to unavailability of relevant staff. SCS were provided at 7 of 9 (77.8%) hospitals, predominantly to inpatients on admission or during hospital stay (5; 55.5%) but also at lower rate at discharge (3; 33.3%) and in outpatients (4; 44.4%). SCS were provided in the main by medical, nursing and hospital SC officers (6; 66.6%); just 44.4% noted alignment with community SC (for ongoing support). SCS provided included brief intervention and or ongoing support (6; 66.6%), intensive support (4; 44.4%), follow up phone support (2; 22.2%). SCS were delivered mainly (pre-COVID) as individual face-to-face (5; 55.5%) but phone (4; 44.4%), online (3; 33.3%) and group work (1; 11.1%) were also utilised. Nicotine Replacement Therapy was the first-choice in 2021 which almost all provided (7; 77.8%), with fewer offering varenicline (5; 55.5%) or buproprion (2; 22.2%). SCS was promoted on the hospital website in 55.5% despite hospital campuses being smoke-free, however, SC information was provided in appointment letters. Most hospitals (6; 66.6%) provide/promote SC training; and 4 (44.4%) have staff trained to deliver intensive stop-smoking advice.

Six (66.6%) of 9 hospitals provided SCS to cancer patients attending outpatient clinics, day units, inpatients or other departments (e.g., radiology, emergency). However, many hospitals noted low referral rates for cancer patients. While 6 hospitals recorded data on overall SCS uptake, one recorded it specifically for cancer patients. Cancer patients who smoke are automatically referred to SCS (at diagnosis/when starting systemic anti-cancer therapy/radiotherapy) and routinely prescribed SC medications at one hospital. Few oncology staff had received SC intervention training.

Conclusion A hospital visit/admission provides a cue to action for smokers and is an important opportunity for brief intervention by healthcare professionals to promote SC. This first National Clinical Guideline should assist necessary strengthening of hospital SC and promote smoking cessation support, particularly among cancer patients.

SMARTER SOCIAL HOUSING: USER PERSPECTIVES ON TECHNOLOGY ADOPTION FOR HEALTHY HOMES

Tim Walker, Tamyn Mennee, Gongpeng Tu, Markus Mueller, Catherine Leychom, Michael Leychn, Karyn Morrissey, Emma Bland, Sarah Buckingham*. 1Centre for Geography and Environmental Science, University of Exeter, Exeter, UK; 2European Centre for Environment and Human Health, University of Exeter, Exeter, UK; 3College of Engineering, Mathematics and Physical Sciences, University of Exeter, Exeter, UK; 4Sustainability Division, Department of Technology, Management and Economics, Technical University of Denmark, Lyngby, Copenhagen, Denmark; 5European Centre for Environment and Human Health, University of Exeter Medical School, Exeter, UK

Background Living in poor quality housing is a significant contributor to public health problems, and represent a considerable societal and economic burden worldwide. However, detecting and responding to a poor home environment remains a challenge, as the causes are often invisible and the impact on health is cumulative and long term. Smart homes are residences augmented with sensors to observe the environment and devices to provide proactive services. Evidence indicates that smart technology can improve home environment management and has potential health benefits. User perspectives on factors for adoption of a smart technology systems are under researched. In response this research examines the factors for adoption, and non-adopter, of a smart technology system to support home environment management for social housing tenants.

Methods 221 social housing tenants were recruited. Participant homes were fitted with sensors to monitor temperature, humidity, and air quality. Participants were provided with a digital dashboard to access their sensor data. Data was collected on participant health, dashboard use, and subsequent changes in home environment. A mixed method sequential research design was employed. Quantitative methods were used to understand determinants and patterns of technology use. Qualitative interviews (n=20, strategically sampled) were used to understand factors of feasibility and acceptability.

Results From a user perspective, this study found little evidence of interaction with the sensor data, and almost no evidence of changes in the sensor data as a result of viewing. Ease of use and usefulness were found to be the most important barriers to technology adoption. Both these factors related to how the information was communicated and how effective the dashboard was in converting data into insight. We found that the Housing Association provided important facilitating conditions to the adoption of the smart home technology, specifically for participant trust regarding how the data will be used. We also found that the Housing Association were using the dashboard to successful intervene with high-risk properties and provide wellbeing support for their tenants.

Conclusion It is clear from this study that smart home technology is not a panacea. While smart technology was useful for identifying risk, the technology could not identify the exact cause of the risk nor instigate an acceptable intervention. Human intervention was required to fully identify and subsequently offer solutions that addressed the problems. We argue that to improve the home environment for tenants, smart technology capacity must be matched to human capacity.
for intervention. In sum, this study has shown the potential of smart home technology, which is integrated with a Housing Association tenant support programme, to improve health and wellbeing.

Background Poor sleep quality has been linked to a number of adverse health outcomes. It is therefore important to understand factors contributing to sleep quality. Previous research has suggested that increased IQ and education duration have a protective effect on sleep quality in old age. A proposed mechanism is that higher intelligence quotient (IQ) and education levels contribute to increased cortical thickness, which in turn contributes to a higher overall sleep quality. That said, there have been very few studies examining this link directly. This study attempts to add to the body of research on the topic with the hypothesis that age-11 IQ and highest achieved education level are significantly associated with subjective sleep quality at age 60.

Methods Poor sleep quality has been linked to a number of adverse health outcomes. It is therefore important to understand factors contributing to sleep quality. Previous research has suggested that increased IQ and education duration have a protective effect on sleep quality in old age. A proposed mechanism is that higher intelligence quotient (IQ) and education levels contribute to increased cortical thickness, which in turn contributes to a higher overall sleep quality. That said, there have been very few studies examining this link directly. This study attempts to add to the body of research on the topic with the hypothesis that age-11 IQ and highest achieved education level are significantly associated with subjective sleep quality at age 60.

Results After excluding participants with incomplete data sets and those who had been diagnosed with sleep apnoea, 251 of 1142 participants were included in the path analysis model. Education level was significantly associated with global PSQI (R²=0.653; 95% CI −1.161, -0.145; p=0.012) but age-11 IQ was not. The model was stratified by sex, giving an improved fit in the women’s model (n=141; RMSEA=0.031; CFI=0.997) but a poorer fit in the men’s (n=110; RMSEA=0.302; CFI=0.841). In women, education level but not age-11 IQ was once again found to be significantly associated with global PSQI (R²=0.872; 95% CI -1.628, -0.115; p=0.024), but in the men’s model neither age-11 IQ nor education level were significant. Neither social class score was significant in any of the models.

Conclusion The results of this study show a relationship between education level, but not childhood IQ and sleep quality in later life, in women only. Limitations of this study include the lack of brain imaging data, meaning the mechanism of the relationship cannot be ascertained.