Project Details	
Project Code	MRCPHS26Br Garnett
Title	Optimising uptake and personalisation of digital health interventions for under-served groups: a case study with the Drink Less app
Research Theme	PHS
Project Type	Dry lab
Summary	Digital interventions can play a large role in improving public health but we need to boost their uptake and effectiveness among under-served groups (e.g., people experiencing homelessness). Despite their potential, less than 5% of adults use digital interventions as support. Using the popular and effective Drink Less app as a case study, this PhD will tailor digital support for under-served groups based on individual needs and goals. This PhD will involve data science, co-creation with stakeholders, and experimental evaluation to improve app uptake and effectiveness to reduce health inequalities by providing personalized interventions for groups facing the greatest health risks.
Description	Digital health interventions can be effective at changing behaviours and can overcome lots of barriers to receiving face-to-face interventions such as stigma and accessibility. They also have the benefit of being scalable at a low incremental cost, which is important given low overall rates of brief intervention delivery with only 24% of smokers and 4% of risky drinkers receiving a face-to-face intervention. However, despite their wide availability, uptake of digital interventions is still very low with less than 5% of adults using a digital intervention when trying to change their behaviour. Digital interventions also provide a great opportunity to provide personalised support that incorporates the individuals' needs and goals, which can increase their likelihood of successful behaviour change.
	Digital exclusion (i.e., unequal access to digital technology and digital literacy) means that increased uptake of digital interventions risks excluding under-served groups and worsening health inequalities. Under-served groups are those that experience greater health-related harms and are under-represented in research (e.g., minority ethnic groups, socioeconomically disadvantaged groups, people experiencing homelessness). However, given that under-served groups are often not well served by existing intervention models, digital interventions could, if done well, offer easier access to interventions for these individuals (e.g., through reduced travel costs to access face-to-face interventions).
	This project will aim to:
	1. Understand and improve the uptake to digital health interventions among under-served groups; and
	2. Design and evaluate personalised support within digital health interventions to deliver tailored strategies, to different users, particularly those in under-served groups, based on their chosen goal.
	This project will use the Drink Less app as a case study – a popular, evidence-based digital intervention to help increasing and higher risk drinkers reduce their alcohol consumption. Increasing and higher risk drinking poses a significant risk of harm to health and contributes to health inequalities with the most disadvantaged groups suffering the most alcohol-related harm. A previous trial evaluating the effectiveness of Drink Less found that 67% of trial participants who were

recommended to download and use the app in a trial did so (i.e., app uptake), and Drink Less was found to be effective in helping increasing and higher risk drinkers reduce their weekly alcohol consumption by an additional two UK units compared with usual digital care.

However, the Drink Less app was designed for the general population of drinkers in the UK and lacks personalisation and detailed tailoring of support based on users' characteristics. Providing personalised and tailored support for users from under-served groups is important if we want to reduce health inequalities from alcohol consumption. The student will steer the project from the start by choosing their focus in terms of the under-served groups and how this looks, whether that is focusing on one particular under-served group, and which one if so, or across a broader range of characteristics.

In phase 1 of the project, the student will use secondary data from the Drink Less app (using Python and R) to investigate whether the third of participants who did not download the app from the previous trial were more likely to be from an under-served group, and how engagement with the intervention varied among those who did download the app from an under-served group. Following that, the student will optimise the uptake of the app among under-served groups using a co-design approach with relevant stakeholders with the aim of increasing the proportion of users downloading the app based on a recommendation. This optimised recommendation will then be evaluated in an online experimental study to assess if it increased the uptake of the app among under-served groups and how this compares with the general population. There will also be the opportunity for the student to conduct a scoping review to identify what interventions already exist for under-served groups.

In phase 2, the student will look to refine the Drink Less app to deliver tailored strategies, to different users, particularly those in under-served groups, based on their chosen goal, other health-related behaviours, their drinking pattern and whether they have made an attempt before. This will be achieved through participatory research using the Person-Based Approach and informed by existing literature. The student can then use the Drink Less app to conduct a within-app randomized trial to evaluate their tailored version. They will also be able to choose from a range of other methodological approaches, including qualitative interviews and online experiments.

In phase 3, the student will draw together what they have learnt and have found with this case study and consider if and how it can be applied to other contexts in a short report with guidance for other researchers producing digital health interventions for how to optimise their interventions for under-served groups. This could include whether the findings are transferable across types of digital intervention (e.g., websites), other behaviours (e.g., smoking) and different under-served groups.

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