

Mobile technology use in clinical research: Examining challenges and implications for health promotion in South Africa



With the help of mobile technologies, such as mobile apps, patients may be able to better self-manage chronic illnesses by tracking health metrics like nutrition, exercise, and medication adherence.

The use of mobile technologies to promote health and healthy behaviours is becoming more prevalent in global health programs. With the help of mobile technologies, such as mobile apps, patients may be able to better self-manage chronic illnesses by tracking health metrics like nutrition, exercise, and medication adherence. However, a number of studies have indicated that factors such as age, gender, race, geographical location, and medical specialization directly affect an individual's inclination for adopting technology, highlighting the significance of comprehending the factors behind the digital divide and unequal access.

Methodology

In this study, a convergent parallel mixed methods research design was utilized. The study population comprised of 363 young women aged 18 to 28 years, who participated in the trial within the precinct of the Chris Hani Baragwanath Academic Hospital in Soweto, Johannesburg, South Africa, and were recruited into the Bukhali trial's intervention arm. Phone calls were made to participants between August 2019 and January 2022, in order to schedule a session or have one delivered to them.

The quantitative component of this study included all young women who were contacted telephonically between August 2019 and January 2022. A subset of the broader Healthy Life Trajectories Initiative participant pool, consisting of 363 women, were contacted to either book for a session or have

one delivered to them. The purpose of this exercise was to determine which young women could be reached and which could not. The study focused on the extent to which participants could be contacted by phone, so participants who had (1) in-person contact with the study team (either off-site to deliver supplements or on-site to deliver a session), (2) contact via SMS, or (3) contacted through other means of communication (e.g., home visits or instant messaging) were excluded. STATA (version 17; StataCorp) was used for all data analysis.

For the qualitative component, a subsample of participants ($n=20$) from the Bukhali trial for > 12 months were recruited telephonically for those who were easily contactable, and by a fieldwork team for those who were difficult to reach. The last group of women involved in the research would be scheduled for a monthly session, which might be conducted in person, over the phone, via SMS, or by having supplements sent to them. Afterwards, we initially limited this group to the young women we were unable to get in touch with, those who had a session delivered to them, and those who had a session scheduled. Moreover, individuals who remained unreachable despite multiple attempts to reach them were excluded, and the sample was then limited to those who received just one call attempt. A reflexive theme analysis technique was utilized for the analysis using MAXQDA software (version 20; VERBI GmbH).

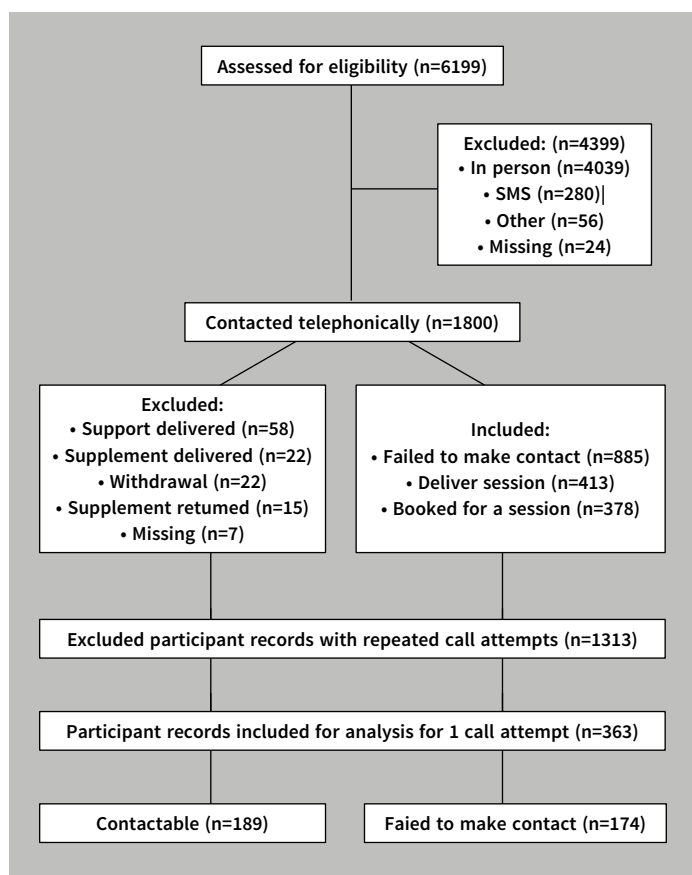


Figure 1: Flow diagram of the trial participants contacted telephonically between August 2019 and January 2022.

Key findings

The purpose of this study was to investigate the difficulties that participants in a trial held in Soweto, South Africa, had in maintaining contact via cell phones. This study found that even though the majority of participants who are difficult to contact do have personal smartphones, they also deal with a variety of interrelated mobile phone problems, like coverage and technical issues, mobile theft in their communities, and expensive data and airtime.

According to the quantitative and qualitative findings of this study, which explored the difficulties that participants face in being contactable by mobile phones, the participants' socioeconomic background has a significant influence on both their mobile use behavior and the difficulty in reaching them.

This study further found that the proportion of those who own phones decreased with each successive age category for both participants who were hard to reach and those who were contactable.

Additionally, this study found that the proportion of phone owners decreased with each age category for both those who were difficult to reach and those who were contactable.

However, multiple viable solutions exist for the issues raised in this study. Health promotion initiatives can be implemented through in-person consultations or sessions with participants to optimize engagement in mobile health research. Participants would get the chance to interact more personally with the study team during these in-person consultations, as well as receive personalized study feedback and support. This method was successful in a previous clinical research, where individualized care, such as allowing participants to express their personal problems and allowing them to make more contact with the study team or investigators, helped in increasing participation.

Conclusion

Despite the availability of mobile technology and network accessibility, significant economic constraints prohibit young individuals from effectively leveraging technology. Consequently, these challenges have an impact on behavioral changes and health promotion. Greater accessibility to less expensive or free data networks or digital platforms is required nationwide in South Africa to offer more equitable access to such technologies, given the rising phone ownership in LMICs, which includes South Africa.

Reference:

Mobile technology use in clinical research: Examining challenges and implications for health promotion in South Africa

Khuthala Mabetha¹, Larske M Soepnel^{1,2}, Gugulethu Mabena¹, Molebogeng Motlathlhedhi¹, Lukhanyo Nyati¹, Shane A Norris^{1,3}, Catherine E Draper¹

Affiliations

¹ South African Medical Research Council/Wits Developmental Pathways for Health Research Unit, Department of Paediatrics, Faculty of Health Sciences, School of Clinical Medicine, University of the Witwatersrand, Johannesburg, South Africa

² Julius Center for Health Sciences and Primary Care, University Medical Center, Utrecht University, Utrecht, Netherlands

³ School of Human Development and Health, University of Southampton, Southampton, United Kingdom

Corresponding author: khuthala.mabetha@wits.ac.za

Funding information: This study was supported by the South African Medical Research Council and the Canadian Institutes of Health Research. SAN was supported by the Department of Science and Innovation-National Research Foundation Centre of Excellence in Human Development.