FEATURE

TECHNOLOGY

Commentary: The emperor's new phone

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Low cost mobile phones have unquestionably revolutionised access to information and communication worldwide. Mobile health (m-health)—the application of mobile technology in healthcare and health promotion—can create unique opportunities for citizen participation in identifying health priorities and solutions and can enable collaboration between individuals, researchers, and health authorities in real time to inform (or misinform) the public.

Innovations in m-health have been used effectively in high income countries for smoking cessation, weight loss, diet and physical activity, treatment adherence, disease management, and more.[1-4] M-health has also shown promise in some of the world's poorest settings and hardest to reach populations, with initiatives including health promotion programmes using text or voice messaging, decision support apps, rapid diagnostics, early warning systems, and outbreak and disease surveillance methods.

Technology is not neutral

However, technology is not neutral—it is affected by the contextually determined relationships between innovations, people, and systems.[5] It is not surprising, therefore, that most of the literature on m-health in low income settings focuses on pilot studies assessing the feasibility and acceptability of m-health interventions in different contexts. These studies broadly conclude that the technological barrier is low and that m-health initiatives can be applied even in the most remote settings.

This has led to prodigious enthusiasm and excitement around the potential of m-health to overcome longstanding health challenges in low and middle income countries. Could it be the way to close the gaps between supply and demand of health services, to democratise health data, and to bring about behaviour change, empowerment, and, ultimately, better health? This excitement has perhaps been mistaken for evidence, or at least consensus, that m-health does actually improve health. But we are not there yet.

Now is the time to take stock of the evidence base in low and middle income settings, which, like the emperor's new robe in Andersen's tale, is sparse and of questionable quality.[6]

Global, multidisciplinary view

Over two days in January, the University College London Institute for Global Health and the UCL Grand Challenge of Global Health, together with BBC Media Action and Umeå Centre for Global Health Research, hosted a conference in London taking a global, multidisciplinary view of the evidence for m-health, embedded in the contextual and cultural realities of population health in low and middle income settings.

Over 150 delegates in London and more than 340 online viewers from 47 countries joined discussions focused on the evidence of the effects of m-health on broad indicators of health, rather than on the success of implementing or using the technology or of small scale pilot studies. These indicators included health knowledge, behaviours, attitudes, service provision, morbidity, and mortality. Cutting across broad themes of health systems and m-health behaviour change, the event covered the major challenges of monitoring and evaluation, scale-up, ethics, equity, and public support and trust in m-health initiatives. With a focus on problems rather than technology and an underlying emphasis on health outcomes, the symposium addressed scientific evidence, controversies, and future directions of m-health globally. The event was recorded and the programme and all presentations are freely available to view online.[7]

Reflecting on the conference, it is clear that pilot and feasibility studies remain important but are not an end in themselves. They must be designed with scale-up, impact evaluation, and sustainability in mind. The key to which is a precise and clear description of the intervention being delivered through mobile technology and the anticipated outcomes. This is starting to happen in low and middle income countries, and emerging taxonomies and evaluation frameworks that focus on health outcomes and public health principles, rather than on whether the technology "works," are beginning to emerge.[8-10]

Technological solutionism

But m-health evaluation is neither easy nor cheap—the limited evidence base from low and middle income countries reflects this. As we shift towards an era of "technological solutionism," traditional health evaluation paradigms must be accompanied by innovation in study design and outcome definitions.[11] We

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also need to develop new interdisciplinary collaborations that include end users of the technology in the design and interpretation of evaluation programmes, within the context of existing health systems. There is certainly, reassuringly, a role for randomised controlled trials,[12][13] but evaluation cannot end there. And, arguably, in some cases the evidence bar need not be set so high.

Without downgrading traditional public health information and evaluation systems, a participatory, citizen-science partnership is needed, focusing on qualitative as well as quantitative measures of impact and benefiting from the wisdom of crowds.[11] This is necessary to truly understand what does or doesn't work and is essential for understanding theories of change. It was, after all, crowds who ultimately pointed out the fundamental limitations of the emperor's new clothes.

An important goal of the conference was to link individuals, groups, and existing networks to create a global network of academics and practitioners who will take stock of m-health evidence and challenges in global health and development. The conversation started in January and will continue as evidence is gathered. I'm optimistic that m-health will prove to be much more than a case of "the emperor's new phone."

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