



PRESS RELEASE

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What women want to see in pregnancy health apps

Singapore, 23 January 2024— Digital health interventions, such as mobile applications, are increasingly being viewed as potential ways to encourage behaviour change to improve health outcomes in areas including diet, exercise and sleep. Among women in the pregnancy, pre-pregnancy, or post-pregnancy stages, healthy lifestyles and behaviours are of key importance to the mother and child.

Using digital health solutions however, also comes with challenges in achieving and maintaining long-term lifestyle changes, due to the difficulty in adhering to suggested procedures and user fatigue. It is critical therefore to involve users during the process of developing these solutions, in order to derive potentially longer-term impact and improve patient health.

A multi-disciplinary team comprising obstetricians, gynaecologists, paediatricians, and biomedical engineers from National University of Singapore (NUS), Yong Loo Lin School of Medicine (NUS Medicine), National University Health System (NUHS) and National University Hospital (NUH), has found that the ability for personalisation of user experience, and localised content, were key determinants for the effectiveness and sustainability of digital health solutions that support women from pre- to post-pregnancy. Their findings were published in [NPJ Digital Medicine](#) and comprised insights from interviews conducted with 44 women at different stages of the childbearing roadmap, including preconception, pregnancy, and post birth.

Dr. V Vien Lee, research fellow at the Institute for Digital Medicine (WisDM) at NUS Medicine, and first author of the study, said, “Women who are trying to conceive, who are pregnant or who have recently given birth, have unique journeys and want digital health interventions tailored to their journey. Part of tailoring the intervention includes providing health information at the right time and sharing anecdotes of women who have similar experiences.”

The research team identified some examples that further elaborated on these two key determinants. The first—personalisation—includes the following examples:

- data-driven personalised information given to women at the right time, as participants highlighted the need for adaptive feedback based on their input, to help them better understand and troubleshoot their journey from conception to post-birth, and provided at a relevant point in time; and
- ability to provide milestone indicators relevant to their current phase such as suitable timelines for fertility checks, further medical investigations and their babies’ development.

For the other determinant of having localised content, examples include:

- access to local healthcare resources within their home region, including fertility testing, gynaecologists, maternity ward options, pre- or post-natal physiotherapists, counsellors, lactation consultants, post-natal massage therapists and paediatricians;
- localised guidance relating to lifestyle, specifically diet and alternative medicine options, which is however not easily available online; and
- information and guidance on the local healthcare process, as participants expressed struggles in understanding next steps when navigating through their healthcare journey from preconception to post birth.

Professor Dean Ho, Director of WisDM, who co-led the study, said, “The factors identified from our study provide a comprehensive view of the participants’ priorities, which could serve as a powerful framework for effective solutions to be developed with the user in mind.”

“Digital health solutions should be deeply contextualised to the needs of the users. Therefore, this study aimed to really understand what pregnant women in Singapore want and need in a digital solution,” added **Dr Agata Blasiak, Research Assistant Professor at WisDM**, and co-corresponding author of the study.

The team hopes that the study’s results will inform key agents and parties within the digital health ecosystem on how to best develop user-centred solutions for women at varying stages of pregnancy, address specific concerns and provide actionable information at the right time.

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Our multidisciplinary and real-world approach to education, research and entrepreneurship enables us to work closely with industry, governments, and academia to address crucial and complex issues relevant to Asia and the world. Researchers in our faculties, research centres of excellence, corporate labs and more than 30 university-level research institutes focus on themes that include energy; environmental and urban sustainability; treatment and prevention of diseases; active ageing; advanced materials; risk management and resilience of financial systems; Asian studies; and Smart Nation capabilities such as artificial intelligence, data science, operations research and cybersecurity.

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Through a dynamic and future-oriented five-year curriculum that is inter-disciplinary and inter-professional in nature, our students undergo a holistic learning experience that exposes them to multiple facets of healthcare and prepares them to become visionary leaders and compassionate doctors and nurses of tomorrow. Since the School's founding in 1905, more than 12,000 graduates have passed through our doors.

In our pursuit of health for all, our strategic research programmes focus on innovative, cutting-edge biomedical research with collaborators around the world to deliver high-impact solutions to benefit human lives.

The school is the oldest institution of higher learning in the National University of Singapore and a founding institutional member of the National University Health System. It is one of Asia's leading medical schools and ranks among the best in the world (Times Higher Education World University Rankings 2024 by subject and the Quacquarelli Symonds (QS) World University Rankings by subject 2023).

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