Mobile apps to support sleep health and emotional wellbeing

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Background

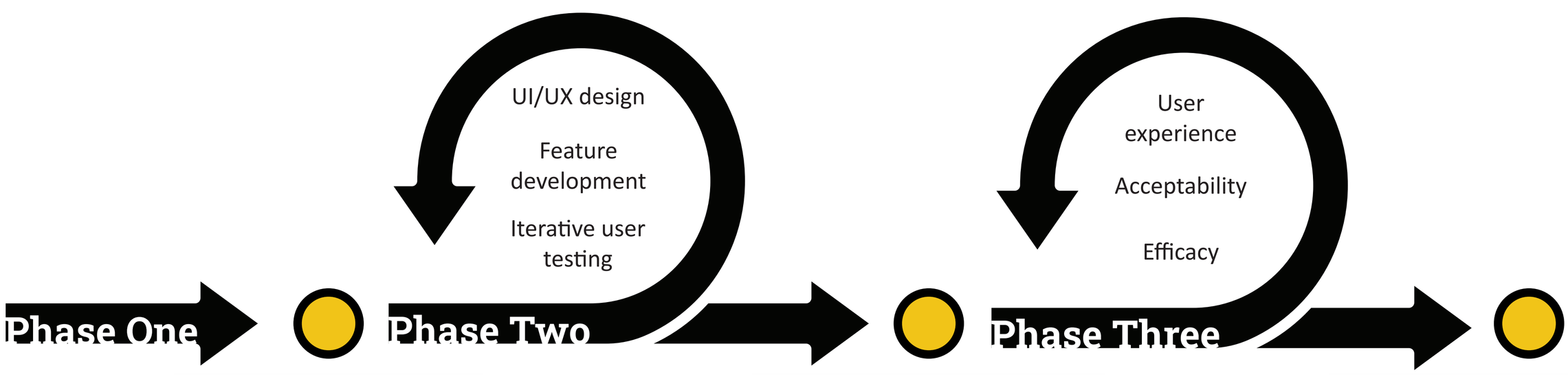
Sleep is an essential part of human life that allows for recovery and repair, conservation of energy, and neurogenic development. The intrinsic relationship between sleep and emotional wellbeing is well explored, where poor quantity or quality of sleep has detrimental outcomes on mood including increased levels of depression and anxiety [1]. Amongst university students, **high levels of sleep disturbances [2] may be an important contributing factor to the growing levels of emotional distress.**

Mobile health apps are highly acceptable [3] and may allow underserved populations to access care. Yet successful delivery faces challenges. Many commercial apps are financially out of reach for students. There is little in the way evidential underpinning or clinical evaluation of apps. mHealth apps also experience problematically low user engagement, potentially due to a lack of quality user-centred design principals.

The use of story narratives pre-date written language. Modern audio narratives are moving more towards digital mediums such as audiobooks and podcasts. Story listening is a common part of children's bedtime routines yet poorly researched in adults despite being a highly popular sleep aid [4]. **Story-listening engages us cognitively and emotionally, which may temporarily modify activity in brain areas responsible for sleep disturbances** [5].

Research Aims

1. Explore university students' openness to a unique new sleep app,
2. Develop a new app using iterative co-design principals featuring audio narratives as a sleep aid,
3. Assess engagement with the app, user experience, and explore evidence of efficacy.



Note: The mHealth Agile Development & Evaluation lifecycle. Adapted from Wilson, K., Bell, C., Wilson, L. & Witteman, H. Agile research to complement agile development: a proposal for an mHealth research lifecycle. Npj Digit. Med. 1, 1–6 (2018)

Phase One – Student experiences and openness

Explore university students' sleep experiences, strategies to improve sleep, how they use mobile apps to aid their sleep, and openness to a new mHealth sleep app.

Phase Two – Codesign a new app

Use an iterative co-design approach to develop a new mHealth sleep app alongside University students. Iterative rapid development of new ideas allows for focus groups to quickly view changes made directly from their collaboration.

Phase Three – Testing acceptability and feasibility

Feasability testing across a 12 week period:

1. Measure user engagement using in-app analytics,
2. Explore user experiences through interviews, and
3. Assess evidence of change to subjective sleep and wellbeing measures.

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