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‘Selecting, appraising, recommending and using mobile applications (apps) in nursing’

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It's more than likely that a patient, their family member or a colleague may have recently asked you *"Is there an app for that?"* Mobile technology is inescapable. It is pervasive in almost every aspect of daily life. Wherever we look, people are often hunched over and fully immersed by a small 6 x 3 inch screen, whether it be walking on the street, travelling on the bus, at the coffee shop or in the clinic waiting room. Mobile devices have infiltrated most aspects of our lives and offer quick, adaptive tech-based solutions to many previously administrative, repetitive or otherwise time-consuming tasks. Everyday tasks such as banking, planning a trip on public transport, maintaining a diary or reviewing the weather all easily accomplished for most, via their mobile device. At the beginning of 2017 more than 2.2 million apps were available to download to various iOS devices such as iPads, iPhones and iPods, and more than 2.6 million apps were available in the Google Play store, formerly known as the Android Market (Statista 2017a, b). Mobile applications in the 'Health' category are now prolific and wide ranging including popular apps such as the *'Nursing Drug Handbook'*, *'Lark'*, *'Medscape'* and BUPA's *'FoodSwitch'* App. It's likely you already make use of a few nursing-related mobile apps, and possibly have even made recommendations to patients about health-related apps in the past. Yet, what informed your decision to download or recommend to patients?

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The McKinsey Digital Patient Survey (2014) highlighted that over 75% of all patients expect to use digital services in the future with usage expected to increase across all age groups. However demand for apps is highest among younger people (Biesdorf & Niedermann 2014). There are several drivers to mobile health app adoption. These include the increasing ownership of smartphones and the ubiquity of mobile devices; a growing culture of instantaneous access to information (including health); ease of app development; their low cost; patient empowerment and the movement towards recognition of the informed patient; the want for personalised health information; big data and analytics; personalised health data; feedback loop from apps to assist with behaviour modification and personal motivation (Elsevier Clinical Solutions 2015). However many barriers still exist to the integration of apps in healthcare. The busy, human and complex risk environment of healthcare and a lack of skills by patients and providers contribute to the slow augmentation to routine clinical practice. Further, both clinicians and patients may be averse to what they perceive as impersonal or dehumanising interface design of some apps, detracting from the personalisation and caring perspectives of healthcare (Dean *et al.* 2016, O'Connor *et al.* 2016).

There is huge variability in the purpose, function and quality of health related apps. They can be used to inform, instruct, record, display, guide, remind or alert and communicate. However, the majority of apps are used to provide health content and information, with largely no interactive functionality (IMS Institute for Healthcare Informatics 2013). With so many apps available for nurses, patients and caregivers, it can be difficult to distinguish between a good app and those that serve little purpose or effect. With health-related apps fast becoming an essential component of nursing practice, little guidance exists for nurses in the selection and critical appraisal of the quality of mobile applications. Yet, the proliferation in the availability has seen an increase in patients and caregivers seeking recommendations and advice of 'the best app' to support self-management of their health, wellbeing or chronic disease.

There are a few key critical factors in the appraisal of health-related websites and guidelines that can be utilised in critically assessing health-related apps. iMedical Apps (www.imedicalapps.com) is a useful website available to review the rank and quality of apps which have usually been evaluated by other health professionals (MEDPAGETODAY 2017). To date, excellent tools and instruments are available to clinicians to help us make sense of evidence and research. CASP (Critical Appraisal Skills Programme (CASP): Making sense of the evidence 2017), AGREE (Brouwers *et al.* 2010) and AMSTAR (Shea *et al.* 2009) are highly useful tools that are available for the critical appraisal of research and different types of evidence. These tools are helpful to guide appraisal of evidence such as randomised controlled trials, cohort studies, qualitative studies, systematic reviews and clinical practice guidelines. However, there is little guidance for clinicians on how to appraise the quality of health-related apps using a similar systematic approach.

Drawing on existing critical appraisal instruments, we suggest the following criteria for nurses to apply, to guide a systematic quality appraisal of a health-related app.

Health related mobile app evaluation criteria
CRITERIA 1: Purpose, description and audience
<ol style="list-style-type: none"> 1. Is the overall purpose/ objective of the health app well described? 2. Is the health topic covered by the app specifically described in the app store? 3. Is the target population (e.g. patient or clinician target group or, speciality area) specifically described?
CRITERIA 2: App development and production
<ol style="list-style-type: none"> 4. Does the app describe how it was developed or produced? 5. Who is the app written, developed or produced by? 6. Were experts and/or consumers involved in the development of the app? 7. Is this a credible or well-known health outlet? 8. Is the web address credible (<i>if downloaded from a website</i>)?
CRITERIA 3: Content and evidence
<ol style="list-style-type: none"> 9. Is the content of the app peer reviewed or evidence-based? 10. Does the app detail how evidence was selected or appraised to be included in the app? 11. If the app makes recommendations to the user, are the methods for formulating the recommendations clearly described? 12. Are there links available to users to seek more information and evidence related to the recommendations?
CRITERIA 4: Endorsement and credibility
<ol style="list-style-type: none"> 13. Has the app been externally reviewed by experts? 14. Is the app endorsed or certified by any relevant and credible peak body? 15. Are there details on how the app development was funded? Are there any funding acknowledgements or conflicts of interest disclosed? 16. How old is the app, when was it first developed? 17. Has the content ever been revised or updated?
CRITERIA 5: Usability, review and rank
<ol style="list-style-type: none"> 18. Generally, is the app intuitive and easy to use? 19. Has the app received generally positive or negative reviews and comments by users? 20. Does the app rank well by users in the app store? 21. Is the app free, or is there a cost attached?
CRITERIA 6: Patient-centeredness
<ol style="list-style-type: none"> 22. Consider patient's health status, wellbeing and independence, cognitive and physical ability and digital and health literacy – is this app suitable for them? Could they use this independently or in partnership with their caregiver? 23. Is there need for patient follow up to monitor and evaluate health outcomes related to the app?
OVERALL ASSESSMENT
<ul style="list-style-type: none"> • Rate the overall quality of the app (1 – 10 with 1 being very poor and 10 being outstanding) • Would you recommend this app for use? (YES/ NO)

Acknowledgement: Some criteria have been adapted from the AGREE-II Instrument (Brouwers et al. 2010)

Once an app has been selected for suitability and appraised for quality, it is important that clinicians identify and address factors that would impede or facilitate use. The overall suitability and quality of the app must be considered; however, it is important to consider other factors that will influence use and sustain adherence to the app intervention. In deciding to use an app for a healthcare intervention nurses must help patients to make sense of the app, assist in the quality appraisal of the app, and provide support for using the app. This may include initiating use with a patient at point of care. In deciding to recommend an app, it may be useful to draw on the Digital Health Engagement Model (DIEGO) developed by O'Connor and colleagues (O'Connor *et al.* 2016), to help identify factors that impact an individual's ability to uptake digital health interventions. O'Connor *et al.* (2016) make a number of recommendations to help address some challenges in the uptake of healthcare apps. These include; raising the awareness of apps, so that the general public are knowledgeable of them (such as advertising of apps). Developers may seek accreditation and endorsement by peak bodies to assist to increase engagement. There is also a need for targeted funding to support improvement of digital literacy skills alongside improved funding models to ensure equity of access to health apps (O'Connor *et al.* 2016).

Practical considerations

We provide the following considerations for nurses who are integrating apps into practice:

- Nurses must upskill as necessary to be able to recommend and integrate apps into their routine clinical practice. This may include developing a general awareness of apps that are recommended by peak bodies to support patients in your area of specialty.
- Frequently check with patients to ascertain if they are using any apps as part of their regular routine (or irregular) healthcare management.
- If a patient advises that they are using a health-related app, it may be useful to obtain permission to review data or analytics that could be helpful to inform goals and plan individualised care activities.
- Patients may find it helpful to learn how to search the internet and app store and how to appraise the content of apps.
- Nurses must ensure that the apps that they select, recommend or use with patients contain relevant and up to date, evidence-based information.
- There is need for greater recognition of the role of the internet and apps as excellent tools for self-management. As with other tools for self-management there is need to regularly monitor and evaluate their use.
- When making healthcare decisions related to apps with patients and caregivers, attention should be taken to evaluate if the app is both credible and fit for purpose.
- Greater research is required to better understand how patients, caregivers and clinicians select and quality appraise apps.

Summary

Health related mobile app use is increasing across all age groups. Nurses have a key role in supporting patients and caregiver in the careful selection and quality appraisal of apps. Nurses must develop a new skillset to better support patients in the initiation, use and evaluation of app use to improve health. Whilst apps at present are not routinely prescribed by health professionals, nurses are well situated to make recommendations and target these non-pharmacological, therapeutic health interventions. Overall, greater research, education, and evidence-based tools are required to support nurses in helping patients select, initiate and sustain the use of apps to improve health outcomes.

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