



Letter to the editor: mobile applications for patients with gout in China

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To the Editor:

Gout is a chronic and progressive disease, and its prevalence is reportedly 1.1% in mainland China [1]. The recent increases in the prevalence of gout in China impose a great disease burden nationwide. The European League Against Rheumatism (EULAR) recommends that gout patients modify their lifestyle and self-medicate when warning symptoms emerge [2]. Therefore, self-management strategies are an essential part of gout disease management. The World Health Organization (WHO) documented that patient self-management is now widely recognized as a necessary part of treatment for chronic diseases [3]. Moreover, a systematic review reported that the use of mobile applications (apps) for self-management interventions had the potential to improve health outcomes among those living with chronic diseases [4]. However, to the best of our knowledge, limited studies have reported the features and contents of mobile apps for gout self-management. Nguyen et al. [5] provided an overview of English mobile apps for gout patients in 2016. Our study aimed to explore the features and contents of the mobile apps for gout currently available in China.

We searched mobile apps on the Apple App Store and 360 Mobile Assistant (the biggest Android platform in China) in April 2019 using the keyword “gout.” The inclusion criteria for the apps were as follows: (1) the app was in Chinese; (2) it was primarily designed for gout patients’ use; (3) it contained elements of gout monitoring and/or patient education; and (4) it could be opened and run on mobile phones.

Finally, 59 apps were retrieved, and only 7 of these met the inclusion criteria (Fig. 1). The features and contents of the 7 apps were classified as follows:

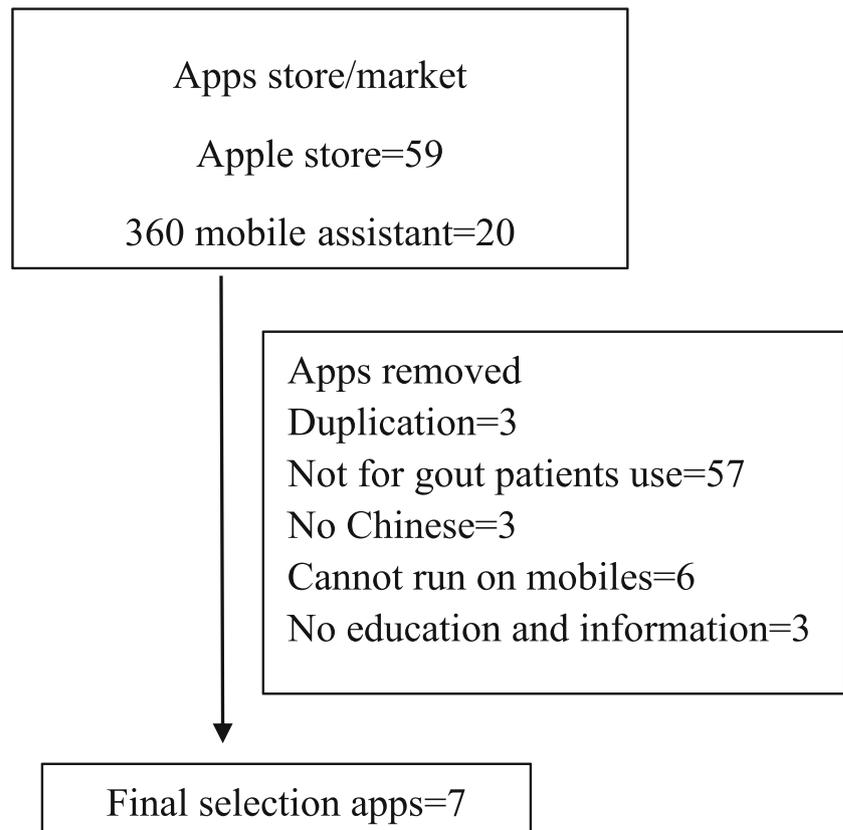
- Education and information. The contents were up-to-date medical news and information related to gout, the pathophysiology of gout, gout treatment, associated comorbidities, how to manage an acute attack, and dietary and lifestyle advice. The educational and information materials were presented in writing and as pictures and videos.
- Data record. The main recorded data included serum uric acid (SUA), medications, body mass index (BMI), acute attacks, exercise, water intake, diet, alcohol intake, smoking, examination record, visiting doctor, and comorbidities (blood pressure, blood sugar, triglycerides, etc.).
- Reminders. Three apps incorporated reminders for taking medicines.
- Consultation and communication. Patients could use apps for professional consultations with doctors and to communicate with other gout patients.
- Shopping. Products sold on the app included shoes, socks, cups, ice packs, books, and some health products.
- Self-assessment. Patients could use the gout diagnostic standard procedure on the apps for self-assessment. Then, the apps would automatically provide brief feedback on their disease condition, treatment suggestions, and dietary and lifestyle advice.
- Food purine database. The apps provided accurate purine data for different food.
- Ability to search, share, comment, and bookmark educational information.

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However, of the 7 mobile apps, three apps had only one or two of these features. We also found that only 2 of the 7 apps had updated versions and been updated over the past year.

Fig. 1 Selection process of mobile apps for gout patients



Nguyen et al. [5] and Kieser et al. [6] reported similar problems: many of the gout apps they identified lacked updated versions and had not been updated for 1 year or more. More importantly, we found that some apps provided incorrect or misleading information. For example, some educational materials said that hot compresses were recommended for attacks. Some apps had communication features that allowed gout patients to communicate with one another. Notably, some drug sellers pretended to be gout patients and advertised on the platform. In addition, the “data record” feature of all of the apps could only be accessed manually. The apps were suggested that they could be linked with hospitals’ electronic patient records to automatically update parameters related to gout.

These findings highlight the need for academia, patients, technologists, and health workers to collaborate to design a comprehensive gout mobile app based on the study results. The effectiveness and usability of apps should be tested among patients with gout prior to the apps’ release. The government also should launch related laws to regulate the release and information quality of apps.

Compliance with ethical standards

Disclosures None.

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