algos: *Painometer*: an app to assess pain intensity

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1.- INTRODUCTION AND AIMS

The use of Information and Communication Technologies (ICT) is increasing in the assessment of pain. This work aimed to:

(1) Introduce *Painometer*, a smartphone app that helps users to assess momentary pain intensity, and

(2) Report on its usability (i.e., user performance and satisfaction) when it is used by healthcare professionals and potential patients. *Painometer* includes four well-known, valid and reliable, pain intensity scales: the Faces Pain Scale-Revised, the Numerical Rating Scale-11, the Coloured Analogue Scale and the Visual Analogue Scale.

2.- METHODS

The sample was composed by 2 groups: healthcare professionals (n=19, mean age=31.2 years, SD=16.9), and potential patients (n=14; mean age=17.9 years, SD=4.9). See Figure 1.

A qualitative usability testing approach with a semi-structured interview was conducted. Instructions about the use of *Painometer* were given to the participants. Healthcare professionals were asked to use *Painometer* as if they were using it with a patient, whereas potential patients were requested to report the intensity of their own pain at that moment and the maximum pain they experienced in the last three months. They were all asked to ''think aloud'' while using the app.

Health professionals and potential patients were asked about the ease of use, the efficiency, and their satisfaction using *Painometer* with a series of open-ended questions. Mistakes made by both groups were also recorded.

Finally, simple content analyses and descriptive statistics were conducted.

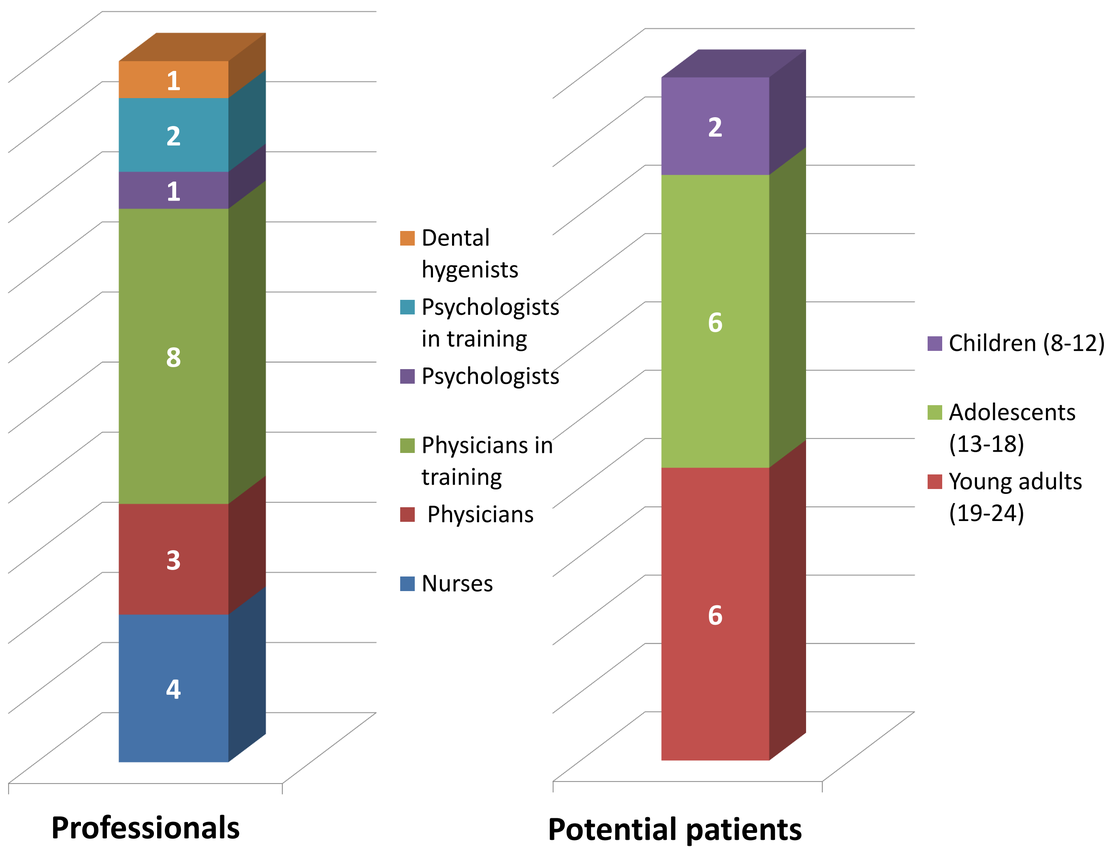

Figure 1. Sample composition

3.- RESULTS

Use of technology. Participants in this study had an average experience of 10 years in using computers. 76% had been using smartphones for 6 months at least.

Most liked characteristics. *Painometer* was rated as easy, simple, intuitive, attractive, comfortable and useful. What patients liked the most was that they could interact with the app by touching the screen.

Suggested changes. (1) Adding a guided tour through the app; (2) providing instructions for the scales; (3) simplifying the configuration through a new screen navigation; (4) fixing some device orientation issues.

Additional usability results are shown in Figure 2.

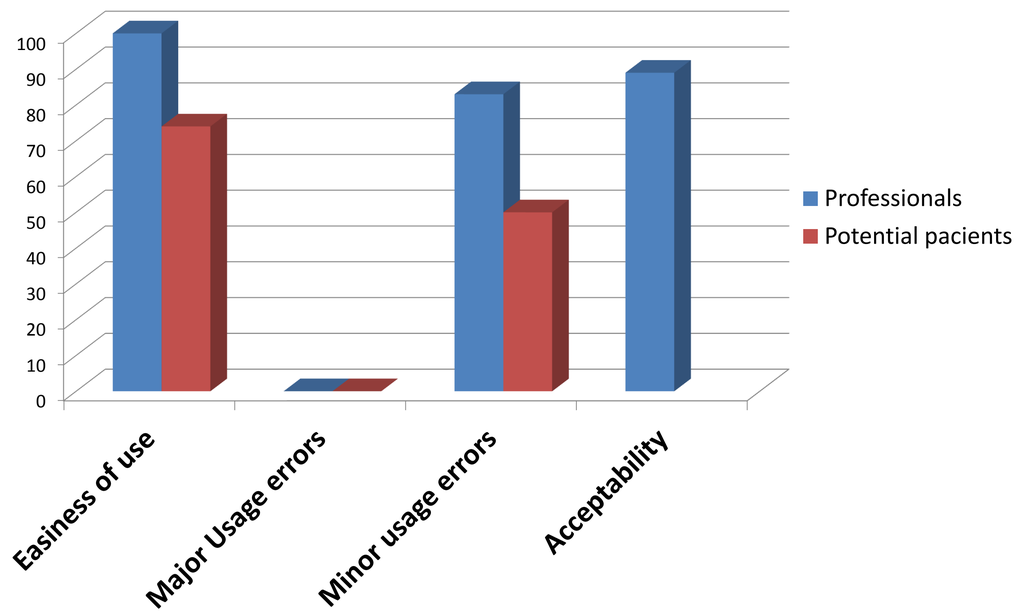

Figure 2. Main usability results

4.- DISCUSSION AND CONCLUSIONS

Painometer has been found to be a useful, nice, and user-friendly app. Adding instructions and changing format and layout details will be implemented to solve the reported usability problems.

Download *Painometer* at:

http://algos-dpsico.urv.cat/apps/painometerv2

Google play

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