

Development of an automatic pill dispenser and control through a mobile Android platform

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BACKGROUND Failure to comply with the medication intake is a major factor for unsuccessful treatment of various diseases and one of the main difficulties to control chronic, cardiovascular and psychiatric diseases, which require proper and constant intake of medicines. These irregular doses end up causing additional waste and spent on complementary treatments and more tests to analyse the current state of the disease.

OBJECTIVES: The objective of this project is to develop an automatic pill dispenser , controlled through a system developed for Android mobile platform. The mobile device is able to manage users, medication and respective stock as well as the requirements of each patient.

METHODOLOGY: In order to prevent failures, many devices that help patients manage their daily medication were developed. However, these devices still have some limitations, namely, to allow only one user and require the prior preparation of doses.

Along this project, an automatic pill dispenser has been developed, together with a control platform through an Android mobile device. The main advantages of this device over the state-of-the-art are the multi-user mode and the automatic drug combination to meet the doses prescribed by the physician.

RESULTS AND CONCLUSIONS The developed device and their use has been validated at Clinical and Academic Centre of Braga Hospital during 5 days, with users of various age groups, as well as at 2 participant's homes in a case study. The system of automatic dispensing of medicines has been tested in both user profiles: patient and caregiver. New user records were created and several medicine disposals were performed so the device reliability could be tested for use in real context. The results of these tests allowed us to demonstrate the functionality and reliability of the developed system.

Keywords: Medicines; Dispenses; Storage; automatic dispensing; mobile platform