

Blood Pressure Diary — Personal Arterial Pressure Monitoring Tool

Eldar Mamedov, Evgeny Stankevich

P. G. Demidov Yaroslavl State University

Yaroslavl, Russia

eldar.mamedov@list.ru, stankevich.evg@gmail.com

Abstract

The problem of hypertension has become one of the most topical problems in modern medicine. A large number of people suffer from high blood pressure. Heart attack, stroke, kidney failure are the terrible complications of hypertension, the result of improper treatment, or lack of it at all. So, it is very important to maintain the normal blood pressure levels permanently. Blood pressure monitoring is one of the main therapeutic and prophylactic measures for cardiovascular diseases.

Every patient with hypertension should regularly measure and record his/her blood pressure, and keep a diary of state of his/her health. It is important to measure blood pressure at home because blood pressure is a variable value, which cannot be characterized by a single measure in a polyclinic at a “random” moment of time. Keeping a diary allows to cope with the disease systemically, as it gives complete information about levels and variations of blood pressure that helps to identify patients with nocturnal hypertension, anomalous pressure variability, and allows to assess the adequacy of blood pressure reduction due to consumption of antihypertensive drugs.

Therefore, it would be very useful to have an application, which helps patients to record their measurements and provide a multi-day medical data monitoring, and statistical analysis. Blood Pressure Diary is a blood pressure tracking and analysis tool for mobile phones, which provides such capabilities. The application is intended to support regular blood pressure tracking to support the treatment lead by the physician or perform a preliminary self-analysis. It has the following features: working with blood pressure measurement records, viewing the statistics of blood pressure, automated data receiving from the AND blood pressure monitor (UA-767PBT, UA-851PBT), data export and data sending via email.

Blood Pressure Diary allows users to keep a history of blood pressure measurements. There is a possibility to add, edit and delete measurement records. The main window contains a history page that displays a list of the previously written records. Each record of the list shows information about a measurement including values of the systolic and diastolic pressure, pulse rate, date and time of recording. Users can optionally add a note to the record in which they can mark all events that may affect the level of blood pressure: time of activity, time of taking medications, mealtime, sleep period.

In addition to a feature of viewing the history of measurements, the application provide simple statistics. It contains information about maximum, minimum, and mean values of measurements. There are statistics for all measurements, as well as for morning, day, evening, or night measurements available. This information can be useful for a doctor to estimate health status of the patient.

To share the measurements history with a doctor the application has a data export feature. The data can be sent via email directly to the doctor or saved it to a file in one of the formats: CSV or HTML. HTML file also includes statistics and constitutes a report appropriate for printing.

Blood Pressure Diary is implemented for Android platform and available from Google Play at <http://play.google.com/store/apps/details?id=org.fruct.yar.bloodpressurediary>

Index Terms: mHealth, Blood pressure diary, Hypertension, Health monitoring.