Abstract

Is a Mobile Personal Health Record Effective Tool for Managing Patient-Generated Health Data?

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Abstract

Background: Mobile health applications and personal health records (PHRs) are considered essential tools to ensure patient engagement. Mobile PHR (mPHR) can be a platform to integrate patient-generated health data (PGHD) and patient medical information.

Objective: An mPHR developed by a tertiary hospital in South Korea has been used from Dec 2010 to Dec 2015. Patients could manage their own health data through the mPHR. By analyzing five years' PGHD, we wanted to evaluate how the PGHD were managed and to find out issues in PGHD management

Methods: Five years' log data were gathered from a backup mobile server. Users who entered PGHDs were selected then variables regarding usage of the mPHR and PGHDs were gathered. PGHDs included body weight (WT), blood pressure (BP), blood sugar test (BST), a 10-year risk of cardiovascular disease (CVD), metabolic syndrome score (META), medication schedule, and insulin. Users were divided with the presence of patient ID, users with patient ID (UPID) and users without patient ID (SUSER). If WT, BP, BST were entered at least one time per week and used for 30 days and more, they were regarded as continuously used. If CVD and META were entered at least two times and used for 180 days and more, they were regarded as continuously used. PGHD entry counts, proportion of continuous users for each PGHD were compared by user type.

Results: Total number of users were 18,265 (UPID: 16,729, 91.6%). Of all the users tracked, 3,620 entered WT, followed by BP (1,625), BST (1,374), CVD (764), META (685), insulin (72), and medication (62). Most users (from 66.8% to 88.2%) entered PGHD just one time. Entry of WT, BP, BST, CVD, and META were increased by year. Mean counts of WT, BP, and BST entry were 2.715.9, 5.943.6, 9.551.9 in UPID and 1.52.2, 9.327.8, 20.645.6 in SUSER (P=.36, .18, .006 respectively). The proportion of continuous users of BP was 2.8% (42/1,482) in UPID while 6.5% (9/139) in SUSER (P=.036). For BST, the proportion was 5.1% (62/1,220) in UPID while 14.6% (22/151) in SUSER (P<.01). There were no statistically differences between user type in WT, CVD, and META.

Conclusions: A very small portion of users managed the PGHD continuously through the mPHR. Research revealing factors promoting continuous use of PGHDs in mPHRs and consensus of continuous use of various PGHD are needed.

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KEYWORDS

mobile health; personal health record; patient engangement; patient-generated health data

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