


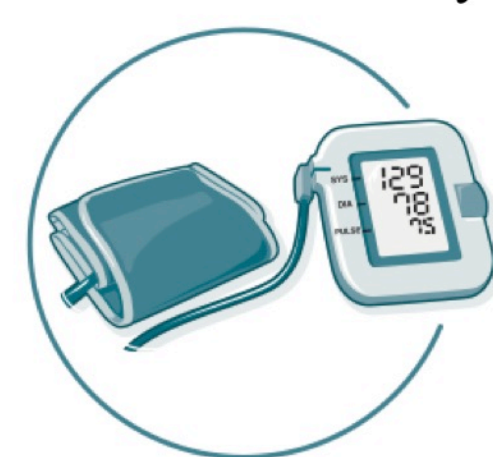
BLOOD PRESSURE MONITORING AND E-HEALTH


Investigation by focus group of patients-experience with the Hy-Result system

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INTRODUCTION

 Hypertension specialists from the ESH Excellence Center hypertension unit (European Hospital George Pompidou (Paris-France) with an international group of hypertension experts (Italy, Portugal, Belgium, Switzerland, Canada) developed a software called Hy-Result®



 Hy-Result is a validated web-based rule management software designed to help patients to comply with the home blood pressure measurement (HBPM) protocol and to self-interpret their results. We explore patients' experience

METHODS

3 Focus Group

3 focus groups with 24 hypertensive patients, 5 general practitioners and 1 hypertension specialist were proposed to hypertensive patients who possess a blood pressure monitor at home and an internet access to use Hy-Result® for HBPM.



A maximum variation sampling was performed and the analysis was thematic in a grounded theory approach. The researcher clustered patients' responses into sub-themes and themes which were compared to highlighted concepts and issues which had been checked by the hypertension expert.

RESULTS

Functionnality

Hy-Result® was unanimously described as an easy-to-use tool. According to the participants, the averaging function was considered the most useful. The majority of the patients appreciated the easily understandable and visual presentation of their reports: tables, graphic representation of the BP readings, colored manometers (green, orange, red). « We are familiar with these colors: we know if they're good, or bad ». The second advantage reported was the automated interpretation with corresponding text messages. Some patients appreciated the final report in PDF format, which can be downloaded and saved. Every patient in the hospital focus group successfully e-mailed their data to their doctors thus reducing the need for face-to-face consultations when BP was controlled

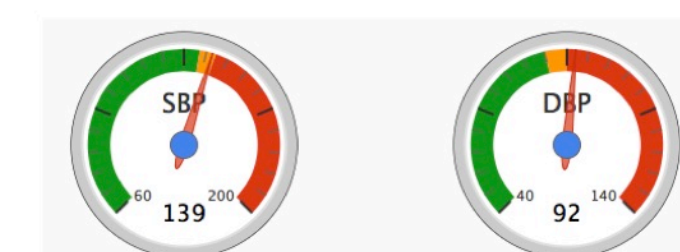
Medical Content

The text messages provided short personalized medical information to users

- 6 patients considered the content "very clear" and two of them did not need any other information. Some patients highlighted the educational interest of Hy-Result® which could give them an "expert level of knowledge about my arterial hypertension" as expressed by one patient.
- 4 patients asked for more detailed information (such as definitions of terms and more medical advice). Six other patients mentioned that Hy-Result® provided useful and clear information, such as blood pressure limits or information about white-coat hypertension. Five patients did not find this information essential

Feeling and Expectations

Half of the patients trust Hy-Result®. They all agree that the application gives suggestions and not a diagnosis. Hy-Result® did not cause anxiety and the risk of exaggerated measurements have been discussed



The color code caused reactions

Some patients said that getting a red indicator alerted them and convinced them to call their doctor whereas receiving a green color was reassuring. One patient in the orange area began retaking his/her measurements. Another one notified that using Hy-Result® encourages one to wait before "running to the doctor because of one isolated bad reading." « It facilitates interpretation, and avoids disturbing your doctor too quickly »

Feeling and Expectations

• Few patients expressed doubts and anxiety. One patient however reported that he always feels anxious when confronted with the BP monitor, regardless of the means he is using - Hy-Result® software or not. «For anxiety...I ... I... You know what I mean... It already exists... If it has to exist, it already exists. »

• Patients discussed human-machine interaction spontaneously. Most of them understood the data sort function of the software and they agreed that Hy-Result® software should not be used for diagnosis but only for counselling. **One patient declared that the system is able to detect emergency situations.**

Physician-Patient relationship

• 14 who discussed Hy-Result® with their doctors noted that the physician-patient relation was not compromised.

- One patient mentioned that Hy-Result® "improves the relationship by strengthening it".
- In every focus group, patients emphasized the need for doctors' intervention before medical decision and care management.

Reactions

According to users opinion, Hy-Result® generated appropriate reactions: alert, reassurance, delay before going to doctor's office. For some patients information was obvious.



DISCUSSION

Hy-Result® Discussion

The exact role of Hy-Result® in the healthcare approach must be well understood, and care should be taken not to confuse the following three stages: ranking of BP levels; help with interpreting BP measurements; medical decision-making. Our algorithm only deals with the first two steps and does not claim to be a substitute for a medical opinion as it does not have the capacity to take all the specific patient situations into account. This limitation is clearly indicated in the text messages that are generated. Thus, the wording of the text messages displayed by Hy-Result® does not constitute a diagnosis, and no therapeutic advice is given. To reinforce these points, each message includes a recommendation that the conclusion of the analysis should be discussed and validated by a doctor.

CONCLUSION

Conclusion

- Hy-Result® is a validated, easy to use, e-health tool for hypertensive patients undergoing HBPM.
- It can be considered for hypertensive patients of all ages.
- Most of the patients welcomed it as a complementary tool to facilitate discussion with their physician.

Hy-Result app is a « software as a service » that is available for free at www.hy-result.com

Learn more : www.hy-result.com



Blood pressure Monitoring Journal

Automated interpretation of home blood pressure assessment (Hy-Result software) versus physician's assessment: a validation study

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ESH meeting
Barcelona 2018

