

Poster: HeartFit – An Intuitive Smartphone Application for Well-being of Hypertensive Patients

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ABSTRACT

Hypertension is the single most significant risk factor for heart disease, stroke and kidney disease. The key causes of hypertension can be directly linked to the lifestyle of the patient, including age, family history, smoking, obesity etc. Our work consists of an interactive mobile application that acquires these lifestyle information and use several recommendation techniques to warn and guide the user towards well-being. So far, this is one of the earliest approaches in this domain for a developing country like Bangladesh.

Keywords

m-Health; Human Computer Interaction; Hypertension; Recommendation System

1 Introduction

Hypertension is a chronic condition where blood pressure persistently remains high. Smart phones present us with ample scope to monitor a person's lifestyle and diminish the risks associated with hypertension. This paper aims at detecting the risk level of hypertension of a person and based on the analysis it will make the person aware of the drawback of such disease.

2 Motivation

As of 2012, in Bangladesh, approximately 20% of adult and 40 to 65% of elderly people suffered from hypertension. Although significant works on this topic have been carried out in developed countries [1,2], they are not fitted for the people of Bangladesh owing to the socioeconomic reasons, lack of technological awareness etc. Due to insufficient medical care facilities and lack of health-care awareness among people of Bangladesh, patients only visit doctors when they start showing symptoms of diseases caused by hypertension, and by then it might be already too late.

3 Methodology

The target of our work is to analyze user data, determine the risk level of hypertension and related diseases, and provide relevant recommendations. For this, we have modeled a system with three major fragments: **input**, **processing** and

output. The whole system architecture is shown in Figure 1. A user will provide his basic information to our system through the mobile application. We have categorized the input mainly into two divisions: static information and dynamic information. The static information will be obtained only once, when the user uses our app for the first time. It includes age, height and heredity information of a user.

Dynamic information is acquired after a certain interval taking into consideration of some important factors, such as risk level and other constraints. These include social, physical, psychological and lifestyle information.

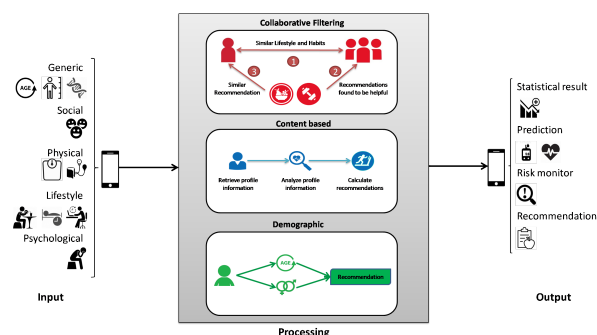


Figure 1: System Architecture

We have introduced three different approaches for constructing our recommendation system: **Collaborative Filtering**, **Content Based Analysis** and **Demographic Analysis**

4 Conclusion

Hypertension may cause several life-threatening diseases without any prior indication. Thus, having an app installed in a user's mobile that regularly monitors his activities and guides him accordingly is extremely beneficial.

5 References

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