

Decision supporting method for chronic disease patients based on mining frequent pattern tree

Hoill Jung · Kyung-Yong Chung · Young-Ho Lee

© Springer Science+Business Media New York 2013

Abstract As the development of IT convergence technology reaches its zenith, data in almost all areas have been developed and operated as a system after digitalization. To acquire more diverse and in-depth information, humans are actively engaged in information filtering. In the medical and health industries, most medical information is organized in a system and utilized for efficient health management as well as in various areas such as U-healthcare. Due to aging and chronic disease, interest in health management has intensified. As a result, health prevention and management through U-healthcare has been developed. However, there has been no study on pain in patients suffering from chronic disease. Regarding pain-related decisions by patients, sustainable and effective management is required, unlike acute disease patients. In this paper, we propose the decision supporting method for chronic disease patients based on mining frequent pattern tree. The proposed method is measures for pain-related decision making by chronic disease-suffering patients using a frequent pattern tree for data preprocessing, extraction, and data mining of conventional medical data. By utilizing the basic information of patients, which are the foundation for pain-related decision making, normalization can be applied to the frequent pattern tree of data mining. The pain forecast supports pain-related decision making by extracting similar patients' information in a frequent pattern tree based on Electronic Medical Records (EMR).

Keywords Medical data mining · Frequent pattern tree · Chronic disease patients · Clinical decision support · Information filtering

H. Jung
IS Lab., School of Computer Information Engineering, Sangji University, 63, Usan-dong, Wonju-si,
Gangwon-do 220-702, Korea
e-mail: hijung1982@gmail.com

K.-Y. Chung
School of Computer Information Engineering, Sangji University, 63, Usan-dong, Wonju-si, Gangwon-do
220-702, Korea
e-mail: dragonhci@hanmail.net

Y.-H. Lee (✉)
Department of Computer Science, Gachon University, 191, Hambakmoero, Yeonsu-gu, Incheon 406-799,
Korea
e-mail: lyh@gachon.ac.kr