Data-Driven Smart Health in the Asia Pacific Area

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In the big data era, advances in informatics have led to new opportunities and challenges in healthcare research and applications. There is an increasing effort to leverage information systems and big data analytics to transform reactive care to proactive and preventive care, clinic-centric practice to patient-centered practice, training-based interventions to globally aggregated evidence, and episodic response to continuous well-being monitoring and maintenance. In Asia Pacific, especially in China, the largest population and the diversity of culture comes to a lot of special healthcare issues. The minitrack of Data-Driven Smart Health in Asia Pacific region intends to provide a platform for the growing international smart health research community to discuss the technical, practical, economic, behavioral, and social issues associated with smart health in the Asia Pacific area.

This minitrack is organized to mainly discuss the principles, frameworks, new applications, and effects of using big data and AI technologies to address health-care problems and improve social welfare in the Asia Pacific region. It has successfully attracted scholars working on smart hospital, online health community, mobile health, medical big data and health-care machine learning, chronic disease management, and health informetrics. And we are pleased that 8 high-quality papers have been accepted, accompanying by evaluations with real-world data or application contexts in the area.

These studies include macro research trends in the field, possible solutions for special diseases, and applications of emerging devices and technologies in mobile health management. First, China's health information behavior related literature was systematically and in-depth reviewed. The whole progress of health information behavior research was explored. A series of important topics such as Social Media, Self-Management and Trust were discovered. Then, there are some studies about possible solutions of some special diseases. Autism spectrum disorder (ASD) is a heterogeneous neurodevelopmental disorder, and some studies have applied omics techniques into ASD research. An ASD subtyping framework that integrates clinical and multi-omics data to identify and analyze ASD subtypes at the molecular level has been proposed, accompanying by the application of Deep learning method in this area. The facial expression image data of 16 Chinese children were collected as supplementary training samples. Deep convolution neural network VGG19 and Resnet18 artificial intelligence algorithms are used for facial expression recognition. The results show that the recognition rate can reach 81.4%. This method can diagnose autism as early as possible, and promote the early treatment and rehabilitation of patients. Then, smart health and wearable devices have recently received widespread attention from practitioners and scholars. Intermittent continuance behavior of users is considered to be one of the most important reasons hindering the development of smart health. Two new constructs (Performance Superiority and Performance Adequacy) are developed to affect intermittent continuance via satisfaction and neutral satisfaction, respectively. Results demonstrates that the effects of the two new variables on intermittent continuance of smart health devices have been fully mediated. OHCs have been an important platform for users to seek and obtain social support and professional medical assistance among the Chinese population. User Generated Content (UGC) is important for community support in the online healthcare community. UGC is used for the investigation of social support communication and communication methods through data mining methods. The results show that a fairly small proportion of highly active Chinese users are quite influential in shaping the connections of the social support network and the off-topic discussions which are not directly on health concerns are not frequently touched by Chinese people, which may impact the longevity of both users and threads, and undermine the foundation of OHCs in the long term. 3,000,000 reviews from a leading Chinese online health community are collected to facilitate the empirical analysis. The results show that service failure exerts a negative effect on patients' both therapeutic effect satisfaction and service attitude satisfaction. Finally, some special issues have also attracted the

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attention of scholars. Limited attention has been directed toward investigating elderly users' continuance intention for mHealth service use. 261 valid responses show that both cognitive and affective trust enhance continuance intention of mHealth services use and health anxiety strengthens the effect of cognitive trust, but weakens the effect of affective trust, on the continuance intention. In addition, the simulation method is used for the study of graded diagnosis and treatment systems in China. The results show that if the proportion of primary care in 2017 increases by 15%, and this trend is maintained until 2021, the total cost saved by medical institutions in 2021 will be as high as 903.32 billion yuan in China.

We further wish to express our sincere gratitude to all Program Committee members of HICSS53, who have offered valuable and constructive reviews. We hope to build a dynamic and ever-growing community for open and constructive discussions, exchange of ideas, and promote research collaborations.