Personalization of Health Insurance Premiums Using the Internet of Behavior: Opportunities, Challenges, and Future Directions

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Dear Editor-in-Chief

The personalization of health insurance premiums offer considerable potential to refine risk assessments and optimize premium determinations (1). This approach is particularly prominent in Iran's insurance-based healthcare system, where it holds significant implications for the overall performance of the system (2). Personalized insurance models offer more precise risk assessments compared to traditional methods that rely on uniform criteria, which leads to more accurate premium determinations (3). For example, individuals who engage in regular physical activity and maintain a healthy diet may qualify for more favorable insurance rates compared to those with less healthy behaviors. This personalized approach not only fosters a fairer insurance system but also serves as a potent incentive for promoting healthier lifestyles. When individuals recognize the potential for reduced insurance costs due to healthier behaviors, they are more likely to adopt or sustain such behaviors (4). These behavior changes can mitigate the risks associated with chronic diseases and other adverse health conditions, leading to improvements in public health (5). Personalized premiums enhance economic efficiency in the insurance system by using precise data and advanced analytics to set more accurate premiums. This reduces un-

necessary costs from misjudged risks, leading to lower overall costs, increased profitability for insurers, and reduced expenses for insurance companies (6).

"Pay-as-you-Live" is a concept in the health insurance, where the premiums that individuals pay are dynamically adjusted based on their lifestyle choices, behaviors, and real-time health data (7). This approach leverages modern technologies such as Internet of Behavior(IoB) to monitor an individual's activities, diet, exercise, and other health-related behaviors (8). IoB is an interdisciplinary framework that integrates behavioral science with data analytics, leveraging data collected from various sources, including wearable devices, smartphones, social media, to analyze, predict, and influence individual and collective behaviors (7). IoB aims to provide insights into behavior patterns, enabling targeted interventions and personalized experiences across healthcare and public policy (9). In insurance, IoB adjusts premiums based on individuals' daily behaviors, so promotes healthier lifestyles by offering premium discounts (8).

Despite the significant importance of the IoB in the effectiveness of personalization premiums strategies, the application of IoB faces several challenges. IoB raises significant privacy and data

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security concerns, with potential misuse of data possibly eroding trust in the insurance system (7). Transparency is another critical issue. Given the nascent nature of this technology, existing legal frameworks may not sufficiently delineate the rights and responsibilities of insurers and insurance companies(10). The use of IoB in health insurance raises concerns about potential discrimination. Individuals unable to engage in desirable behaviors due to genetic, environmental, or social factors may face higher premiums, which could worsen social inequalities and restrict access to insurance for certain groups.

Although personalization of insurance premiums by using the IoB and the "Pay-as-you-live" model holds tremendous opportunities for improving insurance services and encouraging healthier living, its challenges must be overcome. The research in the health insurance in the future must be focused on identifying these challenges and formulating ways to overcome them. Studies could explore the influence of individual, social, cultural, and economic moderating factors on the acceptance of IoB. Furthermore, how the integration of dynamic pricing strategies with the IoB is a research direction for the health insurance. Finally, future research should focus on the development of equitable methodologies to prevent premium insurance personalization from disproportionately disadvantaging individuals in vulnerable socio-economic positions, while simultaneously proposing strategies to mitigate these disparities.

Conflict of Interest

The authors declare that there is no conflict of interests.

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