World Academy of Science, Engineering and Technology
International Journal of Health and Medical Engineering
Vol:15, No:10, 2021

Personalized Intervention through Causal Inference in mHealth

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Abstract : The use of digital devices in healthcare or mobile health (mHealth) has increased in recent years due to the advances in digital technology, making it possible to nudge healthy behaviors through individual interventions. In addition, mHealth is becoming essential in poor-resource settings due to the widespread use of smartphones in areas where access to professional healthcare is limited. In this work, we evaluate mHealth interventions in low-income countries with a focus on causal inference. Counterfactuals estimation and other causal computations are key to determining intervention success and assisting in empirical decision-making. Our main purpose is to personalize treatment recommendations and triage patients at the individual level in order to maximize the entire intervention's impact on the desired outcome. For this study, collected data includes mHealth individual logs from front-line healthcare workers, electronic health records (EHR), and external variables data such as environmental, demographic, and geolocation information.

Keywords : causal inference, mHealth, intervention, personalization
Conference Title : ICMHHI 2021 : International Conference on Mobile Health and Healthcare Innovations
Conference Location : Barcelona, Spain
Conference Dates : October 25-26, 2021