

Personalized Intervention through Causal Inference in mHealth

Authors : Anna Guitart Atienza, Ana Fernández del Río, Madhav Nekkar, Jelena Ljubicic, África Perriñez, Eura Shin, Lauren Bellhouse

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

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