Mobile Health Interventions for Opioid Epidemic

TREO Talk Paper

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Abstract

In the last decade, the use of prescription opioids has increased exponentially. According to NIH, the number of people in US with opioid abuse exceeds 2 million and the total cost is approaching $100B per year (NIH 2019). The opioids also contribute to half of the drug overdose deaths in US (NIH 2019). The opioid epidemic has become a major challenge for patients and family members, healthcare professionals, employers, regulators and the society. There is a need for interventions before patients develop opioid addiction and require major treatment such as detoxification at an in-patient facility. The epidemic can be addressed proactively by mobile health interventions (Varshney 2014). In this paper, we present several interventions that can be implemented proactively for patients and healthcare professionals.

For patients, we present three IT-based interventions. The interventions are (a) reminders, (b) electronic monitoring of opioids and (c) combined monitoring, reminders and support from other patients. The interventions can be implemented using both simple and sophisticated mobile apps, sensors, and smart medication boxes. These interventions can reduce the consumption of prescription opioids by monitoring and reminding patients about taking and/or not taking certain doses within certain windows of time. This could proactively stop patients from becoming dependent on opioids or develop an addiction.

Healthcare professionals underestimate the risks of opioid abuse (Brown et al. 2011) and can lead to sub optimal prescription decisions. A Center for Disease Control study shows an urgent need for improved prescribing practices (CDC 2015). The interventions for healthcare professionals include Mobile Decision Support System which would help them in making suitable decisions for opioid prescriptions. The proposed Mobile DSS collects, integrates and processes inputs from multiple sources to create more reliable, comprehensive and current picture of potential abuse of opioids. The system can assist healthcare professionals in deciding if a new or refill prescription is suitable for a certain patient or not.

There is a need to evaluate the proposed interventions for healthcare professionals and patients. This could include medical effectiveness, cost-benefits, and personalization for different patients. Work can also be in done in developing and implementing mobile DSS for healthcare professionals. Additionally, IT-based interventions can be compared with other interventions in their effectiveness and outcomes.

References


CDC study: Clues to opioid abuse from state prescription drug monitoring programs (available at https://www.cdc.gov/media/releases/2015/p1015-opoid-abuse.html)
