

## mHealth for Traumatic Injury Monitoring



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A pilot study, led by Penn Nursing (Jacoby et al. 2020), indicates that mobile health (mHealth) technology could be used for real-time monitoring and assessment of long-term traumatic injury outcomes.

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In addition, the study shows that use of mHealth tools was acceptable in a cohort of trauma patients – Black men residing in or near Philadelphia – with known outcome disparities and healthcare access barriers.

Following traumatic injuries, as shown in previous research, patients are likely to endure long-term consequences in their physical, psychological and social well-being. While mHealth-based treatment interventions have been used to monitor and improve outcomes across a myriad of health conditions, their potential for addressing health and socioeconomic impacts in long-term injury recovery has not been unexplored.

In this study, researchers worked on the hypothesis that mHealth monitoring was a feasible and acceptable way to examine long-term injury sequelae. Study sample included 25 individuals who were re-recruited 12-36 months after acute hospitalisation, from a recently concluded study of psychological outcomes in seriously injured Black men in Philadelphia, Pennsylvania. A mobile interface, called Way to Recovery (WTR), was developed for this pilot trial.

The mixed-methods pilot study was done in three phases:

1. Qualitative interviews and development of a pilot monitoring platform.
2. A three-month feasibility trial of mobile monitoring of patient-reported outcomes and biometric data using a wrist-worn commercial fitness monitor (n=18).
3. Post-implementation qualitative interviews.

Based on the 90-day pilot trial of mobile monitoring using the WTR platform, the researchers observed participants' preference for text-delivered communication and survey elicitation.

Also, as shown in this study, mHealth tools (e.g. wearable devices such as Fitbit monitors) were helpful in collecting and integrating data like step count and hours of sleep with patient-reported ratings of their functional status and sleep.

Self-monitoring of data, according to the participants themselves, may offer motivation as individuals attempt to regain or improve physical mobility, strength, and sleep hygiene in the aftermath of an injury. This endorsement highlights advantages of using mHealth, such as convenience and flexibility over in-person outcome monitoring (i.e. done by healthcare providers).

However, the research team points out that these findings must be interpreted in the context of this pilot study's limitations, including the sample size being not sufficient to show any statistically significant associations between patient characteristics and long-term outcomes. Also, the biometric data (e.g. heart rate, step count and sleep hours) were collected through a commercially available wearable monitor, which may not be

as accurate and reliable as research-grade devices.

Future studies should look at refining mHealth application to address concerns on the reliability and accuracy of commercially available wearable technology, relative costs and benefits of different mobile data collection strategies, and how mHealth monitoring can be integrated within current clinical paradigms, according to the research team.

Source: [mHealth](#)

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