

Discover the top 5 mHealth apps landing NIH research grants

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The rising use of mobile health (mHealth) apps is witnessing comparable growth in federal funding of mHealth research—which could reflect high hopes for their potential health benefits.

Annual National Institutes of Health (NIH) funding for developing, testing and implementing mHealth interventions grew almost 135% to \$39.4 million, from \$16.8 million between 2014 and 2018, while the number of grants rose almost 87% to 112 from 60. This information comes from a study, “Specialized Smartphone Intervention Apps: Review of 2014 to 2018 NIH Funded Grants,” published in July in *JMIR mHealth and uHealth*.

“Funded grants represent the state of the science and therefore are expected to anticipate the progression of research in the near future,” wrote study authors William B. Hansen, PhD, with Prevention Strategies LLC, and Lawrence M. Scheier, PhD, with LARS Research Institute.

“The increase in numbers of grants funded between 2014 and 2018 attests to the belief in the potential for smartphone technology to be useful in health promotion and disease prevention,” the authors of the study added.

The AMA is committed to making technology and digital health solutions are an asset and not a burden. To this end, guidelines for mHealth apps concerning privacy, security, operability, usability and content have been developed by Xcertia, a nonprofit founded by the AMA and other major players in health care and technology.

Hansen and Scheier combed through grant abstracts for studies funded by 21 NIH agencies and found 1,524 that addressed mHealth and the use of a mobile device or smartphone. They identified 397 that included the use of an intervention app, and divided these into 13 health-strategy categories with the top five being:

- Monitoring and feedback—192 apps.
- Skills training—85 apps.

- Education and information—85 apps.
- Cognitive and behavioral therapies—68 apps.
- Facilitating, reminding and referring—60 apps.

The 397 grants totaled \$138.1 million in the five years studied. The average amount for funded applications was just more than \$345,000.

The top funding agencies were:

- National Institute on Aging—76 grants totaling \$25.5 million.
- National Cancer Institute (NCI)—46 grants totaling \$16.4 million
- National Institute for Mental Health—41 grants totaling \$15.5 million

The study describes monitoring and feedback as a broad catch-all for apps collecting activity, biological, vital-sign and self-reported data, often collected from wearables or implanted sensors.

Such data could help ensure proper diagnosis and treatment and may provide a “clear benefit to the clinician who intends to understand how the patient responds or acts when not present in the clinic,” the study says.

The other value is that it keeps clinical staff, patients and nonclinical caregivers current on the patient’s condition and medication adherence, the authors wrote.

Skills-training apps often focus on pain, anxiety, stress and emotion management while developing decision-making, goal-setting and communication skills, according to the report.

Gaming mostly boosts other strategies

Despite the attention given to augmented intelligence (AI)—often dubbed “artificial intelligence” in popular culture—and to gamification, these two categories of smartphone apps were only Nos. 7 and 8 in NIH funding.

Hansen and Scheier wrote that gamification was used in both active and “stealth” learning where users gain new cognitive skills while playing a game. But this strategy was mostly coupled with other strategies to “augment participant engagement.”

Tech advancements spur mHealth use

“It is conceivable,” they explained, that the funding growth “is due primarily to the increased technology capability that mobile and smartphones offer, their broad reach, ease of use by potential users, flexibility, and increasing ease of app programming.”

These technological advances include higher-resolution digital imaging, connectivity to cloud computing that allows for transmission of medical information that is compliant with data-privacy regulations, and the coupling of “lab-on-a-chip technology” that permits biochemical analysis of blood, saliva, sweat or urine. Furthermore, they note that information privacy was highly attractive to app users.