

INNOVATIVE USE OF TECHNOLOGY FOR HIV PREVENTION AND CARE: EVIDENCE, CHALLENGES AND THE WAY FORWARD

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ABSTRACT

Use of mobile technologies for HIV prevention and care is no longer a promise, but a reality. From 2006 to 2009, a simple search of technology-related HIV studies yielded 1,147 results on PubMed and 274 results on PsycINFO. The number of technology-related HIV studies grew substantially in the next four years, as from 2010 to 2013 there were 1629 on PubMed and 407 studies on PsycINFO. These findings suggest a surge of interest in the field of technology use in HIV prevention and care research.

In response to this growth, the Center for HIV Identification, Prevention, and Treatment Services (CHIPTS) at the University of California, Los Angeles (UCLA) hosted the “Innovative Use of Technology for HIV Prevention and Care: Evidence, Challenges and the Way Forward” conference on January 23rd, 2014. Bringing together interdisciplinary researchers, community practitioners, clinicians, policy makers, technologists, and representatives from governmental and funding agencies, the conference sought to establish a collaborative framework for individuals to share their knowledge and experience in technology-based HIV prevention and care with each other.

Although the conference included information on different types of technologies, there was a particular emphasis on the role of mobile technology in HIV prevention and care. Popular mobile technologies are typically described as belonging to one or more the following categories: 1) cell phones, 2) native and cloud-based applications, 3) social media, and 4) mobile websites. Individuals differ in the way they use mobile technologies to communicate with each other, making it important to study the various ways in which mobile technologies can be used for HIV prevention and care. For example, cell phones facilitate multiple forms of communication, such as phone calls, short message services (SMS)/texts, and multimedia messaging services (e.g. video and picture texts)¹. In the U.S., Youth (ages 18 to 29) communicate with each other predominately through SMS², and recent HIV interventions targeting youth have utilized SMS to reduce substance use and increase HIV testing^{3,4}.

The recent explosion in the use of social media can have a tremendous impact on HIV research, because these technologies can serve as platforms not only to reach a large number of at risk individuals but also to gather data on the behaviors of these individuals. Social media is defined as technologies, platforms, and services that enable individuals to engage in communication from one-to-one, one-to-many, and many-to-many⁵. In 2013, 73% of adults and 80% of teens used some form of social media^{6,7}. There are many different types of social media, including 1) social networking sites (e.g. Facebook and MySpace), 2) blogs (e.g. Word Press or Tumblr), 3) microblogs of real-time communication (e.g. Twitter), 4) forum/bulletin boards (e.g. WebMD and Yahoo Answers), 5) social games (e.g. FarmVille and Mafia Wars), 6) media sharing (e.g. YouTube and Instagram),

and 7) geosocial networking (e.g. Grindr and Jack'd). There exist different patterns of social media use based on socioeconomic, regional, and language factors, and before incorporating these technologies, researchers should understand these trends and how they impact HIV risk. For example, in the U.S., racial/ethnic (African Americans and Latinos) and sexual (e.g. gay and bisexual) minority individuals were found to be the most avid social media users^{8,9}. Moreover, many African American and Latino men who have sex with men (MSM) have also used online social networks/geosocial networking apps to meet sexual partners to avoid potential stigma^{10,11}. Taking into account information on patterns of social media use is important in learning how to craft HIV interventions and studies using social media among at-risk groups.

This conference served as an opportunity to introduce individuals to the latest mobile and social media technologies, and demonstrate research on how technologies can be used to study and address HIV among at-risk communities, along with a focus on the ethical and business-related issues associated with these approaches. The objectives of the conference were: 1) to present the most recent research findings and trends in HIV/AIDS and technology, 2) to increase the capacity of participants to develop, to implement, and to evaluate effective and evidence-based HIV/AIDS interventions with technology in clinical, research and community settings, and 3) to bring together researchers, clinicians, and technologists and to foster interdisciplinary collaborations on innovative way to improve HIV/AIDS prevention among at-risk communities.

The following topics emerged from the conference that can be used as a reference for the current state of the field, including research, community-based practice, and ethical considerations: **1) Social media and mobile technologies are increasingly being used by HIV researchers:** A number of presentations focused on the use of mobile technologies, including using them as methods for recruitment, interventions, and data collection. Because of the increasing use of social media among populations at risk for HIV and highly-affected by HIV (e.g., minority MSM), researchers should continue exploring innovative ways to make use of these technologies for HIV prevention and care. **2) Community-based organizations and clinics are receptive and interested in applying social media and mobile technologies to HIV prevention and care:** We heard from clinic senior management who described their interest and enthusiasm in using mobile technologies to address disparities in HIV prevention and care. Local organizations are interested and willing to partner with academic researchers on this work. **3) The ethical considerations around using these technologies for HIV prevention and care are only beginning to be explored:** Our ethics panel conversation was focused primarily on a mobile application related to individuals affected by HIV and the ethical concerns of using mobile applications for HIV prevention and care. It was an initial step in providing a conversation on this needed topic and highlighted the interest and importance in establishing guidelines¹² for safety and confidentiality in technologies that might increase HIV risk, as well as those that are used for HIV prevention and care. This special issue of the journal is dedicated to providing the readers with the abstracts from the presenters of the conference.

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