

John C. Sieverdes: mHealth has the opportunity to make a worldwide difference

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Editor's note

The term “mobile health”, known as mHealth, appeared more than a decade ago to describe the application of mobile devices and related technologies in healthcare provision. Prior to mHealth apps busting into the market, there were various types of digital health solutions, but it was not until the launch of Apple App Store in 2008 that the mass market for these apps was totally opened up. Application of mHealth is not restricted to educating users about preventive health care services, but also treatment support, epidemic outbreak tracking, disease surveillance and chronic disease management.

As a recent Program Manager of Technology Applications Center for Healthful Lifestyles (TACHL), led by Endowed Chair, Dr. Frank A. Treiber, Dr. John C. Sieverdes aims at leveraging medical technologies and behavioral change approaches to provide patient and provider level services both in clinical and non-clinical settings. This time, *mHealth* is happy to interview Dr. Sieverdes with an aim to learn more about what the center is currently working on, his major roles and duties, the breathing awareness meditation apps that his team developed, together with some interesting and challenging aspects of his research.

Expert introduction

John C. Sieverdes recently served as the Program Manager of TACHL, College of Nursing, Medical University of South Carolina, Charleston, SC (*Figure 1*). He currently collaborates with the center in his new role as an Assistant Professor. His research has been focused on mobile health technology, frailty in chronic kidney disease, wearable technology, behavioral theory in physical activity, measurement of strength in clinical populations, and distance lifestyle coaching in adult populations.

Dr. Sieverdes has been involved in several government funded projects such as one entitled Enhancing Kidney



Figure 1 Dr. John C. Sieverdes.

Donation Through Live Organ Video Educated Donors (LOVED) funded by National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), and others such as heart rate validity of consumer-based wrist-based physical activity monitors in collaboration with the Department of Health and Human Performance, College of Charleston, Charleston SC.

Dr. Sieverdes has memberships in a wide range of professional organizations, including Society of Behavioral Medicine, American College of Sports Medicine, National Strength and Conditioning Association (NSCA), Blue Key Honor Society and Mortar Board National Honor Society. He received several recognitions including the Delta Omega Honorary Society in Public Health, and Dean's Award for Excellence in Graduate Studies from University of South Carolina both in 2012.

Interview

mHealth: TACHL is involved in creation of various software and information systems, multi-disciplinary research and development of new technology products. What is the objective of TACHL? What are some latest technologies that it is involved in?

Dr. Sieverdes: TACHL provides services to the Medical University of South Carolina. Primarily, TACHL leverages medical technologies and behavioral change approaches to provide patient and provider level services both in the clinical setting and for patients away from the hospital. Its main objective is to improve the health and well-being of South Carolinians. Many of the latest technologies involve remote monitoring using mobile app technologies. These include medication adherence and personalized messaging for kidney transplant patients, breathing awareness meditation app for prehypertensives, an education app for burn survivors, post-traumatic stress disorder education apps, a way-finder app for the medical center and many other applications.

mHealth: As a Program Manager of TACHL, what were your major roles and duties?

Dr. Sieverdes: I recently completed managing an NIDDK R01 called the Living Organ Video Educated Donors Program. I also collaborated on several other grants involving breathing awareness meditation app, medication adherence projects, as well as providing grant writing support. I was also involved in my own research to engage kidney transplant waitlist patients in healthy lifestyles using mobile health technologies. I currently have an NIDDK mentored training award under review on the topic. I have also recently taken a tenured track position at the College of Charleston but am still continue my collaboration with TACHL.

mHealth: In a study, you evaluated the use of a culturally tailored approach in breathing awareness meditation apps to reduce stress and blood pressure. What were the major findings? What insights did it bring to guide future studies?

Dr. Sieverdes: Our paper showed limited differences in using culturally tailored approaches with the Tension Tamer app for our sample. Our findings showed that for White and Black groups, individual preferences outweighed

cultural differences. We felt that this led us to believe that customizing apps to cater to personal needs was most important to drive ownership of the app. This was a different finding than what we expected, but may differ if other ethnic or racial groups are studied.

mHealth: Is there any further investigation for other racial groups, age ranges, and disease conditions going on at the moment?

Dr. Sieverdes: At this time, there are no plans to study other groups. Prior to this study, teens were studied. There are plans to submit grants for future studies but they are related to dosage or intervention approaches.

mHealth: Would you introduce us to a recent project that you are involved in?

Dr. Sieverdes: Due to my current change in position, I am not currently supported by NIH funding at the moment, though I was recently involved in the House Calls program led by Dr. James Rodrigue of Beth Israel Deaconess Medical Center (BIDMC) to educate Black patients and their families in their home about living donation, which is in process of recruitment and delivering interventions. I am currently seeking collaborations to partner on NIH and other funding mechanism at this time as well as focusing on the grants I have under review.

mHealth: What do you perceive as the most challenging aspects of research?

Dr. Sieverdes: I would venture that acquiring funding is the most challenging aspect of research at this time. Balancing teaching, committee work and a funding stream is challenging. I feel that this may be discouraging many young researchers but if they are passionate, vigilant, and persistent, then there are opportunities.

mHealth: How do you see the prospects of mHealth in delivering health care to worldwide patients?

Dr. Sieverdes: I see that mHealth has the opportunity to make a worldwide difference. I also see that people are fickle when using apps. Much like many of the free online courses that provide wonderful and valuable education, few take advantage of them. Engaging users to start and continue using an app that is helpful needs more thought

and research. I think this is the largest challenge moving forward in this field.

mHealth: What makes successful research in your opinion?

Dr. Sieverdes: Successful research would be results in an area that can be built upon. I think all research needs a clear path for what is next, such as the next step to which to climb a staircase. Rigorous methodology is also very important but I am learning too that all areas must be attended to such as the impact and approach. I am early in my career, but as I see it, there are many paths to be successful in the research environment where not all endeavours may be funded by

government agencies.

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Footnote

Conflicts of Interest: The author has no conflicts of interest to declare.

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