Results of sun-safety mobile app featured in two studies, one editorial

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A smartphone mobile app that can provide personalized, real-time sun protection advice improved some sun protection behavior, according to an article published online by *JAMA Dermatology*.

Smartphones and tablet computers have transformed how people communicate and mobile devices are a chance to engage with health information.

David B. Buller, Ph.D., of Klein Buendel Inc., Golden, Colo., and coauthors conducted a randomized clinical trial in 2012 on a smartphone app that provided sun-protection advice based on UV Index forecasts and personal information from the users, as well as alerts to apply or reapply sunscreen. (The Solar Cell app was developed by Klein Buendel under a contract with the National Cancer Institute, according to the company's website).

The study enrolled 604 participants and of the 305 individuals in the treatment group 232 people downloaded the app but only 125 individuals (41 percent) used it. Complete data was available on 454 individuals (222 in the treatment group and 232 in a control group). Study participants were younger, more educated, more affluent and fewer were Hispanic whites than in the U.S. population.

Results show that participants in the treatment group reported spending more time in the shade (average days staying in the shade, 41 percent vs. 33.7 percent) but less sunscreen use (average days, 28.6 percent vs. 34.5

percent) than those in the control group. There was no significant difference in the number of sunburns in the past three months between the groups. Users of the mobile app reported spending less time in the sun (average days keeping time in the sun to a minimum, 60.4 percent for app users vs. 49.3 percent for nonusers) and more use of all sun protection behaviors (such as sunscreen, protective clothing and shade) combined (average days, 39.4 percent vs. 33.8 percent).

"The Solar Cell mobile app seemed to promote sun protection practices, especially when it was used. Specifically, it increased use of shade. Shade can substantially reduce exposure to solar UV radiation (UV-R), but it needs to be available for it to be used," the authors conclude.

Study: 2nd Clinical Trial of Mobile Sun-Safety App

A second randomized trial on the use of the sun-safety mobile app Solar Cell showed some improvement and was associated with greater sun protection, according to an article published online by *JAMA Dermatology*.

Many participants who were assigned to receive the app in the first randomized trial (detailed in the news release above) by David B. Buller, Ph.D., of Klein Buendel Inc., of Golden Colo., and coauthors did not use the app. The authors conducted a second clinical trial to evaluate the mobile app by collecting data from a volunteer sample of 202 adults. (The Solar Cell app was developed by Klein Buendel under a contract with the National Cancer Institute, according to the company's website). Of the 96 participants assigned to use the mobile app, 74 individuals (77 percent) used it.

The authors found that participants in the group that received the app used wide-brimmed hats more at the seven-week follow-up than control participants who did not receive app (23.8 percent vs. 17.4 percent).

Women who used the app also reported more use of all sun protection (such as sunscreen, protective clothing and shade) combined than men (46.4 percent vs. 43.3 percent) but men and older participants reported less use of sunscreen (32.7 percent vs. 35.5 percent) and hats (15.6 percent vs. 17.9 percent).

"Strategies to increase the use of the mobile application are needed if the application is to be deployed effectively to the general population," the study concludes.

Editorial: Making Mobile Health Measure Up

In a related editorial, A. Shadi Kourosh, M.D., and Joseph C. Kvedar, M.D., of the Massachusetts General Hospital, Boston, write: "The studies by Buller et al in this issue of *JAMA Dermatology*, in which smartphone apps were used to provide patients with personalized sun protection education, offer interesting examples of the creativity and educational tools that can be applied to health care delivery in this era of increasing penetration of mobile technology. They also illustrate important lessons for those developing and testing health interventions that are patient and/or consumer focused in terms of the pitfalls reported by the authors."

More information: *JAMA Dermatology*. Published online January 28, 2015. DOI: 10.1001/jamadermatol.2014.3889
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