

e- & mHealth SIG Newsletter - Conference edition!

e & mHealth ISBNPA SIG to me

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Welcome from
Professor Corneel Vandelanotte.
e- & mHealth SIG Founder & Chair

Dear SIG Members,

I'm excited, I hope you are too! The next ISBNPA conference is just around the corner and our SIG Team has been doing a lot of work in preparation, for you our SIG members. You can read all about what we plan to do at the conference in this newsletter (make sure to join us!!!). And there is an e- & mHealth conference guide, and there's a publication award, and there's presentation awards....and there is more!

I'm also very excited about the paper our SIG Team has just published, providing a neat overview of the state of the art in our research area. Make sure to have a look at it. I'm very proud to what we have accomplished as a team thus far...and this is just our second year!

A special thank you to Dr Nicole Nathan, who has prepared this newsletter.

See you in Cape Town!

e- & mHealth SIG Annual Meeting

We are very proud to be providing some amazing opportunities for those working in the e- & mHealth field at the ISBNPA Annual meeting. We hope that you will join us for these

events. If you are tweeting throughout the conference don't forget to use #isbnpa_emh. We will share some interesting tweets in our post-conference newsletter.

Our annual meeting will be held Thursday 9th June from 12-1pm

We are thrilled to announce **Professor Margaret Allmann-Farinelli, Professor Johannes Brug, Dr Rik Cruzen and Professor Ralph Maddison**, will be joining our SIG meeting to form a panel to discuss the topic

‘There are thousands of apps for that already’

Chaired by our SIG team member **A/Professor Melanie Hingle**, the panel will touch on a number of issues regarding Apps including;

- The evidence for and effectiveness of Apps
- Examination of existing Apps
- Do we need more Apps?
- How do you get your App noticed
- Benefits, barriers and opportunities for Apps.

Please come along and join in, in what should be a lively panel discussion.



Chaired by A/Professor Melanie Hingle (above) the panel will include (clockwise from top left) Professor Margaret Allmann-Farinelli, Professor Johannes Brug, Professor Ralph Maddison and Dr Rik Cruzen.



e- & mHealth Conference Guide

Once again we have undertaken the huge task of screening the conference handbook to identify e- & mHealth SIG relevant papers and posters (please forgive us if we missed anyone) and compiled them in this [handy overview](#) for our members. We encourage you to download and/ or print the document as a quick e- & mHealth guide for the conference.

0026
Influences of a smartphone app on engagement and determinants of cessation within a free physical activity promotion program: The case of 10,000 Steps Australia
 Diana Quarteri¹, Corneel Vandelinderen¹, Monique Kraaij¹, Mark Duncan¹
¹University Medicine Groningen, Groningen, ²University Queensland University, Queensland, Australia, ³Western Sydney University, Sydney, Australia, ⁴The University of Newcastle, Newcastle, Australia

SIG: E- & m-health

Aims:

Purpose: Data from controlled trials indicate that Web-based interventions generally suffer from low engagement and high attrition. However, data from real-life Web-based interventions are scarce. The aims of this study were to (1) examine how the use of a smartphone app may be helpful in increasing engagement and decreasing cessation within the freely available physical activity promotion program 10,000 Steps, and (2) identify socio-demographic and engagement-related determinants of cessation attrition.

Methods: Users that had been members for at least 3 months (N=11,851) were grouped based on which platform (website, app) they logged their physical activity (Web-only, app-only, or Web and app). Outcomes were compared on engagement parameters (duration of usage, number of individual and workplace challenge started) and number of physical activity log days) using ANOVA. Kaplan-Meier survival curves were estimated to plot attrition over the first 3 months after registration. A Cox regression model was used to determine predictors of cessation attrition.

Results: Engagement with the program was highest for Web-and-app users. Within all users, 50% stopped logging physical activity through the program after 30 days. Cox regression showed that user group predicted cessation attrition. Web-and-app users (hazard ratio=0.85, 95% CI: 0.81-0.89, P<0.01) and app-only users (hazard ratio=0.83, 95% CI: 0.82-0.86, P<0.01) showed a reduced attrition risk compared to Web-only users. Further, having a higher number of individual challenges, workplace challenges, physical activity logging days, and steps logged per day were associated with reduced cessation attrition risk.

Conclusions: The use of an app alone or in addition to the website can enhance program engagement and reduce risk of attrition. Better understanding of participant reasons for reducing engagement can assist in clarifying how to best address this issue to maximize app/website change.

0027
Engagement as a determinant of enjoyment: a conceptual exploration in the context of games for health
 Rita Cruzes¹, Jonathan van 't Hof¹, Corinne Shon¹
¹Wageningen University, Wageningen, The Netherlands, ²Radboud University, Nijmegen, The Netherlands, ³University of Adelaide, Adelaide, Australia

SIG: E- & m-health

Aims:

Purpose: Enjoyment is consistently noted as an important determinant of engagement in games for health. However, as a term, enjoyment is often used interchangeably with a host of other terms, some of which overlap conceptually. This obscures what does and what does not constitute enjoyment, and in turn slows scientific progress by making the study of enjoyment and the synthesis of enjoyment-related research difficult. This paper aims to improve our understanding of determinants of enjoyment.

Methods: A conceptual overview of the literature is distinguished enjoyment from other important constructs, such as fun, and to summarize available evidence of the determinants of enjoyment in serious videogames.

Results: Enjoyment refers to the action or state of deriving gratification from a game. It is experiential in nature and distinct from engagement and fun. Competence seems to be a crucial factor in the enjoyment of games. There is theoretical and empirical evidence regarding three mechanisms to increase the player's sense of competence and thereby enjoyment: providing feedback, challenge and rewards. Narrative transportation is a second factor that contributes to enjoyment and refers to a process in which the player is mentally 'transported' away from their physical world into the imaginary world that is presented in a story. Relevance is another important factor to increase enjoyment and can be defined as being closely connected or appropriate to the matter at hand. This can be achieved via self-identification with game characters.

Conclusions: Competence, narrative transportation and relevance are identified as key factors related to enjoyment and future studies examining these factors using games for health are recommended.

e- & mHealth SIG Best Oral Presentation

e- & mHealth 2015 Publication Award

CONGRATULATIONS to the below authors for their paper being shortlisted for the e- & mHealth SIG 2015 Publication Award. **We will be announcing the winner at our Annual Meeting, so make sure you come along.**

Using Scopus we identified 419 articles published in 2015 with a SIG member as first or last author. Two committee members screened the titles and abstracts to identify e- & mHealth original research articles. The resulting abstracts of 66 articles were allocated to two reviewers each, and each pair nominated their highest scoring article within their set and, if scores were close, also a runner-up (none of the pairs scored articles they co-authored). The full-text of the final seven articles (listed below) were read by all SIG committee members, and again scored. Our scoring criteria were as follows:

1. Relevance to e or mHealth = use of electronic or mobile technology to promote health through behavioural nutrition and physical activity
2. Significance = does the project address an important problem, or a critical barrier to progress the field?
3. Innovation = does the study shift current research paradigms using novel concepts, approaches, methodologies, instrumentation or interventions?
4. Approach = is the overall strategy, methodology and analyses well-reasoned and appropriate to the aims of the project?
5. Presentation = is the article well written, interesting, engaging? Are the analyses clearly laid out?

Block G, Azar KMJ, Romanelli RJ, Block TJ, Hopkins D, Carpenter HA, Dolginsky MS, Hudes ML, Palaniappan LP, Block CH. Diabetes prevention and weight loss with a fully automated behavioral intervention by email, web, and mobile phone: A randomized controlled trial among persons with prediabetes. *Journal of Medical Internet Research* 2015;17(10). <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4642405/>

De Cocker K, De Bourdeaudhuij I, Cardon G, Vandelanotte C. Theory-driven, web-based, computer-tailored advice to reduce and interrupt sitting at work: Development, feasibility and acceptability testing among employees. *BMC Public Health* 2015;15 (1). <http://bmcpublihealth.biomedcentral.com/articles/10.1186/s12889-015-2288-y>

Direito A, Jiang Y, Whittaker R, Maddison R. Apps for IMproving FITness and increasing physical activity among young people: The AIMFIT pragmatic randomized controlled trial. *Journal of Medical Internet Research* 2015;17(8). <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4642788/>

Fjeldsoe BS, Miller YD, Graves N, Barnett AG, Marshall AL. Randomized Controlled Trial of an Improved Version of MobileMums, an Intervention for Increasing Physical Activity in Women with Young Children. *Annals of Behavioral Medicine* 2015; 49(4):487-499. <http://link.springer.com/article/10.1007%2Fs12160-014-9675-y>

Gans KM, Risica PM, Dulin-Keita A, Mello J, Dawood M, Strolla LO, Harel O. Innovative video tailoring for dietary change: Final results of the Good for you! cluster randomized trial. *International Journal of Behavioral Nutrition and Physical Activity* 2015. <https://ijbnpa.biomedcentral.com/articles/10.1186/s12966-015-0282-5>

Spruijt-Metz D, Hekler E, Saranummi N, Intille S, Korhonen I, Nilsen W, Rivera DE, Spring B, Michie S, Asch DA, Sanna A, Salcedo VT, Kukakfa R, Pavel M. Building new computational models to support health behavior change and maintenance: new opportunities in behavioral research. *Translational Behavioral Medicine* 2015;5(3):335-346. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4537459/>

Waterlander WE, Jiang Y, Steenhuis IHM, Ni Mhurchu C. Using a 3D virtual supermarket to measure food purchase behavior: A validation study. *Journal of Medical Internet Research* 2015; 17(4):e107. <http://www.jmir.org/2015/4/e107/>

SIG member profile- Ralph Maddison



Ralph Maddison, a member of our e- & mHealth SIG, is the incoming ISBNPA President so we thought it would be an opportune time to feature Ralph to get his views on e- & m-Health.

Qualifications and position:

Quals; PhD Sport and Exercise Science (Psychology), MSc (Hons) Sport and Exercise Science, BHSc.

My current position is Professor of Physical Activity and Disease Prevention, Institute for Physical Activity and Nutrition, Deakin University, Melbourne Australia.

Where have you worked in the last 5 years?

Programme Leader Physical Activity, National Institute for Health Innovation, University of Auckland, New Zealand

How would you briefly describe your research to someone who is not familiar with your field of study? What is your main research interest?

My research targets important determinants of non-communicable disease, and focuses on interventions to increase physical activity, improve diet, prevent obesity, and improve self-management of chronic disease. My research is exemplified by 1) the incorporation of leading edge ideas for using technology (e.g., mobile phones, wearable cameras, video games, GPS measurement) to trial interventions and measure outcomes; 2) robustly designed and conducted randomised controlled trials (RCTS) to Good Clinical Research Practice (GCP) standards; 3) strong engagement with the healthcare sector, and with community organisations, to ensure the studies are 'real world' in design, and practice and lead to policy-relevant research amenable to immediate translation.

Other than a lack of funds or time, what is your biggest barrier to conducting innovative e- & mHealth research? And what is your most effective strategy in overcoming this barrier?

Biggest barrier for me is trying to keep abreast of the technological innovations and to ensure that the interventions I am involved in are relevant and not readily outdated. To overcome this, I have tried to develop a team of people, that include software developers, data analysts that can help undertake work in a timely fashion. I am trying to test the principles of using the technology so as the technology advances, the principles remain relevant. More recently, I have been involved in greater proof-of-concept testing, before proceeding to a full trial.

What do you think will be the biggest innovation for e- & mHealth in the next five years? How will the future of e- & mHealth look like?

This is a difficult question, but I think given the ubiquity of mobile and wireless sensing, there will be a greater integration of personal sensing with different environment (homes, work, shopping) allowing environmental responses to people's presence (changing lighting in the home, offering a glass of water or suggesting locations to shop as one passes by retailers). This connectedness via the Internet of Things will have a significant impact on e- & mHealth through more sophisticated 'just-in-time', environmentally contextually relevant interventions. However in saying that I can also see a future where people are saturated with technology and revert back to more simple approaches. Not entirely sure which will come to fruition, maybe both in parallel.

Other recent e- & mHealth Publications

Bardus M, van Beurden S, Smith J, Abraham C. A review and content analysis of engagement, functionality, aesthetics, information quality, and change techniques in the most popular commercial apps for weight management *International Journal of Behavioral Nutrition and Physical Activity* 2016, 13 :35

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