



Title	Mobile technologies and physical activity behaviour: an example of what you can do with your accelerometry and GPS data
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RESULT(S): It took 18 months to develop four apps, three for dietary behaviours and one for physical activity behaviour. Development of the physical activity app involved the fields of marketing, physical activity and information technology. Qualitative feedback revealed the slow running speed (due to a reliance on internet connection), and requirement to login, were issues for young adults. The developed apps are web-based and will be delivered online via a custom designed website to young adults participating in the TXT2BFiT trial. Process evaluation will include the number of logins to each app during the study.

CONCLUSION(S): Smartphone apps are a novel technology to facilitate behaviour change, but alone are unlikely to provide sufficient intervention for changing physical activity behaviour. This method of intervention delivery is likely to become necessary for reaching generations accustomed to communicating with mobile technologies, and as such, presents a challenge for researchers working with younger generations.

FUND SOURCING: Funding to conduct the TXT2BFiT research trial was received from the HCF Health and Medical Research Foundation (Reference No. MAUsyd1008201111). This grant is provided by HCF, a leading private health insurance company in Australia, and is listed on the Australian Competitive Research Grants Register.

S25.3 Mobile technologies and physical activity behaviour: An example of what you can do with your accelerometry and GPS data

Cerin E

PURPOSE: The ability of mobile technologies to continuously collect a large amount of objective data on physical activity (PA) and their correlates can assist the identification of potential determinants of PA behaviour. However, modelling such data, with multiple sources of dependency, can be challenging.

METHOD: Objective data on PA and locations were collected on a sample of 95 preschoolers using accelerometers and Global Positioning System (GPS) monitors. Caregivers kept a diary of their child's locations. Data were collected at 15-second epochs for seven consecutive days (over 10,000 data points/person). Accelerometer counts/15s represented the outcome variable, while type of location (e.g., home; kindergarten; indoor play/recreational places; outdoor play/recreational places) represented the explanatory variable. Day of the week (weekend vs. weekday) and time of the day (hours from 6am to 10pm) were treated as moderators. Multilevel linear models with four levels of variation (neighbourhood, person, day and event) and a first-order autoregressive process were used to examine the associations of types of locations and objectively-measured PA.

RESULT(S): On average, outdoor play/recreational places were associated with the highest PA levels. Large inter-individual differences in PA levels were found for two locations: 'home' and 'kindergarten'. Day of the week and time of the day were significant moderators of the associations between type of location and PA.

CONCLUSION(S): To fully exploit the large amount of data made available by mobile

technologies, appropriate analytical approaches that do not require data aggregation need to be applied. Multilevel linear models are one of the extant suitable options.

FUND SOURCING: Seed funding programme for basic research (HKU) # 201001159011.

S25.4 Design considerations in the use of online social networks for physical activity promotion

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PURPOSE: Online social networks (OSNs) (e.g. Facebook) are used worldwide and have features including the ability to articulate personal networks; create affinity groups; and collect, aggregate, and share participant data that could facilitate their use as physical activity (PA) promotion platforms. Very few studies have been published that describe interventions using OSNs, providing little guidance about how to conduct them. This presentation will describe key issues in the design of PA interventions using OSNs.

METHOD: We use formative and process data from the Internet Support for Healthy Associations Supporting Exercise (INSHAPE) study, a randomized controlled trial of an intervention to promote PA in college-aged women. Qualitative data from structured interviews (n =24) and investigator experiences are compared and contrasted with quantitative data from online questionnaires (n = 120) and objective Facebook use to outline issues in the design and implementation of Facebook PA interventions.

RESULT(S): Key design issues related to using OSNs for PA promotion include: (1) choosing OSN type and mode of intervention delivery; (2) using existing social relationships vs. developing relationships; (3) IRB considerations; (4) data collection and communication strategies; (5) measures of engagement and adherence; and (6) the challenges of using rapidly evolving technology in research. Lessons learned and implications for developing future OSN interventions will be presented.

CONCLUSION(S): The few existing studies targeting PA using OSNs have not demonstrated efficacy. Future investigators need to learn from these studies to develop better designs that can capitalize on the considerable features and reach of OSNs for PA promotion.

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