

Reproducible impact of a global low-cost mobile health (mHealth) mass-participation physical activity intervention on step count, sitting behavior and weight: the Stepathlon Cardiovascular Health Study

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Introduction

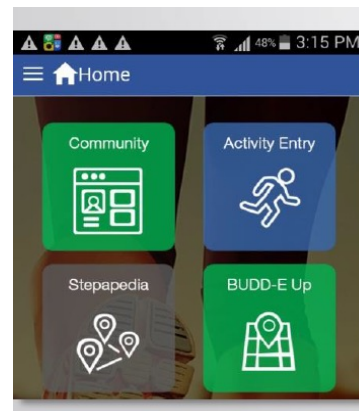
- Physical inactivity, sedentary behavior and obesity are well-recognized drivers of global cardiovascular morbidity and mortality
- The global inactivity epidemic is occurring simultaneous with a global revolution in mobile device technology
- Proof-of-concept for mHealth and workplace-based pedometer lifestyle interventions has been demonstrated in randomized trials in high-income countries
- Translation into globally distributed in a “real-world” mass-participation mHealth implementation has not been shown

The Stepathlon Event

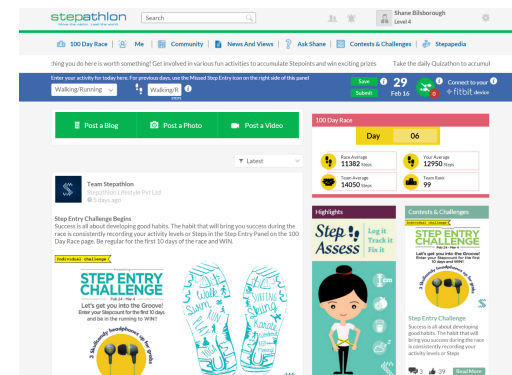
- 100-day international worksite-based pedometer program conducted using mHealth technology
- Participants organized in worksite-based teams of 5, issued inexpensive pedometers
- Program conducted via an interactive platform available on mobile devices and world-wide web
- Encouraged to increase daily steps and physical activity as part of a team-based race around virtual world
- Participant cost was modest (\$US 50 for India, \$US 60 outside India)



Budd-E, 3-D accelerometer based pedometer



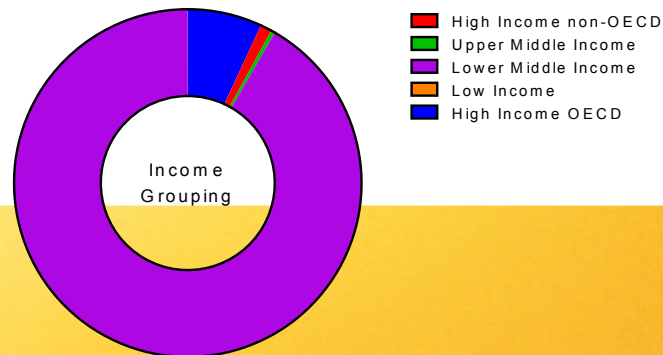
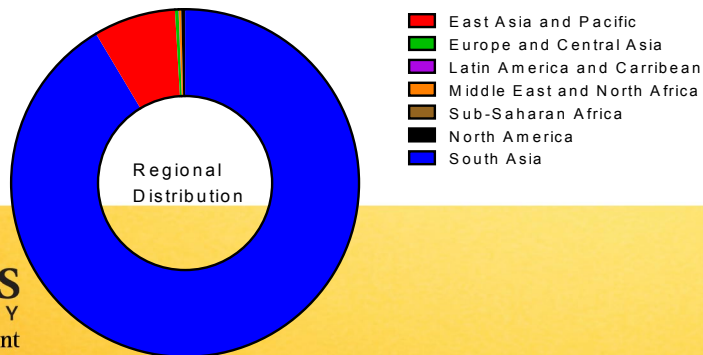
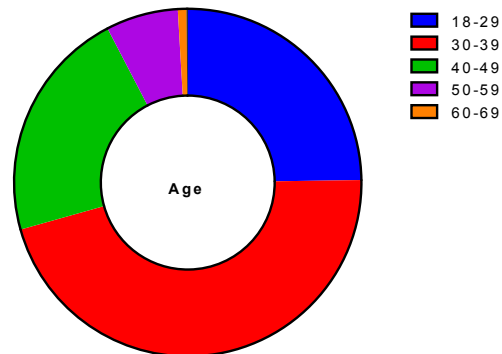
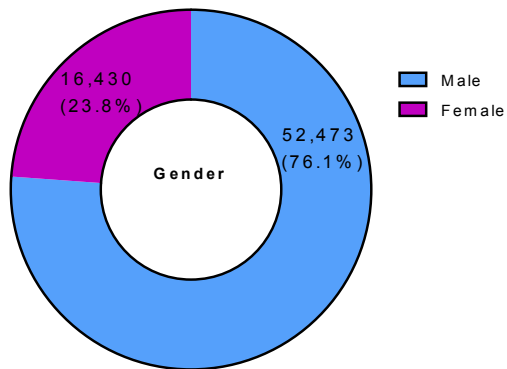
Mobile-device user interface



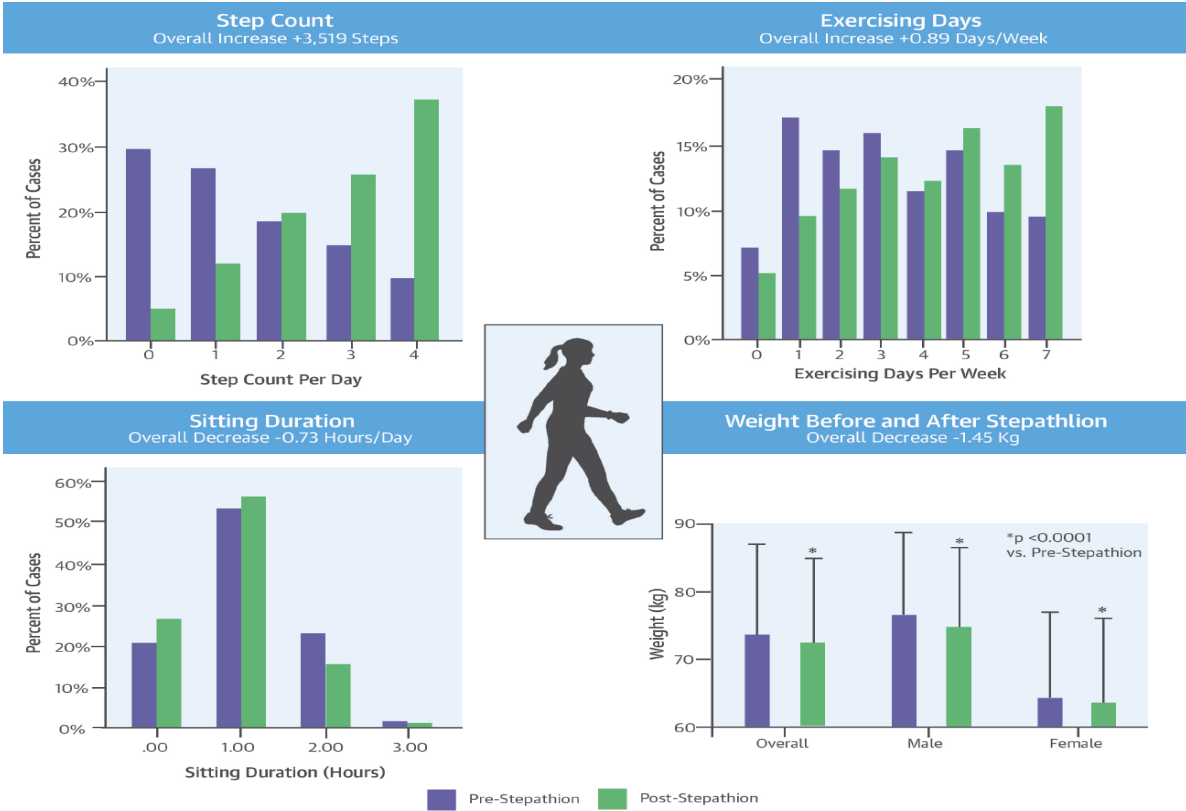
World-wide-web user interface

Baseline Characteristics of Study Participants

- N=69,219 participants across the years 2012-2014, 64 countries, 1401 cities

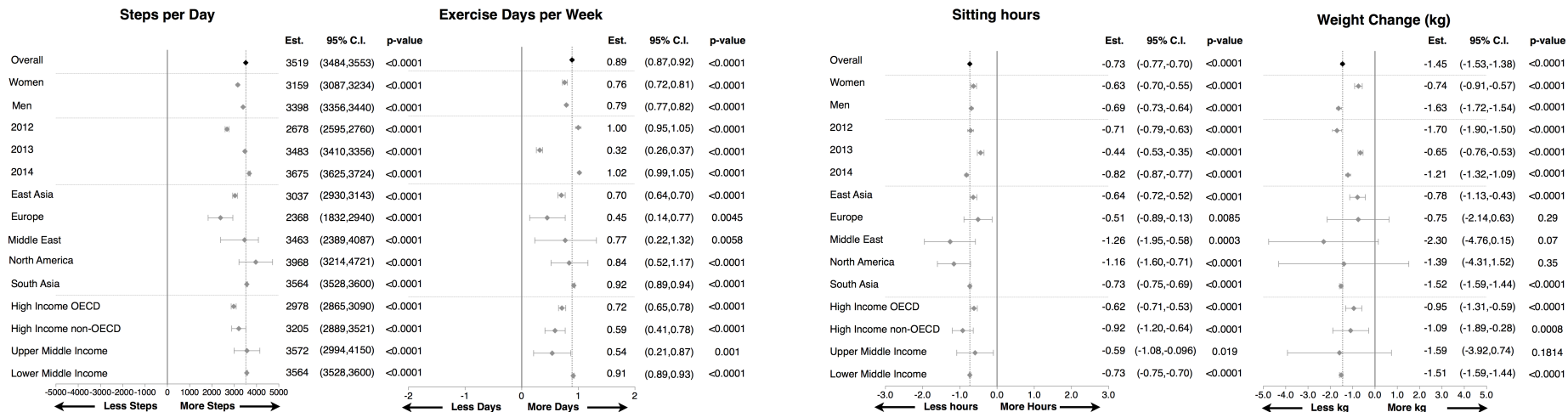


Overall Impact of Stepathlon on Step Count and Exercise Days



Ganesan, JACC, 2016
(in press)

Stepathlon associated with improved outcomes in subgroup analyses



Ganesan, JACC, 2016 (in press)

Conclusions

- Stepathlon demonstrates the efficacy and feasibility of a self-sustaining low-cost, global, mass-participation workplace lifestyle program delivered electronically to a distributed participant base via mHealth technology
- Reproducible statistically significant improvements in physical activity and weight seen in distributed geographic and sociocultural/ economic settings
- Demonstrates capacity of endogenous innovation in lower-middle income countries to develop low-cost internationally applicable mHealth programs

