



Utilizing wearable technology to increase physical activity in future physicians: A randomized trial

Joanne DiFrancisco-Donoghue^{a,f,*}, Min-Kyung Jung^b, Alexander Stangle^c, William G. Werner^e, Hallie Zwibel^{d,f}, Patricia Happel^d, Jerry Balentine^g

^a Department of Osteopathic Medicine, New York Institute of Technology College of Osteopathic Medicine (NYIT-COM) Old Westbury, NY, USA

^b Office of Research, NYIT-COM, Old Westbury, NY, USA

^c NYIT-COM, Old Westbury, NY, USA

^d Department of Family Medicine, NYIT-COM, Old Westbury, NY, USA

^e Department of Physical Therapy, NYIT, Old Westbury, NY, USA

^f Center for Sports Medicine NYIT-COM, Old Westbury, NY, USA

^g Office of the Vice President NYIT-COM, Old Westbury, NY, USA

ARTICLE INFO

Keywords:

Fitbit
Exercise
Medicine
Obesity
Body composition

ABSTRACT

This study examined the use of activity trackers alone or combined with weekly communication through email to improve activity and body composition over one academic year in medical students. This randomized clinical trial conducted at the New York Institute of Technology from July 7, 2016 through June 4, 2017 enrolled 120 medical students. The first group (Fitbit-Plus) wore activity trackers and received weekly emails offering fitness challenges and lifestyle modification challenges. The second group (Fitbit-Only) received only activity trackers and did not receive weekly emails. The third group (Control) was asked not to purchase an activity tracker of any kind throughout the study. All groups had a body composition analysis prior to the start of the academic year and at the end of the first academic year. Outcome measures included step count and body composition (body fat percentage and lean body mass). The results showed the overall mean daily steps were greater in the Fitbit-Plus group than the Fitbit-Only group for the academic year (7429 ± 2833 vs. 6483 ± 2359) with only months April and May showing a significant difference between the groups ($p = 0.011$; $p = 0.044$). Body fat percentage decreased in the Fitbit-Plus overweight women ($2.1 \pm 1.6\%$) lean body mass increased in the Fitbit-Plus group in overweight men (2.4 ± 4.6 lbs.). A subsequent finding of this study showed improved body composition in a small sub-group of over-weight students. Weekly behavioral challenges combined with an activity tracker increased step count in medical students compared to an activity tracker alone.

Clinicaltrials.gov Identifier: [NCT02778009](https://clinicaltrials.gov/ct2/show/study/NCT02778009).

1. Introduction

Physical inactivity is the fourth leading risk factor for global mortality resulting in an estimated 3.2 million deaths per year (Dacey et al., 2014). “Healthy People 2020” has called for an increase in the number of physician office visits that include counseling or education related to physical activity to help combat this global epidemic (Dacey et al., 2014). The American College of Sports Medicine (ACSM) has also implemented a program called, “Exercise is Medicine®”, to encourage physicians to assess a patient's activity level at every visit. Despite these encouraging programs, there has been a decline in the amount of education regarding the benefits of physical activity and health behavior guidelines provided to medical students (Wolf and Scurria, 1995;

Garry et al., 2002; Cardinal et al., 2015). There are currently no recommendations by the Association of American Medical Colleges (AAMC) to incorporate nutrition or wellness education into the medical school curriculum (Cardinal et al., 2015; Adams et al., 2010). It has been reported that physical activity habits of medical students influence their counseling practices after graduation and that a physician's lifestyle can influence the behavior of their patients (Dacey et al., 2014; Lobelo et al., 2009; Abramson et al., 2000). A study conducted by Stephens et al. determined that physical fitness levels declined during medical school, most notably during the preclinical years (Stephens et al., 2012). Although current literature supports the notion that medical schools should incorporate programs and practical requirements to increase physical activity and wellness education to

* Corresponding author at: NYIT College of Osteopathic Medicine, PO Box 8000, Academic Health Care Center, Northern Blvd, Old Westbury, NY 11568, USA.
E-mail address: jdonogh@nyit.edu (J. DiFrancisco-Donoghue).

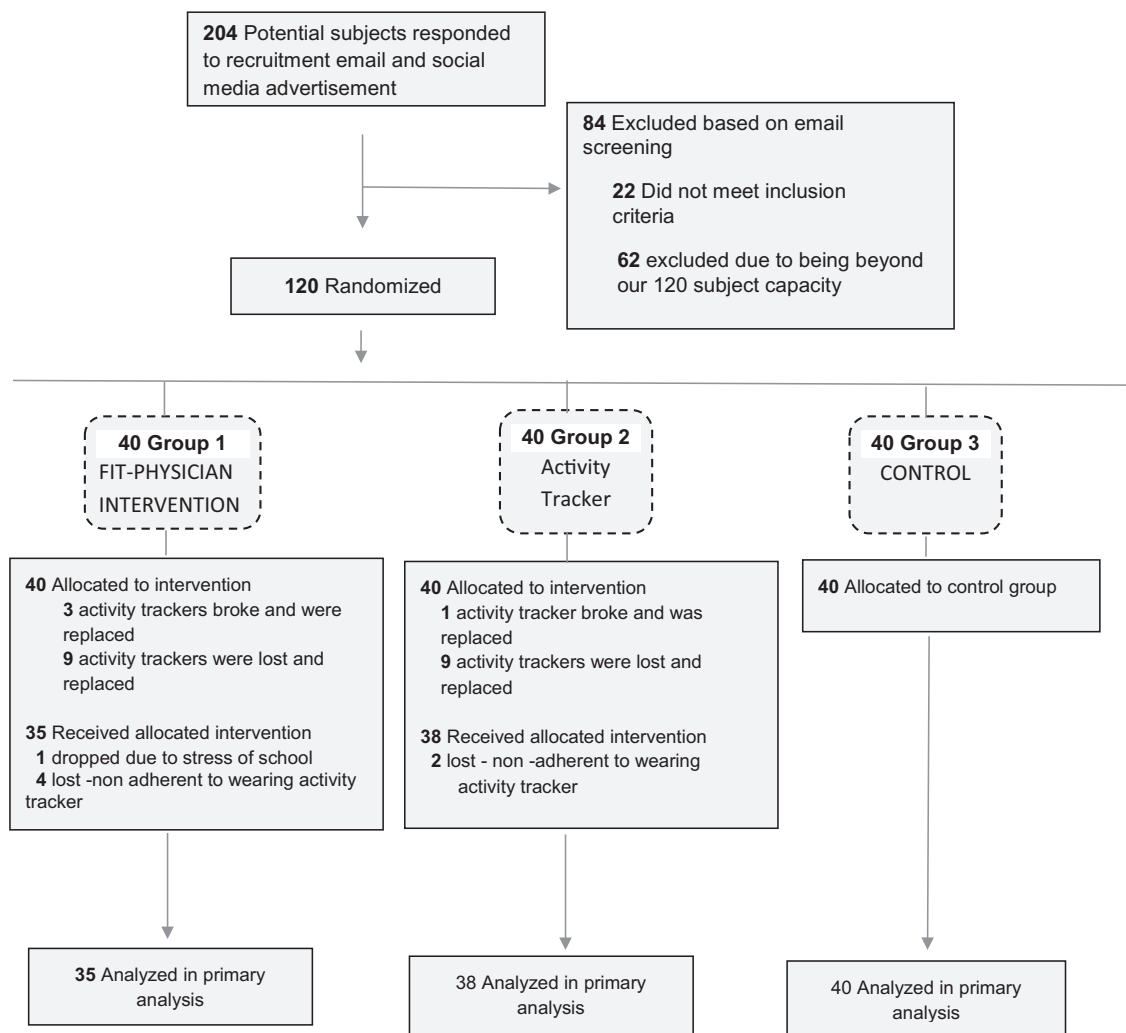


Fig. 1. Study flow chart.

physicians, how to incorporate these programs is an area of question (Frank et al., 2008; Institute of Medicine, n.d.).

Over 10% of adults now wear an activity tracker and the ACSM consensus states activity trackers were the hottest trend for 2017 (Thompson, 2016). These wearable devices are widely used to track and promote physical activity by employers who offer incentives for activity, insurance companies and researchers to help monitor fitness. However, the long term effectiveness to influence lifestyle changes and physiological outcomes has been mixed (Jakicic et al., 2016; Finkelstein et al., 2016). Integrating wearable technology and wellness education into medical education may provide opportunities for these future practitioners to stay abreast of scientific advances while encouraging healthy habits and maintenance of healthy behaviors.

The purpose of this randomized trial was to: 1) determine if implementation of a program designed to increase physical activity and educate medical students is feasible (drop-out rate); 2) examine the effects of utilizing activity trackers alone or combined with weekly emails of encouragement and challenges to improve activity measured by step count throughout the first year of medical school and; 3) examine if this program could affect body composition.

2. Methods

2.1. Study oversight

FIT-Physician was a randomized clinical trial conducted at the New York Institute of Technology College of Osteopathic Medicine (NYIT-COM), Old Westbury, New York from July 7, 2016 through June 4, 2017. This study was approved by the NYIT Internal Review Board and was registered on [Clinicaltrials.gov](https://clinicaltrials.gov/ct2/show/study/NCT02778009) Identifier: NCT02778009. A total of 120 first year medical students enrolled at NYIT-COM provided written informed consent. All student data were coded and kept confidential. Only the authors had access to the data associated with this study.

2.2. Participants

Recruitment was conducted via social media and email prior to the start of the academic medical school year at NYIT-COM. Eligibility was assessed by a self-reported web based questionnaire beginning in July 2016. Eligibility criteria included: 1) between 17 and 50 years of age and; 2) incoming 1st year NYIT-COM medical student. Exclusion criteria included: 1) pregnancy or; 2) current use of an activity tracker.

Download English Version:

<https://daneshyari.com/en/article/10097149>

Download Persian Version:

<https://daneshyari.com/article/10097149>

[Daneshyari.com](https://daneshyari.com)