

S Sigma Theta Tau International's 29th International Nursing Research Congress

Utilization of Smart Phones for Increasing Lifestyle Physical Activity in South Asian Indian Immigrant Women

Manju Daniel, PhD, MSN, APN, FNP-BC

Gagandeep Singh, BSN

School of Nursing, Northern Illinois University, DeKalb, IL, USA

Purpose:

The purpose of this paper is to describe the utilization of smart phones for motivational calls to motivate midlife South Asian Indian immigrant women to incorporate structured brisk walking into their daily lifestyle and to increase their lifestyle physical activity.

Methods:

An interventional research design with biweekly motivational phone calls and text messages, was used for 12 weeks of the study. The study was guided by the Physical Activity Behavior Framework for South Asian Indian Immigrants, which is based on social cognitive theory. Inclusion criteria were South Asian Indian Immigrant women born in India, 40 to 65 years of age, sedentary lifestyle, owned a smart phone, had sent or received text messages, and had no physical activity disability that would interfere with walking. A sample of 25 women were recruited through South Asian Indian SAI faith- and non-faith-based community organizations and SAI businesses. Purposeful and snowball sampling were used. The study was approved by the Institutional Review Board of the affiliated university. A South Asian Indian immigrant bilingual researcher made the motivational phone calls and sent the text messages every two weeks over 12 weeks. A motivational-calls script was used to guide the phone calls. Participants wore downloadable HJ323 pedometers for daily step count measurement and used weekly walking logs to track the number of minutes spent per week on brisk walking. Data on daily steps and the number of minutes spent per week on brisk walking was collected at baseline, 12 weeks, 18 weeks and 24 weeks. Descriptive statistics (frequencies, means, and standard deviations) were calculated.

Results:

The median age of the 40 participants was 50 years ($M=51$, $SD=7.0$); the majority immigrated from either the northern ($n=16$, 40%) or southern ($n=16$, 40%) regions of India. The time since immigration to the United States varied from 2 to 30 or more years. Participants were predominantly married ($n=38$, 95%) with their average household size of 4.3 ($SD=1.25$) adult and child members. The mean score for global health ($M=3.9$) indicated moderately good health. Approximately 13% of participants had hypertension ($>140/90$). The mean BMI ($M=27.6$) was in the overweight range (25-29.9). The mean waist circumference was 33.3. Step counts progressively increased overtime. Overall increase in average daily step counts from baseline to 24 weeks was 6900 steps. Overall increase in number of minutes spent per week on brisk walking from 41 minutes at baseline to 158 minutes at 24 weeks.

Conclusion:

Utilization of smart phones for motivational calls and text messages is an effective innovative strategy for promoting enhanced lifestyle physical activity in midlife South Asian Indian immigrant women. This motivational strategy does not only help midlife South Asian Indian immigrant women with behavior modification to increase their average daily step counts but also to increase the number of minutes spent per week for brisk walking. Meeting the recommended physical activity guidelines with structured brisk walking of at least 150 minutes per week, would further help in reducing the morbidity and mortality risk related to inadequate physical activity status, cardiovascular disease and diabetes in these at-risk midlife South Asian Indian immigrant women.

Title:

Utilization of Smart Phones for Increasing Lifestyle Physical Activity in South Asian Indian Immigrant Women

Keywords:

Motivational calls, Physical activity and Smart phones

References:

Daniel, M., & Abendroth, M., & Erlen, J. A. (2017). Barriers and motives to physical activity in south Asian Indian immigrant women. *Western Journal of Nursing Research*. DOI: 10.1177/0193945917697218

Daniel, M., Wilbur, J., Fogg, L., & Miller, A. (2013). Correlates of lifestyle physical activity among South Asian Indian immigrants. *Journal of Community Health Nursing*, 13(4), 185- 200, DOI: 10.1080/07370016.2013.838482

Daniel, M., Wilbur, J., Marquez, D., & Farran, C. (2013). Lifestyle physical activity behavior among South Asian Indian immigrants. *Journal of Immigrant and Minority Health*, doi:10.1007/s10903-013-9842-4.

Daniel, M., Miller, A., & Wilbur, J. (2011). Multiple instrument translation for use with South Asian Indian immigrants. *Research in Nursing & Health*, 34(5), 419–432.

Daniel, M., & Wilbur, J. (2011). Physical activity among South Asian Indian immigrants: an integrative review. *Public Health Nursing*, 28(5), 389–401.

Diretio, A., Jiang, Y., Whittaker, R., and Maddison, R. (2015.) Smartphone apps to improve fitness and increase physical activity among young people: protocol of the Apps for IMproving FITness (AIMFIT) randomized controlled trial. *Biomedical Central Public Health*, 15, 635. DOI 10.1186/s12889-015-1968-y

Harries, T., Eslambolchilar, P., Rettie, R., Stride, C., Walton, S., Woerden, H. (2016). Effectiveness of a smartphone app in increasing physical activity amongst male adults: a randomised controlled trial. *Bio Med Central Public Health*, 16, 925 DOI 10.1186/s12889-016-3593-9

Ingram, D., Wilbur, J., McDevitt, J., Buchholz, S. (2011). Women's Walking Program for African American women: Expectations and recommendation from participants as experts. *Women and Health*. 51(6):556-582. PMID: 2197311

Wilbur, J., Miller, J., Braun, L., Buchholz, S., Castro, C., Fogg, L., Ingram, D., Schoeny, M., Dancy, B., Volgman, A., McDevitt, J. (in press). Randomized Clinical Trial of the Women's Lifestyle Physical Activity Program for African American Women: 24-and 48-week Outcomes. *American Journal of Health Promotion* (2015). DOI: <http://dx.doi.org/10.4278/ajhp.140502-QUAN-181>; PMID 26158683

Abstract Summary:

Approximately 50% of the midlife South Asian Indian immigrant women fail to meet the recommended physical activity guidelines. Therefore, it is important to explore the innovative strategies that could motivate South Asian Indian immigrant women to incorporate structured brisk walking of at least 150 minutes per week into their lifestyle.

Content Outline:

Learning objectives:

1. The learner will be able to describe the need for motivational strategies to increase lifestyle physical activity of mid-life South Asian Indian immigrant women.
2. The learner will be able to discuss the impact of smart phones for motivational calls and text messages in increasing lifestyle physical activity in South Asian Indian immigrant women.

Introduction:

The centers of Disease Control and Prevention identifies regular physical activity as an essential preventive strategy to reduce the risk of cardiovascular disease and diabetes. The importance of enhanced lifestyle physical activity has also been reflected as one of the Healthy People 2020 goals for healthy living. To support the national efforts in promoting lifestyle physical activity, the United States Department of Health and Human Services recommends at least 150 minutes of moderate intensity aerobic physical activity a week for adults of all races. Surprisingly, more than 80% adults of all races fail to meet these recommended physical activity guidelines in the United States. Approximately 33% of the people in the United States belong to a racial or ethnic minority population group. South Asian Indians from the Indian Subcontinent are the second-largest immigrant group in the United States. The risk of morbidity and mortality related to cardiovascular disease among South Asian Indian immigrants is higher than Whites (2.86 v 1.32 cardiac events/100 patient-years). Similarly, prevalence rate for diabetes for South Asian Indian immigrants is higher (18.3%) than the NHANES data for Whites, Blacks, and Hispanics (6.8-12.7%). However, despite being aware of the benefits of physical activity, approximately 50% of the midlife South Asian Indian immigrant women fail to meet the recommended physical activity guidelines. Brisk walking has been classified as a moderate intensity aerobic physical activity. Interestingly, brisk walking has been identified as the most preferred leisure-time physical activity by the South Asian Indian immigrant women in a prior study. Therefore, it is important to explore the innovative strategies that could motivate South Asian Indian immigrant women to incorporate structured brisk walking of at least 150 minutes per week into their lifestyle. Utilization of smart phones has been found to be an effective strategy for motivating people of other racial groups to increase their physical activity. No prior studies have explored the use of smart phones in South Asian Indian immigrant women to motivate them to incorporate structured brisk walking into their lifestyle and meet the recommended weekly moderate intensity physical activity guidelines.

Body:

Main point #1: Utilization of Physical Activity Behavior Framework for South Asian Indian Immigrants based on social cognitive theory, biweekly motivational phone calls and text messages over 12 weeks, and utilization of motivational-calls script to guide phone calls and text messages.

Main point #2: Utilization of downloadable HJ323 pedometers for average daily steps and walking logs to track the number of minutes spent per week on brisk walking.

Main point #3: Data collection on daily steps and the number of minutes spent at baseline, 12 weeks, 18 weeks and 24 weeks.

Main point # 4: Overall increase in average daily step counts from baseline to 24 weeks. Overall increase in number of minutes spent per week on brisk walking from baseline to 24 weeks.

Conclusion: Utilization of smart phones for motivational calls and text messages is an effective innovative strategy for promoting enhanced lifestyle physical activity in midlife South Asian Indian immigrant women. This motivational strategy does not only help midlife South Asian Indian immigrant women with behavior modification to increase their average daily step counts but also to increase the number of minutes spent per week for brisk walking.

First Primary Presenting Author

Primary Presenting Author

Manju Daniel, PhD, MSN, APN, FNP-BC
Northern Illinois University
School of Nursing
Associate Professor
DeKalb IL
USA

Professional Experience: I am an Associate Professor at Northern Illinois University School of Nursing. I have been a faculty member in a university setting since 2005. My teaching background includes undergraduate and graduate nursing courses in clinical and classroom settings. My clinical experience includes community health and primary health care practice as a Family Nurse Practitioner. My research focus is immigrant health and physical activity lifestyle modification. I have publications specific to such topics and have been a member of Sigma Theta Tau Beta Omega since 2008.

Author Summary: Manju Daniel, PhD, MSN, APN, FNP-BC is an Associate Professor at Northern Illinois University, DeKalb, IL. She is a recipient of NIH-NINR grant focused on advancing nursing science in the area of healthcare disparities. Her current research focuses on developing the culturally-tailored lifestyle physical activity interventions for midlife South Asian Indian immigrants.

Second Author

Gagandeep Singh, BSN
Northern Illinois University
School of Nursing
Student
DeKalb IL
USA

Professional Experience: Presently, I am a senior undergraduate nursing student at Northern Illinois University. I work as a patient care technician on the geriatrics unit at Alexian Brothers Behavioral Health Hospital in Illinois. Over the summer of 2016, I did a student nurse internship at St. Alexius Medical Center in Illinois and I was placed in the emergency department for six weeks.

Author Summary: Gagandeep Singh is an undergraduate nursing student at Northern Illinois University. She is in the university honors program and mortar board senior honors society. She was in the Research Rookies program which has allowed her to present her research poster at two different conferences. She tutors for medical surgical classes and she is a peer mentor for the honors students. She will be inducted into Sigma Theta Tau Honor Society of Nursing in spring 2017.

