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Research article

An evaluation of the loss to follow up participants from the sports for health project in grenada: analysis comparing body mass index and waist-to-hip ratios between

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Background

In 2005, the World Health Organization (WHO) re-emphasized the importance of non-communicable chronic diseases as a neglected global health issue, annually contributing to 36 million deaths. Cardiovascular disease, cancer, type 2 diabetes mellitus, and chronic respiratory diseases are responsible for more than half of all deaths worldwide, 80% of which occur in low-income and middle-income countries. Many non-communicable chronic diseases share common risk factors, some of which include tobacco use, physical inactivity, unhealthy diets and alcohol abuse (WHO, 2013). The WHO has projected a 15% global increase of deaths attributed to non-communicable chronic diseases between 2010 and 2020 due to population growth, population aging and economic, behavioral, occupational and environmental transitions [1].

It has been suggested that perhaps coordinated efforts by national leaders be implemented to strengthen chronic disease prevention and control efforts, which requires an increased commitment by fostering collaborations with partners in the public and private sectors. Rigorous and diverse research and thorough evaluations of existing projects will also enrich our basic understanding of disease causation and the interplay between biological, environmental, and sociocultural contributors to public health [2].

In an effort to combat the rising public health issue, in 2004, the World Health Assembly endorsed the Global Strategy on Diet, Physical Activity and Health, with the overall goal to prevent chronic diseases by focusing on the main risk factors [3]. In 2010, the first Global Forum of the Non-communicable Disease Network (NCDnet) marked the first time the WHO convened key stakeholder groups to address the large-scale and increasing global health and development burden posed by NCDs [4]. The Chronic Disease Action Group was established with the purpose to inspire, maintain, and monitor implementation of efforts to promote national, regional, and global action to prevent and control non-communicable chronic diseases [5]. The National Heart, Lung and Blood Institute (NHLBI) and United Health Group, one of the world's largest health and well being companies, have forged a collaboration to counter chronic disease by supporting a collaborative global network of centers of excellence (COE) in low and middle income coun-

tries throughout the world [6].

In February 2010, a Sports for Health initiative led by the Windward Island Research and Education Foundation included St. George's University Department of Public Health and Preventative Medicine (SGU-DPHPM) and Royal Grenada Police Force (RGPF) [7] established a series of community-based activities throughout Grenada to begin service activities for prevention of chronic disease prevention. In 2010, WINDREF in collaboration with the Royal Grenada Police Force (RGPF) and Special Services Unit (SSU), developed a community based program where citizens of Grenada could access physical training programs and facilities at four population centers at Point Saline, La Sagesse, Grenville, Tanteen and Gouyave. Today, more than 600 persons are actively involved in the program, which provides a cost effective and supportive environment for physical activity [7].

The Sports for Health project in Grenada aims to integrate successful prevention strategies by establishing physical exercise intervention programs, which can be accessed by the entire Grenadian population. The objectives of the program are to establish a collaboration with the training camps, high schools and Grenadian students enrolled at SGU; conduct baseline measurements of health indicators among participants to be monitored over time; introduce sport activities and physical exercise to the different participating groups; develop a sustainable program that is proven to prevent chronic diseases, and to promote well being and overall health. Not only is the Sports for Health project expected to work towards preventing non-communicable chronic disease prevalence in Grenada, it will also provide a means of educating the public about maintaining a healthy lifestyles and promote the overall well-being of Grenadians [7].

Evaluation Description/Question

The goal of this evaluation was to determine if participation in the Sports for Health program shows considerable changes in body mass index (BMI) and waist-to-hip ratio when compared to participants who were originally active members but no longer participate. This evaluation will use participant data collected in 2011 and will compare values to recent data collect-

ed on persons who no longer participate in the program. Body mass index (BMI) and waist-to-hip ratio between these two groups will be analyzed. This secondary data analysis will not only explore the barriers that exist for persons who no longer participate in the program, but it will also provide the program directors with recommendations on how to overcome these barriers and increase community participation in the sports for health program in Grenada.

Methodology

The Sports for Health program is a longitudinal study which first began in 2011. The evaluation of the Sports for Health project in Grenada was obtained by analyzing secondary data collected by the researchers at WINDREF and SGU-DPHPM. When the program was implemented in 2011, researchers collected baseline data on identified health indicators from each participant's progress through the program (Appendix II). Recording of data was done at the Sports for Health community based sites on laptop computers. This data was used to develop a dataset, which is stored at WINDREF. Every four month interval, participants were contacted to measure their health indicators.

The health indicators from each participant that was collected included information regarding the participants weight, height, circumference of the hip and waist, blood pressure and blood glucose. The participants weight was measured using a ProDoc standardized scale, height was measured using a height chart, circumference of hip and waist were measured using measuring tape, and blood pressure and glucose were measured using digital monitors (Appendix II). Participants also were instructed to fill out questionnaires regarding the health behavior that included behavior towards physical activity, smoking and alcohol use and family history of diabetes mellitus and hypertension.

Recently, the Sports for health directors collected follow up data on persons who were originally part of the program and data collection in 2011, but are no longer active participants. The 368 participants from 2011 and the 120 participants who are no longer active participants in the program had their body mass index (BMI) and waist-to-hip ratio were analyzed using

Microsoft Excel 2011. Body Mass Index (BMI) was subdivided into four numerical ranges. According to the CDC, a BMI below 18.5 is considered underweight, a BMI between 18.5 and 24.9 is considered normal, a BMI between 25.0 and 29.9 is considered overweight and a BMI of 30.0 and above is defined as obese [8]. Individuals who meet or exceed this criteria are at an increased risk of eventually developing non-communicable chronic disease due to the distribution of their fat. For the purposes of this evaluation, a waist-to-hip ratio above 0.9 will be considered at risk. Frequencies and percent of population under each range were calculated and histograms were made to better visualize the distribution of the data. The National Health Service states that, "a ratio of 1.0 or more in men, or 0.85 or more in women indicates that you carry too much weight around the midsection" [9]. Waist-to-hip ratio ranges were less than 0.69, 0.7 to 0.749, 0.75 to 0.799, 0.8. to 0.849, 0.85 to 0.899, 0.9 to 0.949, 0.95 to 0.999 and greater than 1. Frequencies and percent of population under each range were calculated and histograms were made to better visualize the distribution of the data.

Results

The results of the data analysis between body mass index (BMI) is shown in Figure 1. Of the 120 persons who no longer participate in the Sports for health program, 33% of those had a body mass index (BMI) of 30 or above and, according to the CDC, is considered obese. Of the 368 active participants in the Sports for Health program, 18% of those had a body mass index (BMI) of 30 or above. Results of the data analysis shows that body mass index (BMI) tends to be increased in persons who no longer participate in the sports for health program when compared to active program participants.

The results from the data analysis of waist-to-hip ratios are shown in Figure 2. When looking at a healthy Waist-to-hip ratio like, for example, the range of 0.75-0.799, the active participants are at least twice as more likely to fall into this range. On the other hand, those inactive participants are much more likely to have a waist-to-hip ratio greater than 0.9 and are therefore at an increased risk for developing non-communicable chronic diseases.

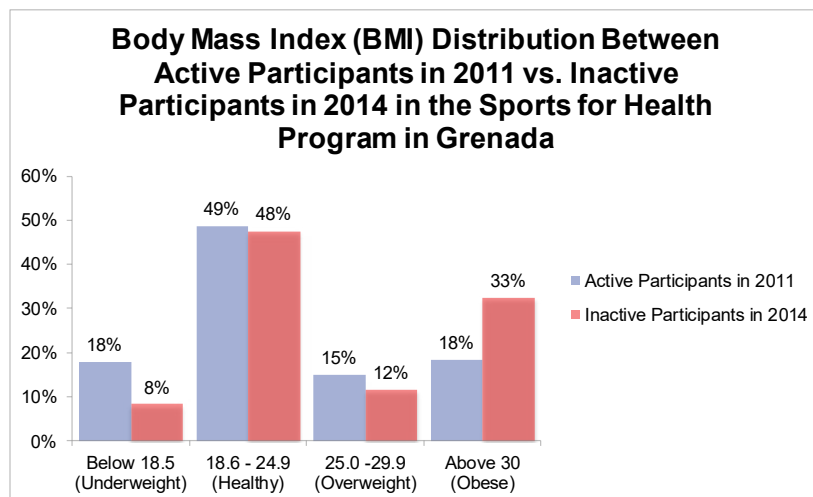
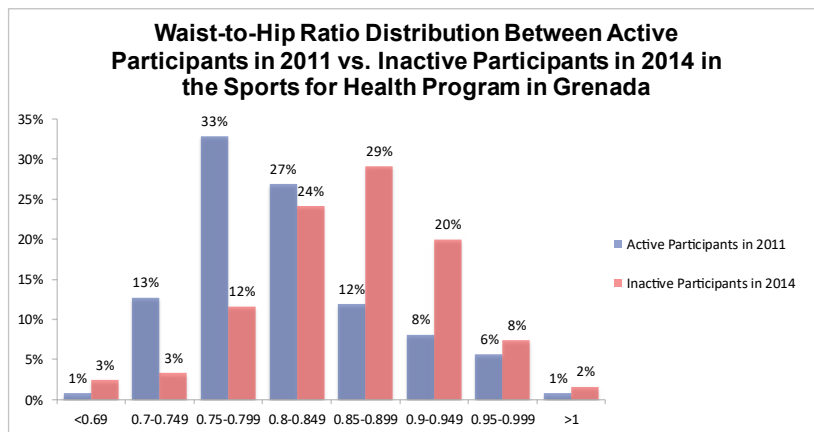


Figure 1. Body Mass Index (BMI) Distribution Between Active Participants in 2011 vs. Inactive Participants in 2014 in the Sports for Health Program in Grenada



Figures 2. Waist-to-Hip Distribution Between Active Participants in 2011 vs. Inactive Participants in 2014 in the Sports for Health Program in Grenada.

Discussion/Implications

It is vital for the evaluation and the future of the program to know the certain barriers that exist that are keeping community members who were once interested in participating in the Sports for health program from participating. It is important to distinguish whether these barriers are attributed to the program directly or whether they stem from personal situations. Regardless, highlighting and acknowledging these barriers is the first step in making the program potentially more accessible to more community members.

In the recent data collection that was conducted, the participants who have not actively been participating in the Sports for Health program in Grenada were interviewed. The notes that were collected featured some of the various reasons why people who originally participated in the program, are no longer participating. Amongst the 120 participants that were interviewed, several themes were noticed mostly among the women.

- Partners of participants no longer supported their participation in the program.
- Some women felt they were losing weight and size, but their partners felt that they were becoming attractive to other men.
- The partners also prefer the women to be plus sized and do not want them to lose weight.
- The women also in their church/community groups became the objects of rumors as they knew people were referring their weight loss with having a disease (AIDS etc.) and this discouraged them from continuing.
- When the women initially participated, they also began changing the way that they prepared their food (stopped frying food etc.), which was not well accepted by their male partners.
- The male partners, while the women initially went to the sports for health program, went to the local rum shops and they do not want their women partners to go and exercise.
- Women reported facing physical, sexual, financial abuse as a result of their participation.

Conclusions

Vital elements for an efficient community intervention program consist of a good understanding of the community and environment, the tight collaboration with community organiza-

tions and of course, participation from members of the community [10]. The Sports for health program in Grenada has shown to involve these essential components of what it takes to be an effective program. It is important to note, however, that constant and thorough evaluation of the program is vital to ensure program efficiency.

The Sports for Health Program in Grenada has shown to benefit individual participants who have put the effort in to actively participate, however, it is difficult to reap the benefits of the program if individuals do not participate. This program shows capacity to demonstrate an impact at the national level.

References

1. Yee SL, Williams-Piehot P, Sorensen A, et al. The Nutrition and Physical Activity Program to Prevent Obesity and Other Chronic Diseases: Monitoring Progress in Funded States. *Preventing Chronic Dis.* 2005; 3(1): A23.
2. World Health Organization. *Preventing chronic diseases: a vital investment.* 2005.
3. World Health Organization. *Global Health Strategy on Diet, Physical Activity.* 2004.
4. World Health Organization. *Global Forum Addresses Solutions to Prevent Premature Deaths.* 2010.
5. Beaglehole R, Ebrahim S, Leeder S, et al. Prevention of chronic diseases: a call to action. *The Lancet.* 2007; 370: (9605).
6. National Heart, Lung, and Blood Institute. *United Health and NHLBI Collaborating Centers of Excellence.* 2013.
7. Windward Islands Research & Education Foundation (WINDREF). 2011. WINDREF
8. Center for Disease Control (CDC). *Healthy Weight - it's not a diet, it's a lifestyle.* 2014.
9. National Health Service. *Why Body Shape Matters.* 2014.
10. Nissinen A, Berrios X, Puska P. Community-based noncommunicable disease interventions: lessons from developed countries for developing ones. 2001; 79(Cvd): 963-970.
11. Alford J, Bidaisee S, Fields P, et al. *Sports as a Strategy for Promoting Health by Prevention Non-Communicable Chronic Diseases: A Proposal for Implementing and Evaluating the Sport for Health Project in Grenada.* 2011.
12. Amani A, Kelishadi BAR, Khosravi A, et al. *Short-Term Results of a Community-Based Program on Promoting Healthy Lifestyle for Prevention and Control of Chronic Diseases in a Developing Country Setting: Isfahan Healthy Heart Program.* 2009.

13. Bayliss S, Davenport C, Greenheld W, et al (2010). Community Programs for the Prevention of Cardiovascular Disease: A Systematic Review. *Am J Epidemiol.* 2010; 172 (5).
14. Bronson D, Elenes J, Pena V, et al. Pasos Adelante: The Effectiveness of a Community-based Chronic Disease Prevention Program. *Prevent Chronic Dis Pub Heal Res Pract Pol.* 2005; 2 (1).
15. Stuart M, Chard S, Benvenuti F, et al. Community exercise: a vital component to healthy aging. *Healthcarepapers.* 2009; 10(1), 23–28; discussion 79–83.

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