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An innovative solution and call to action for the physical inactivity pandemic

Christopher Reyes, Joshua Carlos, Tony Guerra, Jenny Vo and Steven F. Loy*

Department of Kinesiology, California State University, Northridge, 18111 Nordhoff Street, Northridge, CA 91330-8287, USA

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Abstract It is tragic and ironic, as we speak of the pandemic of physical inactivity, that we already know the cure for physical inactivity, the 4th leading risk factor for mortality costing billions of dollars in medically related costs and losses in productivity. The solution is simple. People must move more often. And of exceptional relevance, physical activity can prevent diseases which increase the population's susceptibility to the new coronavirus pandemic, COVID-19. Creating innovative programs which encourage movement is a beginning, but these programs must be sustainable and accessible to a country's vulnerable populations. 3 WINS Fitness is a free scalable and innovative community-based exercise program serving over 300 participants requiring no external funding for daily operations due to its implementation by university kinesiology students. If we apply our knowledge and work together in significant collaborations, millions of lives can be saved. Population physical activity has not increased since the late 1990's. We must take a fresh look at identifying new or unique collaboratives and re-inventing current systems. At the core is the education system of university kinesiology/exercise science programs, teaching students the complete landscape of what is required for increases in population physical activity. The Call to Action (CTA) is kinesiology/exercise science departments around the world vigorously taking on the challenge and owning the responsibility for increasing population physical activity. The students of today can control the health destiny of millions of people around the world. The first steps to these departments taking the lead must begin today.

Keywords : physical activity, community-based, sustainable, kinesiology, university

Introduction

Today, it is tragic as we speak of the pandemic of physical inactivity that we find ourselves amid a different yet also deadly pandemic, COVID-19. To save lives from COVID-19, scientists around the world are working to determine the cause and spread, and to develop a vaccine. Ironically, we already know the cure for physical inactivity which is the 4th leading risk factor for mortality[1] costing billions of dollars in medically related costs and losses in productivity: Simply, people must move more often.

And what comes with populations moving more? Strain et al.[2] estimated the percentage and number of premature mortalities averted by current physical activity prevalence in 168 countries and calculated that physical activity prevalence already prevents 3.9 million premature deaths per year globally. If we apply our knowledge and work together in significant collaborations, millions of lives can be saved. This year, Hallal and Pratt[3] provided a commentary; "Physical activity: moving from words to action", as population physical activity has not increased since the late 1990's. We must take a fresh look at identifying new or unique collaborative options and re-inventing current systems. 3 WINS Fitness is an innovative solution to increasing population physical activity through the delivery of a free exercise program by university kinesiology students which requires no external funding for sustainability. Developed in 2011, the program has expanded from one site to six serving over 300 participants including 87% Hispanic, 94% female with an average age of 54.6 years, body mass index (BMI) of 30.4, and 72% of the participants have an estimated aerobic fitness level of "very poor". We provide a Call to Action (CTA) at the end of this article with the perspectives of how to effectively make population physical activity uppermost in our thinking.

World-wide strategy to increase population physical activity

The World Health Organization (WHO) Global Action

*Correspondence: steven.loy@csun.edu

Plan on Physical Activity (GAPPA) 2018-2030[4] mission is to ensure that all people have access to safe and enabling environments and to diverse opportunities to be physically active in their daily lives, as a means of improving individual and community health and contributing to the social, cultural and economic development of all nations. The target is a 15% relative reduction in the global prevalence of physical inactivity in adults and in adolescents by 2030. The GAPPA provides recommended actions for WHO Member States, the WHO secretariat and other stakeholders. We believe the challenge is the identification and commitment of stakeholders who can effectively act on the GAPPA recommendations.

Importance and actions of stakeholders

As mentioned, the WHO GAPPA speaks of stakeholders. It's about the stakeholders, at all levels, in public and private organizations and the government working together towards a common goal of increasing population physical activity. There is a need to identify action-oriented committed stakeholders in every organization requiring multi-layered and connected leadership. There must be wide-spread accountability.

Infrastructure to develop solutions

In the often cited 2012 Lancet Physical Activity Series, Kohl et al.[5] stressed the need for physical activity to be a global public health priority and noted that during the last 20 years, there has been an identifiable infrastructure. They show an emergence of a global infrastructure for physical activity and public health which shows the four areas below as key elements. We believe a model for community level execution is a downstream application of this infrastructure. These elements are requirements for progress at the local community level to lead us to an increase in population physical activity in this decade.

1. *Policy and planning*
2. *Leadership and advocacy*
3. *Professional development and training*
4. *Monitoring and surveillance*

It appears that the *Policy and planning* level can be represented by the GAPPA 2018-2030 Committee and other large-scale high-level physical activity and public health meetings. For the present, GAPPA has laid out a blueprint for countries to follow.

Leadership and advocacy

We view both the Leadership and advocacy and Professional development and training level are the weak points for application of global strategies to improve population physical activity. However, we recommend creation of **additional layers** of *Leadership and advocacy* to take the message from a national level to appropriate leaders at the regional, state, county, city, and community level to prevent the loss of communication which seems to have occurred. These leaders all represent stakeholders. But it must be stressed that physical inactivity be recognized as a crisis of pandemic levels, and every layer of leadership must consider physical activity too important to allow a potential drop in communication and execution.

Therefore, we would suggest organizations who have an established infrastructure within different parts of the world, and certainly within their own country, to be the layer of leadership to bridge public health and GAPPA to the community. For example, the American College of Sports Medicine (ACSM) has both an international and regional footprint in the United States with most universities having faculty with ACSM membership. The American Kinesiology Association is another organization which will be key to the Call to Action (CTA) discussed below in the United States. Other organizations in the United States to involve at this level may be the American Council on Exercise (ACE), Society of Health and Physical Educators (SHAPE) America, and International Dance-Exercise Association (IDEA) Health & Fitness Association, to name a few. There are similar organizations around the world to fulfill the GAPPA vision and they must be identified. To be successful, we suggest there may have to be a new very *visible and accountable* "GAPPA Leader" position created in each of these organizations, and these GAPPA leaders become the "drivers" of actions and the individuals who personally take the GAPPA message throughout their regions and to the communities.

Professional development and training

Direito et al.[6] published an article entitled, Early Career Professionals' (Researchers, Practitioners, and Policymakers) Role in Advocating, Disseminating, and implementing the Global Action Plan on Physical Activity: ISPAH Early Career Network View. They say the contribution of early career professionals can be achieved through five pathways: (1) research, (2) workplace/practice, (3) business, (4) policy, and (5) professional and public opinion. The early career professionals should be the population of stakeholders receiving the GAPPA message from *Leadership* with the challenge of responding to the message with actions. Many of these early career professionals will start their careers in university kinesiology departments and be kinesiology graduates who move into different sectors of the job market from politician to practitioner and spanning public health, nutrition, social work, community activist and the fitness industry. Educating kinesiology-trained early career professionals while in college on the complete landscape of what is required for improving population physical activity prepares them to contribute

in these different sectors.

Stakeholders from kinesiology/exercise science departments around the world, not only faculty and current students but also the alumni from these institutions, can initiate and operationalize this early career professional level. Are they trained in all the areas and pathways[5,6] mentioned above? Given the current kinesiology/exercise science departments' curriculum and course requirements, the answer to this question would be "no". However, as with COVID-19, where scientists, research, businesses, and education are being re-tooled for an effectual response, why not design something similar for these kinesiology/exercise science departments? We are in a global pandemic and the current students from undergraduate to master's degrees to alums to doctoral and post-docs and faculty can take courses taught by experts in the field to understand the breadth and depth of knowledge required; even from those who helped construct the GAPPA, i.e., those in the *Policy and planning* group.

Sallis et al.[7] reported more than 50 physical activity and public health training courses coordinated by the US Centers for Disease Control and Prevention produced over 3500 graduates who can develop and deliver national, state, and local actions. To provide the reader with perspective, California State University, Northridge presently has 1600 undergraduate kinesiology students and there are over 700 kinesiology departments in the United States alone. The university system represents an army of prepared stakeholders committed to the action of increasing physical activity.

Driving an innovative solution into action

Community-based exercise programs have proven to provide strong social support for community members that can help promote healthy behavior, and this is especially true among individuals with a low social economic status given their lack of education of how to engage in various leisure time physical activities and limited accessibility to health clubs and gyms[8]. These community-based exercise programs can be implemented in neighborhood parks, of which most people live within 2 to 5 miles of[9], and faith-based settings that are becoming increasingly popular sites for health promotion[10].

3 WINS Fitness (formerly 100 Citizens) was created on the premise of involving kinesiology students from California State University, Northridge (CSUN) to deliver a free exercise program for primarily underserved communities[11,12]. The mission is reflected in the operative 3 WINS in the program: participant health, community health, and student professional development. Using this student-led university model, involved students gain understanding of the power they have to make world-altering changes in the fight against physical inactivity.

Since the program's inception in 2011, 3 WINS has successfully operated without external funding for over 9 years. Starting in one local park in the City of San Fernando, 3 WINS Fitness has expanded to 6 locations throughout the Northeast San Fernando Valley, all under the direction of students from CSUN. This student-delivered exercise model has been replicated by 5 universities (CSU Los Angeles, CSU Dominguez Hills, CSU Bakersfield, CSU San Bernardino, and George Washington University (Washington, DC) demonstrating its potential for scalability. The CSUN program now serves over 300 participants including 87% Hispanic, 94% female with an average age of 54.6 years, body mass index (BMI) of 30.4, and 72% of the participants have an estimated aerobic fitness level of "very poor". The program has proven to be capable of reaching vulnerable populations in underserved communities.

The structure of the program is designed to exceed the minimum Physical Activity Guidelines for Americans[13] by engaging participants in 60 minutes of moderate-to-vigorous physical activity (MVPA) that includes muscle strengthening exercises, 3 days/week. Equipment utilized include resistance bands, battle ropes, kettlebells and dumbbells, as well as body weight exercises using tables, benches, and playground equipment for appropriate resistance. Participants are organized into three groups or levels, ranging from beginner to advanced, based on fitness level. The goal is to support participants through each level thereby promoting engagement in lifelong physical fitness.

When COVID-19 forced the closure of the park programs, the program had to accommodate this pandemic outbreak. With uncertainty looming and circumstances rapidly changing, the leadership viewed this as an opportunity to take a step back and re-evaluate the needs of the participants, whose ages range from early 20s to 70s (mean age 55 years), as well as the reality of when the program would resume in the parks. As addressed earlier, the population is becoming increasingly inactive, and the circumstances that surround COVID-19 adds additional risk to this inactive lifestyle. Using the student-led university model that garnered success pre-closure, a virtual program was developed that allowed continuity of the program. This online program was identified as Back to Basics (B2B) (https://3winsfitness.com/b2b/).

B2B follows the same structure as the park site program with greater emphasis on "the basics". B2B revolves around the primal movement patterns (push, pull, hinge, squat, lunge, rotate, gait) that allow individuals to successfully get down and up off the floor safely and with ease, a task that many participants struggle to accomplish. Given the COVID-19 circumstances in Los Angeles and the United States, it was anticipated that the program would be out of the parks for at least 1 year. This year or 365 days was viewed as a unique opportunity to purposefully guide participants through B2B and give them the tools and resources needed to adopt a healthier and more physically active lifestyle because of building a stronger

foundation of fitness. The program is called 365 Journey to Health (JTH) with the goal of lifelong physical fitness. Throughout this journey participants engage in student-led Zoom seminars that revolve around exercise, motivation, nutrition, mindfulness, and medicine, have access to a library of exercise videos including the entire B2B program, and virtually interact with student instructors and other participants through the fitness tracking app, *Strava* (www.strava.com).

While the virtual program is different than the original program, the student-led university model is maintained, the three wins preserved, and the capacity of the program to significantly counteract physical inactivity retained while taking on a further innovative direction. Going virtual has increased our outreach beyond our 6 locations and 5 universities with participants from different parts of both southern and northern California and out-of-state interest in the program.

While 365 JTH is timestamped for 1 year, it is possible that 3 WINS may be forced to continue virtually beyond that time. However, when the time comes to re-open the park programs, it appears the virtual program can be easily integrated back into the parks to create a more effective exercise program than before, and it may be an avenue for people to better prepare themselves to join the park-based programs. Also, though the program has gone virtual, ironically, the staff is more connected to participants through Zoom conversations and education, utilizing the Strava app to communicate with participants about their physical activities, and social media platforms such as Facebook Live workouts and Instagram engagement. There has been better tracking of participant progress allowing a greater personalization of the program to meet the unique needs and goals of participants. The nine years of student-led university model success has not been abandoned, but rather expanded and is poised to deliver participant and student success in the future on a larger scale.

3 WINS Fitness is an example of how an army of potential early career professionals can be mobilized in tremendous numbers within 5 years, especially with the opportunity for virtual class offerings from the CDC, business sector, media, and all of the areas and pathways mentioned by Direito et al.[6]. The COVID-19 pandemic has taught the students of 3 WINS Fitness lessons on virtual learning and teaching. The infrastructure for a generation of professionals capable of implementation of the GAPPA could easily be developed by 2030 with incremental advances over the next 10 years. 3 WINS Fitness is an example of what could be a natural experiment[14]. It was designed as a physical activity intervention program in public parks delivered free by kinesiology students with the intention of offering underserved communities an opportunity to meet the Physical Activity Guidelines for Americans[13], yet it has the flexibility to adapt and meet changing needs and circumstances. It represents a model for consideration given its potential for scalability and sustainability with no external funding required and, most importantly, students are being trained to fill early career professional opportunities.

A valuable attribute of 3 WINS Fitness is the program's flexibility. 3 WINS Fitness is offered in five public parks and one public school. With COVID-19, the organization was able to quickly pivot and now is offering an on-line 365 Day Journey to Health (www.3winsfitness.com). It was able to do so because it functions without the need for external funding, and its only responsibility is to participant/community health and student professional development, not to a particular funding agency's requirements or protocol.

Raising a generation of students/early career professionals in hundreds of universities who are inculcated into the methods required for GAPPA and beyond provides a scaling potential of a generation of trained scientists, practitioners, and collaborators in other sectors of society, given many graduates of programs will also venture into other connected fields of the working world. Our own observations from distinct locations and experience suggest that what Kohl et al.[5] and the GAPPA[4] describe has not been operationalized across the United States and other countries. Obviously, every country, every state, every district/county/city are different, but there does need to be an organization who has established a unique and distinct priority of increasing physical activity. We believe this core priority is the education system of universities, colleges, community colleges with kinesiology/exercise science programs teaching students the complete landscape of what is required to increase population physical activity. It is possible for kinesiology departments to educate students how to teach group exercise, acquire leadership skills, understand business, and appreciate the importance of governing skills, and thus embed physical activity into the fabric of a country's policies. This is what the early career professional stakeholders educated in kinesiology departments can do across the spectrum of their career opportunities to make physical activity a priority for the world.

Call to Action

The Call to Action is kinesiology/exercise science departments around the world, taking on the challenge and responsibility of improving population physical activity. This time, we believe it can be different. Let's drill down into the foundation of our profession, create a focused curriculum, and make a commitment to teach, involve, and help our students understand that the future health of the world and the saving of lives through physical activity is in their hands. They can control the health destiny of millions of people around the world. The first steps to these departments taking the lead must begin today.

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Conflict of Interests

The authors declare that there is no conflict of interests regarding the publication of this article.

Author Contributions

CR, JC, TG, JV and SL have been involved with the project, and met and discussed the manuscript submitted prior to conception. All have contributed to the writing of the manuscript and have reviewed and approved the final submission agreeing to be accountable for all aspects of the work.

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