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Research article

A 10 Week Study to Determine the Effects of Live Vs Virtual Delivery of Transitions Program on Fitness Related Components

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Abstract

The purpose of this study was to determine if the effectiveness of virtual fitness classes on improving fitness related outcomes as compared to in-person group fitness classes. This quantitative study was conducted with sedentary female subjects 45 to 65 years of age. Volunteers were selected to participate in either the live or virtual group using the WELLBEATS™ Transitions program for ten weeks. A repeated measures GLM revealed a significant multivariate within group effect for time (pre-posttest), Wilks' $\lambda = .133$, $F(12, 18) = 9.82$, $p < .001$, partial eta squared = .867 supported the impact of exercise on fitness. WELLBEATS™ Transitions Live and WELLBEATS™ Virtual group exercise programs both showed significant improvements on ten of the thirteen fitness measures. No significant difference was found between types of fitness exercise: WELLBEATS™ Transitions Live and WELLBEATS™ Transitions Virtual, Wilks' $\lambda = .532$, $F(13, 17) = 1.15$, $p = .468$, partial eta squared= .468. This study indicates that both WELLBEATS™ Transitions Live and WELLBEATS™ Transitions Virtual were effective at improving health related outcomes.

Introduction

The 2019 COVID pandemic introduced an increased need for alternative forms of exercise other than in-person fitness classes. The fitness world responded by personal trainers and large programming units creating virtual methods of online fitness classes to meet the growing demand of people confined to their homes. The question remains are virtual fitness classes effective interventions to create the same benefits as in-person classes. Research supports daily exercise enhances one's mental well-being and promote healthy musculoskeletal function throughout life [1]. Although recommendations set for physical activity are achievable to improve one's health status, only 54.2% percent of all American adults currently get greater than or equal to 150 minutes of moderate intensity physical activity per week while only 37.4% get greater than or equal to 75 minutes per week of vigorous intensity physical activity per week leaving a large percentage who are not meeting the minimum recommended amounts of physical activity [2].

The importance of exercise is apparent in the 2007 joint initiative by the American College of Sports Medicine and the American Medical Association to increase the amount of physical activity of all individuals using evidence-based information and having an exercise history as part of clinician visits on the global stage [3,4] point out that 80% of deaths in low-income countries are attributed to noncommunicable diseases. In 2018 the American College of Sports Medicine and Exercise is Medicine Initiative released a statement siting the alignment of their vision with the United Nation and World Health Organization to improve physical activity globally [5]. 2021 will mark the 12th year of the World Congress on Exercise is Medicine which is hosted each year in conjunction with the American College of Sports Medicine Annual

Meeting and this meeting could not be at a better time based on a recent article by [6]. who concluded that individuals who were physical inactive had poorer outcomes than those who meet the American College of Sports Medicine physical activity guidelines in relation to the COVID-19 global pandemic?

Even with fitness and medical organizations urging individuals to be active to become healthy and resistant to illness seventy-five percent of the world's population does not receive the minimum recommended amount of physical activity, [7]. A qualitative study conducted by Rai et al. [8] listed the following as barriers to exercise, poor health, options that were cost prohibitive, and options that were not of interest to individuals were some of the most reported. In addition to the more common reasons people find to not exercise, fitness centers are sometimes unable to offer group fitness classes due to a lack of qualified instructors and this past year has added a global pandemic, gym closures, and physical distancing as other reasons individuals are unable to participate in fitness classes. In 2018 the International Health, Racquet & Sportsclub Association reported a record 62.5 million individuals in the United States belonged to a fitness club [9]. Based on the International Health, Racquet & Sportsclub Association press release this meant that when the global Covid-19 pandemic hit that left roughly 20 % of Americans looking for exercise options due to gym closure mandates. With the digital age and vast online resources that meant there were options available to those who wanted to continue to exercise with some sort of fitness instructor leadership in an online or digital format. As of the writing of this article a google search of the internet using the term exercise and the video search option elicited roughly 498,000,000 results [10]. The current studies aim was to determine if performing exercise with home based virtual programing is as effective as performing exercise in a live group setting using WELLBEATS™.

The WELLBEATS™ program was previously known as Fitness on Request and was a pioneer in the model of virtual group fitness programing [11]. WELLBEATS™ partners with organizations like fitness facilities, corporations, and hotels to offer virtual group fitness programing to meet the needs of their clientele. Transitions is one of the virtual group fitness class options. Transitions is about staying active, strong, and vital, working out with while promoting optimum fitness and health for life [12]. "Each Transitions class features the perfect multi-level mix of cardio, resistance training, balance, mobility, and awareness skills that can positively impact those in the 45+ market" [13].

There were no studies found on the physical effects of virtual group exercise classes versus live group exercise classes, using the same exercise program. This research was conducted to determine if performing WELLBEATS™ Transitions live with a group instructor vs WELLBEATS™ Transitions in a virtual group exercise setting had similar outcomes on health and fitness related components. Outcomes measured for this study include muscular strength, muscular endurance, flexibility, aerobic fitness, blood pressure, weight, girth, and body composition. The results of this research will inform females between the ages of 45-65 years of age on the effectiveness of virtual fitness programming versus in person fitness programs on fitness related outcomes.

Materials and Method

The research proposal was approved by the Minot State University Institutional Review Board for the Protection of Human Research Subjects. One approval was gained, adult females between the ages of 45 to 65 who were considered sedentary, or exercise sporadically were recruited to participate in this study. Sedentary individuals or sporadic exercisers were defined as those who exercise less than three times per month over the previous year. Individuals were recruited through announcements made on a local noon hour news show, through the local newspaper, through a local school electronic communication system, in the university public information newsletter, as well as on social media. Participants were selected to be in either the WELLBEATS™ Transitions live group or WELLBEATS™ Transitions virtual group. The study protocol was a 10-week program in which the participants performed the same workout either in the WELLBEATS™ Transitions live group or the WELLBEATS™ Transitions virtual group to participate in two formats of Transitions program three days a week.

The WELLBEATS™ Transitions live group had a fitness trainer leading the sessions while the WELLBEATS™ Transitions virtual group utilized the digitally streamed version of the workout. Volunteers were required to have a physician signed statement indicating that they were medically sound enough to participate in the study. Subject exclusion criteria included unstable cardiorespiratory, metabolic, musculoskeletal, or neurological disorders that would affect the subject's ability to complete the study. The purpose of this study was to explore how WELLBEATS™ Transitions live group instruction versus WELLBEATS™ Transitions virtual group exercise programs compare regarding girth measurements, aerobic condition, body weight, body composition, Body mass index, muscle endurance, and flexibility. The results of this study lend evidence to the growing body of literature about the viability of virtual group exercise programming and as compared to live group exercise programming. Participants completed the PAR-Q and you form to determine whether they required additional medical consent prior to starting the study. Those needing further medical consent were not eligible to participate in the study. After eligibility was determined for participation in the study and groups assignments were established the participants were baseline tested for the following:

- Cardiovascular fitness using resting heart rate, that was conducted in the seated position and palpated for 60 seconds.
- The sit and reach test was used to measure lower body flexibility. The test was performed in a long-seated position with the legs extended and ankles dorsiflexed.

- Aerobic capacity was measured using the 3 Minute Step test which was performed by the subject stepping on to and off a 12-inch step for three minutes, a recovery heart rate was taken for 60 seconds after concluding the stepping.
- Body Fat Analysis was conducted utilizing a Tanita Bioelectrical Impedance device.
- Weight was measured using a Tanita Scale.
- Circumference measurements were taken at the chest, right upper thigh, waist, hips, and right thigh.
- Body Mass Index was calculated using height and weight.
- Muscle endurance was measured using the 1-Minute Sit-Up test.

Research participants were post tested on the same measures after completing the 10-week workout phase of the study.

Results and Discussion

A repeated measures GLM revealed a significant multivariate within group effect for time (pre- posttest), Wilks' λ = .133, F (12, 18) = 9.82, p <. 001, partial eta squared = .867 supported the impact of exercise on fitness. WELLBEATS™ Transitions Live and WELLBEATS™ Virtual group exercise programs both showed significant improvements on ten of the thirteen fitness measures. No significant difference was found between types of fitness exercise: WELLBEATS™ Transitions Live and WELLBEATS™ Transitions Virtual, Wilks' λ = .532, F (13, 17) = 1.15, p = .468, partial eta squared = .468 (Table 1).

Table 1.

Dependent Variable	Pre-Post GLM		Transitions Live		Transitions Virtual	
	df	F	df	t	df	t
Chest	1	27.96**	16	3.21*	14	4.27**
Right Upper	1	11.36*	16	3.65*	14	1.49
Waist	1	20.48**	16	4.46**	14	2.49*
Hips	1	20.07**	16	3.20*	14	3.07*
Right Thigh	1	0.67	16	-0.21	14	1
Resting HR	1	2.29	16	0.17	14	2.77*
Body Weight	1	18.65**	16	2.59*	14	4.06**
Body Fat	1	6.38*	16	3.47*	14	1.57
BMI	1	19.30**	16	2.73*	14	3.91*
Recovery Heart Rate	1	16.56**	16	2.49*	14	2.80*
Sit Up	1	99.1**	16	-8.23**	14	-6.09**
Sit Reach	1	17.9**	16	-2.51*	14	-3.92*

Participants in both WELLBEATS™ Transition Live and WELLBEATS™ Transitions Virtual groups had significant reductions in the circumference of their chest, waist, and hips. Both groups also showed significant reductions in their weight, body mass index, and recovery heart rate. Significant increases occurred for both groups on their number of sit ups and the length of their sit and reach. Transition Live participants showed significant decrease in the circumference of their upper arms and a significant reduction in their body fat while the Transitions Virtual participants did not show any significant change in these two measures. This study indicates that participating in either WELLBEATS™ Transitions Virtual or WELLBEATS™ Transitions Live group exercise classes can improve fitness levels of women aged 45 to 65 years who have been sporadically active or have not exercised at all. Women participating in either the WELLBEATS™ Transitions Virtual or WELLBEATS™ Transitions Live classes decreased girth of chest, waist and hips, lowered body weight and decreased Body Mass Index indicating that both delivery methods may provide the intensity of exercise necessary and/or adequate instructor cues and motivation to achieve a caloric deficit. The WELLBEATS™ Transitions Virtual and WELLBEATS™ Transitions Live groups also improved muscle and cardiovascular endurance and flexibility indicating both delivery methods are effective to achieve muscular and cardiovascular endurance changes. While both groups improved fitness parameters, if loss of body fat is the goal, WELLBEATS™ Transitions Live instruction is most effective. WELLBEATS™ Transitions Live participants did experience significant reduction in girth of upper arms and significant decrease in body fat, whereas WELLBEATS™ Transitions Virtual participants did not. This may have been partially because the live instructor continually monitored handheld weight used and strongly encouraged increase in load. This personalized progressive overload is only available when the instructor is familiar with the participants. Virtual programming provides prompts but does not allow for personalized instruction based on familiarity with participants. With the fitness industry worth $100 billion it is important to know, not only to combat the personal health cost but also the global financial cost, is the virtual fitness industry a viable alternative [14]. Based on the results of the WELLBEATS™ Transitions Live versus WELLBEATS™ Transitions Virtual study it appears that virtual exercise classes are in fact as

effective as in person group exercise classes to produce fitness benefits.

Acknowledgement

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Conflict of Interests

No conflict of interests.

References

1. Warburton D, Nicol C, Bredin S (2006) Health benefits of physical activity: the evidence. CMAJ: Canadian Medical Association journal. journal de l'Association medicale Canadienne 174(6): 801- 9.
2. Centers for Disease Control and Prevention (2021) Trends in meeting the 2008 physical activity guidelines, 2008-2018. Centers for Disease Control and Prevention.
3. Exercise is Medicine (2021) Getting Started: The first steps towards change. American College of Sports Medicine.
4. Lobelo F, Stoutenberg M, Hutber A (2014) The Exercise is Medicine Global Health Initiative: a 2014 update. British journal of sports medicine 48(22): 1627-1633.
5. American College of Sports Medicine (2018) American College of Sports Medicine and Exercise is Medicine Initiative Support UN Commitment to Reducing Noncommunicable Disease: ACSM Vision Aligns with UN and WHO's Special Focus on Physical Activity.
6. Sallis R, Young DR, Tartof SY (2021) Physical inactivity is associated with a higher risk for severe COVID-19 outcomes: a study in 48 440 adult patients British Journal of Sports Medicine Published Online First.
7. World Health Organization (2020) Physical Activity. [Fact Sheet].
8. Rai R, Jongenelis MI, Jackson B, Newton RU (2020) Pettigrew S. Factors influencing physical activity participation among older people with low activity levels. Ageing & Society 40(12): 2593-2613.
9. Rodriguez M (2019) Latest IHRSA Data: Over 6B Visits to 39,570 Gyms in 2018.
10. Google (2021).
11. Lewis J (2015) WELLBEATS Virtual Fitness formerly Fitness on Request Presentation by Joe Lewis.
12. Wellbeats (2020) Virtual Fitness Classes & Channels.
13. Ft Campbell (2021) WELLBEATS™ Transitions Series at Sabo PFC Army Family and MWR.
14. Biron B (2019) Fitness has exploded into a nearly $100 billion global industry as more people become obsessed with their health. The Insider.