

EFFICACY OF A 30 DAY ONLINE WEIGHT MANAGEMENT SOLUTIONS ON INDIVIDUALS THAT ARE OVERWEIGHT

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Jamie Ridge Alcantara

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STATEMENT OF ORIGINAL AUTHORSHIP

The work contained in this thesis has not been previously submitted for a degree or diploma at any other higher education institutions to the best of my knowledge and belief. This thesis is structured based on the regulations and procedures governing the award of the dual degree of ‘Doctor of Osteopathy & Naprapathy’ by National University of Medical Sciences, Madrid, Spain

Jamie Ridge Alcantara

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ABSTRACT

Background and Objective: Obesity is the leading cause of death today in this world with cardiac issues, diabetes, and cancer being prevalent due to poor lifestyle choices. This paper's initiative is to improve nutritional awareness of overweight individuals purely online thru the use of mobile apps Trainerize (exercise and habit tracking) and MyFitnessPal (macro tracking)

Study Design: This study was conducted as a single-arm pre-post study for a total of 30 days with the initial values taken from day 0 and the final values taken on day 30.

Methods: The technology and system used are smart phone mobile device with internet connectivity, Trainerize Training App, and MyFitnessPal Nutrition App. All values (height weight, age, BMI, and waist circumference, and photos) were all uploaded in the app for the pre and post data analysis with the initial interview done thru the Zoom Meeting App. There were no face to face interaction between the practitioner and the participants and all data analysis and interviews were done purely online.

Results: All participants in this pre and post study had notable changes in all of their values with a minimum weight loss of 2 lbs to a maximum of 10 lbs, with BMI drop from 0.3-1.9, and waist circumference changes from 0-1.5 inches.

Conclusion and Limitation: Online Nutrition is an effective means of prescribing weight management solutions to overweight individuals as it helps them learn the system at their own pace irregardless of their starting point. Compliance and motivation are the key factors in order to push through with the program and have significant results since weight loss is a slow and lifelong journey. Actual limitation of this study was the age group of 30-42 years old with all individuals being medically healthy with no known medical conditions at the time of the study. A low participation rate of (10) subjects, whom were all volunteers, were also monitored which might be the reason for the high success rate.

Introduction

This paper, for online weight management education is very timely as this 2020 we are currently stricken with the pandemic of Covid-19. With people avoiding roaming the streets and socializing, there is a current rise in the search for outlets and means of improving their health & immune system without having any contact with one another. This was initially set up to bring awareness to nutrition concepts, exercise, and habits and the implication of leading a stressful life. The timing is crucial as the Covid-19 is a virus that has a high infection rate especially for the immunocompromised individuals or the ones who have lots of internal stress in their body. This paper aims to deliver vital information on how to reduce the weight of overweight individuals through healthy lifestyle choices in effect lowering the possibilities of medical risks.

The modern man has been designed by society to work faster and be more efficient than the basic necessities of the body has become a distant memory and seems to be for the more privileged. The majority of the society have been too engrossed in fast food and technology that slowly there's a rapid incline in weight and a decline on the physical activities and rest. This makes the modern man susceptible to health issues which usually becomes undetected as the years go by until a physical examination comes up. Most of these health risks are actually preventable if we choose the path of a healthy lifestyle living.

This pandemic has opened the eyes of the people on what truly is important in this world. Wealth and riches are nothing compared to spending time with family and having a healthy body. Those stricken with the disease have difficulties coping with the symptoms even if they were completely healthy prior to getting sick. In effect, people realized that they are now able to enjoy time with the family and cook proper meals again with an open mind to start doing some changes for their health because the lifestyle that we choose in our generation then becomes the lifestyle of the next generation. Our susceptibility to certain diseases will also be their susceptibility where in fact the majority of them are actually preventable. The only way to break that chain is to build up a strong immunity from choosing healthier options and it is up to the allied health society to inform and educate that the body functions well with proper nutrition, rest, and habits that we make.

The body is like an automobile, fuel it with the right gasoline and it will run efficiently and have a longer life span. Fuel it with gasoline and alcohol and it might run but eventually the parts will deteriorate at an accelerated rate. It is the same with the body, fuel it with nutritious food and it will reward you with a well functioning body. Fuel it with junk food and eventually the body will try and adjust but it won't be able to cope the long term abuse resulting to it breaking down faster. Same with getting rest. The body is designed to recover when rest is complete on a daily basis. The internal organs get to refresh when sleep is complete. Without proper rest, the body does not have the means to recover which makes it break down faster.

This paper aims to educate the overweight participants to have an action plan to reverse their weight in order to gain a healthier lifestyle focused on nutrition, rest, and habit options in order to reduce medical risks. The tools utilized were MyFitnessPal and Trainerize app to help keep track of their back to health journey.

Review of Related Literature

Osteopathy As Medicine

“Osteopathy is based on the perfection of Nature's work. When all parts of the human body are in line we have health. When they are not the effect is disease. When the parts are readjusted disease gives place to health. The work of the osteopath is to adjust the body from the abnormal to the normal; then the abnormal condition gives place to the normal and health is the result of the normal condition.” (Still, 1910). Based from the founder of Osteopathy, as long as the body is working as one without any road blocks, the body can function efficiently and fight foreign objects from harming the body. He was talking about the body and its function in general

Osteopathic Medicine is a complete and comprehensive system of medical practice which gives basis on the neuro-musculoskeletal system as a major importance to human life which includes a basis of the inter-relationships between this major system and the body's internal environment. An incorporation of evaluation and treatment is administered as a fundamental approach to health and disease. (Nicholas 1974)

Obesity As A Disease

Obesity and overweight usually get interchanged with each other but are not necessarily always true. One can be overweight with minimal fat with increased muscle mass and that person should not be considered obese. On the other, obesity is having excess fats in the body with a Body Mass Index (BMI) score of 25 or beyond. The main cause of this is a positive energy balance wherein the food intake goes beyond what the body can actually burn or expend. Being overweight for a relatively prolonged period of time added with stress and poor lifestyle choices puts the person with increased risks for acquiring certain diseases such as hypertension and diabetes. (Hruby 2015)

Obesity becomes epidemic, jeopardizing about one third world's population. No one intervention really solves it due to certain limitations of poor compliance for diet, habit and excises. Poor weight loss may also be attributed to the fact that there are other several factors to be considered: age, medications, stress and so on. (Hurt 2010)

Nutrition For Weight Management

Maciel (2020) mentioned that, “Nutrition is one of the basic sciences that underlie a proper understanding of health and human sciences and the ways in which human beings and their environment interact. In its turn, the science of nutrition is based on both biochemistry and physiology, on the one hand, and the social and behavioural sciences on the other. There is an obvious need for energy to perform physical work. The dietary sources of metabolic energy (the metabolic fuels) are carbohydrates, fats, protein and alcohol.”

Additionally, Maciel (2020) noted that a simple equation of calories in and calories out can justify how weight management can be achieved. An overcalorie in to calorie out means that there's an abundance of food intake with the body not being to use the untapped energy resulting

to weight increase. The opposite is also true when there is an undercalorie in compared to calorie out, results would lead to weight decrease. Lastly, an equal amount of calorie in and calorie out would lead to maintenance of current weight.

Bertoia (2015) observed that, Humans are healthier when they consume more whole foods and fewer refined ones. As a result, weight loss occurs when there's more consumption of fruits and vegetables. In relation to that, it's also noted that some food, because of certain degree of processing, lose its nutritional value causing an increase in calorie consumption as opposed to eating whole foods which is high in density but low in calories.

Exercise For Weight Management

“Change happens through movement and movement heals.” and “In 10 session you'll feel the difference, in 20 sessions you'll see a difference, and in 30 sessions you'll have a brand new you.” (Pilates 2010) By mobilizing the body through movement and by doing it on a consistent basis within three months, the body can adapt and there would be notable changes in every 10 sessions, from feeling it to seeing it and lastly to functionality.

As mentioned by Cormack (2019), we must start to recognize that there may be varying mechanisms, including non-physical ones, through which exercise may have a positive effect. For some patients, just interacting with a program may be enough and the psychological benefits could be the most important element.

mentioned by Brignell (2010), “A Pilates program forces you to think about your body and what you are asking it to do, so you tend to listen to your body and use your brain more in everyday life. The benefits of this, in my view, are at least twofold. A brain that listens to the body that it controls becomes a much better manager, so less fatigue, greater efficiency, and fewer injuries should result.”

Data of over 25 years collated by Miller (1997) reported that, middle aged moderately obese individuals have good results to weight loss by two groups (diet only and diet plus exercise) for over 15 weeks of being into the program. The highest achieved weight loss was up to 11kg.

Losing fat depends on consistency and discipline towards reaching the goals. A realistic fat loss would be roughly .5-3lbs per week and muscle gain can be 1-3lbs per month. Both are dependent on current weight, fats to lose, muscles to gain, and experience to exercise and body composition. (Pierre 2020)

Habits To Form For Weight Management

Sleep deprivation is one of the main factors that significantly slows down weight loss. If the individual chronically sleeps less than 7 hours, it impairs the body's ability to regulate several key hormones namely Ghrelin levels rise triggering hunger, Leptin falls which takes longer to feel full, and Endocannabinoids increase making perception of foods seem more pleasurable. Therefore getting sufficient rest of 7-8 hours brings the hormones to a stable level. (Hanlon 2016)

One weight management trick is drinking 500 mL of water before meals makes the stomach feel fuller faster making the subject eat less food. The difference of roughly 50 kcal per meal

translates to about 150 kcal less if 3 meals are taken each day making weight loss easier. (Kollias 2020)

Methodology

Tools and Methods

A pre-post method was deliberated for the subjects to observe if weight management can be achieved by directing online subjects to a healthy lifestyle. The criteria screening for the participants were done with Zoom Meeting App for interview where a thorough analysis of the patient's condition was documented. The criteria for eligibility were the following:

1. Male or Female in the overweight category (BMI 25 to <30)
2. The subject is coherent and comprehensive
3. No current medical condition
4. Age 30-42
5. Has a smartphone or tablet
6. Has a smartwatch
7. Has access to internet

Trainerize is the app of choice because they make fitness accessible to trainers to reach new and former clients to promote a healthy lifestyle. Data collected and relayed inside the app were the waist measurement, photos, basic Pilates exercises, habit tracking (sleep and water intake), and nutritional guidelines and macro proportions taken in synced with MyFitnessPal.

The exercise program was done for 30 minutes each session for a total of 12 sessions in the 30 days. Cardio exercises were also prescribed for 30 minutes each session for a total of 8 sessions per month. Habit tracking were also recorded inside the app. Sleep were recorded with the use of a smart watch which automatically syncs with the Trainerize app. A nutritional guideline from Precision Nutrition was virtually sent to each individual which consisted of personalized information regarding weight management, meals and portion plans, and exercise. MyFitnessPal was the app of choice for nutrition as it allows the user to easily track their macros and water intake that easily syncs with the Trainerize app.

Assessments

The assessment tools that were utilized in this study is measuring tape for the waist circumference, weighing scale for the weight, and camera for the pictures. All were uploaded to the Trainerize App. Weekly Check ins were also done for each individual to motivate them to continue on and comply with the program.

Data analysis and Discussion

Of the 10 total participants in the study, each one had significant weight changes thru nutrition, exercise, and habit tracking. A modal range from 2-10 lbs were recorded for all individuals with 0-1.5 inch waist circumference changes and BMI changes of from 0.3-1.9.

The assessments were only done twice from before starting the program and after finishing the 30 days. They were reminded to not look in the mirror and constantly weigh themselves during the course of the program to avoid the psychological and emotional factors that might affect the results of the study.

The participant that lost only 2 lbs may have the low outcome result due to not sleeping well (4-6 hours) with minimal compliance to the nutrition guidelines but religiously followed the exercises. Also there were inconsistent meals portions during some days where meals were just the right portions while there were meals that was double or almost double the recommended values.

The participant that achieved the most weight lost of 10 lbs was very compliant with the program including the water intake and sleep. 1.9 inches were also lost at the waist circumference and BMI went down to normal 23.8 from 25.4.

The other participants had a mean average of 5.4 lbs lost for the 30 days with waist circumference trimmed down to a mean average of 1 inch with mean BMI decrease of 1.1.

Post-survey were also administered for the participants to give other feedback aside from the given data being asked for. In summary, all of the participants did not have any technological issues probably due to all participants being in the generation of internet literate. Compliance, motivation, household chores and work were the factors for success/failure for the online weight management program. Those who felt tired and unmotivated to continue with the exercises during the first two weeks pushed through with it and later on got used to moving and doing the exercises. The weekly check ins might have worked as an advantage as probably they felt they were not alone in their journey. Lastly, convenience was the number one motivation for them to go through with the program as they did not have to leave the comfort of their home for the consult, assessments and plan of action. Everything were communicated online.

Conclusion and recommendations

Weight Management Solution has many different approaches and a purely online weight management educational system is not inferior to the face to face. The online removes the disadvantages of going to a facility which takes up time for the preparation, transportation and learning. In the online, everything is done digital unless the participant would like to print out the nutrition guideline. It eliminates the paper documentations which also becomes part of the problem because the participant needs to always bring it for record keeping purposes of the meals, exercise, and habits. With the apps that were used, there were not paper trail to be documented and everything was uploaded digitally for easier access for both the participants and the practitioners.

While there are a lot of advantages for doing an online weight management program, it also has its disadvantages. Since there is no facility to go to, the lack of motivation to do the exercises and the compliance to the nutrition and habits are the hindrance. The inspiration to do what's necessary should really come from the subject that they have to do it to formulate a change. The weekly check-ins helped to keep them motivated to continue with the program but the face to face sessions keeps them to continue with the program since there's always a fixed time and place to do the exercises.

The online weight management solutions thru Trainerize and MyFitnessPal is a tool that delivers results given that the participants comply to the program. It is the same with the face to face coaching wherein the advises and the guidelines have been set but the only real important factor there is that the individual should do their part in working for their transformation. No matter how successful and scientifically sound the program is, if the participant does not comply with it (which usually happens for sedentary obese individuals) there would be minimal to no results attained.

The limitation of this study is that it was done for a specific age group of 30-42 years of age which everyone was exposed to running different apps and technology. The older generation might have difficulties operating the mobile application as it requires some technical skills to operate. I would not advise an online approach to the participants who has medical condition not unless the practitioner gives the go signal to do so. In a facility, if something goes wrong, at least there's someone to help and assist the individual.

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