The Importance of Physical Activity during COVID-19
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Abstract
On March 11, 2020, the World Health Organization (WHO) declared corona virus disease 2019 (COVID-19) to be a global pandemic. Lockdowns, social distancing, isolation, mask wearing, travel restrictions, and quarantine are but a few public health measures taken across the world to curb the spread of the disease in communities; and in addition is the profound impact that physical activity (PA) has towards the health and well-being of the general population. This paper examines physical activity as an important determinant of health and well-being benefits and challenges surrounding it during COVID-19.

Introduction
- The World Health Organization (WHO) defines PA as any bodily movement produced by skeletal muscles that requires energy expenditure.
- Benefits of regular PA include prevention and management of communicable diseases, cardiovascular health, healthy body weight, stroke, diabetes, cancers and mental health improvements.
- Regular PA activity is proven to benefit overall quality of life and well-being, WHO (2010).
- COVID-19 pandemic created severe confinement rules, which restricted people around the world from engaging in PA. This created significant challenges in fulfilling daily recommendations.
- This poster examines the challenges and benefits of PA as a mechanism to the health and well-being of the population. Due to the spread of COVID-19 throughout 2020, lockdown measures and restrictions remained generally in place.
- Citizens were oftentimes requested to stay within their homes for prolonged periods of time.
- With this increased time within the home, people across the globe began to decrease their regular engagements in common behaviors and daily activities.
- Daily routines were broken, and regular practices such as daily physical activity have been abandoned as people adjusted to their new normal.
- A recommended physical activity has been defined as 150 minutes of moderate activity per week or 75 minutes of vigorous intensity per week within the World Health Organization (WHO). An equivalent combination of both also suffices.
- The adoption of sedentary lifestyle behaviors throughout the COVID pandemic created a concern within the public health zeitgeist about the possible negative health consequences endured on Americans throughout this period of increased restrictions (Castaneda-Barbaro, 2020).

Methods
A literature review was conducted by analyzing scientific literature discussing physical activity during the COVID-19 pandemic. Only papers created after 2020 were looked and analyzed. After analysis, statistically significant differences were noted. Root causes and underlying influences were assessed and used to form this analysis.

Objectives
- To understand the effects of COVID-19 and its related restrictions and limitations on physical activity
- To understand the benefits of physical activity on individuals during the COVID-19 pandemic
- To understand the challenges of engaging in physical activity caused by COVID-19 and its related restrictions and limitations.

Results
- Decreases in PA were also noted throughout the country of Italy.
- The questionnaire adapted both the International Physical Activity Questionnaire (IPAQ-S) and also included questions and assessments from the Psychological general well-being index. Responses were converted to Metabolic Equivalent Task minutes per week (MET-mins/week) through automatic scoring of the IPAQ-S.
- A total of 2796 Italians were surveyed and within the national respondents stated their pre COVID-19 PA activity levels.
- Decreases in vigorous physical activity, moderate physical activity, and walking were all observed. These results can be seen in Figure 2 in Appendix B (see Appendix C).
- Psychological Well Being Scoring showed a positive correlation between increase variations of physical activity and mental well-being.

Discussion/Benefits
PA has proven to be beneficial in improving the clinical conditions that are most frequently associated with severe COVID-19.
- These clinical conditions include diabetes, hypertension, and heart disease. Physical activity contributes to the reduction of overall cardiovascular risks, lowering both systolic and diastolic blood pressure and remodeling left ventricular hypertrophy.
- Physical activity has also well-known positive effects on metabolic syndrome and insulin sensitivity.
- Therefore, it can be assumed that individuals who engage in the recommended amount of physical activity as previously mentioned decrease their personal likelihood of encountering severe COVID-19.


Discussion/Conclusion
Due to the “stay at home” related orders executed by local municipalities throughout the globe. Due to these mandates, restrictions and access to regular sporting or exercise routines were not available.
- This lack of access would lead to challenges to both physical and mental health.
- This baseline lack of access would further be exacerbated by the mental health toll the pandemic has been demonstrated to have on people.
- Overall, this lack of access leads to the exacerbation or commencement of existing diseases that are enabled by a sedentary lifestyle (United Nations, 2020).
- Stratified by income class, decreases in PA were noted in lower income groups as compared to higher wage earners.
- Individuals from lower income households were less likely to report engaging in physical activity within their sidewalks or on local roads within their neighborhood.
- Streets in lower income communities have reduced quality of sidewalks and improper access to open spaces to participate in exercise outdoors.
- Greater traffic volumes and higher crime rates in lower income neighborhoods serve as deterring factors for members of the community to engage in outdoor physical activity and leisurely walking.
- Demonstrate the disproportionate impacts of the COVID-19 pandemic on lower income and ethnic minority groups reach beyond viral exposures and mortality.
- These disparities extend into health-related behaviors that may have long-lasting consequences and lead to the development of chronic cardiovascular and metabolic diseases.

Conclusion
- Physical activities were demonstrated benefits on both physical and mental health.
- With the emergence of the COVID-19 pandemic, shelter in place orders and restrictions on travel and businesses limited the global communities’ access to the daily routines. With this “new normal” literature has demonstrated that within the United States and around the world, physical activity has decreased across all communities.
- Challenges include access to exercising spaces and sports opportunities existed leading to decreases in Physical Activity
- Prominent benefits were noted for persons who remained engaged in physical activity throughout the time of pandemic related closures.
- Benefits included improvements in physical and psychological variables and improvements in clinical conditions such as cardiovascular and metabolic diseases.
- Future research should aim to understand the full scope of changes in physical activity once the pandemic has ended and provide actionable recommendations.