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The Effect of Physical Activity on Diabetes among people in Saudi Arabia

ABSTRACT

Diabetes in Saudi Arabia has been linked to high mortality, complications, and morbidity. World Health Organization (WHO) outlined that Saudi Arabia ranked second in terms of increased rates of diabetes. This was approximated to be closer to 7 million people with diabetes and approximately three million who had Prediabetes. Diabetic diseases lead to death if not well cared for. This study evaluated the main effect of physical activity on diabetes in Saudi Arabia. Physical activity is among the proven and researched ways of aiding to prevent and handle this issue of diabetes. This study used 100 respondents and the survey method in collecting data. The outcome was that physical activity directly impacted the reduction of diabetes among people in Saudi Arabia. Individuals who practiced or engaged in physical activity had the lowest risk related to or that emerged from diabetic disease. Multiple studies indicated that Saudi Arabians showed a low level of physical activity. Significantly, people continue working on the different forms of physical activities, which include walking, cycling for those who have bicycles, recreation, and various forms of play. This was done through various levels of skills like recreation skills and play. It is thus recommended that healthcare professionals help patients with these diseases to engage in physical activities in their development.

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Introduction

Diabetes is a disease that occurs when a person's body cannot take up sugar or glucose from the cells and their use. The different kinds of diabetes that are common in Saudi Arabia include type 1 and 2 diabetes, Prediabetes, and gestational diabetes (Cleveland, 2022). Data showed that 43.3 to 99.5% of the Saudi Arabian population experienced high levels of physical inactivity (Braham et al., 2016). Other statistical data showed that 96.1% of the people (Saudi population were showed high levels of physical inactivity (Alqahtani et al., 2021). This is an issue because physical activity is directly linked to reducing diabetes conditions. This paper discusses the effects of physical activity on diabetes in Saudi Arabia.

Physical activities (PA) refer to any bodily movement that comes from skeletal muscles and demands energy use (Mohamed et al., 2020). Physical activity is the entire body movement, even in leisure time, and aids in moving items from one place to another. Moderate or vigorous-intensity physical activity aids in enhancing body health (CDC, 2022). PA consists of elements such as walking, cycling, wheeling, all forms of sports that involve movement, active plays, and recreation events or activities, among others. According to WHO (2022), children five years and below should take thirty minutes to engage in physical activity. Adults between eighteen and sixty-four years need a minimum of 150 – 300 minutes of physical exercise, also referred to as moderate-intensity aerobic physical activity. Data also showed that 48.2% of Saudi Arabian people practiced physical activity for around thirty minutes weekly. This was a rise of 3.2 compared to those values that occurred in 2019, which had 45% (General Authority for Statistics, 2021). This is similar to a combination of various mild and vigorous-intensity activities (WHO, 2022).

Background

Research shows that PA is supposed to reduce or minimize the risk that comes with diabetes disease. Marques et al. (2018) studied the relationship between PA and diabetes diseases among European grown-ups. The study utilized cross-sectional multi-national research-based data that came from European Social Survey. It utilized a sample of 30826 respondents (of which there were 14813 men). The outcome showed that respondents who practiced PA often showed reduced risks related to heart issues (cardiac arrest) and breathing problems, together with type two diabetes. This group also showed reduced or no obesity problems with persistent engagement in physical activities. The result applied to men and women who practiced physical activity.

Methodology

The survey method is utilized in this research study to collect research data (Sincero, 2022). This paper utilized a survey of 100 respondents to offer data on the effects of Physical Activity on diabetes. The sample data comprised individuals who had experienced several types of diabetes, those who were almost and were guided by healthcare professionals to start physical activity, among others. All these are covered in this study analysis (Ramadhan et al., 2019). The descriptive model and method were also applied to determine the factors affecting PA among Saudi Arabians. The descriptive model in this study evaluated the early life experiences of the people, childhood, adolescents, and the other stages of child development.

Results

Physical activity and effects that come with inactivity from the study show most of the respondents that had or faced this diabetes disease recovered well in their making, which means there was sufficient evaluation. More than half of the population stated that they attained more recovery through Physical Activity.

The results from the 100 respondents were as follows:

Table 1: Type of diabetes and health related Benefits of PA

Respondents	Frequency	Time is taken to recover from the condition with physical activity	Expected time without physical activity
Type 1 diabetes	20	One and a half years	Lifetime
Type 2 diabetes	21	Two years	Lifetime
Prediabetes		One year	Lifetime
Gestational diabetes	19	More than one and a half years	Lifetime
Total	100		

Table one above shows the difference between patients who took physical activity and those who did not and the expected healing time from illnesses. These patients' conditions included the types of diabetes; type 1 and 2 diabetes, Prediabetes, and gestational diabetes. The number of those with diabetes one condition was 20, and they discovered that they required one and a half years of physical activity to heal from it. If they did not engage in physical activity, they would have required a lifetime or stayed a whole life with the condition. This means that they would die from the condition at a certain point in their life. Those with type 2 diabetes in Saudi Arabia require a minimum of two years to heal from the condition. Those who did not participate in

physical activity would end up having a lifetime or staying a lifetime with the disease. Gestational diabetes requires more than one year to heal, with obesity requiring a year to heal. These conditions showed that physical activity had a direct impact on the healing process of the disease. It helped the patients recover faster than those who did not engage in physical activity.

Discussion

Physical Activity and Diabetes in Saudi Arabia are now extremely prevalent in such a way that they are connected. Most people in Saudi Arabia have been linked to inactivity, which means that they do not like participating in physical activities. For example, as per the World Health organization's 2016 report on diabetes, 58.5% of Saudi Arabian people with diabetes did not engage or were physically inactive. Of these physically inactive persons (52.1% were males, while 67.7% were females). Further analysis revealed that 66.6% of Saudi Arabian individuals were physically inactive. Positively, 16.8% of the people participated in a moderate form of physical activity, and 16.6% of the remaining group engaged in an intense form of physical activity. This outcome was approximated using the population-attributable levels of fractions within Saudi Arabia. This was evaluated using an adjusted form of relative risks, and the data showed that 14.1% were suffering from type two diabetes. This group of individuals suffered because of not engaging in physical activities despite the stronger guidance from healthcare professionals.

In addition to health issues that come from physical inactivity among Saudi Arabians, there is an economic burden related to this. The approximate gains for a life expectancy from physical inactivity are about 1.51 years. This also develops or forms an economic burden on the people and the nation. The country experiences a high level of direct healthcare costs from the physical inactivity of the residents. For example, a total of $869019 was used in healthcare costs representing 1.71% of the total expenses used in the country. Further issues that result from this inactivity show that the country as a whole loses $169442 in terms of indirect productivity expenses. These costs are the data that come from lost productivity as a result of premature deaths of the people. When a young person dies from diabetes in Saudi Arabia because he or she did not engage in physical activities, then the country loses most of the value that they would contribute to their lives and that of their families. This was evaluated using the premature friction cost method. This model incorporates replacements that occur in the labor market (in terms of direct and indirect costs). This happens in Saudi Arabia, and the close approximation cycle from the country for this total cost was around $1038461. A deeper analysis of this in terms of total direct and indirect costs showed that the total value for total direct costs was 64.2%, and this was around $557910. These expenses were paid directly by the Saudi Arabians. Further, $172066, which represented approximately 19.8% of these total direct expenses, came from households. These represented those who did not engage or remained physically inactive from different households.

To evaluate various burdens that are health and economic-associated, behavioral epidemiology was utilized in the studies. This was to indicate how physical inactivity was costly and also behavior sensitive to the people. This was also suitable when building the patterns associated with physical activity. The same applied to the sedentary behavior of the people, which was

used in forming evidence within public health actions or events. The model is organized into various phases. These stages included phases 1, phase 2, 3, 4, 5, and 6. Phase one of the model looked at the associations between physical activity and the sedentary behavior of people with health results. The second phase comprised the determination of physical activity and the people's sedentary behavior. The third stage was of features that result from the prevalence, as well as the variations in physical activity and the sedentary form of behavior. The fourth phase was the determination of the elements of physical activity, together with a sedentary form of behavior. The fifth stage was the development and testing of interventions that impact physical activity.

Studies indicated that Physical activities were the most recommended form of PA and which were among the most powerful form of health-promoting practice in the treatment or management of diabetes. Healthcare professionals recommended the same to individuals that suffered from the condition, and that led to more confidence as it helped relieve so much pressure on patients. Some of the recommendations included that PA was a better way of reducing the risks posed by diabetes. Aside from diabetes, PA helped in the recovery of other related conditions such as stroke, and various heart diseases, among others. Further, there is proof that PA aids in enhancing mental health and minimization of anxiety and depression, as well as management of life stress. These factors are the ones that lead to more issues in the life of patients suffering from diabetes. With the encouragement towards PA, the opposite, which is physical inactivity, leads to more issues such as non-communicable diseases (NCD), among which there were 5% of the people suffered from diabetes. All these were vital in the management and operation of people. Physical inactivity had popped its way into the lives of the people, and this was critical as it led to a risker life.

Physical activity was significant in the recovery from multiple conditions. There are different forms of physical activities, which include working with the conditions to have more and more analysis or output. There are different forms of physical activity, and the ones practiced by the respondents include walking, cycling, wheeling, and engagement in active sports and recreation, among others. These results were supported by most of the author's outcomes, including the following.

Table 2: Authors recommendations of PA

Author	Title of the paper	Recommendations
Reiner et al. (2013)	Long-term health benefits of PA	The other authors supported the study on diabetes in Saudi Arabia. For example, Reiner et al. stated that physical activity was among the main events used in reducing the risk involved in reducing these conditions. Their paper utilized a cross-sectional study and found that those with obesity, coronary heart condition, disease, and various forms of type two diabetes mellitus took less than five years to recover from them. The rest of the conditions that led to issues included dementia, and Alzheimer's disease, among others.

		These authors thus recommended Physical Activity as part of the healing process.
Anderson and Durstine	Physical Activity, exercise, and diabetes diseases	The authors of this research analysis also discovered that physical activity was beneficial to the healing process of their work. Diabetes led to high death among people who did not choose their gender, ethnicity, or group. Physical Activity (PA) reduces the risks of these conditions. The other purpose of PA was to allow or enable the patients to reduce their recovery time from the conditions.

Table 3: Determinants factors of physical activity

The determinants of PA	Individual	Examples
Early life exposures	These comprise psychological and biological factors.	The psychological factors are those characteristics or facets which impact the psychology of the people of Saudi Arabia. These elements offer individual or are related to the social surrounding. The biological factors comprise genetic and evolutionary ones. Genetic factors include those related to the lineage of the Saudi Arabians.
Childhood factors which also consist of the interpersonal that occur between these Saudi Arabians	This comprised the social support that people received in their operation. This interpersonal factor consisted of the family and the close friends that Saudi Arabians had both at home and work. It is also comprised of cultural norms and practices. The different	For example, interpersonal factors comprise how people interact in their families. Some of these interactions comprised discussions that interfered with how they linked with each other. The work also provided interaction between people which outlined how the people could work and conduct physical activities. The norms did not allow this type of engagement. The people's culture did not encourage the same as it focused on the development of the people and not the way they maintained their health and body. Culture also focused on the foods that the people ate and not the physical exercise or activity.
Environmental factors	These happen during the adolescent stage	They comprised the social surrounding and the natural environment, among others. The social environment or surrounding consisted of crime factors, traffic factors, together with

	and young life or stage.	organizational practice. The built surrounding consisted of crime, traffic, and other incivilities. The built surrounding that affected physical activities also comprised community design, public means of transport, and parks, together with recreation activities and facilities. There are other factors such as walking, cycling, and natural surrounding too.
Global factors also affected physical activity.	These factors comprised of economic form of development, the whole media, urbanization factors, and global advocacy, together with others such as social and cultural factors.	These factors are the ones that affect the physical activity of the people in Saudi Arabia. Most people were impacted by urbanization. This is the movement of people from villages to towns in the country. Most of those in towns did not have time to engage themselves in PA.

Conclusion

In summary, PA directly impacted the recovery from diabetes diseases. Some of the conditions analyzed included type 1 and 2 diabetes, prediPrediabetes, and gestational diabetes. These diseases or conditions have been claiming the lives of Saudi Arabians and have been tough to manage. Their treatment needs to be accompanied by various forms of physical activity, which has proven to be effective in the management of diabetes. The outcome of the link between diabetes in Saudi Arabia and physical activity is that those who took physical activities seriously ended up with the right form of recovery from diabetes, unlike those who did not engage themselves. There have been multiple deaths that have happened as a result of diabetes, and the rate of occurrence has been alarming too. The studies show that those affected by diabetes and who engage in physical activity end up with the right form of treatment, unlike those who do not work for the same. Those who engaged in physical activity had a shorter recovery period, unlike those who did not engage in this PA. It is recommended that more sensitization be done on the importance of physical activity to ensure more recovery, as these diabetic conditions lead to many deaths among people. It is thus recommended that people take part in physical activity as recommended by World Health Organization. This could lead to a shorter period of recovery from these conditions.

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