Epidemic of Overweight and Obesity in Mexico

By Francisco J. Aceves*, Ricardo Peñaloza†, Genaro Hernandez‡, Joel Audefroy§ & Jorge Rojas**

Mexico has a growing epidemic of overweight and obesity which generates chronic degenerative diseases such as diabetes mellitus and high blood pressure, which are the leading causes of death, with around 100,000 deaths each in 2017, despite having been implemented governmental programs to control this epidemic. This epidemic has begun to grow and become uncontrollable since the introduction of the neo-liberal socio-economic model in Mexico in the 1980s, because the population has become impoverished and has changed their eating habits, has stopped practicing physical exercises, and lives stressed by the socio-economic situation. Fortunately, on December 1, 2018, there has been a change of government regime, which promises to make fundamental changes in the provision of health and social security services, seeking to centralize these services at the federal level, in order to be more efficient and to avoid corruption in the purchase of equipment and medicines. The authors of this work propose that in addition to these administrative changes, other changes should be done in education, in order to train people to make better decisions regarding their eating habits, physical activation, relaxation and others, with the purpose of controlling the aforementioned epidemic of overweight and obesity.

Keywords: Epidemic of Overweight And Obesity, Chronic-Degenerative Diseases, Diabetes Mellitus, Arterial Hypertension, Health Education.

Introduction

Mexico, like many other countries in the world, is suffering a serious epidemic of overweight and obesity, which gives rise to a series of chronic-degenerative diseases, such as diabetes mellitus, hypertension, cancer and others. This epidemic began to grow dangerously during the decade of the 1980s, which coincides curiously with the beginning of the application of the neo-liberal model in Mexico and other countries of the world. Is there any relationship between these two facts?

In this paper, several concatenating factors are analyzed, and a very close correlation is found between these two facts, and several causes that explain this correlation are sought and found.

But let's begin with the diagnosis of this problem, then we will see the implications or prognosis of what can happen, in case of not taking appropriate measures, and finally we will arrive at a series of recommendations, to avoid the premature fatal outcome.

---

*Professor, Mexico’s National Polytechnic Institute, Mexico.
†Professor, Mexico’s National Polytechnic Institute, Mexico.
‡Professor, Mexico’s National Polytechnic Institute, Mexico.
§Professor, Mexico’s National Polytechnic Institute, Mexico.
**Professor, Mexico’s National Polytechnic Institute, Mexico.
The Body Mass Index (BMI) is the most widely used indicator to detect if the person analyzed has a normal - healthy weight. This BMI is calculated with the following formula:

\[ \text{BMI} = \frac{\text{weight in kg}}{\text{height in meters squared}} \]

A BMI less than 18 is considered low weight. BMI between 18 and 25 is considered normal or healthy weight. A BMI of 25.1 to 30 is considered overweight. A BMI of 30.1 to 40 is considered Obesity. BMI greater than 40.1 is considered Morbid Obesity.

Correlation of the BMI with the Application of the Neoliberal Model in Mexico

During the six-year term of the president of Mexico, Miguel de la Madrid (1982-1988), the neoliberal model of socioeconomic development began to be implemented in Mexico, with the promise of improving the socio-economic level of the population.

As there was more growth in the economy, as expected by freeing the productive forces that were under the tutelage of the state, then there would be greater wealth generated, with which the majority of the population would improve their socio-economic conditions, and the quality of life would be improved and extended the life expectancy.

But the result was not so, since the generated wealth accumulated in very few hands, and instead of improving, the majority of the population began to suffer economic hardship, due to uncontrolled inflation, with which, the official minimum wage that the majority of the population received, was no longer enough to provide the needed elements to survive, for which the housewives and sometimes the young people had to go to work, leaving abandoned the care of the children, their feeding, and their education.

The housewife, when she started working outside her home, stopped cooking fresh and nutritious natural foods at home and the whole family began to consume industrialized food, and carbonated drinks, promoted by foreign industries, which filled with commercial messages to promote the consumption of junk food and drink.

Mexico ranks first in the per capita consumption of sugary bottled beverages (Coca Cola and others) with an average intake of one liter a day. This excessive consumption of sugar is directly correlated with overweight and obesity.

Likewise, industrialized food began to be consumed as pizzas and others, which have a very high index of lipids and chemical products to preserve the product on the shelf, which favors the increase of BMI in those who consume
it, and the appearance of diseases such as cancer, due to the use and abuse of chemical products harmful to health.

Diagnosis

The alarming increase of chronic degenerative diseases in Mexico, such as diabetes mellitus and arterial hypertension, among others, during the last 30 years has worried the health sector and many researchers had sought causes and possible repercussions, and possible solutions.

Diabetes mellitus and arterial hypertension are the two main causes of general mortality in Mexico during the last years. In 2017, diabetes mellitus caused the death of 106,525 Mexicans and ischemic heart disease caused the death of 101,877 people (See Figure 1, Mortality rates per 100,000 inhabitants in México, and Table 1, Mortality in Mexico).

Figure 1- Mortality rates per 1000,000 inhabitants in Mexico

The economic burden of diabetes mellitus in 2013 considering direct and indirect costs was estimated at 362,859.82 million Mexican pesos (about 27,180 million USD), what in that period was equivalent to 2.25% of GDP.


Figure 1. Mortality rates per 1000,000 Inhabitants in Mexico

ALGUNAS CAUSAS DE MORTALIDAD EN MEXICO, 1938-2017, TASAS POR 100 MIL HABITANTES

Source: http://www.mexicomexico.org/Voto/MortalidadCausas.htm (2019-06-20)
Table 1. Mortality in Mexico

<table>
<thead>
<tr>
<th>Description</th>
<th>2016</th>
<th>2009</th>
<th>2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>685,766</td>
<td>564,288</td>
<td>457,680</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>105,572</td>
<td>77,699</td>
<td>54,925</td>
</tr>
<tr>
<td>Heart ischemic sickness</td>
<td>97,743</td>
<td>63,332</td>
<td>48,285</td>
</tr>
</tbody>
</table>

Source: [http://www.mexicomaxico.org/Voto/MortalidadCausas.htm](http://www.mexicomaxico.org/Voto/MortalidadCausas.htm) (2019-06-20)

Forecast

If this epidemic continues, the main causes of general mortality will continue to be diabetes mellitus, high blood pressure, cancer and others, directly related to overweight and obesity. With this, the life expectancy of Mexicans stagnates in 75 years, and may even be reduced in the future, due to the alarming growth of these body mass indexes.

This will have serious socio-economic repercussions, because on the one hand, diabetes mellitus is a debilitating degenerative chronic disease, that as the disease evolves or progresses, the sick person loses his ability to work, his energy, his vision, and they are creating several symptoms that reduce their quality and life expectancy.

On the other hand, the economic cost of control, which does not cure the disease, increases, and this will have an impact on their economy, and ability to live and satisfy their personal and family needs, appropriately. This situation has worsened recently, because currently the rate of overweight and obesity in children in Mexico, is one of the highest in the world, so everything indicates that, if appropriate measures are not taken, this alarming situation of the rate of overweight and obesity, will worsen.

Corrective Measures

The health sector of the government of Mexico began to take measures to control this epidemic of overweight and obesity during the six-year period 2006-2012, implementing massive institutional programs, for example the IMSS (Mexican Institute of Social Security) with its program PREVENIMSS, in which information and some training was given to the right-holders, so that they could improve their diet and increase their physical activation.

Soon a similar program was also implemented in the ISSSTE (Institute of Security and Social Services for State Workers) under the name of PREVENISSSTE, so that by means of awareness and physical activation the overweight and obesity of the right population could be controlled.

In addition to these institutional, public and massive programs, other measures of the private initiative have emerged to try to correct this epidemic at a particular or personal level. The companies Weight Watchers, of American origin, the local private clinics, with other names, but with the same purpose, the printed or electronic magazines, the internet pages that give advice or
recommendations to eat healthy, for physical activation, and other subjects related, have proliferated, but have not been very successful either, because, according to different sources, they reduced, at most, the weight of the persons under treatment, by 5%, and often bounce, that is, after restrictive diets and strenuous exercises, people get tired and stop applying them, and a rebound effect is created, in which they regain their weight, and even more, so this treatments are generally counterproductive.

Then you can see that the solution to this problem is not only these awareness and education campaigns, but something else is needed, something that goes to the root causes of the problem. The result of the application of these massive public programs and private commercial activities has not had the desired effect, in an important or impressive way, because the neoliberal structural situation is still valid.

There are no substantial changes in the socio-economic structure that allow applying many of the measures recommended there. For example, the need persists for the housewife to go to work, in order to acquire the necessary food for the family.

The small children are almost all the time locked up in their house, for fear of general violence on the streets, and then, they spend their time watching television or watching screens in which they play electronic games. This prevents them from jumping, running or practicing any sport or physical game, so they do not burn all the empty calories they eat with their junk foods and beverages.

The supply of fresh food has also deteriorated. There is no food sufficiency at the national level, because agricultural production in the countryside has been neglected, and most of the basic grains for the traditional food of Mexicans, such as corn, have to be imported, because there is no longer food self-sufficiency. Neither the fruits and fresh vegetables necessary for the population are produced in the vicinity, or these vegetables and fruits are at prices beyond the reach of most people.

Also, due to the socio-economic situation, you often have to invest a lot of time in transporting yourself from home to work and vice versa, so you do not have the time or energy to perform the recommended physical activation. Likewise, there are no parks or public gardens that allow such physical activation.

Many people sleep little, and with little quality, due to excessive stress, worries, or noise, which does not allow people to recover during the night, so the next day they can not work and study properly, and they do not have good results, productivity or learning.

This creates a vicious circle in the children of the proletarian class, since they can not learn what they are taught, and because they can not study, they can not aspire to get better paid jobs, so they remain trapped in the vicious circle "poverty – bad nutrition – lack of physical exercise - bad health - low productivity (or low learning) - poorly paid jobs – poverty” (see Figure 2. Vicious circle of poverty - bad health).
Therefore, pertinent measures must be taken to be able to solve structurally the fundamental causes of the epidemic of overweight and obesity.

**Current Situation**

The current president of Mexico, Andres Manuel Lopez Obrador, who took office in December 2018, has shown signs of wanting to solve the problem of health in depth, which includes combating corruption, impunity, violence, and others. One of its first actions has been to integrate or centralise at the federal level the public health services, which were scattered, at the federal and state levels, since there were several institutions at the federal level to provide health care services, mainly focused on a corrective approach, such as IMSS, ISSSTE, PEMEX, SEDENA etc.

On the other hand, there were also state administrations of the same institutions. This biased approaches and the purchase of inputs, such as medications and surgical equipment. The new president initiated the integration of the first 8 states of the southeast, (which are the most backward at the socio-economic level) to start its integration into a single health institution, which will favour the acquisition of supplies of health, with better prices and purchase conditions. Likewise, those purchases will be better monitored to avoid corruption. The following years it will continue the integration of medical services of the other 16 states to complete in 2022 the integration of the 32 states that make up the Mexican Republic, in a single central federal institution, whose name will probably be "Secretary of Health".

However, in addition to making these administrative changes, (which probably work for the purpose pursued, to avoid corruption and to improve the conditions and prices to purchase medicaments), the current trend of the health sector, which mainly devotes its resources to cure, must also be reversed, in order to prevent the diseases, which is more economic efficient. In short, more resources and efforts should be devoted to preventing the disease and not so much to cure them, because it will no longer be so necessary.

But the solutions must be rooted, and go to the bottom of the problem. As we have seen, the main causes of the epidemic of overweight and obesity are due to several trigger factors:
1. Food and nutrition with junk foods and junk beverages, with too many empty calories and lack of vitamins and minerals,
2. Lack of sufficient physical activation, to burn excess calories, and keep bones and muscles in good condition,
3. Lack of sleep, relaxation and rest to keep the endocrinological and mental system functioning properly,
4. Lack of attention to other health factors, such as dental health, for not caring for and properly cleaning the teeth and mouth, among other factors.

Therefore, a great radical transformation should be carried out in the health sector, in which the curative attention should not be longer of such importance and resources, but rather more efforts should be devoted to preventive care, which favors the people’s health, with less maladies to cure.

This must be done attacking the root causes of this epidemic of overweight and obesity, which, as we have previously analyzed, are:

1. Favor the supply of healthy, varied and fresh foods, fruits and vegetables, in their natural state, mainly to favor a healthy and nutritious diet.
2. Create and/or attend spaces for recreation and practice of physical activation, to maintain muscles and bones in optimal operating conditions
3. Generate jobs that provide sufficient income so that people have the ability to purchase food and other inputs to be able to feed properly
4. Favor that one of the parents dedicate more time to the preparation of food at home and to take care of the family education of the small infants.
5. Encourage the practice of arts to favor mental health, recreation and mental relaxation, in such a way that youth energy is channeled to the fine arts and creativity.
6. Create institutions that monitor that companies provide healthy and beneficial products for society, and restrict or avoid the production of junk products.
7. Supervise that companies pay a decent wage to employees so that they can acquire the necessary supplies to satisfy the basic needs of the whole family, and live a decent life with a sufficient quality of life

Conclusions and Recommendations

The fourth transformation promised by the current president of the Mexican Republic includes to improve the health and quality of life of all the citizens. He has started with the centralization of the administration of health institutions.

But beside this administrative changes, the authors of this paper recommend to change the excessive emphasis on curative services towards preventive services, which will have more impact in the prevention of the chronic degenerative sickness that are the more important causes of mortality actually.
In this paper we dare to suggest that this curative approach must be modified towards a mainly preventive approach, to avoid the appearance of many of the chronic degenerative diseases that are currently the main causes of morbidity and mortality in Mexico.

These chronic-degenerative diseases are caused mainly by unhealthy eating habits, in which many junk foods and junk drinks are consumed and little physical exercise is performed, among other equally important factors. The current epidemic of overweight and obesity are at the origin of these epidemics of diabetes mellitus and hypertension, which are currently the main causes of mortality in Mexico. Changing current unhealthy habits for healthier habits can control these epidemics of chronic-degenerative diseases.

The solution is in sight, and you should only have the decision to pursue it, but not only with awareness and training campaigns, which are of course very important, but it is also necessary to change many structural situations, so that they can be applied. These structural changes include:

1. Changing the structural rules of the actual neo-liberal socio-economic model towards a more sustainable model that pursue to protect people and environment and no so much the capital.
2. Creating enough productive and interesting jobs with decent wages,
3. Refocusing the production of unnecessary goods for goods and services that are really useful and healthy to people and society,
4. Creating enough spaces for exercise and recreation,
5. Educating people in order to improve health and quality of life.
6. Building a resilient and sustainable society, among other important measures.

Finally and particularly, workshops and courses should be included in the study plans of the scholar levels, to train the population to eat healthy, exercise physically, according to their age and physical conditions, and have a pro-active attitude to life, so that they look for health and well-being of themselves and their fellows. With these measures, we will probably obtain better results in terms of health and well-being.
Reference


Webgraphy

http://www.mexicomaxico.org/Voto/MortalidadCausas.htm (2019-06-20)

Acknowledgments

This section was removed