REVISTA CARIBEÑA DE CIENCIAS SOCIALES

July 2019 - ISSN: 2254-7630

COGNITIVE CONSEQUENCES OF OBESITY

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To quote this article you can use the following format:

Juan Carlos Calderón Reza, Lilian Reza Suárez, Gabriel Isaac Lamingo, Jorge Efraín Camacho Desiderio and María Belén Loaiza Matos (2019): "Consecuencias cognitivas de la obesidad", Revista Caribeña de Ciencias Sociales (julio 2019). Online

https://www.eumed.net/rev/caribe/2019/07/consecuencias-cognitivas-obesidad.html

Summary

Obesity is a very frequent chronic disease in the human being so it is quite possible that every teacher has in his class, throughout his professional life, some student with this ailment, Because of this it is necessary that the teacher knows some aspects of it to promote the integration and social inclusion, safe and affective of the student with obesity. Educational institutions must be prepared to serve this group of people, especially the teaching team needs to apply didactic strategies, microcurricular adaptations suitable for serving this vulnerable group. The patient affected by obesity is a person with great potential for development as long as he has the necessary support so that his evolutionary progress is not affected by the disease, for which the various contexts surrounding him must be integrated, adapting them to their medical and educational treatment needs so that their academic performance is not affected.

Key words: obesity - chronic - potential - academic performance

Abstract

Obesity is a chronic disease very common in the human being so it is very possible that each teacher has in his class, throughout his professional life, a student with this ailment, because of this it is necessary that the teacher knows some aspects of the same to promote the integration and social, safe and affective inclusion of the student with obesity. Educational institutions must be prepared to serve this group of people, especially the teaching team needs to apply didactic strategies, suitable microcurricular adaptations to serve this vulnerable group. The patient affected by obesity is a person with a great potential for development as long as he has the necessary support so that his evolutionary progress is not affected by the disease, for which the diverse contexts that surround him must be integrated, adapting them to his medical and educational treatment needs so that your academic performance is not affected.

Keyword: obesity - chronic - potential - academic performance

1.- Introduction

The student affected by obesity is a person with great potential for development as long as he has the necessary support so that his evolutionary progress is not affected by the disease, for this effect must integrate the various contexts surrounding it, which must be adapted to their medical and educational treatment needs.

Obesity is one of the most common chronic diseases in humanity, therefore, it is very possible that every teacher has in his class, throughout his professional life, some child or adolescent with this disease, Therefore it is necessary for the teacher to know some aspects of it to create social integration and inclusion, safe and affective of the student with obesity. Ideally, the school should be prepared to cater for students with obesity, and legal representatives should be part of this process, providing information to the school, ensuring that this information reaches the right people, They should also prepare the student to be able to control his or her food intake when he or she is away from home

2.- Development

2.1.- Contextual framework

Problem:

Due to poor eating habits or lack of nutritional information, obesity can occur, food anxiety, all this can affect the educational process, reflected in low academic performance by learning deficiencies

Definition

Obesity and overweight are defined as an abnormal or excessive accumulation of fat that can be harmful to health. A simple way to measure obesity is the

body mass (BMI), this is the weight of a person in kilograms divided by the square of the size in meters. A person with a BMI of 30 or more is considered obese and a person with a BMI of 25 or more is considered overweight. Overweight and obesity are risk factors for many chronic diseases, including diabetes, cardiovascular disease and cancer. (O.M.S., 2019)

Obesity and overweight are on the rise in all countries of the world, especially in urban areas, is also associated with poor eating habits and sedentary lifestyle.

Incidence

Obesity affects the world population, but it is necessary to prevent it from childhood because an obese child will most likely reach adulthood with obesity. Attention is drawn to childhood obesity, which is taking on alarming proportions in many countries and is a serious problem that must be addressed urgently. In the 2015 United Nations Sustainable Development Goals, the prevention and control of non-communicable diseases is considered a core priority. Among the risk factors for non-communicable diseases, obesity is of particular concern as it may negate many of the health benefits that have contributed to improved life expectancy. Progress in the fight against childhood obesity must continue to improve. In 2014, a Commission to End Childhood Obesity was established to review existing mandates and strategies and expand them to address potential gaps. After consulting more than 100 WHO Member States and reviewing almost 180 comments online, the Commission has developed a set of recommendations to effectively combat childhood and adolescent obesity in different global contexts, This study took two years to complete.

The Commission’s report presents a series of recommendations to governments aimed at reversing the growing trend towards overweight and obesity among children under five. At least 41 million children in this age group are obese or overweight, with the largest increase occurring in low- and middle-income countries. Greater political commitment is needed to address the global problem of childhood overweight and obesity.

According to the report, many children today grow up in environments that lead to weight gain and obesity. Processes of globalization and urbanization are contributing to increased exposure to unhealthy (obesogenic) environments in high-, middle- and low-income countries and across socio-economic groups. It is noted that the marketing of soft drinks and unhealthy foods is one of the main reasons for the increase in the number of overweight and obese children, especially in the developing world.

Between 1990 and 2014, the prevalence of overweight among children under five increased from 4.8% to 6.1%, and the number of affected children rose from 31 million to 41 million. In the countries of

The number of overweight children has more than doubled over the same period, from 7.5 million to 15.5 million. In 2014, almost half of all overweight and obese children under five (48%) lived in Asia, and 25% of them in Africa. The number of overweight children under five has almost doubled in Africa since 1990, from 5.4 million to 10.3 million.

Six recommendations of the Commission to governments

Promotion of healthy food consumption. - Implement comprehensive programmes that promote the consumption of healthy food and contribute to reducing the intake of unhealthy foods and sugary drinks by children and adolescents.

Promotion of physical activity. - Implement comprehensive programmes that promote physical activity and reduce sedentary habits of children and adolescents.

Pregestational and pregnancy care. - Integrate and strengthen guidelines for the prevention of non-communicable diseases with current guidelines on pre-gestational and prenatal care.

Early childhood feeding and physical activity. - Provide guidance and support on good nutrition, sleep and physical activity in early childhood; Promote healthy habits and ensure that children grow up well and adopt those habits.

Health, nutrition and physical activity of school children. - Implement comprehensive programmes that promote healthy school environments, health and nutrition education and physical activity among school children and adolescents by setting standards for school meals; The elimination of the sale of unhealthy foods and beverages and the inclusion in basic curricula of health and nutrition training and good physical education.

Control of weight. -Provide family- and lifestyle-based, multi-component weight management services for obese children and youth.

The report also presents a series of measures that should be taken by other actors, and calls on non-governmental organisations to raise awareness of the problem of childhood obesity and advocate improvements in the environment, and for the private sector to support the production of foods and beverages that promote a healthy diet and facilitate access to them. (O.M.S., 2016)

Main data:

Worldwide, the number of infants and children (0-5 years) who are overweight or obese increased from 32 million in 1990 to 41 million in 2016. In Africa alone, the WHO reported that the number of overweight or obese children increased from 4 to 9 million over the same period.

In developing countries with emerging economies (classified by the World Bank as low- and middle-income countries), the prevalence of overweight and childhood obesity among preschoolers exceeds 30 per cent.

If current trends continue, the number of overweight infants and young children will increase to 70 million by 2025.

Without intervention, infants and obese children will remain obese during childhood, adolescence and adulthood.

Childhood obesity is associated with a wide range of serious health complications and an increased risk of developing diseases prematurely, including diabetes and heart disease.

Exclusive breastfeeding from birth to six months of age is an important means to help prevent infants from becoming obese.

Consequences of childhood obesity

Obese children are more likely to develop a number of health problems in adulthood, including: heart disease; resistance to insulin; musculoskeletal disorders; some types of cancer; disability.

Factors contributing to the problem

The environment in which children are conceived, born and grow up can aggravate the risks of overweight or obesity. During pregnancy, gestational diabetes may lead to higher birth weight and an increased risk of obesity in the future. Choosing healthy foods for infants and young children is crucial as dietary preferences are established early in life. Feeding the infant with high-calorie foods with high fat, sugar and salt content is one of the main factors that lead to childhood obesity.

Lack of information on sound approaches to nutrition, as well as limited availability and affordability of healthy food contribute to the problem. The intensive promotion of high-calorie foods and beverages for children and families further exacerbates it. In some societies, a fat child is believed to be a healthy child, which is wrong. The automation of the planet also offers fewer and fewer possibilities for group physical activities, which predisposes to overweight.

Prevention of childhood obesity

Overweight and obesity can be prevented as long as the education community becomes aware of a healthy diet and physical activity is part of daily life.

For infants and young children, WHO recommends: immediate initiation of breastfeeding during the first hour of life; Exclusively breastfeeding during

the first six months of life; and lactation at 6 months, while maintaining breastfeeding up to 2 years or more. Complementary foods should be rich in nutrients and should be taken in adequate quantities. At 6 months, they should be introduced in small amounts, which will gradually increase as the child grows. Young children should have a varied diet that includes protein (foods such as meat, poultry, fish or eggs), which they should eat as often as possible. The child's food can be prepared specially for him or from the family's food, with some modifications. Complementary foods high in fat and carbohydrates should be avoided.

School children and adolescents should: limit energy intake from fats and carbohydrates; Increase consumption of fruits and vegetables, as well as legumes, whole grains and nuts; exercise regularly (60 minutes a day).

The food industry can play an important role in reducing childhood obesity by trying to reduce the fat, carbohydrate and salt content of processed foods for infants and children.

The WHO Global Strategy on Diet, Physical Activity and Health adopted by the World Health Assembly in 2004 calls for global, regional and local action to improve diets and increase physical activity.

The importance of reducing the level of exposure of individuals and populations to unhealthy diets and sedentary lifestyle should be recognized. At the 2012 World Health Assembly, countries agreed to work towards halting any future increase in the proportion of overweight children. This is one of six global nutrition targets to improve maternal, infant and young child nutrition by 2025.

The 2014 World Health Assembly also adopted the "Global Action Plan for the Prevention and Control of Non-Communicable Diseases 2013-2020", which aims to implement the commitments of the United Nations Political Declaration on Non-communicable Diseases. The Global Plan of Action will contribute to progress on nine global targets for non-communicable diseases to be achieved by 2025, including halting global obesity rates among school-aged children and adolescents, and adults.

Facts and figures

Since 1975, obesity has almost tripled worldwide. In 2016, more than 1.9 billion adults aged 18 and over were overweight, of whom more than 650 million were obese. In 2016, 39% of adults aged 18 or older were overweight, and 13% were obese. The majority of the world's population lives in countries where overweight and obesity claim more lives than underweight.

In 2016, 41 million children under the age of five were overweight or obese. In 2016, there were more than 340 million children and adolescents (ages 5 to 19) who were overweight or obese.

Obesity can be prevented.

Overweight and obesity are defined as an abnormal or excessive accumulation of fat that can be harmful to health.

The body mass index (BMI) is a simple indicator of weight-to-height ratio that is often used to identify overweight and obesity in adults. It is calculated by dividing the weight of a person in kilos by the square of his height in metres (kg/m2).

Adults: For adults, WHO defines overweight and obesity as follows:

Overweight: BMI of 25 or more.

Obesity: BMI of 30 or more.

The BMI provides the most useful measure of overweight and obesity in the population, as it is the same for both sexes and adults of all ages. However, it should be considered as an approximate value because it may not correspond to the same level of thickness in different people.

In the case of children, it is necessary to take age into account when defining overweight and obesity.

Children under 5: overweight is the weight for height with more than two standard deviations above the median established in WHO child growth patterns; and obesity is the weight for height with more than three standard deviations above the median established in WHO child growth patterns.

For children aged 5 to 19, overweight and obesity are defined as follows:

Overweight is the BMI for age with more than one standard deviation above the median established in WHO child growth patterns, and obesity is greater than two standard deviations above the median established in WHO child growth patterns.

Data on overweight and obesity

Some recent WHO global estimates are presented below.

In 2016, more than 1.9 billion adults aged 18 and over were overweight, of whom more than 650 million were obese.

In 2016, 39% of adults aged 18 or older (39% men and 40% women) were overweight.

Overall, in 2016 about 13% of the world's adult population (11% of men and 15% of women) were obese.

Between 1975 and 2016, the global prevalence of obesity has almost tripled.

In 2016, an estimated 41 million children under the age of five were overweight or obese. While overweight and obesity were formerly seen as a problem in high-income countries, both disorders are now on the rise in low- and middle-income countries, particularly in urban settings. In Africa, the number of overweight children under 5 has increased by nearly 50 per cent since 2000. In 2016, about half of all children under five years old who were overweight or obese lived in Asia.

In 2016, there were more than 340 million children and adolescents (ages 5 to 19) who were overweight or obese.

The prevalence of overweight and obesity in children and adolescents (ages 5-19) has increased dramatically, from 4% in 1975 to over 18% in 2016. This increase has been similar for both genders: 18% of girls and 19% of overweight boys in 2016.

While in 1975 there were less than 1% of children and adolescents aged 5 to 19 years with obesity, in 2016 there were 124 million (6% girls and 8% boys).

Globally, overweight and obesity are associated with a higher number of deaths than underweight. In general, there are more obese people than underweight. This is the case in all regions except parts of sub-Saharan Africa and Asia.

What causes overweight and obesity?

The root cause of overweight and obesity is an energy imbalance between calories consumed and spent. Globally, there has been an increase in the intake of high-calorie foods that are high in fat; and a decline in physical activity due to the increasingly sedentary nature of many forms of work, new modes of transport and growing urbanization.

Changes in eating and physical activity habits are often the result of environmental and social changes concomitant with development and lack of supportive policies in sectors such as health; agriculture; transport; Urban planning; the environment; food processing, distribution and marketing, and education.

What are the common health consequences of overweight and obesity?

A high body mass index (BMI) is an important risk factor for non-communicable diseases, such as cardiovascular disease (mainly

heart disease and stroke), which were the leading cause of death in 2012; diabetes; disorders of the locomotor system (especially osteoarthritis, a highly disabling degenerative joint disease), and cancer (uterus, breast, ovaries, prostate, liver and bile ducts, kidneys and colon). The risk of these non-communicable diseases increases with increasing BMI.

Childhood obesity is associated with an increased likelihood of obesity, premature death and disability in adulthood. However, in addition to these increased future risks, obese children suffer from respiratory difficulties, an increased risk of fractures and hypertension, and have early markers of cardiovascular disease, insulin resistance and psychological effects.

In the field of education, obese students present discouragement, heaviness, which prevents them from participating successfully in collaborative and sports tasks; Therefore, an obvious intervention is educational, and in this sense the NAOS strategy (Nutrition, Physical Activity, Prevention of Obesity and Health) also promotes school food education and regulations regarding requirements and control of school canteens. In this connection, it should be noted that we are not starting from scratch, since many schools and institutes have already been providing food education for a long time, both within the academic content and in the form of specific activities. But it should be considered that not wanting to control and reduce obesity, they can increase the incidence of excessive obsessions compared with what is not obesity and often not even overweight, and that wrong aesthetic concerns encourage anorexic behavior.

On the other hand, school and teachers cannot do everything. We must not be tempted to pass the responsibility on to the school. The family has more responsibility. For this reason, actions are envisaged at the family and community level: training and dissemination of nutritional recommendations and physical activity plans. It is obvious that the school canteen can be an important tool to help educate students nutritionally and also gastronomically, but all school activities of little or nothing will serve if then in the family does not devote due attention to food. Eating a significant amount of vegetables, fruits and vegetables, for example, is essential to good nutrition, but in order for the children and youth population to assume it must see their parents, relatives and teachers preach by example. (Vidal & Mariné, 2005)

Many low- and middle-income countries continue to face the problems of infectious diseases and malnutrition, they also experience a rapid increase in risk factors for non-communicable diseases such as obesity and overweight, especially in urban environments. It is not uncommon to find malnutrition and obesity coexisting in the same country, the same community and the same household, eating habits, together with a lower level of physical activity, lead to a drastic increase in childhood obesity, while the problems of malnutrition remain unresolved.

How can overweight and obesity be reduced?

Overweight and obesity, as well as related non-communicable diseases, are mostly preventable. The enabling environment and communities to influence people's choices are essential, so that the simplest option (the most accessible, available and affordable) is the healthiest one in terms of food and regular physical activity, and consequently prevent overweight and obesity. At the individual level, individuals may choose to: limit energy intake from total fat and carbohydrates; Increase consumption of fruits and vegetables, as well as legumes, whole grains and nuts; and regular physical activity (60 minutes per day for young people and 150 minutes per week for adults).

A healthy lifestyle must be cultivated, with regular physical activity and healthier food options available to all, especially the poorest people. An example of such a policy is a tax on sugary beverages.

Response from WHO

The "WHO Global Strategy on Diet, Physical Activity and Health", adopted by the World Health Assembly in 2004, describes measures needed to support healthy diets and regular physical activity. The Strategy calls on all stakeholders to take action at the global, regional and local levels to improve diets and physical activity habits in the population, recognizing the critical importance of reducing unhealthy diets and physical inactivity.

The WHO has also established the Global Plan of Action for the Prevention and Control of Non-communicable Diseases 2013-2020, which aims to implement the commitments of the United Nations Political Declaration on Non-communicable Diseases, was endorsed by the Heads of State and Government in September 2011. The Global Plan of Action will contribute to progress on nine global targets for non-communicable diseases to be achieved by 2025, including a 25 per cent relative reduction in premature mortality from these diseases by 2025 and halting the rise in global obesity to match 2010 rates.

The World Health Assembly welcomed the report of the Commission to End Childhood Obesity (2016) and its six recommendations to address the obesogenic environment and critical life cycle periods in ways that combat childhood obesity. The 2017 World Health Assembly welcomed the implementation plan to guide countries in implementing the Commission's recommendations (O.M.S., 2018).

Symptoms of Obesity

The most obvious symptom is weight gain, so symptoms will depend on this weight gain that, among others, can be:

Difficulty in sleeping. -Obesity is related to sleep apnea, which is the cause of daytime drowsiness and poor restful sleep, bone pain, back and/ or joint pain, excessive sweating, skin folds, infections in these folds, fatigue, dyspnea depression, acanthosis nigricans, striae, edemas and varicose veins, body mass index greater than 30 kg/m2, waist circumference greater than 102 cm in men and 88 cm in women. (Portalclinic.org, 2018)

Initial assessment

Obesity is defined as the abnormal or excessive accumulation of fat that can harm health. In infants and children growing up obesity is measured according to the WHO "child growth patterns" size for age, weight for age, and reference data on growth between 5 and 19 years (body mass index for age)

How is this different from the way obesity is measured in adults?

In adults, overweight is defined as the person's body mass index (BMI). This is a simple weight index for height, defined as the weight of a person in kilograms divided by the square of his height in meters (kg/m2). In adults, a BMI of 25 or more is considered overweight; and a BMI of 30 or higher is considered obesity.

What are the health consequences of childhood obesity?

Obese infants and children are likely to remain obese in adulthood, and therefore more likely to develop various health problems as adults. Among them: heart disease; insulin resistance (often an early sign of imminent diabetes); musculoskeletal disorders (especially arthrosis, a highly disabling degenerative disease affecting the joints); some types of cancer (endometrium, breast and colon); disability.

How can childhood obesity be prevented?

Exclusive breastfeeding during the first six months of life is recommended. Once solid foods are incorporated, families can: limit total caloric intake of fats and carbohydrates; Increase consumption of fruits, vegetables, legumes and whole grains; Ensure that infants and young children have opportunities to move freely, and that children over five years of age engage in regular physical activity (60 minutes per day).

Why has WHO established a high-level commission on childhood obesity?

There is currently no global consensus on the approaches and combinations of interventions most likely to be effective in different contexts and societies around the world. High-level Commission to End Obesity

to seek advice from experts around the world and make recommendations to the Director-General of WHO on how to deal with the current crisis.

No single discipline can provide the basis for a strategic approach to addressing childhood obesity. Social scientists, public health specialists, clinical scientists and economists will come together to summarize in a coherent plan the best available scientific evidence. The work will also involve those responsible for maternal health and nutrition; health, education and basic health knowledge; physical activity; and public policies.

How will experts be involved?

The Commission will be supported by two working groups. A panel will examine all available scientific evidence regarding the prevention of childhood obesity and how to stop it in affected children; e will identify the optimal policy mix to achieve these objectives. The second group will determine how achievements in the fight against childhood obesity worldwide will be tracked and results monitored. Their work will serve as a basis for the Commission to produce a report specifying approaches and combinations of interventions that are most likely to be effective in different contexts around the world. The report will emerge from consensus among a wide range of experts.

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In 2015 the Commission had two working groups, a working group on scientific evidence composed of experts in epidemiology, paediatrics, nutrition, origin of development, basic health knowledge, advocacy directed at children, health economics, physical activity and gestational diabetes: estimate the prevalence of childhood obesity and its consequences; assess the economic impact of childhood obesity; examine the scientific evidence regarding the prevention of childhood obesity and how to stop it in affected children; and identify the optimal policy mix to achieve these objectives in different environments; evaluate and recommend policy options for monitoring and surveillance.

The working group on implementation, monitoring and accountability will be composed of experts in monitoring and accountability as well as representatives from governments, civil society sectors, children’s groups, child health and nutrition advocates, International organisations and the food industry. This group will develop: a framework for the implementation of policies recommended by the

Work on and accountability for science and scientific evidence; mechanisms necessary for the follow-up of recommended policy options; Assessment of the feasibility of monitoring recommended policy options. (O.M.S., 2015)

Treatment

The treatment of obesity must be comprehensive and multidisciplinary to achieve and maintain a healthy weight. Weight loss of at least 5-10% over a period of 6 months improves and controls the appearance of comorbidities associated with obesity.

Initial treatment of obesity includes changes in dietary patterns and increased physical exercise. In addition to these strategies and, depending on the degree of obesity, drugs may be administered or bariatric surgery may be used to promote weight loss.

Diet. - There is no single dietary pattern for weight loss. Together with the nutritionist, a balanced and varied diet plan is designed to control calories, which is individualized according to the degree of obesity, the presence of comorbidities, age, level of physical activity and idiosyncratic characteristics.

Reduce calorie intake. - In the hands of an experienced nutritionist will achieve weight loss by reducing the amount of calories consumed. Food and beverage consumption habits can be reviewed to estimate how many calories are consumed and their frequency

Specific strategies to reduce caloric intake will always be in the hands of a bedside dietitian.

Choosing healthier foods. - The intake of plant products such as vegetables, vegetables, fruits, whole grains and legumes should be increased. As well as consuming small amounts of fat, making sure it comes from healthy sources such as olive oil, nuts and bluefish. The consumption of other animal products should be minority, prioritizing those lean as white fish, white meat and dairy with low fat content. It is advisable to limit the consumption of red meat and its derivatives, as well as the addition of salt and sugar.

Limiting the consumption of high-calorie foods. - Foods rich in saturated fats such as fatty sausages, pastries and precooked, should limit the consumption of soft drinks with sugar and alcohol to start reducing calorie intake.

Plan your meals. Make three main shots per day and two snacks. Regular physical exercise, which must be adapted to the possibilities of each person and practiced regularly, contributes favorably to control weight, improve

associated risk factors and positively influences the feeling of well-being, so it is recommended to schedule physical exercise, reducing sedentary lifestyle.

Pharmacological treatment of obesity

Pharmacological treatment is recommended as an adjunct to the personalized regimen guided by the nutritionist and physical trainer in people with a BMI greater than 30 kg/m2 or 27 kg/m2 and with at least one comorbidity (Dyslipidemia, hypertension and fatty liver). The goal of this treatment is to perpetuate lifestyle changes and induce and maintain weight loss. Pharmacological treatment requires indication and supervision by the head clinician. In Spain, the drugs approved to treat obesity are:

Orlistat was placed on the market in 1999. Its main mechanism of action is a 30% reduction in the absorption of consumed fat at the intestinal level. Its main adverse effects are digestive such as fecal urgency, flatulence and oily stools.

Liraglutide marketed in 2016. Its main mechanism of action, being a human GLP-1 agonist with a longer half-life compared to the one secreted by the body, has anorectic effects, allowing appetite regulation. The main adverse effects are nausea, diarrhea, constipation, vomiting, decreased appetite and lower blood sugar levels.

Bupropion/naltrexone marketed in 2017. They act on the central nervous system by controlling caloric intake and balance, reducing the pleasurable sensation associated with food consumption. When administered together, they reduce appetite and the amount of food eaten, while increasing energy expenditure. Patients undergoing this treatment should undergo regular monitoring of the internal environment with the help of laboratory tests. It should be discontinued if certain adverse effects such as increased blood pressure occur or if at 4 months of treatment, at least 5% of the initial body weight has not been lost.

Surgical treatment of obesity

Bariatric surgery (BC) is a set of surgical procedures for the treatment of obesity. Currently, bariatric surgery is the only effective treatment to achieve significant and sustained weight loss over time. Bariatric surgery techniques are divided into restrictive, mixed and malabsorptive techniques according to changes in the gastrointestinal tract and their nutritional impact. While bariatric surgery techniques continue to evolve, the most common ones in our environment today are:

Gastric sleeve (restrictive). It consists of eliminating approximately 80% of the stomach so that the remaining 20% acquires a tubular form Among the postulated mechanisms of weight loss of this technique are: the significant decrease in the intake of food that can be consumed (and, therefore, calories) by reducing gastric capacity and the effect that

has surgery on gastrointestinal hormones that impact a number of factors including hunger and satiety.

Gastric bypass (mixed). The configuration of this technique is highly effective as it includes a restrictive component with limitation of oral intake and malabsorptive with limitation of caloric absorption. Another proposed mechanism of weight loss is that by diverting food from the proximal portion of the small intestine, changes occur in gastrointestinal hormones that promote satiety and suppress hunger.

Duodenal crossing or bilio-pancreatic shunt (mixed, but with predominance of the malabsorptive component). It consists, on the one hand, of a tubular gastrectomy and, on the other hand, of a bilio-pancreatic bypass by which digestive secretions are removed at the end of the small intestine (100 cm) which significantly alters the absorption of food. Being a more malabsorptive technique results in greater weight loss compared to the previous two techniques, but it can also have a higher risk of complications such as diarrhea, nutritional deficiencies and protein-caloric malnutrition.

Complications of surgical treatment of obesity

Bariatric surgery, being a major gastrointestinal surgery, carries the possibility of complications and side effects. Complications from surgery or surgical morbidity occur in about 10% of cases. Early and severe surgical complications include suture dehiscence, ulcers, bleeding, gastric stoma stenosis, and pulmonary thromboembolism.

Long-term complications include nutritional deficiencies. Among the most common are iron deficiency anemia, vitamin B12 (pernicious anemia), calcium, vitamin D and protein. Other less frequent complications are diarrhoea, caloric-protein malnutrition, hypoglycemics, gallstones and gastroesophageal reflux disease.

General symptoms such as the feeling of cold caused by a lower amount of adipose panicle are also very common. Weakness or tiredness associated with loss of muscle mass and nutritional deficiencies, as well as hair loss related to protein and vitamin deficiency. Finally, excess skin and sagging skin that appear after weight loss sometimes have to be corrected by plastic surgery.

Cognitive-behavioral psychological treatment

Psychological factors contribute to the development and/or maintenance of overweight and obesity. They also make it difficult to start weight loss treatment and maintain it.

On the one hand, some people eat more and less healthily when they are under negative emotional states, such as anxiety or depression. Eating can act as a mechanism to deal with certain situations that, although it may initially relieve negative emotions, eventually turns out to be problematic. On the other hand,

People with obesity have an increased risk of psychological disorders. The most common are depression, anxiety, eating disorders and substance use related disorders. They also tend to suffer from difficulties in self-esteem, self-image and interpersonal relationships.

The most effective psychotherapy is cognitive-behavioral. The main objective of obesity treatment is to help change, acquire and maintain behaviors that allow, in addition to weight reduction and maintenance, improve the psychosocial functioning of the patient. Identify which external or internal (mental or emotional) situations predispose to eating in a non-adaptive way and provide the patient with behavioral, emotional and cognitive strategies that allow him to have a healthier relationship with food.

This therapy uses techniques for anxiety management, problem solving, stimulus control, self-control and cognitive restructuring, among others. (Portalclinic.org, S/F)

Diet for obesity

Obesity is characterized by overweight as a result of increased body fat. A person is considered obese when their body mass index exceeds 30 kg/m 2. It is important to clarify that obesity should be treated as a chronic disease and that its treatment should be considered in the long term. The main goal is to achieve a lifestyle change that allows for a gradual decrease in fat mass and maintenance of lost weight over time, so small changes can give great results.

First, it is necessary to change eating habits: Introduce plenty of raw or cooked fruits and vegetables (at least five units a day), skimmed milk products, whole grains.

Select lean cuts of meat and fish. Cooking with non-fat-dependent processes. Take care of the quantities and try to reduce gradually the consumption of salt and alcohol.

Drink at least 1.5 to 2 litres of water daily.

Make a full breakfast, plan in advance the menus and distribute meals in at least five daily intakes.

However, if we limit the changes to the diet it will be more difficult for us to achieve the goal. It is essential to accompany these dietary changes with a gradual increase in daily physical activity. It’s not about becoming an athlete overnight, or doing strenuous exercises that are difficult to maintain over time. On the contrary, one should look for an activity that can easily be included in the

routine, so as to ensure their daily compliance. For example, walking to work, class or the market; get off the metro or bus a few stops earlier and walk the rest of the way; replacing the lift with stairs; going for a walk; Cycling, among other activities.

False myths about obesity

Fruits become fat when eaten as a dessert. Food is always digested in the same way, regardless of the order of intake, without affecting its caloric value. What is true is that if the fruit is consumed at first, its fiber content can increase the feeling of satiety.

Carbohydrates gain more weight than proteins. Both provide 4 kilocalories per gram of nutrient.

Drinking water during meals makes you fat. Water is an caloric nutrient, therefore it does not provide calories or fat. Another thing is fluid retention that occurs with some diseases, but it has nothing to do with increased body fat.

Vitamins increase appetite. It is fully proven that no vitamin stimulates the appetite. (Spanish Heart Foundation, 2018)

The total ban on children's favourite foods can have an adverse impact psychologically speaking, coupled with the family concern surrounding the child. With regard to the above, several authors advocate not developing dietary restrictions but maintaining a free or normal diet as stated by Lichtenstein in Sweden, Stolte in Germany, Fanconi in Switzerland and Guest in USA. (Violante, 2001)

In the case of children, this fact is important to consider when preparing the school lunch box, balance the nutritious and healthy with whatever is of the child's liking so that his life can be as normal as possible.

Suggested caloric distribution. -

Carbohydrates: The minimum intake is 40% of the total caloric value.

Proteins: They are very important for their plastic and protective value. At least 20% of the total caloric volume is required in protein. This represents approximately 100 g. of protein per day.

Fats: The corresponding calories of carbohydrates and protides are deducted from the caloric value of the diet by 40%. Maintaining an intake of milk and its derivatives, eggs and meat includes more than 50% of what is necessary, leaving the rest to cover with oils

RECOMMENDED CALORIE INTAKE
BASED ON AVERAGE HEIGHTS AND WEIGHTS

Category	Age (years) or condition	Weight (kg)	Altura (cm)	T.M.B.[a] (kcal/day)	Average ration of kcal [b]		
					Múltiplo-TMB	Per kg	Per day
Children	1 - 3	13	90	740	-	102	1300
	4 - 6	20	112	950	-	90	1800
	7-10	28	132	1130	-	70	2000
Males	11 - 14	45	157	1440	1,70	55	2500
	15 - 18	66	176	1760	1,67	45	3000
	19 - 24	72	177	1780	1,67	40	2900
	25 - 50	79	176	1800	1,60	37	2900
	51 +	77	173	1530	1,50	30	2300
Women	11 - 14	46	157	1310	1,67	47	2200
	15 - 18	55	163	1370	1,60	40	2200
	19 - 24	58	164	1350	1,60	38	2200
	25 - 50	63	163	1380	1,55	36	2200
	51 +	65	160	1280	1,50	30	1900

Source: http://www.portalfitness.com/nutricion/tabla_calorias.htm

Exercise

Moderate exercise is important in the treatment of obesity, especially in children, taking into account the risk of hypoglycemia that could occur during its performance and even appear 12 hours later, in relation to the duration, intensity and frequency with which it exercises.

Therapeutic behaviour and psychological support

Although it is clear that the person is overweight, parents or relatives should be informed of the diagnosis of the disease, this must be done in every patient, making known that there are effective treatments and that better treatments will exist in the future.

Obese children of school age. -

As already mentioned, the child or adolescent diagnosed with obesity is above all a child who has great potential for development and should therefore be given the necessary support so that his evolutionary progress is affected as little as possible due to the disease, The achievement of this objective requires the integration of the various contexts surrounding it: individual, family, social and school. These should be adapted to their medical and educational treatment needs.

Obesity is one of the most common chronic diseases in the pediatric age, ideally the school should be prepared to take care of these children, and that the parents are part of this whole process, providing information to the

part of the intellectual, sporting or recreational processes; his illness does not prevent it, but it is necessary to anticipate and plan school activities. (Barrio, s.f.)

The education community and medical team can help, and school administration and nursing staff are gaining experience in helping children with obesity participate successfully and safely in school activities.

Collaborating with the school

Obese students should practice physical activities and participate in school celebrations and field trips, in moderation.

Contact your child's educators. - School staff should know your child's diagnosis and current health status. It is also appropriate to make clear which are the responsibilities of parents and which of the school.

Thanks to the inclusion enshrined in Ecuador's constitution, school staff can be kept well informed, and even consider revising the obesity control plan. It is necessary for the staff to have experience and some preparation on the management of students with this disease in order to have a quiet situational development that guarantees a healthy educational environment.

How to prepare your child. - The school must be prepared in advance to receive these children as they need special supervision, and they also need to feel welcome in their classroom. The child should get used to regularly reporting on how he is doing in class in every way, especially as it relates to food anxiety.

Contextual framework

There are nearly 62 million people with diabetes in the Americas and it is expected that cases will continue to increase because of high overweight rates in the region, where obesity is twice the global average, with the Bahamas, Mexico and Chile among the highest rates.

Each year the incidence of this disease in young children increases at an average rate of 3.9%. However, there are important differences by age group. Thus, in the range from 0 to 4 years, the increase in new cases occurs at a rate of 5.4% per annum; 5 to 9 years, 4.3%; between 10 and 14 years of age by 2.3%

In Guayaquil, according to the 2014 Ensanut survey, 30% of children between 5 and 11 years old were overweight. This incidence rises to 62.8% in the population aged 19-59 years. In 2015, there were 6,817 new cases of obesity in the age group of 20 and 49 years in Health Zone 8 (Guayaquil, Durán and Samborondón).

As indicated by the National Plan of Good Living 2017-2021: From the point of view of human development, childhood and in particular early childhood is a stage of special relevance: during this period are laid the foundations for the future cognitive, affective and social development of people (ECLAC, 2016). (PNBV, 2017)

Field: Public health - bariatric surgery - Education

Scientific research area: Social Sciences and Good Living.

2.2.- Subject of the investigation

Analyze the incidence of obesity as one of the causes that can affect cognitive performance.

Context:

Using the statistics found in the research, it was possible to identify that there is low performance in students but it is not yet possible to determine whether one of the causes is obesity.

General Objective:

Establish the consequences of obesity on cognitive performance through literature, documentary and field research to improve the quality of life of this vulnerable group

Specific Objectives

• Knowing the cause and consequences of obesity.

• Describe the physical, psychological and social characteristics of obese people.

• Propose activities to reduce malnutrition in children with a balanced diet and physical exercise.

Know the surgical methods capable of solving this pathology.

• Publicize the results of this research.

2.3.- Justification and importance

The national government has clear policies on this issue, but also educational institutions must carry out campaigns for young mothers on adequate nutrition so that their children are not overweight.

The present research focuses on analyzing bad habits and the intake of an inadequate diet causing this disease, while describing the clinical and epidemiological behavior of obesity in children and adolescents, to be able to improve early detection of this pathology, as well as primary care to avoid complications; In addition, this study will generate parameters for preventive actions in schools and colleges.

This research proposes the use of micro-curricular adaptations to raise awareness and provide support for children with obesity in ordinary schools as it is necessary to specify the application of such adaptations for this type of students with special educational needs, associated with a disease, and thus help them in the learning process.

The survey carried out among the educational community of a school (whose name is protected and whose record is kept in our archives) reveals that 90% of the 85 teachers surveyed think that the care given to this group of children is not relevant, because they are not considered to be children with special educational needs and that weight loss is a simple matter, it has been explained to them that this vulnerable group requires collaborative work between

all actors in the educational process as it is the only feasible means by which diversity can be addressed. Children and young people are the future of our homeland, so it is important to promote relevant information so that they can benefit from a proper and healthier diet.

2.4.- Theoretical framework

Background

Obesity in the United States

In the United States of America, nearly 40 percent of adults and 19 percent of youth are obese, the highest rate the country has ever seen for adults, according to research published by the National Center for Health Statistics. Since 1999, there has been an astounding increase in the prevalence of obesity, particularly in adults, with no "signs of slowing down", according to the study's lead investigator, Dr Craig Hales, U.S. Centers for Disease Control and Prevention medical epidemiologist.

By contrast, childhood obesity has increased tenfold in the last 40 years. Youth obesity rates appear to be more stable in recent years. However, it is "too early to say" which direction the prevalence of obesity in young people will take. At least four more years of study required

To understand it. What is "most striking" about this information is that there has been a 30% increase in adult obesity and 33% in juvenile obesity from 1999-2000 to 2015-16 data, despite government efforts to address the problem.

Hispanic adults had an obesity rate of 47% and non-Hispanic black adults a rate of 46.8% in 2015-16, the new report showed. Non-Hispanic white adults had an index of 37.9% and Asian adults a rate of 12.7%.

Among young people, Hispanics and non-Hispanic blacks there were also higher rates of obesity, at 25.8% and 22%, respectively, compared to 14% of non-Hispanic whites and 11% of Asians. (Larned, 2017)

Obesity in Ecuador.-

According to information in Ecuador the excess of sweets make children suffer from various diseases such as obesity and diabetes.

In Guayaquil, according to the 2014 ENSANUT survey, 30% of children between 5 and 11 years old were overweight. This incidence rose to 62.8 per cent in the population aged 19-59, which is a serious public health problem. In 2015, there were 6,817 new cases of obesity in the age group of 20 and 49 years old in Health Zone 8 (Guayaquil, Durán and Samborondón).

The same ENSANUT survey showed that obesity prevalence is increasing in all age groups. 3 out of 10 school-age children were overweight and

obesity. 1 in 4 preschoolers was small for their age and the percentage of overweight doubled over the last three decades.

In Ecuador the problem is synthesized to 1.4 million diabetics and in Manabí there are 100 thousand of them. These statistics are growing every day, because 10 percent of obese people are potential future diabetics. In this province the disease is considered among the 10 with the highest incidence, according to a report from the Health Directorate. It has been possible to observe the growth of the disease, precisely because manabitas have bad eating habits, there is a lot of consumption of carbohydrates and fats, accompanied by the intake of alcoholic beverages.

There must be work to prevent the disease, which involves raising awareness among the population about exercise and healthy eating.

The vast majority of those affected have type II diabetes which is related to obesity and lack of exercise, and the epidemic is spreading especially rapidly in poorer countries as people adopt western diets and urban lifestyles.

The food situation in 125 countries of the world has been assessed on the basis of four factors: the availability of food, its price, its quality and the health of inhabitants as a function of diet.

It is also important to note that breastfeeding helps prevent short-term infections and diseases such as infections, even those that are chronic over the course of life such as diabetes, obesity or certain types of cancer. (Reza, Franco, Cayambe, & Calderón, 2018)

Educational response to the main characteristics that define obesity

The characteristics that have been pointed out so far to describe how people affected by obesity are will give us the key to know how to approach educational intervention with this vulnerable group. Their progress will depend, to a large extent, on the ability of the education system to adapt to the needs of the learner. Some methodological strategies are described below as suggested recommendations to treat these symptoms in the classroom.

Microcurricular adaptations for children with special educational needs, associated or not to a disability: visual, motor, auditory. - A curricular adaptation or adjustment is a type of educational strategy generally directed at students with special educational needs, It consists in adapting the curriculum of a given level of education with the aim of making the contents accessible to the whole group, or modifying those elements of the curriculum which are not functional for all students. This concept allows the implementation of a process of curricular adaptation from the first level of concretion, education decrees, to individual or group curricular adaptation. Thus, curricular adaptations are

Intrinsic to the curriculum itself. Teaching teams, departments, teachers or tutors adapt the curriculum according to the characteristics of the students in the cycle or classroom. Within this scope, account must be taken of:

•Principle of standardisation: the ultimate reference point for any curriculum adaptation is the ordinary curriculum. The objectives are to be achieved through a standardized educational process. •Ecological principle: curricular adaptation needs to adapt the educational needs of pupils to the most immediate context (school, environment, group of pupils and particular pupil).

•Principle of reality: for it to be feasible to carry out a curricular adaptation it is necessary to start from realistic approaches, knowing exactly what resources we have and the goals to achieve.

•Principle of participation and involvement: curriculum adaptation is the direct responsibility of the tutor and other professionals working with students with special educational needs.

Types of curricular adaptations. - The different types of adaptations would form part of a continuum, where at one end there are the many and usual changes that a teacher makes, and on the other the modifications which deviate significantly from the curriculum.

Curriculum adaptations for access to the curriculum. - Modifications or provision of spatial, material, personal or communication resources that will make it easier for some students with special educational needs to develop the regular curriculum, or where appropriate, the adapted curriculum. These adaptations facilitate the acquisition of the curriculum and do not affect its basic structure. Access curriculum adaptations can be of two types: •Physical-environmental: Spatial, material and personal resources. For example: removal of architectural barriers, such as ramps and handshakes, adequate lighting and sound, modified furniture, specialized support teachers,

•Access to communication: specific teaching materials - learning, technical and technological aids, complementary communication systems, alternative systems, Braille code perforating machines, magnifying glasses, telescopes, computers, recorders, sign language, adaptation of texts, adaptation of graphic material, light indicators.

Curriculum adaptations for special cases. - These are all those adjustments or modifications made to the different elements of the educational proposal developed for a pupil in order to respond to his specific educational support needs (n.e.a.e.) and which cannot be shared by the rest of his peers. They can be of three types:

1.- Non-significant (ACNS): Modify non-prescriptive or basic elements of the curriculum. They are adaptations in terms of time, activities, methodology, type of exercises or way of carrying out the evaluation. They may also involve small variations in content, but without implying a curricular gap of more than one school cycle (two courses). Any pupil, whether or not he has special educational needs, may need them at a particular time.

2.-Significant (ACS): involve modification or removal of contents, purposes, core objectives of the curriculum, methodology. They are carried out from the programming stage onwards, always in a collegial manner according to a prior psycho-pedagogical evaluation, and affect the prescriptive elements of the official curriculum by modifying the general objectives of the stage; basic and core content of the different curricular areas and evaluation criteria.

Significant curricular adaptations may consist of:

- Adapt the objectives, content and evaluation criteria.
- Prioritise certain objectives, contents and evaluation criteria.
- Change the timing of evaluation objectives and criteria.
- Eliminate objectives, content and evaluation criteria from the relevant level or cycle.
- Introduce contents, objectives and evaluation criteria of previous levels or cycles. There is therefore no question of adapting spaces or removing partial or specific content; a very exceptional measure which is taken when a pupil is effectively unable to achieve the basic objectives.

The team developing a significant curricular adaptation must be more rigorous, if at all, than in other cases, and the assessment of learning must be more specialized, taking into account factors such as learning ability, sensory functioning, motor, the socio-family context. In addition, the student must be subject to greater control, in order to facilitate his learning as much as possible and to make the changes deemed appropriate at any time.

- Individualized (ACI), aimed at pupils with special educational needs and adapted to their individual characteristics.

Examples

Examples of significant curricular adaptations

- Removal of content relating to colour discrimination for the blind.
- Deletion of certain content related to written language skills in individuals with physical or sensory disabilities.
- Deletion of content from the music area for deaf people.

- Implementation of oral examinations for blind pupils.

Examples of access adaptations

- Use of adapted furniture, folding tables.
- Access ramps to the centre.
- Use of frequency modulated apparatus.
- Extension of texts.
- Maps in relief.
- Literacy in Braille.
- Pictograms for communication.

3.- Curricular adaptations of access. - For a patient with difficulties in the process of abstraction, or memory, it will be offered support material such as the Pythagorean table, help sheets for problem solving (step guide) or for another with labile attention the text will be reduced to work or assigned the task in parts. For a visually impaired patient:

- Material adaptations: tiflotechnology (speaking annotators such as spoken Braille; computer adaptations such as the Jaws screen explorer, character magnification and zoomtext; the text recognition software such as the Tifloscan and the recorded book player such as the spoken book and Victor), optical aids (hand magnifiers, table-top magnifying glasses), tactile aids (tape recorder, punch, ledger paper sheets, Perkins machine, arithmetic box, geometric play slotted or embossed, maps in relief, soundball, road education plans) or hearing aids (audiobook, digital agenda, opticon, talking calculator and macrotype, electronic dictionary)
- Communicative adaptations for visually impaired students: printer impact Braille, an application called Helena that converts a tablet into a braille keyboard for sighted people.

For a child with hearing impairment:

- Material adaptations: visual aids (information panels, illuminated signs, subtitling of images, signboards and large screens), hearing aids and touch aids, computer software (for the visualization of speech parameters, for the stimulation of language development, for the development of lecto-writing, for the learning of sign language, for the learning of Bimodal and Supplemented Word and Dactylological Dictionary), educational teaching material (musical notebooks).
- Spatial adaptations: visual aids such as light indicators, good lighting (it is advisable for the patient to face natural light), placing the tables in the classroom in a U-shape so that they can be placed in the environment and can at the same time locate all the objects forming it, reducing ambient noise as it distorts and interferes with correct auditory perception and the use of other instruments such as magnetic loops.

For those with motor disabilities:

- Material adaptations: For postural control, in chairs (headrest, side controls for the trunk, spacer block, armrests and footrests) and on tables (adjustable in height, with opening, suction cups, flanges on the table, non-slip material and inclined plane). For manipulative elements in writing (adapters for clamp or grip, impressors, ferric slate, mouthpiece and adapted keyboards), and reading (magnifying glasses and rubber thimble). Supplementary items for handling: scissors, notebooks, lasered wristbands, electric pencil sharpeners, licornes (to signal, to use magnetic material, to perform plastic activities or to write on the keyboard), mice, push buttons and screens.
- Spatial adaptations:
- School transport: Access ramp, reserved space with seat belt and equipped parking spaces.

Individual curricular adaptations. They are the set of educational decisions taken from classroom programming to develop the educational proposal for a given student. They may be non-significant, if they do not affect the basic objectives and contents, and significant if they involve the elimination or substantial modification of essential or nuclear contents in the different areas.

2.5 Legal framework

FAO, Food and Agriculture Organization of the United Nations.

Diet, nutrition and prevention of life-long chronic diseases. - The rapidly growing burden of chronic diseases is a key determinant of global public health. 79 per cent of deaths attributable to chronic diseases already occur in developing countries, especially among middle-aged men. There is increasing ontological evidence that the risks of chronic disease begin in fetal life and persist into old age. Therefore, chronic adult diseases reflect
lifetime cumulative exposures to harmful physical and social environments. Identifies as causes of disease: unhealthy lifestyles, in particular excessive intake of total and saturated fats, cholesterol and salt, insufficient potassium intake and decreased physical activity, In addition to this, there are often many hours of television.

Huge increase in the consumption of fast food, ready-to-eat meals and carbonated drinks, the amount of physical activity at home and at school has been significantly reduced, and mechanized transportation has spread.

The interaction between early and later factors throughout life has shown that low birth weight, when combined with the subsequent onset of obesity in adulthood, generates a particularly high risk of coronary heart disease as well as diabetes. It has been observed that the greatest risk of decreased glucose tolerance occurs among individuals who were low weight at birth and became obese as adults. There is also fairly consistent evidence that the lower the height, the higher the risk of coronary heart disease, stroke and probably adult diabetes.

It is well established that hypertension, obesity and dyslipidemia are risk factors for coronary heart disease, stroke and diabetes. (WHO/FAO/s/F)

Good nutrition is the first defense against disease and the source of energy to live and be active. While young children are the most vulnerable to malnutrition, the right to adequate food is universal and good nutrition is essential for all. The FAO Nutrition Strategy seeks to improve diets and increase nutritional levels through a people-centred approach:

Art.50

The State shall guarantee to all persons suffering from catastrophic or highly complex diseases the right to specialized and free care at all levels in a timely and preferential manner.

UNICEF

It is governed by the Convention on the Rights of the Child with the objective that these rights become enduring ethical principles and international codes of conduct for children. Its objectives focus on child survival and development, education and gender equality, health services, child abuse nutrition, children and HIV. In relation to the subject investigated he states the following:

Nutrition-related health problems can also be life-long harms. For example, diarrhea can impair fitness, growth and development
cognitive and, as a result, hindering later school performance. Also, diseases such as hypertension, obesity, diabetes and cardiovascular and pulmonary conditions often occur in early life experiences, even before birth. (UNICEF, 2017)

The national development plan 2017-2021

Axis 1: Rights for all throughout life
Goal 1: Ensure a decent life with equal opportunities for all people
This Axis deals in a general way with the rights of Ecuadorians, including infants, for life, in the case of them refers to health, as expressed in the Goals of the same document. It has as Policy 1.3. - Combat malnutrition and promote healthy living habits and practices, generating mechanisms of co-responsibility among all levels of government, citizens, the private sector and actors in the popular economy and solidarity; and, as Targets to 2021: Reduce the infant mortality rate by 9.1 to 8.1 deaths per 1,000 live births. (SENPLADES, 2017)

2. UNESCO

The United Nations Educational, Scientific and Cultural Organization is a specialized agency of the United Nations that contributes to world peace and security through education, science, culture and communication. With regard to the subject under analysis, its objectives include:
Goal 2. Improving nutrition: The harmful consequences of child malnutrition can be avoided through education. (UNESCO)
Goal 3. Health and well-being: through education, women can recognize the first symptoms of a disease in their children, seek advice and take action to cure it. If all women in poor countries completed primary school, infant mortality would be reduced by one sixth, saving nearly a million lives each year. If they all had secondary education, it would be cut in half, saving three million lives. (UNESCO)

The WHO tells us about good nutrition

3. WHO (World Health Organization)

Food according to WHO.-

This United Nations organization specialized in managing policies for prevention, promotion and intervention in health at a global level, promotes healthy eating habits starting in the first years of life. Breastfeeding promotes healthy growth and improves cognitive development; It can also provide long-term benefits, such as reducing the risk of overweight and obesity and suffering from non-communicable diseases like diabetes. (WHO, 2015)

Among the Millennium Development Goals, WHO highlights:

MDG 4: Reduce child mortality

Target 4.A: Reduce by two thirds the mortality of children under 5 years between 1990 and 2015

Achieving the MDG on reducing child mortality will require more rapid expansion of key interventions that are effective and affordable.

WHO strategy, related to our research:

4.-Breastfeeding has long-term benefits, such as preventing type 2 diabetes, overweight or obesity, and better results in intelligence tests.

2.6 Research methods and techniques

Among the scientific methods used in this research we note: bibliographic, documentary and statistical mathematical because a bibliographical research is carried out for the theoretical framework through the search in various primary and secondary sources, International figures and data are then analysed and interpreted.

3.- Conclusions and recommendations

Because the obesity of students is related to nutrition and bad eating habits, it is important to know this topic and give the following conclusions for their growth, physical development, good health and academic performance:

- Follow the international recommendations of WHO, UNICEF, accepted by the Ministry of Public Health of Ecuador.
- At the beginning of life, breast milk should be fed because it is associated with fewer chances of obesity, allergies and diabetes in the long term. (Mundo, 2013) (Reza, Franco, Cayambe, & Calderón, Eumed, 2018)

- Inform school authorities if the child has diagnosed obesity as soon as possible, providing a medical report with phone numbers and directions to use if necessary.
- Prevention of the disease, which involves awareness in the population about exercise and healthy eating.
- Do not eat foods high in calories and low in micronutrients.
- Enhancing physical activity.
- Reduce the consumption of extra salt to the natural one that contains each food.
- Reducing the intake of sugary drinks, especially in children.
- Consume natural products that contain potassium.
- Decrease the number of hours spent watching TV and the internet to avoid being sedentary.
- Skip fast food.
- Encourage groups of mothers to share their experiences and educate the younger ones on how to deal with an obese child.
- Control school bars for the distribution of adequate food to children.
- Publicize the results of this research and disseminate recommendations on the benefits of proper nutrition for children to prevent obesity so that their academic performance is not affected.

Glossary.-

Anorexia is an eating disorder characterized by abnormally low body weight, intense fear of weight gain and distorted perception of weight.

Chronic.- (disease) Suffering for a long time.

Obesity.-Pathological condition characterized by excess or excessive and general accumulation of fat in the body.

Obesogenic Environment.- It is called so that which favors the development of obesity or stimulates habits and behaviors that lead to excess weight. That is, it is the set of factors around us that can lead to overweight or obesity.

Heart disease.- Heart disease.

Musculoskeletal.- Related to muscles, bones, tendons, ligaments, joints and cartilage.

Hypercaloric.- a mixture of macro and micronutrients together in a single solution.

Hypoglycemia.- Decrease in the normal amount of glucose in the blood; causes dizziness, tremors and headache, among other symptoms.

Dyspnea.- Sensation of shortness of breath.

Streaks.- Small, narrow and elongated cleavage that is marked on human skin when it has been stretched much and quickly

Edema.- Presence of an excess of fluid in some organ or tissue of the body that, sometimes, can offer the appearance of a soft swelling.

Varice.- Permanent dilation of a vein.

Dyslipidemia.- (hypercholesterolemia and/or hypertriglyceridemia) is a set of pathologies characterized by very high blood lipid concentrations.

Hypoglycemia.- Decrease in the normal amount of glucose in the blood; causes dizziness, tremors and headache, among other symptoms.

Ostomy.- is a surgical procedure in which an opening (stoma) is made for a hollow organ. There are several cases: 1a. At the level of the digestive system in the abdominal wall (duodenostomy, yeyunostomy, ileostomy and colostomy) to release intestinal contents.

Malabsorptive.-Intestinal malabsorption syndrome is the difficulty or loss of the small intestine's ability to normally absorb one or more nutrients during the digestion process.

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