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Original Research Article

Effect of lifestyle and socioeconomic status in type I diabetes in children

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ABSTRACT

Background: This study describes the effect of life style and socioeconomic state in children diagnosed with type 1 diabetes mellitus. The study was conducted in different health centers in Mexico, to clarify and describe relationship between life style, socioeconomic state and occurrence of diabetes type I.
Methods: The sample was 65 children with similar characteristics, they agreed to participate in the study, from July 2012 to September 2012. IMEVID was used to describe effect of lifestyle and socioeconomic state.
Results: 29.23% has been applied to sustain a "good lifestyle", which corresponded to a "healthy" rating, but highest concentration were in an inappropriate lifestyle (70.77%), classified into two classifications 56.92% was "moderately healthy" and only 13.85% was "unhealthy" behavior. Significant correlation between the styles of life evaluated and considered dimensions, except with the emotional state was found. Relationship existed between the style of life evaluated and perceived by patients.
Conclusions: Gradual clarification of the concept known as "lifestyle" has enabled the health sciences resize the notion of the state of "health and disease"; results are consistent with other studies conducted in Mexico.

Keywords: Children, Type I diabetes, Life-style, Socioeconomic state

INTRODUCTION

Diabetes is a chronic, non-communicable disease, with hereditary predisposition and environmental factors that favor its incidence. It is one of the largest causes of morbidity and mortality. Its frequency has been increased worldwide due to increased prevalence obesity and lack of physical activity; therefore, the correct composition of the diet is important to maintain optimal blood glucose and avoid chronic complications.

Nutritional medical treatment is decisive for patients with diabetes. In type 2 diabetes, this can be the only form of treatment. In other cases of diabetes tighter control is needed and hypoglycemic drugs or insulin are required. Lifestyle modifications are also recommended.[1]

Type 1 diabetes is an absolute insulin deficiency for total lack of its production. It is the result of a defect in the beta-pancreatic cells (islets de Langerhans); may be related to the cortex adrenal, thyroid, anterior pituitary or other organs.

The immunologically mediated form is usually starts in children or young adults, but can develop at any age. Intensive treatment to achieve glucose concentrations close to normal delays complications or mitigates them. It is essential to prevent hypoglycemia, especially in the very young, the elderly, in those with disease end-stage renal disease and those with vision loss.[2]

The American Diabetes Association (ADA) recommends three to four consultations of nutritional medical treatment throughout the first three months of treatment, and after at least one to two consultations a year.[3]

Type 1 diabetes mellitus (DM 1) constitutes one of the main health problems of the world pediatric population, being the most frequent chronic endocrinological disease in childhood. There is a global increase in psychological problems in the pediatric population that suffers from it, 36% present some psychological difficulty during the first year, especially depression and anxiety, compared to non-diabetic youth.[3]

The American Academy of Pediatrics has indicated that a purely medical treatment of the disease is insufficient, being necessary, in addition, the improvement of the well-being of the child or its quality of life related to health, the enhancement of its adaptive capacities and its development and transition to a healthy and productive adulthood.

Our objective was to study the effect of lifestyle and socioeconomic state in DM 1 of children and adolescents diagnosed with DM 1, with special emphasis on the associated psychopathological factors.

METHODS

The study population consisted of 65 participants, who had very different characteristics, similar in relation to the diagnosis of DM 1.Regarding research, it was descriptive and transversal, whose purpose was to recognize the lifestyle and socioeconomic state of patients with DM 1 who attended the control of disease in different urban health centers of the metropolitan area of Monterrey, Nuevo León, Mexico, during the period of July 2012 to September 2012.

Inclusion criteria included children participants already diagnosed with DM 1 who agreed to participate in the study. Exclusion criteria involved people with refusal of participation, adults and non-diabetics.[17]

The evaluation was carried out with the IMEVID instrument. This instrument includes eating practices, physical activity, knowledge about the disease, tobacco and alcohol consumption, emotional state and adherence to treatment. Cataloging of patients, regarding their lifestyle, it was carried out according to the following numerical progression: 100-75, 74-50, 49-25 and 24-0, which were designated in two categories with four classifications: a good style of life, which represents healthy behavior; inappropriate lifestyle, which involves moderate behaviors healthy, unhealthy, and unhealthy, respectively. After the evaluation, it was related to the perception of the lifestyle contributed by the patients, by questioning how they perceived their lifestyle, whether it was very healthy, healthy and unhealthy.

This instrument consisted of 25 questions, which covered different dimensions with three options to answer, with point estimates whose values were 4, 2 and 0 points: the highest value corresponds to the best evaluation condition and the lowest, to the worst evaluation state. This instrument included eating practices, physical activity, and knowledge about the disease. Regarding their lifestyle, it was carried out according to the following, which were designated in two categories with four classifications: a good style of life, which represents healthy behavior; inappropriate lifestyle, which involves moderate behaviors healthy, unhealthy, and unhealthy, respectively. After the evaluation, it was related to the perception of the lifestyle contributed by the patients, by questioning how they perceived their lifestyle, whether it was very healthy, healthy and unhealthy. For the processing and analysis of the information collected, the statistical package for the social sciences (SPSS) v.21 program.

RESULTS

Sociodemographic characteristics and health conditions of the study population. A total of 65 patients participated in the present study: the highest percentage of them are female.

Regarding the health peculiarities of the participants, the highest percentage were diagnosed overweight, the participants mostly stated that the time of evolution of the disease was less than 3 years and the type of treatment that was repeated the most for its control was the use of insulin injection.

Lifestyle assessment

Of the population studied, 65 participants, 29.2% (f=19) stated that after having applied the instrument, claimed to experience a "good lifestyle" corresponding to a "healthy" rating, while The highest concentration was located in an inappropriate lifestyle (f=46, 70.7%), with two classifications of the participants; 56.9% (f=37) presented

a “moderately healthy” behavior and only 13.8% (f=9) of these it was classified as “unhealthy”, amount that indicates that the population studied has an average lifestyle classified as "moderately healthy".

Food practices

Regarding the eating practices carried out by the research participants, it is revealed that 36.92% (f=24) have a “good lifestyle” and a “healthy” behavior pattern, while that 63% of the participants classified themselves as having an “inadequate lifestyle”. In this regard, it was observed that 41.5% (f=27) of the participants practice “moderately healthy” habits, while 21.5%, (f=14) corresponds to an "unhealthy" mode.

Physical activity

Regarding the physical activity performed by the patients in the study, the inquiries showed that the 20% (f=13) have a “good lifestyle” and a “healthy” classification, however, 80% (f=52) shows an “inadequate lifestyle”, which is reflected in 47.6% (f=31), “moderately healthy”; a 20% (f=13), is "unhealthy" and 12.3% (f=8), "unhealthy" a result that evidences a lifestyle average considered "moderately healthy" for that population.

Table 1: Relationship between the assessed lifestyle and the perception of the patients' lifestyle.

IMEVID	Sperman correlation	Significance
Eating habits	0.78	<0.01
Physical activity	0.352	<0.01
No tobacco use	0.289	<0.05
No alcohol consumption	0.494	<0.01
Knowledge about the disease	0.642	<0.01
Emotional state	0.229	0.066

Knowledge about the condition

Regarding going to groups or professionals to obtain more knowledge about the disease, it was found that 30.7% (f=20) of the research participants have a classification of “healthy” in the context of a “good lifestyle”, while 26.1% (f=17) are “moderately healthy"; while in the condition of "unhealthy" and "unhealthy" are 23% (f=15) and 20% (f=13) of the participants respectively that, together, add up to 69.2% (f=45) within an “inappropriate lifetime" surveyed as lifestyle average "unhealthy", in other words, lacks interest in learning about their condition.

Relationship between the assessed lifestyle, socioeconomic state and the perception of the patients' lifestyle. When examining the association between the evaluated lifestyle and the appreciation of the participants about themselves in relation to the disease, a significant relationship was identified, so that infers that the research participants have an adequate perception of their health status in terms of to the evolution of the disease and changes in their behaviors.[3-4]

Table 2: Distribution of the assessed lifestyle versus the perceived lifestyle.

Lifestyle evaluated	Not healthy (%)	Mod-erately healthy (%)	Healthy (%)	Total (%)
Not healthy	4 (6.1)	1 (1.5)	4 (6.1)	9 (13.8)
Moderately healthy	2 (3.0)	8 (12.3)	27 (41.5)	37 (56.9)
Healthy	1 (1.5)	0 (0.0)	18 (27.6)	19 (29.2)
Total	7 (10.7)	9 (13.8)	49 (75.3)	65 (100)

DISCUSSION

With the gradual clarification of the concept of "lifestyle", the notion of the state of "health-disease" manifested by a human being from the health sciences, apart from allowing to recognize that this binomial is surrounded by determinants that establish said condition in a particular way.[4]

Undoubtedly, the foregoing favors a better understanding of these non-biological factors that mediate this relationship and that allow to clarify and interpret the structural variation associated with the process of seeking the health for each person; consequently, lifestyle results from a network of decisions of a personal order carried out consciously, which have interference from frankly in the health of the person.[4-6]

In particular, in people diagnosed with DM 1, the lifestyle is constituted in a revealing variable of successful adherence to treatment, which includes a series of therapeutic measures and others more related to behavioral patterns, as well as the recrudescence of symptoms. In this order of ideas, the population under study stated that they were mostly in an inappropriate lifestyle (70.7%), with a concentration mainly in the classification of “moderately healthy” (56.9%), which refers to the difficulties due to part of the participants to maintain a good lifestyle, which promotes adherence to treatment, with attitudes that allow them to overcome the factors of personal order that interfere, to successfully achieve a desired behavior and, in this case, an adequate and healthy lifestyle.[7] The results of the present investigation is compared with other studies carried out, from which it is observed that statistically agree in their behavior with.[8-11]

When referring to disease, mention that in developed nations this adherence to treatment reaches values in the 50% of the cases, while in Mexico, studies carried out show an attachment of 54.2% and 65%, very similar to the present study in terms of adherence to treatment in 61.5% of the participants.[12,13] Then, with regard to the behavior of

the diabetic patients studied, of the significant correlation values between the lifestyle evaluated with the vast majority of the dimensions have been observed that participants implement positive changes in their lifestyle in order to own and maintain good health and avoid the chronic complications that arise and that mediate this pathology, which generally affect the quality of life of those who have it and shorten the expectation of life by worsening the functional prognosis of the patient and coping with consequences that can result in lethal consequences.

However, this does not happen with the emotional dimension, a particularity that, according to the authors, is it is due to a notable emotional stress to which diabetic patients are exposed; essentially because it's a condition that can shorten their life span and cause serious inconvenience, with symptoms of denial, discomfort, anger or depression.[14] The above, coupled with everyday situations, subjects and imposes an additional burden on the patient which, is called the mesosystem, the which considers the relationships of other environments in which the diabetic patient actively participates, such as the family, the labor field and what is related to the social environment; Such environments influence and exacerbate the condition of the suffering in terms of not having emotional stability; therefore, it is not related to lifestyle evaluated in this population.[15]

Regarding the dimensions of the assessed lifestyle, it should be mentioned that the main factors to be considered, according to the results expressed by the participants in the present study, they are related to eating practices, lack of physical activity and emotional state, so that they lead the patient to live "moderately healthy" practices. However, as regards the relationship with the knowledge of their disease, the lack or search of this knowledge about the disease is notorious, to the point that it places them in an "unhealthy" state. The foregoing is linked to the level of education that the primary school prevails incomplete, which places participants at risk that may aggravate their condition, given that they lack the abilities to receive the information and thus learn enough about the disease to create an interest that, gradually, leads them to a change in behavior and leads them to improve their lifestyle.[16]

Limitations

This study has limitation of sample size as it was only 65 participants also the short period of observation that was not enough to gain higher number of participants from control of disease in different urban health centers of the metropolitan area of Monterrey, Nuevo León, Mexico.[17]

CONCLUSION

The present study allows approaching the disease of DM 1 from several angles that constitute the dimensions of a lifestyle, so that it allows to know more about this condition from the actors themselves to better understand their positions, as well as the attitudinal changes that would imply a better restitution of health and social integration of those who suffer it. Finally, it must be recognized that clinically and socially, predisposing or precipitating factors for the adoption of new positive behaviors or the negative accentuation of others that visibly already existed established in patients with DM 1.

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