

Impact of the Life Reform Program On the Prevention of Liver Steatosis in Teachers from the City of Chachapoyas

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Abstract

The objective was to evaluate the impact of the life reform program in the prevention of hepatic steatosis in teachers and administrators of this population. The approach was quantitative, quasi - experimental methodology with a single group with pre and post test, with a representative sample of 64 teachers from regular basic level educational institutions in the city of Chachapoyas Amazonas network. The results revealed that the life reform program showed a decrease in the levels of hepatic steatosis, which is why its affinity in preventing it is inferred; in the teachers of the three educational institutions of the City of Chachapoyas, Amazonas - Peru: San Juan de la Libertad (P = 0.006), Seminario Jesús María (P = 0.01) and Virgen de Asunta (P = 0.01) with a 95% confidence, denoting the changes before and after the intervention. It concludes with the proposal of the Rainbow Cosmic Care Theory, which integrates a collaborative, multidisciplinary work of sectorial gear to achieve integral human health with a healthy environment in these times.

Keywords: Impact; Prevention; Hepatic Steatosis; Program

Introduction

The world population is growing drastically, which has increased urbanization processes and migratory movements [1]. These trends will have repercussions for future generations, as well as people's quality of life. The UN has proposed millennium objectives in objective 3 - Health and Well-being, to achieve development and guarantee a healthy life and seek well-being, giving higher priority to prevention and thus reducing deaths from non-communicable diseases, parallel to this the implementation of educational activities for health care [2]. However, there is an increasing prevalence of hepatic steatosis disease worldwide, from 15 to 25% in the general population [3].

Guthold in a study with 358 surveys in 168 countries, with 1.9 million participants, states that the age-standardized prevalence of insufficient physical activity was 27.5%; women being the ones

who are more predisposed to sedentary life [4]. The worldwide prevalence of non-alcoholic fatty liver disease has been estimated at 20-30%, but the prevalence in the Americas is unknown due to the lack of epidemiological studies; however, some studies in Latin America show a prevalence variable, that ranges between 17% and 33.5% [5].

At a national level, an investigation in overweight and obese patients who underwent liver biopsy found a prevalence of non-alcoholic steatohepatitis of 44% [6]. Cárdenas., *et al* however, stated that they did not have large studies on the prevalence of fatty liver in the general population, although some studies have shown a prevalence of metabolic syndrome of 17-25.8% [7].

In Peru, the first, hepatic steatosis is one of the causes of effective demand for hospitalization and one of the main causes of out-

patient consultation registered in the Gastroenterology Service of the Edgardo Rebagliati Martins EsSalud National Hospital [8]. According to García, there is a high increase of fatty liver cases; being 99% identified with obesity, and 70% with diabetes condition. Affirming that, if inadequate eating habits and sedentary lifestyle are maintained, the projection for the year 2030 will be that the vast majority will suffer from liver diseases with multisystem characteristics [9].

There is some research related to the study variables. In Madrid Spain, Sahuquillo in a sample of 100 patients, 77% had mild, moderate and severe hepatic steatosis, being predominant in men in 82%, more than in women [10]. Also, Cortés, *et al.* in his research whose population of care was 25, 747 over 14 years; found a 1.51% prevalence of hepatic steatosis, reaffirming that there is a significant association between obesity, diabetes mellitus and metabolic syndrome [11]. Ullah, *et al.* in their findings affirm that the genetic and epigenetic routes, the style of Sedentary life, sleep, and high-energy diets play a key role in the pathogenesis of hepatic steatosis. Likewise, oxidative stress, liver inflammation, mitochondrial dysfunction, unbalanced pro-inflammatory cytokines, fibrosis, insulin resistance, hyperinsulinemia, plasma free fatty acids, fatty liver and hepatocyte injury are pathologies that support the development of non-alcoholic hepatic steatosis and fibrogenesis [12].

In Chachapoyas, in a sample of 45 workers, he found a higher prevalence of metabolic syndrome in women between 30-59 years of age, reaffirming that the abdominal girth criterion was 97.78%, high-density lipids 82.22%, glucose 28.89%, triglycerides 95.56% and arterial pressure 4.44% revealing that the determining risk factors were nutrition and diet of said workers [13].

There are health policies framed in the first level of care that emphasize preventive promotional activities for people's health care. The social health insurance implemented the life reform program, which is based on an early and timely diagnosis of pre-morbid metabolic syndrome, framed in the promotion of health and prevention of the appearance of non-communicable diseases, seeking to promote healthy lifestyles. at the family, work and socio-cultural level, considering health education as a vehicle [14].

In this context, this research was carried out, the objective of which was to evaluate the impact of the Life Reform Program on the prevention of hepatic steatosis in teachers of this study population.

Material and Methods

Quantitative study, quasi-experimental design of a single group with pre and post test [15,16]. The population consisted of 225 teachers from three public educational institutions: San Juan de la Libertad, Jesús María and Virgen de Asunta Seminary of Regular Basic Education, Chachapoyas secondary level [17]. The sample was represented by 64 teachers, who were chosen because they met the inclusion criteria: that they are lucid oriented in time, space and person assigned to the EsSalud system, appointed work condition, hired and/or location of services that they present or not diagnosis of metabolic syndrome.

The study had the approval of the Graduate School of the National University Toribio Rodríguez de Mendoza de Amazonas and the signing of the Informed Consent of the teachers who voluntarily accepted to be part of the application of the renewed life reform program, in addition, the principles ethics in the entire process of scientific research.

Techniques and instruments for data collection

For the independent variable, a life reform program approved by the Higos Urco EsSalud Base Hospital was used, which is based on three fundamental pillars called: Terrestrial, human and heavenly nutrition, focused on a healthy diet, relationship between human beings and with the nature, which allows eliminating risk factors and living healthily, in order to lead the insured to a better quality of life. This intervention lasted 6 months included 19 activities of which 7 were protocol sessions (coordination and awareness, signing the alliance, screening, discharge medical consultation, re-evaluation, discharge consultation and reflective meeting) and 12 workshops distributed on topics such as: knowing my reality, life project, healthy eating, physical activity, identity and self-esteem, working relationships, values and family, spirituality and health, interpersonal relationships, proper stress management, integration and support networks, rest and free time on Fridays from 5:00 p.m. to 7:00 p.m. at night. The methodology used was demonstrative and participatory.

For the dependent variable, the survey technique was used and the instrument was the questionnaire card, made up of 20 items that integrated 3 dimensions: biological, socioeconomic, preventive factor (habits). The validation was done through the judgment of experts whose opinions and recommendations served to improve

the instrument, said validity was determined through the binomial distribution test, whose calculated value (V_c) was 10.625 exceeding the theoretical value (V_t) of 1.64, indicating that the value was adequate. The reliability of the instrument was also determined by applying a pilot test to 10% of the sample that is equivalent to 20 teachers who work in the educational institution of Regular Basic Education María Auxiliadora who had similar characteristics to the study sample but were not part of the study. The reliability values were determined by Cronbach's Alpha and reached a value of 0.8887, which indicates a strong reliability.

The data were processed in SPSS software version 23, Microsoft Word and Excel, the results were shown in frequency frequency tables and in figures of boxes and whiskers. With 95% confidence and 5% error, these results obtained showed the impact of the program between before and after the stimulus was applied on the teachers of the educational institutions that were part of the sample. The statistical test that significantly verified the impact of the intervention on teachers was willcoxon, after a Kolmogorov Smirnov normality test (add what was found), in this case of paired sample.

Results

The teachers who were part of the study fluctuate between the ages of 40 to 59 years, 31 women and 33 men; They had a named, hired job status and/or location of services regardless of whether or not they had a definitive diagnosis of metabolic syndrome.

The educational program had a highly significant impact on the decrease in the levels of hepatic steatosis, which is why its affinity in the prevention of it is inferred; in the teachers of the three educational institutions of the City of Chachapoyas, Amazonas - Peru: San Juan de la Libertad ($P = 0.006$), Seminario Jesús María ($P = 0.01$) and Virgen de Asunta ($P = 0.01$).

Discussion

This research demonstrated the impact of the highly significant life reform program on the prevention of hepatic steatosis ($P = 0.001$) in workers of secondary educational institutions in Chachapoyas (Figure 1). There are similarities with Moigan, *et al.* when they state that after two months of intervention they observed significant improvements in all the variables of the health beliefs model and in knowledge within the intervention group ($P < 0.001$) [18]. In addition, it was evidenced a significant and prominent reduction in liver enzymes in the intervention group compared to controls. Similarly, the ultrasound findings revealed a significant improvement in the intervention group versus the control. There are also Cortes and collaborators; when they reveal that increasing the quality of the diet is associated with less fat accumulation in the liver [19]. Vigotsky mentions that learning is a social activity for the production and reproduction of knowledge through which the human being assimilates the social modes of interaction with his fellow men, under a psychological and educational analysis, the transformation of relationships is promoted. between society and nature. In this regard, it is inferred that when building knowledge in health care, it will be evidenced through a positive impact on the improvement of the person's lifestyles [20]. From this research it can be inferred that in the population studied harmful habits have gradually reverted to healthy ones; such is the case in the practice of physical exercises, consumption of fruits and vegetables. The scientific contribution of the present study is of a practical nature, because it is fundamentally addressing preventive measures for a better management of the disease called hepatic steatosis through the life reform program, taking into account new, healthier lifestyle habits that help reduce the calorie intake consumption; increasing the practice of physical exercises in order to gradually and progressively reduce a person's weight.

Likewise, the person conceptualized as a biopsychosocial spiritual being and also linked to integral responsibility, encourages and encourages helical and gear health circles starting from the basic to

Figure 1: Effect of the life reform program on the prevention of hepatic steatosis in teachers of Educational Institutions, Chachapoyas, 2019.

the complex and/or vice versa in each of the levels of education in their environment. (initial, primary, secondary, higher), with an intercultural approach, participatory community that anchors evaluation as its ally, full of opportunities, comprehensive satisfaction with decision-making power, which objectively evolves until achieving changes in lifestyles in the different age groups.

This description alludes to the proposal of the theory called Cosmic - Rainbow (Figure 2), which constitutes a multidisciplinary epistemological contribution, considering the socioeconomic aspect, transport and communications, vulnerable populations,

production, economy and finance, defense, culture, environment, education, health, development and social inclusion, agriculture and irrigation, energy and mines, foreign trade and tourism, housing, construction and sanitation, work, employment promotion, foreign relations, justice and human rights, economy and finance, exercising governance, citizenship and empowerment of the nursing professional; whose collaborative and committed work at all levels, transforms the person, family and community with healthy environments that allows increasing life expectancy at birth, generates human and social capital, evidenced in a quality of life of total well-being.

Figure 2: Proposal of the Rainbow Cosmic Care Theory.

Conclusions

- The results showed that the life reform program had a significant impact on hepatic steatosis in teachers and administrators ($P = 0.001$).
- Likewise, it had an impact on the biological aspect ($P = 0.002$) with some modification of eating habits ($P = 0.001$), denoting significant changes before and after the intervention.
- Teachers and administrators have demonstrated healthy lifestyles evidenced in certain improvement habits such as physical exercise, consumption of fruits and vegetables, gradually unlearning those that are harmful, such as the consumption of alcohol and tobacco.

- For the benefit of the person, family and community, the rainbow cosmic care theory is proposed, in order to obtain a synchronous sustainable environment at all levels with continuous improvement feedback, in public and private institutions generating current practices of a modern society that helps us move to a new worldview.

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