Behaviors related to chronic non-communicable diseases development in university students

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Abstract

Introduction: The scientific literature has reported the trend of the impact of non-communicable diseases on public health and therefore the investment of resources that infer in the development of a country.

Objective: This study's objective was to identify the presence of behaviours associated with developing chronic non transmissible diseases in university students as a population susceptible to the modification of this trend.

Materials and methods: Cross-sectional descriptive study was carried out on a sample of 375 university students. The STEPwise method was applied to identify risk factors associated with the development of chronic non transmissible diseases, in relation to behavioural measurements identified by means of STEP1. Descriptive statistics and bivariate analysis were applied to determine possible relationships between the variables studied.

Results: Prevalence of tobacco consumption was 7.5%, frequent alcohol consumption was 91.5%, and fruit consumption was 96.3%, while vegetable consumption was 95%. Only 48% of the sample practiced intense physical activity. A relationship was found between the male sex, with the consumption of tobacco and the practice of low physical activity.

Conclusions: Behaviours associated with chronic non transmissible diseases such as alcohol and tobacco consumption were identified in university students.

Keywords: Physical activity, smoking, fruit and vegetable consumption, alcoholism, university students.

Introduction

Chronic non transmissible diseases (CNTDs) represent one of the most significant challenges of the 21st century due to their social, economic, and human repercussions, generating a negative impact on the poor and vulnerable population, which affects the sustainable development of a country from the point of view of its productivity (1). Similarly, the scope of sustainable development goals is limited by reducing premature deaths from NCDs by 33% by 2030. (2)

The risk factors for CNIDs are mostly modifiable. These risks are associated with environmental factors, psychosocial factors, lifestyles, behaviours, and habits acquired in adolescence and maintained during university life, (3) behavioural and behavioural risk factors such as smoking, alcohol and unhealthy diets and physical inactivity (4) which are in a first place (5) followed by an increase in the trend to unhealthy diets based on the high consumption of foods rich in saturated fats, trans fatty acids and low consumption of fruits and legumes that are acquired in adolescence and in the context in which they develop (6) prevalent in the university population. (7)

According with Patiño et al.(8) low levels of physical activity, obesity, smoking and metabolic syndrome are the most important cardiovascular risk factors in adolescents. Alcohol consumption is associated with the risk of developing important NCDs such as liver cirrhosis, some types of cancer and cardiovascular diseases. (9)

According to statistics from the World Health Organization in Colombia show that 71% of deaths are caused by non-communicable diseases, 28% cardiovascular diseases, 17% cancer, 7% chronic respiratory diseases, 3% diabetes and 16% other NCDs. (10)

This paper aims to contribute to the discussion on this topic, in order to identify risk behaviours or threats that can be reduced or prevented from the university context.

Materials and methods

Design: A cross-sectional descriptive observational study, developed in university students of the city of Neiva Huila, Colombia during the period 2014-2015, with non-probability sampling.

Population:

A total of 15,889 students from 5 universities were identified and enrolled in the first semester of the academic year. This criterion was determined taking into account that the transition from secondary school to higher education implies a significant change in life, including unfavourable changes in behaviours related to eating habits, health and weight gain for many students. (10), (7)

The study selected 375 students who met the following inclusion criteria: be 18 years of age or older, be enrolled in any face-to-face program at public or private universities in the city of Neiva, be in first semester of school and agree to participate in the study by signing informed consent and completing the STEPwise questionnaire (Step 1 Behaviour Measurements). Students attending higher semesters and those who reported being diagnosed with a chronic non-communicable disease were excluded.

Instruments: The STEPwise method was used as a source of information, specifically the STEP1, which estimates the relationship of behavioural measurements for the monitoring of risk factors for non-communicable diseases, a validated and free-to-use tool of the World Health Organization (11). This tool covers information in the main section on: tobacco consumption, alcohol consumption, diet, physical activity in leisure time.

At the procedural level only the basic questions of the instrument were taken into account: tobacco consumption, alcohol consumption, physical activity in leisure time.

The instrument was applied by students of the Physiotherapy program belonging to the research hotbed Visionaries of Science of the María Cano Neiva University Foundation who were trained for its application, after performing a pilot test.

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Statistical analyses: The data was processed in the SPSS version 21 statistical package, descriptive statistics and bivariate analysis with the calculation of statistical Chi-square and OR (95% CI) to determine possible relationships between the variables studied.

Ethical considerations

The research was approved by the research committee of the María Cano University Foundation Act # 001 with code assignment # 01300416-2014-311.

The general principles of the Helsinki Declaration were taken into account by protecting the integrity, privacy and confidentiality of the participants, taking into account that the research had an eminently scientific purpose (12), and was also framed within the guidelines of resolution 008430 of 4 October 1993 in the category of research with minimum risk (13), with regard to the participants an informed consent was drawn up which explained the objectives of the research.

Results

Of the total number of subjects in the study sample (n=375), 242 (64.5 %) were female. The median age was 20 years. As for the socioeconomic stratum, most of the participants were located in the low and medium low stratum, belonging to a subsidized health regime and health and engineering programs.

There was a prevalence of tobacco consumption of 28 (7.5%), alcohol consumption in the last year 343 (91.5%), and 267 (71.2%) in the previous 30 days.

361 (96.3%) university students consume fruit, 356 (94.9%) consume vegetables, and 180 (48%) do physical activity in their free time (Table 1).

Table 1. Behaviors related to chronic non transmissible diseases in university students.

	n	%
Do you currently smoke any tobacco products?		
Yes	28	7,5%
No	347	92,5%
Do you smoke daily?		
Yes	23	6,1 %
No	352	93,9 %
Have you consumed any beverage containing alcohol in the last 12 months?		
Yes	343	91.5%
No	32	8,5%
Have you consumed any drinks containing alcohol in the last 30 days?		
Yes	253	67,5%
No	122	32,5%
Fruit consumption		
Yes	361	96,3%
No	14	3,7%
Consumption of vegetables		
Yes	356	94,9%
No	19	5,1%
In your free time, you practice intense physical activity		
Yes	180	48,0%
No	195	52,0%
In your free time you practice some physical activity of moderate intensity		
Yes	204	54,4%
No	169	45,1%

Source: Own source

In the bivariate analysis, a relationship was identified between the male sex, tobacco consumption (OR 4.3; 95% CI 1.89-9.83), and physical activity practice (OR 3.03; 95% CI 1.94-4.7) and an inverse relationship with the variables fruit consumption (OR 0.13; 95% CI 0.038-0.508), vegetable consumption (OR 0.179; 95% CI 0.063-0.51) (Table 2).

«As for the socioeconomic stratum, most of the participants were located in the low and medium low stratum, belonging to a subsidized health regime and health and engineering programs. »

Table 2. Behaviors related to chronic non transmissible diseases in university students, according to sex.

	Tobacco consumption		OR	Confidence interval	Chi square Pearson
Sex	Yes	No	4,3	1,89- 9,83	
Male	19	233			13,87, gl 1, *p* 0,000
Female	9	114			
Total	28	347			
	Fruit consumption		**OR**	**Confidence interval**	**Chi square Pearson**
Sex	Yes	No	0,13	0,038-0,508	11,8, gl 1, *p* 0,001
Male	122	11			
Female	239	3			
Total	361	14			
	Vegetable consumption		**OR**	**Confidence interval**	**Chi square Pearson**
Sex	Yes	No	0,179	0,063-0,51	
Male	119	14			12,7, gl 1, *p* 0,000
Female	237	5			
Total	356	19			
	Intense physical activity		**OR**	**Confidence interval**	**Chi square Pearson**
Sex	Yes	No	3,03	1,94- 4,7	25,03, gl 1, *p* 0,000
Male	87	46			
Female	93	149			
Total	180	195			

Source: Own source

Discussion

From this study the presence of behaviours associated with the development of NCD was described in a group of university students. In 2008, the World Health Organization (WHO) established that physical inactivity, smoking, harmful use of alcohol and an unhealthy diet were the behavioural risk factors associated with NCDs (14), conditions that are not alien to the university population and that, on the contrary, make them vulnerable (15). In 2010, such unhealthy behaviours were responsible for approximately 21.5 million deaths worldwide, mainly inadequate eating habits (16).

For the present study, the presence of high alcohol consumption and low adherence to physical activity were the main risk factors associated with the development of NCDs. Contrary to the WHO established in 2008, low tobacco consumption was found, while other studies have recorded a

wide range of smoking prevalence in university students (17). In relation to gender, men are the biggest consumers, similar to what has been reported in previous studies (18), (19), (20). Low consumption in this study could be related to the promotion of tobacco-free environments and educational campaigns for the prevention and reduction of smoking in the university context.

As for alcohol consumption, a high prevalence was found, consistent with the results obtained in the National Study of psychoactive substance use in Colombia, the highest current alcohol use rate, of 49.2%, occurs among young people from 18 to 24 years, and with a value of 45.4%, consumption is defined among young people from 25 to 34 years (21). Salcedo et al., in 2011, found that 73% of university students consumed alcohol (22). Other research suggests that a significant proportion of breast and colon cancer cases may be attributable to excessive alcohol consumption (23). Harmful alcohol consumption in the university population represents a very delicate public health problem because it is associated not only with the risk of suffering NCDs, but also with liver diseases, mental and behavioural disorders (24) that increase the risk of university students to present harmful behaviours with a highly negative impact for their future, such as suicides, injuries, engaging in violent acts (traffic accidents, scuffles) and practicing unsafe sex (22); situations to which alcohol consumers are exposed.

Regarding the consumption of fruits, vegetables and vegetables was found a high percentage in their consumption, similar to the results reported by Restrepo et al (25). By contrast, studies on eating behaviours mostly highlight unbalanced macronutrient intakes and significant nutritional deficits of micronutrients in university students, due to the short time spent by young people on preparing healthy foods and the ease of access to "fast foods" (26), (27).

The results obtained in this study are encouraging, considering that the consumption of fruits and vegetables is considered as a protective factor for the development of non-communicable diseases and for the proper maintenance of the Body Mass Index (BMI) in university students (28).

Finally, it was found that most of the university students surveyed showed little physical activity in their free time, which is consistent with other studies on physical activity in university population worldwide. In the United States, levels of sedentary lifestyle in a study with college students registered 86.6% (29), while a meta-analysis of physical activity behaviours

in college students established percentages between 40% and 50% (30). With respect to gender, university women have lower levels of physical activity than men. This finding has been widely described by the scientific literature in the last decade (31), (17), (32), (15).

Deforche et al., in 2015, stated that low levels of physical activity in university students are the result of an age-related process, as they become less active as time passes in the transition between adolescence and adulthood. Thus, the level of physical activity of the last year of university is predictive of the level of physical activity after graduation and prevails during adulthood (10).

This research presents limitations of cross-sectional studies. In addition, sociodemographic characteristics such as academic and socioeconomic level were not included; which would have been important in the analysis of the results.

Conclusions

This study represents a contribution to the characterization of the lifestyles of university students. We found a high prevalence of alcohol consumption and, in contrast, a low prevalence of tobacco consumption and a low level of physical activity. These findings invite us to continue strengthening strategies to enhance the University as an environment that promotes the health of the educational community, which in turn mitigates the development of future complications and reverses the current upward trend in the development of chronic diseases.

Conflicts of interest: The authors refer not to have conflicts of interest.

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