

Public Health and Sustainable Development: training future generations in a developing country

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Introduction

The adoption of the Sustainable Development Goals [1] in the Colombian Caribbean region is a priority to achieve sustainable development and, specifically in the city of Santa Marta.



In Santa Marta are several factors involved as Social Determinants of Health that influence public health problems [2,3]:

1) In the houses, about 50% presented rationing of the water service and some presented *Escherichia coli* bacteria [4].



2) City has lack of vegetation [5] and high degree of population density which can be a conditioning factor for the progressive increase in temperature and for heat index [6].



3) Power outages are common; It is endemic region for dengue transmission [7,8].

4) Finally, in city was observed that having a university education level and having a medium or high socioeconomic stratum is directly related to the increase of the carbon footprint [9].

Therefore, in this paper is presented the curricular design of the course: Public Health and Sustainable Development Goals offered at the Universidad of Magdalena.

Materials and Methods

Curriculum content

The Public Health and SDGs course was offered to students in all areas of the University's knowledge. The course is taught for two hours per week for 16 weeks, and includes three topics in order:

- 1) **Identify the relationship between sustainability and health;**
- 2) **Knowledge of the SDGs and their global agenda;**
- 3) **and argue for healthy living and sustainable development.**

Students who received the course

In this first course, **55 students attended the areas of: nursing, psychology, engineering and education;** including an exchange student from Mexico. The students were divided into two groups, each group with a professor different, but with the same topics.



Pedagogical tools

The students had access to all the information via virtual through the Blackboard platform.

For the first issue of identifying the relationship between sustainability and health, such as: operation of the Colombian social security and health system, process for requesting a medical appointment and its inconveniences, concepts of sustainability and its application to wellness and health.

For the second topic, knowledge of the SDGs and its global agenda, information was presented based on the UN website (<https://www.undp.org/content/undp/es/home/sustainable-development-goals.html>) and the Sustainable Development Report 2019 report (<https://sdghub.com/project/sustainable-development-report-2019/>).

In addition, scientific evidence was analyzed in relation to the effects on public health due to air pollution, heat waves, drought, lack of drinking water and current climate change; And topics such as access to renewable energy and desalination of seawater for human consumption were discussed.

In the third topic, arguing for healthy living and sustainable development, students were assigned a workshop describing a healthy and sustainable city.

Evaluation method

Oral workshops and group written reports, participation in blogging through Blackboard, and a final report of a topic selected by them were carried out, the report addressed the relationship between public health and SDG, the written report was in short paper format and was guided by the professor. All work after evaluation received a feedback from the professor.

Results and Discussions

This was the first time that the Public Health and SDG course was offered at the University of Magdalena. Analysis of some SDGs and their goals such as: #3 Good health and well-being #4 Quality education, #6 Clean water and sanitation, #7 Affordable and clean energy, #11 Sustainable cities and communities, and #13 Climate action. It can be concluded that the students achieved a first level of knowledge in the relationship between public health and the SDGs.

This work identified that there are three main environmental problems and possible solutions at the city of Santa Marta:

1) The lack of public service of drinking water for human consumption [4], and possible solution is desalination of seawater for human consumption

2) Continuous increase of high temperatures [6], and possible solutions are construction of houses adapted to the tropics, adequate air circulation systems inside houses, and use of solar panels for avoid the unique dependence on hydroelectric power

3) Th lack of vegetation [5,6] and possible solution is an adequate territorial organization plan for urban growth based on green spaces areas [5,6].

In this way, new buildings based on green buildings [10], must generate an impact on public health, guaranteeing a healthy urban environment [11,12]. In Santa Marta, the university must have a central role as an integrating axis, promoting healthy and sustainable behavior, and work in network between educational, business and political institutions.

Conclusion

Students from different academic programs approached the knowledge of public health and proposed ideas to promote the development of a healthy sustainable city.

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