

쿠바 시엔푸에고스 건강 도시 프로젝트

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Healthy City Project in Cienfuegos, Cuba

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Objectives: The World Health Organization's Healthy City Project was established to increase the health commitment of citizens in urban settings and to improve deteriorating health conditions. Cuba's Cienfuegos city introduced the "Healthy City Project", adapting the concept with projects based in primary healthcare. The study aimed to review the implementation of this project in Cienfuegos City, Cuba. **Methods:** Cuba's Healthy City Project was reviewed by analyzing the experiences of Cienfuegos city. Relevant literature related to the implementation of the Healthy City Project was also reviewed and web-based gray literature was assessed, searched, and selected. Additionally, reports from Google Scholar and the Scientific Electronic Library Online were used to gather complementary information. **Results:** Initiated in 1989, the city of Cienfuegos used the Healthy City Project as a strategy for health promotion, lifestyle modification, and disease prevention. It undertook this initiative as the local government's plan to help reduce non-communicable diseases and the associated initiatives to transform the city into a healthier one has proven to be successful, especially by involving the community and engendering the government's political commitment. The Project has involved schools and hospitals to improve personal and community health. **Conclusion:** The Project has been proven effective by involving the community, yet there are some considerations, such as upgrading the evaluation system, that would improve the overall outcome of the Project.

Key words: Healthy City Project, Healthy Municipality, Health Promotion, Cuba

I. Introduction

A healthy city is one that is continually creating and improving its physical and social environment and its expanding community resources that enable

individuals to support each other in performing all life functions and developing to their maximum potential(Nutbeam, 1998). Being a 'Healthy City' depends on the city's commitment to improving its environment rather than its current health

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infrastructure. In 1978, World Health Organization (WHO) initiated a public health movement called "Health for All", which was based on the following six principles: reduce inequalities in health, emphasis on disease prevention, intersectoral cooperation including reducing environmental risks, community participation, emphasis on primary health care, and international cooperation(Werna, Harpham, Blue, & Goldstein, 1999). Based on this movement, the Healthy City Project(HCP) was initiated in Canada, with the creation of Toronto's Healthy City Program in the 1980s. This program inspired the development of the Urban Health Promotion Program in 1986. At about the same time, WHO started promoting HCP in Europe, as an integrated and multisectoral approach to address urban health issues, which aimed to create and improve the physical and social environment that impacts citizens' health. Worldwide, several other countries started joining this project and they were committed to transforming their cities' environment into a healthier and sustainable one.

In Korea, the HCP started as a local government level project that focused on four autonomous regional entities(Changwon city, Wonju city, Seoul and Busan Jingu) in 1998, by 2010, it spread to 55 cities(Nam, 2011). To pursue the goal of building a health-oriented city, Korea adopted the National Health Promotion Act. This Act stated(Article 1) that the project aimed to improve citizens' health by providing them appropriate knowledge about health, to enhance their awareness and develop a sense of responsibility for maintaining their health, and by creating an environment in which they can lead a healthy life spontaneously(Elaw.klri.re.kr, 2019).

To support the expansion of the HCP in Korea, the Korea Healthy City Partnership(KHCP) was established in 2006. It aimed to promote citizens' health, support sustainable city development, and improve quality of life. Thus, KHCP aimed to support cities implementing

the HCP. It is the official representative of Korea's HCP. It comprises 81 cities, which are full members, and 10 institutions(NGOs, national government agencies, private organizations), which are associated members(Korea Healthy Cities Partnership, 2019). At the city level, the planning department handles HCPs(Moon, Nam, & Dhakal, 2014).

In Cuba, the government maintains a special interest in investing in better policies and strategies to address health promotion, and HCPs constitute an interesting and useful approach to improve Cubans' overall health. The Healthy Municipalities Project started in 1989 as an initiative of the Cienfuegos city's local government, to improve citizens' quality of life after a preliminary study that revealed an increasing incidence of non-communicable diseases (NCDs). Other municipalities will later incorporate to the initiative boosting the expansion of the project through the island. On the other hand, Cienfuegos city started a health project to improve the city's health profile. This project is based on the guidelines of the HCP but implemented according to the city's capacities. Cuba has earned a reputation for achieving substantial advances in medicine and primary health care. Therefore, the implementation of such a HCP is expected to contribute to improving citizens' life and wellbeing.

Previous studies have pointed out the effectiveness of the Healthy Municipalities Project in Cienfuegos, as this city is the leader of the project in Cuba. The project is cited as an example of health promotion, disease prevention, and community intervention (Giraldoni, 2008), boosting new ways to promote community participation to solve health problems (Price & Tsouros, 1996). However, the component of the evaluation is still pointed out as one of the lacking parts of the Healthy Municipalities initiative in the country(Espinosa Brito, 2010).

Cienfuegos was the first city to implement the

healthy city project in Cuba and Latin America, starting in the late 1980s. The city took over the opportunity to provide a healthier environment to its citizens, implementing more actions reinforcing health promotion and disease prevention, using community participation as a means to involve the citizens in the local government's health policies. The project started shortly after the European community, following its guidelines but adjusting them to the characteristics and resource availability in Cienfuegos. The experiences from Cienfuegos shows how enhancing community participation and government support help to ensure the sustainability of the project.

The objective of this research is to revise the initiation, organization, implementation, and evaluation of the Healthy City Project in Cienfuegos, Cuba.

II. Methods

1) Literature review

This research is a literature review of the implementation of the Healthy City Project in Cuba. The study reviews relevant information related to the implementation and sustainability of the Healthy City Project in Cuba. The information was retrieved from academic articles, grey literature, and reports from Google Scholar and Scielo(Scientific Electronic Library Online). Materials were collected from the period between 1990 and 2017. Additionally, secondary data was used and collected from the WHO, Pan-American Health Organization(PAHO), and the Cuba Statistical National Office.

2) Data collection

To collect the data, the authors visited the City of Cienfuegos on August 20th, 2019 and attended a

meeting held in the city regarding the Healthy City Project. In addition, we interviewed with Dr. Alfredo, who is the ex-coordinator of the Global Project of Cienfuegos, to get details of the GPC.

3) Ethical considerations

This study received IRB review exemption from Exemption from Yonsei University Institutional Review Board(IRB). The IRB review exemption number is 1041849-201911-SB-165-01.

III. Results

1. Profiles of Cuba and Cienfuegos

1) Country profile of Cuba

Cuba is a unitary Marxist-Leninist one-party socialist republic located in the Caribbean Sea. According to World Bank statistics, Cuba has a population of 11.48 million people(2016) and a per capita Gross Domestic Product(GDP) of 87.13 USD (according to statistics from 2015) (Databank, 2019). Cuba is classified as a low-middle income country, but it has maintained a high health profile in contrast to its developing nation status, as evident from health indicators such as life expectancy(79.6 years) and mortality rates for children under 5 years (5 per 1000 live births). In terms of urbanization, Cuba experienced rapid urbanization after the 1950s. However, the process slowed down after the Revolution, mainly due to government policies (Ebanks, 1998). Nevertheless, the country has a high urban population with 77.3% of the population residing in urban areas. The population over 65 years is 1,6788,381 and the mean age is 40.1 years. Infant mortality is 4.3 and the maternal mortality rate (100,000 live births) is 39<Table 1>.

〈Table 1〉 Demographic profile of Cuba (2016)

| Indicator | Cuba |
|--|-------------------------|
| Total area | 109,884 km ² |
| Population, million | 11.48 |
| Population >65y | 1,678,381 |
| Population Density | 102 |
| Population median age | 40.1 |
| Life expectancy, years | 79.6 |
| Population growth, % (annually) | 0.1 |
| GDP, billion US dollar | 87.13 |
| GDP (per capita), US dollar | 7,602 |
| GDP growth rate, % | 4.4 |
| Urban population growth, % (annually) | 0.3 |
| GNI, billion US dollar | 74.97 |
| GNI (per capita), US dollar | 6,570 |
| Under-5 mortality rate (per 1000 live birth) | 5 |
| Infant mortality | 4.3 |
| Maternal mortality ratio (100,000 live births) | 39 |
| Urban Population, % | 77.3 |
| Urban Population, people | 8,877,624 |

Source. World Development Indicators Database(World Bank Group. 2019) / Cuba Statistical Yearbook, 2018

2) City profile of Cienfuegos

Cienfuegos is a city located at the central and southern part of the island of Cuba. It is the administrative city of Cienfuegos Province, covering an area of 356 km². It has a population of 176,244

people, and a high population density. The rural population is 11,094 people and the population over 65 years is 25,090. Infant mortality(1,000 live births) is 3.4, under five mortality(1,000 live births) is 4.5, while the maternal mortality is 55.5 〈Table 2〉.

〈Table 2〉 Profile of Cienfuegos city

| Indicators | Cienfuegos city |
|--|-------------------------------|
| Total area | 356 km ² |
| Population | 176,244 |
| Rural population | 11,094 |
| Population density | 499.4 persons/km ² |
| Life expectancy, Cuba* | 79.6* |
| Population>65y | 25,090 |
| Infant Mortality (1000 live births) | 3.4 |
| Under five mortality rate (1000 live births) | 4.5 |
| Maternal mortality | 55.5 |

Source. *National data. Oficina Nacional de Estadística e Información (National Office of Statistics and Information) (www.one.cu)

2. Overview of the Healthy City project in Cienfuegos city

The movement of Healthy Municipalities in Latin America is sponsored by the Pan American Health Organization, and it is based on the Healthy City model initiated in Canada and Europe in 1986. It is a proposal for local action to improve citizens' health and wellbeing. In Latin America, municipalities were chosen as the political division to implement the Healthy City model because the majority of the population did not reside in urban areas, which would render it less practical to implement such projects at the city level. In Cuba, implementation of the project at a lower level in the community was considered; however, it was realized that this would limit its political power, and its intersectoral and community potential(Espinosa Brito, 1995).

Cienfuegos city introduced the Healthy Municipality Project after an epidemiological study revealed an increase in the incidence of NCDs. Therefore, the local government proposed to include all sectors of the community in the intervention. Accordingly, in 1989, the Global Project of Cienfuegos(GPC) was initiated with the participation of the Local Government of Cienfuegos city, the Cuban Ministry of Public Health, and the expert assistance of PAHO. The project included highly qualified individual interventions(individual risk approach) based on primary care. Additionally, an intersectoral intervention was conducted for the population('population risk approach' or 'community intervention'), in which every community sector or group suggested and conducted activities using its resources, in a coordinated way, directed by the Local Government through a core group to achieve healthy living conditions for all individuals. Its general goal was to enhance health, quality of life, and wellbeing in the community through a long-term project. Thereafter, the GPC used the HCP model to expand its framework

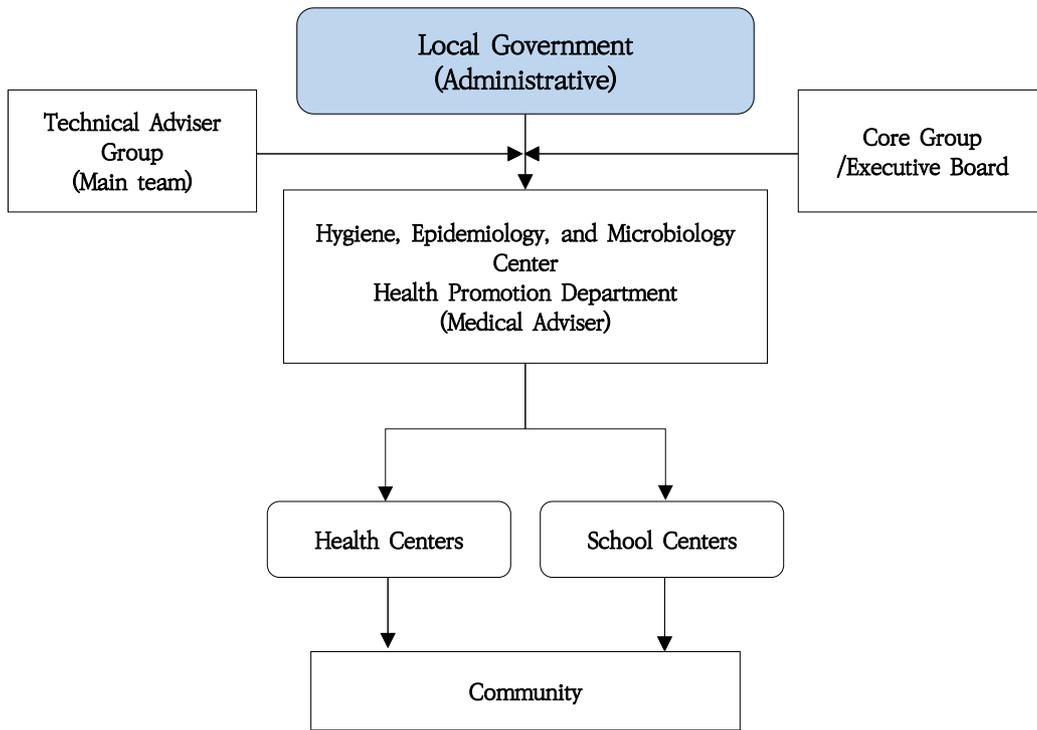
(Price & Tsouros, 1996). In September 1992, at the Europe Encounter on Healthy Cities and Municipios (Seville, Spain), the city internationally proclaimed its commitment to Healthy Cities in the Americas. According to Brito (Espinosa Brito et al., 2000), this movement helped encourage commitment, cooperation, and participation in the community, because medical care services, by themselves, cannot fulfill a comprehensive health program.

Subsequently, the GPC evolved into a larger health promotion project that mainly focused on NCDs, because, when the project was created, the city's medical profile showed a high prevalence of risk factors such as the number of individuals with hypertension and obesity, smoking, and a sedentary lifestyle. The GPC contributed to reducing these risk factors, proving the effectiveness and sustainability of the project(Espinosa Brito et al., 2000).

3. Organizational structure of the Healthy City Project

[Figure 1] shows the organizational structure of the GPC. The local government selected a technical advisory group to apply the strategies that drove the Healthy City project. These strategies addressed specific projects related to the environment, education, communication, culture, legislation, and physical exercise, and disease prevention, all according to the needs of the community.

Health workers, educators, social communicators, and community leaders compose the core group. This group programs and coordinates, advises, choose strategies and evaluates the activities within the project(Price & Tsouros, 1996). The schools and health centers work for health promotion within the project working directly with the population. Interventions included a) individual-focused strategies for disease prevention based on primary health care) an intersectoral population intervention where the



[Figure 1] Organizational structure of the Global Project of Cienfuegos in Cuba

Source. Re-created from El Proyecto Global de Cienfuegos. "Nuestra Ciudades, Nuestro Futuro: Políticas y Planes de Acción para la Salud y el Desarrollo Sostenible (The Global Project of Cienfuegos. Our cities, our future: Policies and action plans for health and sustainable development)" (12)

community, using its resources and led by the local government, prepared activities intended to prevent diseases and to achieve a healthier lifestyle. One of the strategies is related to the reorientation of services and available resources according to the specific needs of the population(Espinosa Brito et al., 2000). It included reducing the morbidity, incapacity, and mortality related to NCDs. It also implemented an integrated intervention involving community orientation aimed at reducing NCD risk factors(such as smoking, alcohol consumption, dietary, sedentary lifestyle, hypertension, and hypercholesterolemia). It promoted intersectoral interventions to address the major health problems in the community; conscious and active participation of the population; perfecting healthcare behavior; reorienting services within the health sector and other areas; and guaranteeing

appropriate information to measure, monitor, and evaluate changes in the prevalence of NCD-related morbidity and mortality.

Cienfuegos city was the first to implement the Healthy Municipalities project in the country and Latin America(Price & Tsouros, 1996). Subsequently, other cities within the country joined the initiative. For instance, in 1992, a project to control previously identified risk factors related to unhealthy habits was implemented in the municipality of Caimanera, Guantanamo Province. A year later, the Yaguajay Project(Sancti Spiritus Province) was initiated in a predominantly rural area, to promote health among its inhabitants. Based on its success, in 1994, the initiative spread nationwide, as other municipalities, such as those of Unión de Reyes(Cabezas-Bermeja), Pinar del Río(Hermanos Cruz), Cumanayagua, and

Santa Isabel de las Lajas, joined in. The same year, based on these experiences, the Red Cubana de Municipios por la Salud(Cuban Network of Healthy Municipalities) was created on December 9th, with the participation of 4 other municipalities from 9 provinces. It later expanded to the rest of the country, formalizing cities' commitment to the Healthy Municipalities Movement(Espinosa Brito, 2011).

4. Financing

The government finances the GPC. Specifically, the Provincial Government took care of the funding and administrative aspects of the project, while the Cuban Ministry of Public Health and PAHO supported as advisors. In this regard, the GPC could use the initiative of using tobacco consumption taxes to create more funds to help to finance the project. Wonju city(South Korea) uses Tobacco Consumption Taxes as a sustainable approach to financing the HCP(Moon et al., 2014). Cienfuegos city could use them as well and eliminate the financial burden from the local government.

5. Operating

1) Institutions

The purpose of the visit was to know the characteristics and functioning of the Healthy Municipalities Project in the city of Cienfuegos. The authors visited the Centro de Higiene, Epidemiología y Microbiología, Departamento de Promoción de Salud(Center of Hygiene, Epidemiology, and Microbiology, Department of Health Promotion). There, we could learn details on the functioning of the project. The direction of the Global Project of Cienfuegos is split between the municipality(local government) where the administrative part works, and the Health Promotion Department(Medical

Adviser) in the Hygiene, Epidemiology and Microbiology Center. The Health Promotion Department has a doctor in charge of the implementation of the Healthy City Project watching over the development of the promotion activities, and the rest of the projects under the Global Project of Cienfuegos. The building has a section with a small gallery showing the development of the project from its beginnings to recent years.

2) Activities

The Global project of Cienfuegos started in 1988 as a part of an initiative to help to decrease the non-communicable diseases in the city. The initiative started as Professor Pekka Puska visited the city recommended by the national health authorities. Professor Puska had already implemented a similar project in Finland, and after its success, he decided to help Cuba. The project started as early as 1988, a year in which the Cuban situation was marked by the beginning of an economic crisis. This period was particularly difficult as the aids from the socialist bloc disappeared and the country suffered economically. At that time, because of the characteristics of the Latin American region, the 'Healthy City' name did not fit with our profile. In consequence, PAHO started calling this type of initiative 'Healthy Municipalities and communities' following the administrative division in the region and the fact they did not have enough power to move big cities governments. They were more interested in smaller communities. Also, the name 'Healthy City' was reconsidered as it seemed ironic a country with an economic crisis could achieve such a goal. Therefore, Cuba followed the example from Mexico that had been implementing similar projects and declared a more suitable term 'Municipios por la Salud'(Municipalities for Health) meaning a municipality pursuing to achieve a healthier environment for its

citizens. Later, the improvement of the situation allowed the city to be accredited as a Healthy one.

The project has been going developing as a series of autonomous smaller initiatives combining different kinds of activities to produce a comprehensive approach, thus the name of the overall project became 'The Global Project of Cienfuegos'. The initial project was targeting NCD, but as it grew, it started including other areas and smaller projects or 'proyectos específicos'(specific projects) in education, physical health, social communication, culture, improving health services, healthy food, among others. The city installed a plaque to show promotion strategies for the project and the Cuban Healthy City Network. The plaque reads: In this city in December 1994, the Cuban Network of Healthy Municipalities under the slogan of "Lo Primero es la vida, lo inmediato es el bienestar"(The first thing is life, the immediate is wellbeing). National Assembly of People's Power, December 9th, 1994.

6. Monitoring and evaluation

Regarding the evaluation and monitoring process, there is a lack of effective instruments for evaluation in Latin America(Espinosa Roca & Espinosa Brito, 2001). In general, the costs of the evaluation process are rather used in specific activities, and less to evaluate results(Bosque Araujo, González Molina, & de Madariaga, 1998). In the case of Cuba, the evaluation criteria mainly come from external sources(PAHO, Ministry of Health), and it often ignores the stakeholders within the community. This, together with bureaucratization and the tendency to evaluate what is measurable in a short term, often interferes with the evaluation process(Bosque Araujo, González Molina, & de Madariaga, 1998).

The project, however, has a research component that includes universities, research centers, and professionals within the community. From 1991 to

1992, a baseline survey was conducted with a sample of 1,634 individuals aged 15 years and over, to identify the risk factors influencing the lifestyle of Cienfuegos inhabitants. This survey proved the prevalence of three major risk factors related to NCDs (hypertension, smoking, and hypercholesterolemia) in 60% of the population(Espinosa Brito, 2011; Espinosa Brito, 1999). Further studies included smoking prevalence at 25% in the city representing a decline from the previous years(33%, 31%, and 25% for the years 1991-92, 2001-02, and 2011 respectively), confirming its steady decline (Benet et al., 2014). On the other hand, hypertension prevalence suffered a decline from the 1990s, to 20% in 2001, however there was an increase by 2010(33,8%), and then again a decline by the time a new survey was carried out in 2016(Delgado Acosta, 2016).

These evaluations are under the CARMEN(Conjunto de Acciones para Reducir Multifactorialmente las Enfermedades no Transmisibles/ Collaborative Action for Risk Factor Prevention & Effective Management of NCDs) initiative, a strategy for preventing, measuring, and controlling NCDs by the Pan American Health Organization(CARMEN, 2002).

〈Table 3〉 presents the Cienfuegos's healthy city scope. This presents a comprehensive approach to ensure the best quality of life for their citizens. Requisite policies and management systems existed. The evaluation system included national and local level evaluation processes, and the analyses based on the review of related documents. Additionally, the CARMEN initiative is used to evaluate health indicators within the project(Delgado Acosta, 2016; Benet et al., 2015), yet other evaluation tools such as the SPIRIT(Standard Protocol items: Recommendations for Interventional Trials) check list, and a SWOT (Strength, Weakness, opportunity, and Threat Analysis) analysis for a comprehensive evaluation of the project's effectiveness and efficiency (22) has not

been used. On the other hand, the GPC, being a more modest project, mainly focused on prevention activities, such as education and disease prevention

strategies. Strategies to support the development and implementation of the projects included cooperation within countries and international partnership.

〈Table 3〉 Evaluation of the Global Project of Cienfuegos city

| | Items | Cienfuegos city |
|--|---|-----------------|
| Documents/Policies/ Regulation/Acts | National level | O |
| | Local level | O |
| Management system | A dedicated department in the local government | O |
| | A steering committee | O |
| Evaluation system | National level | O |
| | Provincial/Local level | O |
| | Document analysis | O |
| | Interview | × |
| | CARMEN | O |
| | SPIRIT checklist | × |
| Program | SWOT | × |
| | Infrastructure development | × |
| | Healthy City publicity | × |
| | Education | O |
| | Anti-smoking | O |
| | Alcohol abuse | O |
| | Diet and nutrition | O |
| | Exercise | O |
| | Mental health | × |
| | Disease prevention | O |
| | Medical checkup | O |
| | Elderly health | O |
| | Culture, welfare, and social marketing strategy | O |
| | Health settings | O |
| | Rehabilitation | O |
| Healthy industry | O | |
| Partnership | Academic institution | O |
| | National/ Local enterprises | O |
| | International Association | O |

Note. O represents the elements included in the Healthy City Project in Cienfuegos while the × represents the elements missing.

IV. Discussion

HCPs are a way of expanding health services through a more inclusive approach to public health. Nevertheless, the main issue is the lack of funding to undertake such projects, since resources for implementing health promotion programs are limited. Initiatives like the use of Tobacco Consumption Taxes(used in Wonju City, Korea) could help funding, taking away a burden from the health budget, and helping to diminish the overall tobacco consumption rate in the country, while promoting the sustainability of the project(Moon et al., 2014). Evaluation remains as a distinctive part that is hardly explored when addressing these projects in Cuba(Espinosa Brito, 2009). The strengthening of the adviser group would help to achieve a more continuous monitoring, and decision-making process within the project. The experiences from the Wonju Healthy City project in South Korea provide examples of evaluation and monitoring the performance of the project with methods like the SPIRIT and SWOT analysis. Assessment workshops, literature analysis, and surveys through social events(such as community assemblies), benefiting from these spaces to have more community participation(Nam, 2019). A previous study on Healthy City Project evaluation in Liverpool and Wonju cities reported that the combination of the qualitative and quantitative analyses provides a comprehensive strategy for the continued development and revitalization of healthy cities(Kang, Nam, & Moon, 2013). The HP-Source.net(Nam, Lee, Moon, Song, & Dhakal, 2015) as an evaluation tool, not only in Cienfuegos but also in other municipalities participating in the Healthy Municipality program, could be used to compile data about the functioning of the project. The combination of evaluation methods could help to create a more comprehensive evaluation mechanism that fits better to the city's

profile.

Focusing on planning and executing Healthy City projects, especially for developing nations would work as a strategy to enhance citizens' awareness regarding health issues contributing to the development of healthier lifestyles.

V. Conclusion

Cienfuegos City has managed its Healthy City Project following the city's characteristics. The project has good political leadership, which allows its continuity. The leadership of the project is divided between the local government(administrative) and the health sector dealing with health promotion. As a unique characteristic of the project in Cienfuegos, the schools work in coordination with the project directly with the population as a health promotion strategy. However, the evaluation system of the project needs improvement. In Cienfuegos, the funds come from the local government budget. The city has the goal of preserving and prioritizing the overall health of its citizens. To achieve this goal, while it is necessary to maintain a high-quality health profile, governments focus on other factors such as living environment and quality of life. The Healthy Municipalities initiative is a method to invest in a better environment for the country's inhabitants.

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