

ORIGINAL

The environment and the health-disease process in vulnerable communities in Pinar del Río, 2020-2022

El ambiente y el proceso salud-enfermedad en Comunidades Vulnerables en Pinar del Río, 2020-2022

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ABSTRACT

The vertiginous process of globalization and the promotion of individualism offered by postmodernism; They have forced the world health authorities to reassess the relationship between health and the environment. Therefore, the conception of the environment as a determinant of health has gained special relevance; since currently, it is necessary to respond to the challenges required by the relationship between the care of natural resources and the improvement of human health. This article deals with unavoidable aspects about the environment as a determinant of health, first, the concept of environment is exposed, according to the different idiosyncrasies and their implications on health, later, scientific evidence is presented of some examples that support the relationship with the health-disease process and, lastly, challenges that public health professionals have to address.

Keywords: Environment; Health; Public Health.

RESUMEN

El vertiginoso proceso de globalización y el fomento por el individualismo que ofrece la postmodernidad; han obligado a las autoridades sanitarias mundiales a reevaluar la relación entre la salud y el ambiente. Por ende, la concepción del ambiente como determinante de la salud ha cobrado especial relevancia; puesto que actualmente, se hace necesario responder a los desafíos que exige la relación entre el cuidado de los recursos naturales y el mejoramiento de la salud humana. El presente artículo aborda aspectos ineludibles sobre el ambiente como determinante de la salud, en primer lugar, se expone el concepto de ambiente, de acuerdo a las diferentes idiosincrasias y sus implicaciones sobre la salud, posteriormente, se presenta evidencia científica de algunos ejemplos que soportan la relación con el proceso salud-enfermedad y por último se plantean retos que tienen los profesionales de la salud pública para el abordaje de las problemáticas actuales.

Palabras clave: Ambiente; Salud; Salud Pública.

INTRODUCTION

The environment as a determinant of health has been a subject of discussion throughout history. Currently, it is gaining importance due to the global need to address the challenges associated with environmental care, sustainable development, and improving health indicators.⁽¹⁾ Some attribute ecological problems and their repercussion on human health to the application of economic models of capitalist idiosyncrasy, which despite the contributions generated to society, have not been able to mesh between the lines: environment, wealth

and health; therefore, this incapacity turns the environment into a determinant of the health-disease process of populations.⁽²⁾

In this order of ideas, it is necessary to note that after the Second World War, large-scale capitalism permeated many parts of the world through the rapid process of industrialization; a method based on unlimited economic growth at the expense of the indiscriminate exploitation of finite natural resources.

This reflection raises three basic considerations: *first*, the concepts of: health, environment and environmental health are defined, *then*, the epidemiological relationship between the environment and the health - disease process is presented through some examples and *finally*, challenges are outlined that allow enriching the discussion presented between the environment as a determinant of health and quality of life.

Concepts: Health, Environment, and Environmental Health

In 1948, the World Health Organization (WHO) defined health as. “The complete state of physical, social, and mental well-being and not merely the absence of disease”,⁽³⁾ this concept remains accepted and is still used today. On the other hand, the word “environment” is considered the set of solid, liquid, and gaseous components that interact with the living beings residing in it; in other words, “Environment”.⁽³⁾

Before conceptualizing environmental health, it is necessary to socialize two aspects used by the political-administrative authorities in the world; *the green aspect*; whose concern is centered on the effects that human activity has on the environment, represented in factors such as: deterioration of the ozone layer, deforestation, greenhouse effect, among others. On the other hand, *the blue side*, also called environmental health, aims to study the impact of the environment on the health and quality of life of humanity.⁽³⁾

At the international level, the WHO and the United Nations Environment Programme (UNEP) have addressed health and environmental issues from different approaches; a similar situation exists at the national level between the Ministry of Health and Social Protection and the Ministry of Environment and Sustainable Development.⁽³⁾

In the world, as far as environmental education is concerned, various training strategies have been developed, ranging from prevention to cultural intervention and communication, encompassing both theoretical and methodological tools indispensable for predicting the negative impacts on the environment within a community.

In addition, the strategies involve transforming all social entities that coexist in the environment, which corroborates what is stated in Principle 10 of the Rio de Janeiro Declaration of 1992, which states: “The best way to deal with environmental issues is to ensure the participation of all citizens involved...”.⁽⁴⁾

On the other hand, in Cuba, there is currently little practice in maintaining the balance between society and the ecosystem in terms of community environmental protection. The efforts that are made are insufficient, and the utilitarian efforts of man are limited, if we consider the indissoluble unity between both and the need to act to achieve the link between research and citizen participation in all processes.

It should not be forgotten that in the later stages of the development of society, man’s capacity to modify his environment grew and, consequently, the need to safeguard nature from the harmful effects of this activity arose.⁽⁵⁾

The focus on community interventions enhances social capacities as a preventive measure against the emergence of situations of vulnerability and risk of various origins. It requires strategies that can serve as an instrument of training and education, taking into account the specific characteristics of each population group, provided that the functions derived from personal autonomy prevail, by which the general social security system was created, which includes a chapter on health, where the study of the effects of the environment on health is encouraged. These facts currently reflect the lack of identity for the formulation of integrative policies.

At its 1993 meeting in Sofia, Bulgaria, the WHO defined environmental health as comprising those aspects of human health, including quality of life, that are determined by physical, chemical, biological, social, and psychosocial ecological factors. It also refers to the theory and practice of assessing, correcting, controlling, and preventing environmental factors that may adversely affect the health of present and future generations.⁽³⁾

The environment and the health-disease process

To have an approach from epidemiology and its relationship with the environment and the health-disease process, it is necessary to evoke the treatise: *Airs, waters and places of Hippocrates*,^(6,7) who was one of the pioneers in describing this relationship; later, this trend was enriched by the Italian physician Ramazzini, who attributed to the work environment the collective affectation of many workers in the XVII century,^(8,9) but it was John Snow who for the first time demonstrated the epidemiological relationship between the environment and health.⁽¹⁰⁾

At present, among the most studied topics are:

- Climate change.⁽¹¹⁾
- Public space.⁽¹²⁾

- Mobility.⁽¹³⁾
- Air.⁽¹⁴⁾
- Noise.⁽¹⁵⁾
- Electromagnetic radiation.⁽¹⁶⁾
- Water quality.⁽¹⁷⁾
- Transmissible events of zoonotic origin^(18,19) (one of the current causes of covid-19) and prenatal exposure to chemicals such as phenols.

Prenatal exposure to chemicals such as phenols.⁽¹⁹⁾

The following is a chronology of some of the relationships between environmental conditions and the health-disease process:

Water, sanitation, and health

- Lack of potable water, precarious basic sanitation conditions, and poor quality are associated with the presence of some neglected diseases, including some tropical diseases such as trachoma.⁽²⁰⁾
- Soil-transmitted helminthiasis (intestinal worms).⁽²¹⁾
- The lack of access to basic sanitation and 946 million do not have access to sanitary units, a situation that is detrimental to child survival.
- Neglected tropical diseases (NTDs) affect more than 1,5 billion people in 149 countries, causing serious consequences such as blindness.⁽²²⁾
- Disfigurement, permanent disability, and death.⁽²³⁾ On the other hand, the practice of open defecation is linked to an increased likelihood of stunting (or chronic malnutrition).⁽²⁴⁾

Climate change and human health

Over the last five decades, humans, through their industrial activities, especially the combustion of fossil fuels, have released large amounts of carbon dioxide and other greenhouse gases that affect approximately 40 % of the lower layers of the atmosphere, potentially impacting the world's climate.

In the analysis carried out, we agree with other authors who state that:

- These changes have led to a change in the epidemiological pattern of infectious diseases,
- the increase in natural disasters (which have claimed more than 600 000 deaths in the world),
- The increase in mortality from respiratory diseases.
- In addition, climatic conditions also influence water-borne and vector-borne diseases, such as diarrhea, malaria, and protein-calorie malnutrition, which cause more than 3 million deaths each year.

Electromagnetic fields

Electricity consumption is part of everyday life, and magnetic and electric fields are present wherever there is a flow of electric currents. Exposure to electromagnetic fields is related to acute pediatric leukemia and some types of cancer in adults.

Atmospheric pollution

In 2014, it was estimated that in the world, 1,3 million people die from atmospheric pollution, and the main associated pathologies are pneumonia and lung cancer.

Indoor air pollution: The primary sources of indoor air pollution include the combustion of wood, coal, or agricultural waste, which has been linked to pneumonia and lung cancer. A WHO report in 2014 reported that 13 billion people used these types of materials, and of them, 4 million died from diseases attributable to this exposure.

UV radiation

Excessive UV exposure caused the loss of 1,5 million disability-adjusted life years (DALYs) and 75 000 premature deaths in 2015. The most significant burden of disease is represented by: cortical cataracts, malignant cutaneous melanomas, and sunburns.

Children's environmental health

Intrauterine exposure to persistent chemicals, such as polychlorinated biphenyls and perfluorinated acids, and non-persistent pollutants, including phenols and phthalates, can cause irreversible damage to offspring.

Environmental health challenges

The high-quality scientific evidence that relates the environment to the health-disease process shows the worldwide need to use effective intervention strategies from public health and also calls for environmental

self-awareness and involvement of all stakeholders in favor of improving health and quality of life, which implies significant challenges:

- a) Fostering intersectorality and interdisciplinarity to decrease the incidence of prevalent pathologies associated with the environment.
- b) To balance the allocation of efforts and available resources through the prioritization of needs, which will make it possible to include integral policies of intervention and formation of environmental awareness.
- c) Advance in the development of specific research and knowledge management, aimed at environmental health.

“When the earth is sick and polluted, human health is impossible. To heal ourselves, we must heal our planet, and to heal our planet, we must heal ourselves.” Bobby McLeod.

Taking into account the global behavior presented by this condition and the role played by primary health care services with a view to the adequate attention to environmental care in vulnerable communities, the authors undertook the present study, whose objective was to characterize the behavior of the environment and the health-disease process; concepts, examples and challenges in primary health care in Vulnerable Communities in Pinar del Río.

METHOD

A descriptive observational study was conducted, focusing on a transversal cut in primary care at the Family Medical Office 39 in Pinar del Río province, as part of doctoral research and analysis of PVR. The study took place from January 2020 to October 2022, encompassing a universe of 1296 families.

It is located at Km 89. Central, Montequín, which belongs to the Hermanos Cruz polyclinic in the municipality of Pinar del Río. It is bordered on the north by the La Conchita River, on the south by the highway, and the east.

It is subordinated to GBT 4, characterized by being a densely populated area with regular sanitary and environmental conditions, where there is emigration from both rural and urban areas. 16 RDCs belong to Districts 93, Zone 216, and 192, where the total population is distributed, which are part of the 10 de Octubre Popular Council.

Information was obtained through the analysis of the clinic's health situation, with the assistance of a multidisciplinary team comprising a doctor, nurse, stomatologist, psychologist, obstetrician, clinician, pediatrician, social worker, statistician, community volunteers, and other vertical specialists who contribute to care work during scheduled consultations. There is a teaching polyclinic that provides emergency services to the entire population, in addition to the provincial hospitals, including the pediatric age, which allows obtaining information on the following health determinants as the main problems:

- Poor quality and late arrival of drinking water.
- High alcohol addiction.
- Poor disposal of solid waste.
- High incidence of smoking.
- High incidence of acute respiratory infections.

The research was also supported by techniques such as interviews and brainstorming, which were used to diagnose needs and ascertain the strengths and weaknesses of the community under study.

The interview was conducted with fifteen people considered key actors for this research.

The objectives are flexible depending on the areas of the community where the study is applied, but with a constant sensitization and awareness of environmental problems, their causes and consequences, and promoting the critical capacity of those who receive it, in which it is expected that social participation will arise to be part of the solution. It is essential to emphasize the importance of human beings feeling accepted and valued, so that these participatory processes enhance the self-esteem and overall well-being of those who share in their achievements.

To solve the socio-environmental problem, it is convenient to adopt a social intervention model that identifies environmental deterioration as an element contrary to the quality of life of the community, so that social and resource mobilization can contribute to the improvement of the ecological quality of the place and generate a social learning process that strengthens community interests.

The design of an alternative model of social intervention to develop an environmental public policy should take into consideration at least five aspects within a social learning process:

- 1) Determine the features and magnitude of the problem.
- 2) To understand the social experience in addressing socio-environmental problems.
- 3) To distinguish the key aspects of the system of relationships for the intervention model.
- 4) Structure the model by organizing it according to social and institutional priorities, as well as in both diachronic and synchronic manners.

5) To include a non-formal, andragogical and community-based environmental education proposal⁽²⁵⁾ within the proposed social intervention model.

On the other hand, such a model can build its objective around the relationship between environmental deterioration and the loss of quality of life; the community must understand how it can avoid or mitigate ecological deterioration by defending and improving its quality of life. This makes it susceptible to becoming a simple, easy, and feasible objective, as the environmental damage that implies risks to human health directly affects social perception of quality of life, and, in addition, it can be demonstrated with indicators of environmental quality.⁽²⁶⁾ The following is the case study that gave rise to this proposal. Furthermore, it is proposed to verify its relevance, as the methodology includes empirical testing.

The procedure was carried out using descriptive statistics, which included absolute and relative percentage frequencies.

The Ethics Committee of the institutions was consulted for the application of the questionnaires.

Of the questionnaires. Informed consent was requested informed consent was requested from the patients, guaranteeing the confidentiality of the information.

RESULTS

Results of the diagnosis of the problems existing in the Montequín community

The results obtained according to health analysis showed that the areas in terms of: i

Quality of drinking water

It should be noted that the quality and coverage of water is a problem in the community since there have been frequent stoppages in the water supply, which leads to the storage of water in inadequate containers, thus facilitating the transmission of diarrheal diseases, as well as the proliferation of vectors such as *Aedes Aegypti* in uncovered tanks and other unprotected reservoirs.

In most of our families, there are no hygienic habits regarding boiling drinking water; it is only used in some homes where there are small children and older adults. This results in the appearance of parasitic and digestive diseases, among others. To avoid these diseases, we must continue to educate the population about the importance of boiling drinking water for their health. In coordination with the government, we should work on ensuring that the water supply is maintained continuously. Very few houses have healthy water, which is in good condition.

Bacteriological examination of the water: -2,2 NMP/100ml of total or fecal coliforms, demonstrating 99 % potability (fit for consumption), as all 20 samples taken at different points along the distribution network were negative, 19. Residual chlorine: DCR 0,6 at one ppm (performed by the Orthotolidine method).

Solid waste disposal

Solid waste is generally deposited in covered containers (buckets, baskets), nylon bags, or sacks. It is a situation that has given rise to further educational efforts at home about the importance of avoiding the presence of flies, cockroaches, and rodents, which act as mechanical vectors and are an essential factor in the transmission of diseases. It is also of great importance to collect these wastes in impermeable containers, far from the reach of any domestic animal, and to dispose of them in the places provided in the community (the “zupaderos”).

The garbage deposited in the dumpsters is collected by the communal company's carts and taken to the large landfills. This work is conducted in the community on alternate days, but there are occasional irregularities in garbage collection, which can lead to the creation of micro-dumps.

In our community, garbage collection is also done by animal transport (horses, oxen). There is a municipal landfill in good condition, which is managed by the municipal sector. There is no sewage system.

Condition of vacant lots and green areas

There are no barren lots because most of the land is planted with tobacco and other products for human consumption, since this is a rural area.

Vector control

During the period under analysis, outbreaks of *Aedes Aegypti* have been reported, so strict control is maintained through the surveillance system, and prevention and promotion activities were carried out with the community, inspecting all homes.

Presence of pigs in the home

In this community there are pigs in most of the houses, since they are part of the daily life of the people, which are kept in corrals in the backyards of the house, in addition to raising other types of animals such as dogs, cats, goats, cattle, horses.

Sanitary culture

The behavior is regular, because there are harmful habits such as alcohol, smoking and bad eating habits, and drinking water is not boiled, although it can be recognized that there has been progress in the use of sodium hypochlorite, as this has been through educational work imparted in various activities and has improved the habit of washing hands before handling any type of food. Among the predominant risk factors were:

Table 1. Harmful habits				
Harmful habits	Previous year		Current year	
	Cases	%	Cases	%
Tobaccoism	279	21,52	275	21,21
Alcoholism	36	2,77	53	13,2
Sedentarism	317	24,45	315	24,30
Addictions	87	6,71	81	6,25

Analysis: a sedentary lifestyle, as shown in the table, is the most prevalent harmful habit in the population, affecting 24 % of the population. If we compare it with the previous year we see that it decreased in 2 cases less, this means that we still have to continue working on the activities that are carried out to avoid sedentary lifestyle, which reflects the need to link the population to perform physical exercises and thus prevent the early onset of cardiovascular and atherosclerotic diseases. In addition, secondly, we see that our population presents 21 % of smokers, and concerning the previous year, it has not improved much, so we continue to insist on attending smoking cessation consultations, and continue with our work of explaining the risks that smoking has for our patients. See annexes 1, 2 and 3.

Results of the diagnosis of the existing problems in the Montequín community

Technique applied: Brainstorming

Positive aspects that identify the Montequín community, according to the perception of a group of villagers

- Familiarity.
- Good social relations among its inhabitants.
- Tradition of educators.
- Enthusiastic people.
- Community members see the need for transformation.
- Existence of community social support organizations such as the system of intervention, prevention and social care (SIPAS).
- Existence of a Provincial Art School.
- Existence of a Provincial School of the PCC.
- Existence of a Provincial School for the Training of Primary School Teachers.
- Compliance with neighborhood ordinances by families.
- Functioning of social, political and mass organizations.
- Existence of social institutions within the community boundaries.
- Gastronomic services are provided in the community environment.
- Educational institutions in the community environment.
- People of both sexes who make up some cultural manifestations (congas and comparsas) with active participation in popular festivals and other events or commemorations held in this municipality.
- People who are dedicated to the realization and materialization of some artistic manifestations (handicrafts made with fishing materials such as seashells, woven garments and handmade dolls).

Negative aspects identified in the community

- Lack of information on how to carry out better environmental sanitation actions through the implementation of VCAs and VPRs.
- The community's culture and identity has been lost.
- Unstable garbage collection.
- Lack of culture about caring for the environment.
- Lack of spaces for environmental recreation (parks, gardens, video rooms, youth clubs in the most vulnerable areas of the community).
- Lack of basic social services.
- Precarious environmental aesthetic and hygienic-sanitary conditions.
- Predominance of overcrowded housing.

- Large number of dwellings in poor construction conditions.
- Little environmental education of the inhabitants.
- Presence of micro-dumps in interior yards.
- Area contaminated by solid and liquid waste.
- Little attention to this settlement by cultural and recreational institutions.
- Unfavorable environment.
- Poor condition of access roads to the community.
- Lack of public transportation.
- Poor geographic location.
- Scarcity of drinking and storage water.
- Low sanitary culture.
- Deficient public lighting.
- High level of alcoholism and people disengaged from study and work (which causes various social problems that affect the integrity of people, the life of the community and intra-family relations).
- Hydraulic network in poor condition.

Other environmental problems affecting the community

1. Presence of garbage in the streets.
2. Dumping of pits.
3. Difficulties of the community's population with access to drinking water.
4. Presence of debris, overhangs and holes for the installation of turbines.
5. Latrines discharge into a ditch and then into the river, affecting drinking water pipes.

Problems that, according to the villagers, can be solved by the community itself

- Presence of garbage in the streets.
- Garbage on the river bank.
- Dumping of pits.
- Dumping of liquid and solid waste.
- Situation with latrines.

Questions from the interview conducted with the oldest residents of the Montequín community to learn about their customs, habits and traditions

- What do you know about the origins of the Montequín community?
- What essential characteristics distinguish the population of the Montequín community (traditions, customs, religiosity and others of interest)?
- What is your appreciation of the hygienic conditions in the community (water, solid waste disposal, environment)?
- Do you know of any environmental education work that has been developed in the community? Who, when, how, and what were the results?
- What are the fundamental social problems that exist in the population (alcoholism, smoking, family violence, drugs or others)?

The following are the educational interventions designed to promote environmental education in the Montequín community.

Environmental training for community members through VCA workshops

This training is an organized process of theoretical and methodological preparation. The topics related to environmental protection, prevention and orientation were deepened, starting from the work with social skills, being aware of their significance in ensuring a harmonious insertion into the system of interpersonal relationships in the community, such as tolerance, flexibility, the ability to dialogue, the development of communication skills, empathy, listening.

General guidelines

The actions planned should significantly contribute to the elimination of existing conditions that generate irresponsible behavior towards the environment, while also facilitating sustainable community development. These actions should be developed throughout the year.

General objective: To train educators, students, homemakers, environmental promoters, workers, volunteers, advisors of the Red Cross, etc. in environmental matters in order to promote a different view of the relationship between man and his environment, based on the conformation of a new Cuban interpretation and journalists of Tele Pinar as a cultural entity.

Plan of action

1. Coordinate, plan, and execute an action plan to develop actions aimed at environmental education in the Montequín community, with the participation of all relevant organizations and institutions, in conjunction with the Provincial School of the PCC, the School of Arts, the Faculty of Medical Sciences, and the Popular Council of October 10.
2. Train educators, students, homemakers, and environmental promoters to enhance their capacity for analysis, addressing the multiple interactions between the natural and social environments. This will be achieved through VCA workshops, methodological workshops, short courses on communication skills, conferences with CITMA specialists, and other activities.
3. Carry out activities in conjunction with the Municipal Library to publicize book titles and brochures, and make presentations addressing environmental issues. Additionally, assess the possibility of donating materials related to this topic for the creation of the Community Library House on the environment.
4. Coordinate and plan with the municipal government and the local council where the community is located to include the topic of environmental education in the Montequín community as a line of research in the different educational institutions, and to provide an outlet through diplomas, master's theses, doctoral theses, and other relevant initiatives.
5. To summon from the community to the realization of events and workshops of VCA and PVR before Disaster and Exceptional situations to value all the dimensions of the raised problem and to offer it multiple solutions, with the participation of professionals of the different branches, homemakers, workers of the different sectors, in coordination with the Council of Defense of the Community, the CITMA, Sectorial of Education, the schools, the Popular Council and the Medical Offices of Families.
6. To convene, once a year, an event of community character to conciliate actions that contribute to the solution of the main problems of the community with professionals of the MES, CITMA, and the Cuban Red Cross that direct their work activity to the care and protection of Environmental Health.
7. Distribute leaflets that outline the regulations, laws, and norms of Cuba's environmental policy to enhance the community's capacity for analysis and reflection through VCA workshops.
8. To hold conferences with specialists from CITMA and Agriculture that allow the knowledge and diffusion of agricultural techniques regarding Reforestation and Ecology.
9. Develop workshops for exchanges between medical students and community members on the application of correct environmental techniques and their impact on health.
10. To promote, with the Municipal Secretary of the Government and Delegate of CITMA, the instrumentation, in a systematic way, of the analysis of the main environmental problems, the solution to them, and the community work, in function of solving them.
11. To carry out systematic visits of inspectors and organizations that regulate environmental records, together with CITMA and Government specialists, oriented to point out and correct, together with the violators, the damages they commit to the environment.
12. Coordinate community cleanup and sanitation actions with government structures, the Committees for the Defense of the Revolution (CDR), the Federation of Cuban Women (FMC), Defense Councils, the FEU of the Faculty of Medical Sciences from the Department of PPD and the Association of Combatants of the Republic of Cuba (ACRC).
13. To develop a quarterly exhibition of paintings, directed by the president of the 10 DE Octubre Popular Council, the delegates of districts, and the different community factors, to promote care for the environment and the importance of environmental education in this regard.
14. Promote the participation of the different institutions of health, education, and commerce, as well as the conscious and active participation of students and citizens in sports, recreational, literary, preventive health, and hygienic-epidemiological activities, and recycling of solid waste.
15. To broaden and intensify the culture of environmental debate, controversy, criticism, and, above all, to create conditions to increase these in the different social organizations of the community.

Environmental Education for Sustainable Development in the Community: Montequín

Environmental training for community members

This training constitutes an organized process of theoretical and methodological preparation. The topics related to environmental protection, prevention, and orientation were deepened, starting with work on social skills, which is crucial for ensuring a harmonious integration into the system of interpersonal relationships within the community, including tolerance, flexibility, the ability to dialogue, empathy, and active listening.

General guidelines

The actions planned should contribute to the elimination of existing conditions that generate irresponsible behaviors.

The connection between Environmental Education and socio-community intervention implies having an impact on how to conceive Environmental Education as a strategy or instrument at the service of community objectives proper to socio-cultural animation.

However, it will also imply considering the environment, and specifically its problems, as the determining factor in the intended educational action.

Our proposal will then focus on showing how environmental issues that directly affect both urban and rural areas directly affect communities, both urban and rural, can serve to energize, firstly, processes communities, both urban and rural, can be used to dynamize, firstly, training (education) processes and, secondly, to education, and, secondly, to develop the aims of Social Work with the medical

In this sense, the environment will be the protagonist of the formative-educational action on the citizen, at the same time as the triggering element of the animation in its community of reference. The environment will ultimately be the basis for both educational and socio-communicative interventions.

Environment and education

With Environmental Education, we aim to achieve a change in mentality, one that, in this case, will always favor nature. This point is the determining factor of what Environmental Education truly is, and, in short, what distinguishes this type of Pedagogy from others.⁽²⁷⁾ Therefore, we propose:

- A Concern: environmental Quality.
- A Goal: the regeneration and improvement of the environment.
- A Field: environmental problems.
- An Approach: relationship and interdependence.
- A Methodology: exercising decision making.

All this makes Environmental Education to be seen as a pedagogical project, since it has its philosophy -to favor nature- which in turn implies the application of a different axiological program based on the inculcation of a new ethic, regulating, on this occasion, the relationship between man and nature; likewise, it will try to propose a cognitive style, its own and original, propitiating its communicative abilities oriented to the realization of problems according to the diagnosis of the community.

The socio-community animation

Socio-community animation arises from an eagerness to solve daily problems in the current complex environmental situations. It will be then in front of this situation that the animation will pretend to achieve the following objectives:

- To prepare the community for the education on how to protect its environmental surroundings.
- To teach communication skills.
- To promote group participation.
- To achieve the personal promotion and, therefore, the maturity of the members of the community.
- Cultivate a critical sense.
- To defend the community's interests.
- To achieve the personalization of the community, that is to say, to endow it with identity and tradition.

Environmental practice in a community framework

As already mentioned, the facilitator should begin with a fundamental understanding of the community and its environmental issues.

Regarding the community and its environmental problems, starting from the new intrinsic factors, that is, providing it with an identity and tradition.

Intrinsic Factors, or problematic situations at the environmental level, whose guilt lies with the inhabitants of the community themselves.

That is to say, it will now be a question of proposing educational and participatory actions among the inhabitants themselves, considered as the negative cause of the environmental situation to be corrected in order to improve it.

Faced with situations of this type, the so-called Community Programs of Environmental Education should be proposed, which will respond to the following outline or analysis of tasks:

Delimitation of the Environmental Problem, Object of the Program. This is the most important, decisive, and original point of this type of Program, so it is here that the social worker will demonstrate their professionalism, training, and experience.

The delimitation of the problem presupposes, on the one hand, defining the environmental problem, i.e., specifying the objectives, and on the other hand, documenting the problem in question. This involves

documenting research and research work, based on official publications and general bibliography, analysis of opinions and surveys, contact with experts, use of the press and local publications, oral sources, and environmental education and socio-community intervention. Also, in the direct knowledge of the uses and customs, traditions, and general aspects of the socio-human situation of the community, so that, with all these means, the causes and origins of the problem can be known, as well as the conditions that make it beneficial for the population.

In addition, the report will need to clarify a critical issue: gauging the degree of involvement of the population in the problem. Does the situation affect the whole community or just a specific group? In other words, the report must delimit the population group that should be the target of the Program. Of course, taking into account all the information gathered and assimilated, it must be able to answer (and solve) the following question: How can the problem be solved without publicly revealing specific culprits, and also knowing the customs, traditions, and limitations that also exist in the community? These are the two main objectives of the report: to delimit the target population and to design an action-solution guideline.

Planning the Program. If, as we have seen, one of the purposes of the report was to design or focus on adequate solutions, it will now be a second phase of planning and focusing on such alternatives. This requires a planning model that at least addresses the following issues:

To define concretely the group or population that will be the object of application of the Program, which must contemplate, at the same time, a precise evaluation of the relations of the group with the problem.

Timing, or determining stages and times of the Program, which implies evaluating the convenience of staggering the Program, i.e., whether it should be applied exclusively to the problem group, or whether it should be applied to the entire population indiscriminately. If the second strategy is adopted, those responsible for the Program will have to ensure the continuity of the programmed actions.

Define the messages, i.e., select ideas, so that they can be transformed into messages that can be communicated through the media that will be selected at this time. It is a matter of compiling basic ideas in order to influence the required change in attitudes. The messages should be brief, direct, and relevant to the target group or population, while also being adapted to the characteristics of the media through which they will be transmitted.

Selecting activities involves creating an inventory of the community's media and institutions that can be utilized; the possibility of creating one's media should also be analyzed. The contents to be transmitted and the type of actions to be undertaken should be specified (in schools, through the press, radio, publication of brochures, dissemination and information campaigns, debates, conferences, exhibitions, etc.).

Execution of the Program, in an attempt to fulfill the proposed objectives, but with sufficient flexibility to recreate new processes according to the achievement of results.

Verification, or evaluation of the results achieved. In this order of things we propose that the final evaluation be carried out using elementary techniques, since the use of specialized measuring instruments - surveys, questionnaires, attitude scales, etc., is not at all operative, fundamentally at an economic level, since the evaluation can very easily be more costly than the application of the Program. Therefore, we recommend a softer evaluation, consisting, for example, in analyzing attendance at events, or the response to the calls made, to know the opinion of specialists or opinion leaders, and above all, a posteriori, to see if the number of actions considered at the beginning as problematic and which, in short, were the cause of the Program's implementation, have been decreasing.

Final reflection

Based on the cases studied and the strategies described above, achieving socio-community animation through Environmental Education is feasible. With this, we also confirm once again the excellent relationship between community animation or participation and education, to such an extent that the educational work, typical of the social pedagogue, is once again intermingled with the participatory work, typical of the social worker. In this way, Social Work and Social Education are presented to us as two sides of the same coin, which forces us to understand educational work as a form of participation and participatory work as an educational strategy.

We must also confirm the importance of a new educational approach, such as Environmental Education, for participatory community achievement. The environmental message easily penetrates, through participation, into people's logic, because it is part of the logic of needs. On the other hand, it enriches the field of non-formal education planning,⁽²⁸⁾ by providing Pedagogy with new educational intervention designs.

DISCUSSION

As already indicated above, Environmental Education is based on the initial transmission of information about the environment, so that educational interventions grounded in knowledge should be sought, where not only is information about the environment transmitted, but also knowledge about the environment on knowledge, where not only skills are developed, but also, commitments and the will to act, through educational activities that enable.⁽²⁹⁾

- a. Build an educational intervention based on the principles of sustainability.
- b. Understand the connection between environmental, social, economic, and cultural processes.
- c. Be aware of social and environmental problems at both local and global levels, as well as their interrelationships. Be aware of social and environmental problems at the local and global levels and their relationships.
- d. To train students to analyze socio-environmental conflicts during debate, to find alternatives and in individual and collective decision making; To train students to analyze socio-environmental conflicts during collective decision-making.
- e. Promote the expansion of sustainable “best environmental practices in the community” in different contexts and cultures.

Although there are numerous methodological strategies for setting up AE activities, there are generally.

Activities, in a general sense, refer to the steps to follow to work in this manner. According to Vega-Marcote et al.⁽²⁹⁾, the steps to follow to work in this sense are:

1. Selection of the environmental problem.
2. Formulation of the problem.
3. Identification of causes and consequences.
4. Identify the factors that need to be modified.
5. Identification of possibilities for action and improvement.
6. Specify difficulties and barriers to change.
7. Establish priorities for action.
8. Selection of appropriate and sustainable actions.

CONCLUSIONS

1. The working hypothesis that identifies the solution of the environmental problem as a way to raise the quality of life, and that proposes that it can be used in a social intervention model appropriate to the circumstances and experiences of the inhabitants of the :Montequín Community, is accepted.

2. The social-environmental intervention model based on a proposed environmental education strategy should be aimed at identifying the issue of quality of life as an ecological-social problem; the social learning process should have an andragogic character and be based on the active and passive participation of older adults due to their great influence on the behavior of local families.

3. The technical solution to wastewater discharge should be analyzed according to a systemic approach, not only by disseminating hygiene recommendations among citizens and adopting stricter and more severe norms or sanctions, as this only touches a part of the problem. It should be stated that the quality of the water supplied by the treatment plant must be improved, since the contamination of the river water is not only the responsibility of the neighbors, but the poor quality of the treated water flowing into the canals also contributes to the problem. A solution to the problem caused by the establishment of regular and irregular settlements in the area bordering the La Conchita river should also be studied, since it would not be possible to eliminate the risks caused by their permanence and the deterioration of the quality of life in the area would continue, in addition to the damage to the ecological and cultural heritage.

4. In order to give continuity to the line of research on the models of social-environmental intervention adequate to the development of a new public policy, it is necessary to support the analytical instruments aimed at developing and strengthening the capacities of social organization and decision making of the social groups interested in certain environmental problems.

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CONFLICT OF INTEREST

Authors declare that there is no conflict of interest.

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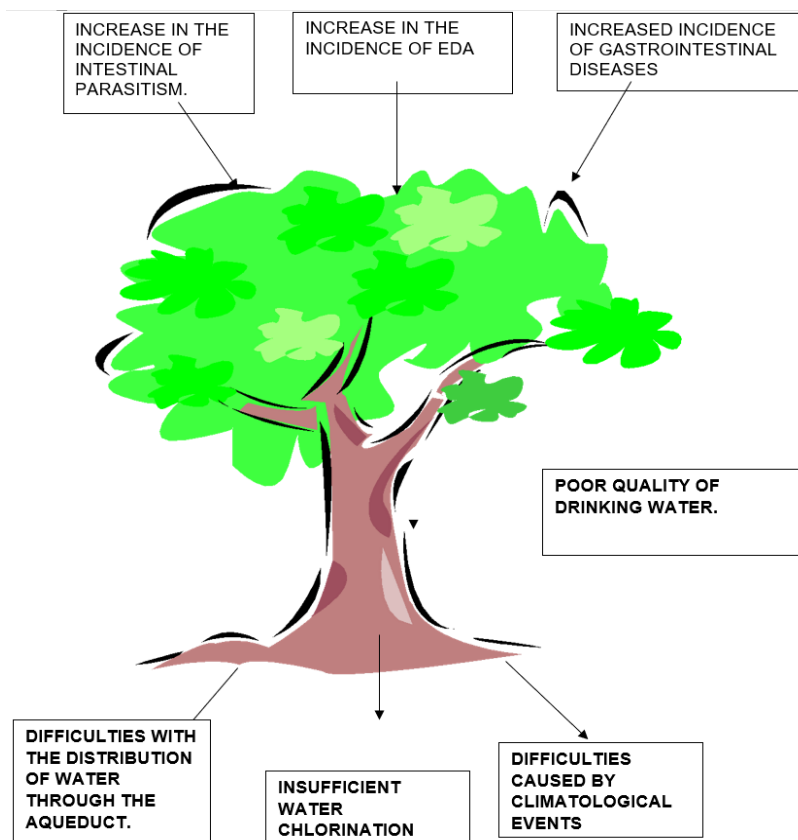
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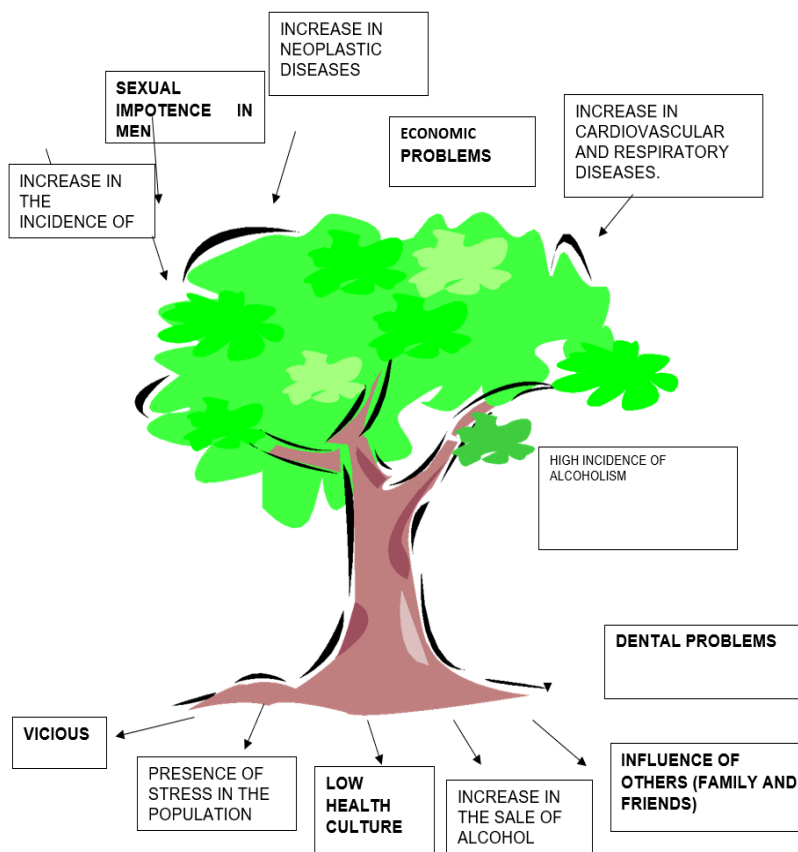
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ANNEXES

Problem 1: poor drinking water quality



Problem 2: high alcohol addiction



Problem 3: little incorporation of the elderly into the circle of grandparents

