



Educational Intervention Strategy for the Prevention and Control of Tuberculosis in a Community in the Municipality of Santa Clara, Villa Clara, Cuba

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Abstract

A prospective descriptive study after study research and development, with the aim of proposing an educational strategy in the community led to the knowledge of tuberculosis, in the area of university teaching polyclinic "Twentieth anniversary" of the municipality of Santa Clara was conducted in a first stage and province Villa Clara, Cuba. The study covered the period from July 1, 2017 to July 31, 2018. The study included an adult population of both sexes aged 15 years, which were conducted random sampling random 360 people for implementation surveys and identify learning needs on the model of David Leiva. The correlation between knowledge and prevention measures showed that 89.2% of people are not aware and do not know the preventive measures to avoid infection of tuberculosis or minimize damage. It is concluded that in the study population there are gaps in learning tuberculosis because of ignorance of it.

Keywords: Community; Strategy Educational Intervention; Prevention; Santa Clara; Tuberculosis

Introduction

Tuberculosis (TB) is a chronic bacterial infection caused by *Mycobacterium tuberculosis*, the disease is usually located in the lungs, but can affect almost any organ in the human body [1,2].

Several factors, including socioeconomic stand and abandonment of control programs, determine this phenomenon. The evolution of pulmonary TB in Cuba shows a downward trend until 1991 [3]. The incidence

increases associated with the country's economic difficulties, endogenous reactivation in elderly adults. With the revitalization program in 1993 and 1995, it stops the increase in cases in 2007 and in 2008 [4-6].

In Villa Clara tuberculosis behaves similarly to the country, resulting in a decrease in rates in recent years, but higher than the national average rate (6.2 per 100 000 inhabitants) and still far from disposal purposes It has the country (rate of 5 per 100 000 inhabitants). In 2009 the rate was 6.34 per 100 000 inhabitants [7,8].

Educational Programs run to improve or maintain the health of the population, are oriented to promote knowledge, create a positive attitude to change behavior, develop a skill of self-care, among many other purposes [9], which leads to the observation, where drawn up an educational program would increase knowledge and therefore improve the control and prevention of tuberculosis in the community, so we set out to design an educational intervention strategy and clarify where we should direct our actions with the aim of achieving behavioral changes in our populations.

Materials and Methods

The research was conducted in the community polyclinic “Twentieth Anniversary” of the municipality of Santa Clara, Villa Clara province. The study covered the period from 1 July 2017 to 31 July 2018. A random sampling 360 random people of both sexes aged 15 years was conducted. The research comprised two stages: a first prospective descriptive stage, with the aim of identifying the learning needs of the population by the method of David Leiva, through a survey that was performed and the second stage was based on research development in which an educational strategy for the control and prevention of tuberculosis was elaborated, the one shown below.

Education Strategy

The need to increase knowledge about the population, a system of capacitated actions was established.

Fundamental Problems

Lack of knowledge about pulmonary tuberculosis. Little educational action of basic health team. Little diffusion in mass media and educational activities at the community level.

Objectives

General: Increase knowledge on the prevention and control of tuberculosis in the “XX Anniversary” community that promote changes in lifestyle and facilitate the stage of change.
Specific:

1. Capacitated perform actions to increase knowledge on pulmonary tuberculosis in population, family and community.
2. Perform actions of social communication.
3. Create evaluation mechanisms, monitoring and control.

Educational Strategy

The strategy will be based on providing information, education and social communication to the public, to increase

knowledge about pulmonary tuberculosis. In this sense they are proposed as main actions: Informing the population mainly on tuberculosis transmission routes, predisposing factors and their consequences. Educate the population in relation to healthy lifestyles that are related to the prevention of pulmonary tuberculosis. Develop a comprehensive social media campaign on the issue through all possible media dissemination and community level.

Activities

The program will be capacitated through actions which will enable social actors establish communication as an interactive process to meet your needs; will be conducted in groups of 10 people and will be adapted to the characteristics of each auditorium, school groups will be made by.

Beneficiary's

Direct beneficiaries or primary audience. It is aimed primarily at the county population belonging to the area of health “XX Anniversary”.

Indirect Beneficiaries or Secondary Audience

- Community members.
- Community leaders, including representatives of mass organizations.
- Personal health: basic equipment makers and health (EBS).
- Workers Labor Centers framed on the perimeter to intervene.
- Duration: It will be permanent for one year.

The Most Appropriate Communication Channels are:

- Technical research team, EBS, CMF, families and community leaders.
- Media: printed brochures and videos.
- Intervention scenarios:
- Waiting rooms polyclinic
- Medical consultants
- Multi-Purpose North County House
- North County Library
- Schools

Conceptualization

Designing messages for mass media and interpersonal and group communication will be based primarily on the model of social learning and health beliefs. Models reflecting the audience and attitudes that will be developed (see Annex 3) will be used. Behavioral ability (self-efficacy) and the

standard subjective (perception of what they think the same behaviors that are assumed), and the perception of severity and risk is taken into account. The benefits are emphasized, not be confined only to health.

- **Creative Strategy**

Models that reflect the population referred will be used.

Appeal to affective, cognitive and cognitive area.

Elevated risk perception increasing susceptibility and perceived severity.

Strengthening the gender perspective.

Combination of communication médium

Interpersonal communication will be made by doctors and family nurses, who will be previously trained through workshops, conferences, seminars and supports graphics. The group communication is carried out in conjunction with social and mass organizations, through discussions neighborhood health hearings, and other group techniques, well designed graphics and audiovisual materials will be used for this purpose.

Main Activities to Fulfill Each Objective

1. Perform capacitated actions to increase knowledge on pulmonary tuberculosis in the population and in the family.

Activity	Run	Responsible	When	Where	Evaluation
Sensitization and training workshops with health decision-makers.	Technical team	Municipal Health Director	Oct-17	Health Area	Systematics
Sensitization and training workshops with health personnel (EBS).	Technical team	Director of the health area	Oct-17	Health Area	Systematics
Sensitization and training workshop with representatives of the mass media.	Technical team	Directors of radio stations and newspapers	October-November 2017	Multipurpose	Systematics
Awareness-raising and training workshops with the population and training actions.	Technical team	Director of the health area	01-12- January-February-March 20182017	Health Area	Systematics
Awareness-raising and training workshops with community leaders.	Technical team	Chairman of the board of the provincial administration	April-May-June-July 2018	Community scenarios	Systematics

Carry out social communication actions

Activity	Execute	Responsible	When	Where
Creation and validation of educational materials	Technical team and community participants	Vice Directorate of Health Area Epidemiology	August-September-October 2017	Community and Health Area.
Broadcasting of radio and television programs with interviews to specialists	Journalists and broadcasters from different media and specialists	Technical team	Starting January 2018 on a permanent basis	Radio and television stations as well as radio bases Flat press
Preparation of articles to be published in the press	Journalists and specialists in the flat press	Technical team	Starting January 2018 on a permanent basis.	

Format	Frequency	Distribution
Spots televisivos	Diary	In regular Municipal Television slots Municipal radio stations
Radial wedges	Diary	
Plana Press Journalistic works in the page of the municipal newspaper	1 weekly	For the entire population

The communication by the mass media will be as follows:

- **Graphic Materials**

And folding poster with messages aimed at the population.

- **Means**

Human: Specialists from all sectors involved, officials of all

levels, Target Population.

Materials: pencil, paper, video, television, computer, and other necessary.

Infrastructure and financial and others provide the Community.

2. Create mechanisms for monitoring and evaluation

Activity	Execute	Responsible	When	Where
Evaluation cuts of the intervention process.	Technical group	Health and community area	Semestral	Vice Area Epidemiology and/or at the Multipurpose House in the community

Indicators to consider

Evaluation Process

Indicators	Standards	Methods
No. of trainings carried out/No. of trainings convened	Adequate more than 78%	Register of activities to be developed
No. of persons trained/No. of persons summoned	Adequate more than 75%	Attendance register
No. of messages prepared/Total number of messages to be prepared	Adequate more than 80%	Registers

Evaluation of Results

Indicators	Standards	Methods
% of knowledge about tuberculosis	50% increase over the previous situation	Results of the survey conducted at the beginning and at the end
% of knowledge about prevention measures	50% increase over the previous situation	Results of the survey conducted at the beginning and at the end
% of information received about tuberculosis by the family physician and nurse practitioner	50% increase over the previous situation	Results of the survey conducted at the beginning and at the end

Impact assessment

Indicators	Standards	Methods
% person with knowledge of tuberculosis	50 % increase over the previous situation	Survey conducted at the beginning and end
% of family members with knowledge of tuberculosis	Adequate: 50% of family members participating in the project with knowledge about tuberculosis	Knowledge questionnaire
% of community leaders with knowledge about tuberculosis	Adequate: 50% of community leaders participating in the project with knowledge about tuberculosis	Knowledge questionnaire
% of EBS members with knowledge of tuberculosis.	Adequate: 50% of the community leaders participating in the project with knowledge about tuberculosis	Knowledge questionnaire
% of community with knowledge about tuberculosis	Adequate: 50% of community leaders participating in the project with knowledge about tuberculosis	Knowledge questionnaire and participant observation

Universe and Sample

The calculation of sample size was performed according to

criteria established by specialists leaving 360 people.

Inclusion criterion**The largest populations of 15 years.**

- Acceptance of the population for the survey.
- Do not suffer psychiatric disorders.

Exclusion criterion

- Population refuses to participate.
- Personal disabled.

Results

There is lack of knowledge about tuberculosis in 93.9% of the population. 92.5% do not perceive the risk of the disease, 89.2% do not know the ways of how to prevent disease, 4.4% of the information by the nurse and the doctor 16.9 families (Table 1).

What should it be?	What is it really?	Discrepancy	Needs	Alternative solutions
100% of the population has adequate knowledge about tuberculosis	93.9% of the population does not know about tuberculosis.	To increase the knowledge of the population	Incorporate knowledge through education and information once their learning needs have been identified	Conduct research to design information, education and communication projects
100% of the population has a perception of the risk of tuberculosis	92.5% do not perceive the risk of the disease	Try to raise the perception of risk	Increase educational actions	Public training, health hearings,
100% should know how to prevent the disease	89.2% do not know how to prevent the disease	How to increase knowledge in the population	Incorporate knowledge through awareness-raising workshops and training activities	Discussions and analysis in meetings with, presentation of results of community surveys
100% of the information must be through the GBT	4.4% of the information is provided by the nurse and 16.9% by the family physician	How to increase information in the population by GBT	Provide information through promotional activities carried out by the GBT	Carry out interventions with community participation to develop educational materials

Source: Survey conducted 10% of the population-surveyed polyclinic XX Anniversary.

Table 1: Educational Diagnosis based detection model learning needs of David Leyva.

The Table 2 shows the distribution of the study population was observed by sex, which prevailed more in males, with 66.1% of the women with 33.9%.

Total		
Sex	No	%
Male	238	66.1
Female	122	33.9
Total	360	100

Source: surveys.

Table 2: Distribution of the study population by sex. 2017-2018.

The distribution of the population was analyzed according to knowledge about tuberculosis by age group, as reflected in table 3, which shows that 28.9% of those aged between 27- 40 years, 28.1 % they do not know about it, while 26.9% of the age of 41 -54 years 27.5% have no knowledge about the disease, followed by the group of 13-26 with 18.6% (Tables 3-7).

Age group	Knowledge about tuberculosis				Total	
	Know		Do not know			
	No.	%	No.	%	No.	%
13-26	9	31.9	63	18.6	70	19.4
27-40	7	40.9	95	28.1	104	28.9
41-54	4	18.2	93	27.5	97	26.9
55-68	1	4.5	60	17.8	61	16.9
69-82	1	4.5	27	8	28	7.8
Total	22	100	338	100	360	100

Source: surveys.

Table 3: Distribution of the study population as knowledge about tuberculosis by age groups 2017-2018.

Knowledge of tuberculosis schooling as shown in table 4, where it was observed that 35.8% of people who had a high school education level, the (37.0%) were unaware, while a 24.4% average technician, (23.7%) were unaware, followed by 16.7% who represent senior high schools of which 16.0% reported unaware of the disease.

Schooling	Knowledge of tuberculosis				Total	
	Know		Not known			
	No.	%	No.	%	No.	%
Primary	1	4.8	32	9.5	33	9.2
High School	4	18.2	125	37	129	35.8
Preuniversity	6	27.3	54	16	60	16.7
Medium technician	8	36.4	80	23.7	88	24.4
University	3	13.6	47	13.9	50	13.9
Total	22	100	338	100	360	100

Source: Surveys.

Table 4: Distribution of the study population as tuberculosis knowledge and education.

The correlation between knowledge and prevention measures listed, showing that 89.2% of people have no knowledge, do not know the preventive measures to avoid infection of tuberculosis or minimize damage not going well in 10.8% of the people in the study are aware of the measures to be considered to avoid the disease (Table 5).

Preventive measures		
Knowledge	Total	%
Know	39	10.8
Not known	321	89.2
Total	360	100

Source: surveys.

Table 5: Distribution of the study population as knowledge of tuberculosis prevention.

It was noted in table 6, 100% of the study population (24.2%) was reported television while 16.9% was informed by the nurse of the family, followed by friends and Radio (15.8% and 14.7%).

Strategy designed to validate the analytical program

Questions	Before		After	
	Total	%	Total	%
1. Can infect with the tuberculosis bacillus?	20	45	20	96
2. Symptoms of tuberculosis?	20	44.3	20	97.8
3. Learn how to prevent tuberculosis?	20	41.2	20	98

Source: Surveys.

Table 7: Ratio of knowledge before and after the XX Anniversary 2017-2018.

was applied to 20 people in the population study, which underwent a pre-test and post-test. Demonstrating the effectiveness and efficiency of the program to analyze some selected indicators for evaluation of 12 training to conduct took place 12 to 100% compliance, of the 20 people selected for the intervention the 94.55 attended all training meeting the standard set, is increased more than 50% knowledge about tuberculosis and prevention measures there of with respect to the initial situation, results of the survey are in the (Table 7) reflecting a before and after.

Medios of Communications	Total	
	No	%
TV	87	24.2
Friends	57	15.8
Radio	53	14.7
Press	49	13.6
Family Doctor	61	16.9
Family nurse	16	4.4

Source: surveys.

Table 6: Distribution of the study population according to the media by which reports from 2017 to 2018.

The observation throws results within that highlight gestures of disgust, fear but also with some concern to know that it is a disease that exists and continues to increase the Tb was identified; is an infectious disease, inappropriate behavior was observed when talking over each other, coughing, sneezing without covering your mouth and spit, show some uncertainty as to the infectiousness, if they believe that sticks.

After making the working sections the post-test for validation of the strategy was applied, it was found that knowledge is more and more confidence less afraid to speak and safer behavior was observed in terms of actions, coughing, talking or sneezing. By having, necessary knowledge about the disease positive attitudes and healthy behaviors both individual and group, and favorable conscious, reflective v organized participation for people against the disease was achieved.

Discussion

The results of our research showed the level of ignorance that exists in the population about tuberculosis and the low perception of risk in this entity, which is consistent with the results obtained by González VBL, et al. [9-11].

In this study, male dominance over females confirmed in studies in patients with tuberculosis that male gender is most affected, while the female tends to decrease as age increases. The gender gap also influences the incidence of tuberculosis, treatment and recovery [12].

According to the age groups studied, the economically active population was what I contribute the greatest number; it is suggested that infection occurs from an early age and is more common in young and aggressive groups of 15 to 45 people [13,14]. Knowledge about tuberculosis showed that most people are unaware of the main symptoms of TB infection, so do measures to prevent disease 89.2% is not aware of how to prevent it [15-17].

In a study conducted to modify knowledge of pulmonary tuberculosis in adults, it is proposed that measures to prevent and control tuberculosis include disclosure of the main characteristics of the disease in both healthy people and sick, allowing to develop a program educational and emphasize this important and necessary aspect to mitigate the damage that could cause an epidemic, which coincides with the results obtained by Zayas VM, et al. [18-20].

The investigation showed that the media contributed the highest percentage in terms of the information received by the population, followed by friends and family physician, all of which leads us to reflect on the role of these spaces mass communication in the knowledge of this disease, coinciding with other studies [21,22].

A high level of ignorance was found in the population over 15 years about tuberculosis infection. The educational strategy was developed and is valid with 20 people, increasing by more than 50% knowledge about tuberculosis and prevention measures thereof with respect to the initial situation people were very safe, with very positive views about of the illness.

It is concluded that in the study population there are gaps in learning tuberculosis because of ignorance of it.

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