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ORIGINAL ARTICLE

Training of non-biomedical professors to conduct active survey related to COVID-19

Preparación de los profesores no biomédicos para conducir la pesquisa activa relacionada con la COVID-19

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ABSTRACT

Introducción: the technical preparation of teachers to conduct active research related to COVID-19 is essential for a correct development of the process.
Objective: to describe the technical preparation of non-biomedical professors of the University of Medical Sciences of Las Tunas to lead students in the active investigation related to COVID-19.
Method: an observational, descriptive and cross-sectional study was carried out with non-biomedical professors of the institution between March and May 2020. The universe included the 56 professors assigned to the health area of the "Manuel Fajardo" University Polyclinic of Las Tunas and the sample remained made up of 22 non-biomedical professors. The data were processed using descriptive statistics.
Results: teachers with more than 6 years in medical education predominated. The English subject with the highest number of teachers (31,82 %) stood out. According to self-perception, 90,91 % considered they were prepared to conduct the research. Regarding the evaluation of knowledge, 68,18 % correctly defined the concept of clinical method and 59.09% were unable to establish the difference between passive and active research. The 31,82 % did not correctly identify the taxonomy of COVID-19. The media were the main means of acquiring knowledge (86,36 %).
Conclusions: the preparation of non-biomedical teachers to conduct the research is adequate. The experience in medical education was pointed out as an aspect in favor of these professionals. The main deficiencies lay in the differentiation between active and passive research.

Keywords: Faculty; Health Knowledge, Attitudes, Practice; Education, Medical; Coronavirus Infections

RESUMEN

Introduction: la preparación técnica de los profesores para conducir la pesquisa activa relacionada con la COVID-19 es fundamental para un desarrollo correcto del proceso.
Objetivo: describir la preparación técnica de los profesores no biomédicos de la Universidad de Ciencias Médicas de Las Tunas para conducir a los estudiantes en la pesquisa activa relacionada con la COVID-19.
Método: se realizó un estudio observacional, descriptivo y transversal con profesores no biomédicos de la institución entre marzo y mayo de 2020. El universo incluyó los 56 profesores asignados al área de salud del Policlínico Universitario "Manuel Fajardo" de Las Tunas y la muestra quedó conformada por 22 profesores no biomédicos. Los datos fueron procesados mediante estadística descriptiva.
Resultados: predominaron los profesores con más 6 años en la educación médica. Se destacó la asignatura de inglés con el mayor número de profesores (31,82 %). Según autopercepción, el 90,91 % consideraron estar preparados para conducir la pesquisa. Sobre la evaluación de los conocimientos, el 68,18 % definieron correctamente el concepto de método clínico y el 59,09 % no lograron establecer la diferencia entre

pesquisa pasiva y pesquisa activa. El 31,82 % no identificaron correctamente la taxonomía de la COVID-19. Los medios de comunicación fueron la vía principal de adquisición de los conocimientos (86,36 %).
Conclusiones: la preparación de los profesores no biomédicos para conducir la pesquisa es adecuada. La experiencia en la educación médica fue señalada como aspecto a favor de estos profesionales. Las principales deficiencias radicaron en la diferenciación entre pesquisa activa y pasiva.

Palabras clave: Docentes; Conocimientos, Actitudes y Práctica en Salud; Educación Médica; Infecciones por Coronavirus.

INTRODUCTION

Due to its importance to conduct health promotion and prevention, active survey has become into one of the actions within the planning of teaching activities in the medical sciences; being part of the public health and environmental education of the curricular strategy[1] . In the same way, it is an important organizational form of the teaching-learning process in a variety of subjects, as it forms part of the activities developed during in-service education.

Active survey in the medical sciences has been defined as the set of actions aimed at determining the health status of individuals at the level of the population in the community, detecting possible sick individuals and identifying early cases with symptoms associated with a determined disease, as well as population at increased risk suffering from severe illness or screening of people in vulnerable groups. The main purpose of the active survey is to be able to make an early diagnosis of presumptive positive cases[2,3].

The fact that humanity is constantly besieged by epidemics requires the implementation of protocols to cope with epidemic outbreaks that affect the population. Among the epidemics that have strongly affected entire nations are those caused by viruses[4]. Within the protocol actions to achieve an effective control of these epidemics are the active survey. In Cuba, it has been traditionally planned to carry out the active surveys, including students and professors, in order to prevent and control epidemic outbreaks of contagious diseases such as dengue fever[5].

Since the beginning of the current year 2020 and due to the worsening of the international epidemiological situation because of the emergence of a novel disease caused by SARS-CoV 2 (Severe Acute Respiratory Syndrome Coronavirus 2), the organisms and sectors of the Cuban State Central Administration began the design and implementation of a system of measures to cope with it[6]. COVID-19, denomination acquired from the English term coronavirus disease and the year 2019,[3] was declared a pandemic on March 11, 2020 by the World Health Organization (WHO)[7]. Coincidentally, on March 11 itself, the first cases were reported in Cuba[6].

Based on this situation, the Ministry of Public Health (MINSAP) activated the research system that included the medical universities. For this purpose, a training process was developed for professors and students through workshops. In these spaces, the most important aspects of this disease were highlighted, as well as the necessary actions for its prevention and control[8].

On March 19, the active survey began with the students of the 3rd and 4th academic years of dentistry and those who were starting the clinical rotation in public health specialty from the 5th academic year of medicine. On March 23rd, the rest of the students of medical sciences, except for those in the last years, joined the active survey. The main objective of the active survey was originally to identify cases with respiratory symptoms and fevers; then other symptoms such as headache, malaise, weakness, and sore throat, which could be associated with COVID-19[9], were included.

When survey actions are activated, the student workforce is led by medical university professors. Each professor is assigned a group of students who, in turn, are assigned to a family doctor's and nurse's office[8]. These professors have the high responsibility of conducting the practical work of the survey, guiding the students in the work they must accomplish, supervising the work, guaranteeing the discipline and receiving the information

collected by the students to be later reported to the headquarters of the health area, represented by a professor from the polyclinic.

The teaching staff of the medical universities is comprised of a variety of specialists in different sciences. The professors who work on the university campus belong to the basic biomedical sciences, preclinical sciences and other disciplines that contribute to general education[10]. The disciplines of general education are mostly taught by professors whose academic training has not been in medical universities. This group includes the disciplines or subjects of English Language, Computer Science (part of the professors, not all of them), History, Philosophy and Physical Education.

From the teaching staff, the biomedical professors have an academic training in medical universities that allow them to carry out their professional work, whose knowledge is based on the biological bases of medicine. On the other hand, non-biomedical professors acquire knowledge related to the medical sciences through postgraduate courses, up-to-date workshops and basically, through the study of the biological basis of medicine. Taking into consideration the clinical and epidemiological nature of the research[11], the difference in knowledge acquirement between biomedical and non-biomedical professors may result in the study developed exclusively to classify the status of health and report this collected information; losing other reports offered by the activity. This is based on the fact that students usually see the professor as the vital leader who knows everything; regardless of the subject he or she is teaching[12].

In order to know the tangible state of the level of knowledge of these professors, a description of the technical training they developed to conduct the active survey related to COVID-19 was proposed as the objective of this study at Las Tunas University of Medical Sciences.

METHOD

An observational, descriptive and cross-sectional study was carried out at Dr. Zoilo Enrique Marinello Vidaurreta School of Medical Sciences, Las Tunas University of Medical Sciences, between March and May 2020. The target group included 56 professors, from all of the subjects, those who were assigned to the health area of Manuel Fajardo Teaching Polyclinic, Las Tunas province. The sample comprised 22 non-biomedical professors of general education subjects. The inclusion criteria chosen were: to be a graduate professor from non-medical universities and not to teach subjects related to the biological bases of medicine.

For the collection of data, a survey was designed based on other existing ones. The variables studied were: years of experience in medical education, allocation of professors according to non-biomedical subjects, self-perception of the level of theoretical knowledge required to carry out the survey, evaluation of knowledge related to the these research method and ways of acquiring theoretical knowledge to conduct research work with students.

The following variables were measured to determine the influence of work experience and the level of knowledge[13] on the efficiency of the research work: years of experience of these professors and professional performance. The variables were measured with the indicators assessed and was carried out using survey and observational methods. The evaluation of the level of knowledge of the professors about this research method was made on the basis of the fundamental contents that should be known for a scientific development of the research process, by means of the qualifications of good, fair and poor, following the principles established by the didactics to evaluate the level of knowledge[14].

All the information gathered was stored in a database made for this purpose and was processed by applying the statistical package SPSS 21.0; through the methods of descriptive statistics, by means of absolute and relative percentage frequency.

The ethical procedures of medical research methodology established in the Declaration of Helsinki, adopted by the 18th World Medical Assembly in June 1964, were taken into account. Participants were asked for informed consent, anonymity was maintained, no recordings were made, and only the minimum

necessary information to maintain the reliability and scientific character of the study was provided. The research instruments applied were prearranged by the research team to which the work responds and approved by the Provincial Health Scientific Committee of Las Tunas, who directs the project, and by the Ethics Committee at Las Tunas University of Medical Sciences.

RESULTS

Professors between 6 and 10 years of experience in medical teaching predominated (36,36 %). It was observed that more than 86.37% of them had more than 5 years of experience (Table 1).

Table 1- Distribution according to years of experience in medical education of non-biomedical professors

Years of teaching experience in medical education	No.	%
1 - 5	3	13,63
6 - 10	8	36,36
11 - 15	4	18,18
16 - 20	5	22,73
21 - 25	1	4,55
26 - 30	0	0
31 - 35	1	4,55
Total	22	100

The highest number of professors was found in the subjects of English Language (31,82 %), followed by Computer Science (22,73 %) and Physical Education (22,73 %) (Table 2).

Table 2. Distribution of professors according to the non-biomedical subjects they teach.

Disciplines	No.	%
English Language	7	31,82
Informatics	5	22,73
History	3	13,63
Philosophy	2	9,09
Physical Education	5	22,73
Total	22	100

The 90,91 % of the professors considered, according to self-perception, to have the necessary level of technical knowledge to carry out the work of the current research. However, the applied evaluative instrument showed results fair and poor results in several knowledge, standing out the fact that 13 professors (59,09 %) did not know how to establish correctly the difference between passive and active survey (table 3).

When studying the ways of acquiring knowledge about this research method, 86,36 % referred to the mass media; 54,55 % referred to self-management as a way of acquiring knowledge about this research method as opposed to COVID-19 (table 4).

The influence of teaching experience and the level of knowledge of these professors to achieve these competences, confirmed a high number of professors evaluated as good according to their teaching experience (6 years and more 86,36 %). There were minor difficulties in professional performance with 27,27 % evaluated as fair.

Table 3- Distribution of professors according to the evaluation of knowledge related to active survey as a research method

Knowledge	Good		Fair		Poor	
	No.	%	No.	%	No.	%
Difference between active and passive survey as a research method	2	9,09	7	31,82	13	59,09
Definition of the clinical method	15	68,18	6	27,27	1	4,55
Stages of the epidemiological method	7	31,82	11	50	4	18,18
Taxonomy of the novel coronavirus	10	45,45	5	22,73	7	31,82

Table 4. Distribution of professors according to the ways of acquiring theoretical knowledge for conducting active surveys with students in the community

Ways of acquiring knowledge	No.	%
Self-management	12	54,55
Through the help of biomedical professionals	16	72,73
Trough the teaching of workshops and courses prior to the research work	16	72,73
Through the mass media	19	86,36

Table 5. Distribution of the influence of teaching experience and the level of knowledge regarding the efficiency to do research work.

Variables and indicators	Good		Fair	
	No.	%	No.	%
Indicators according to the years of professional experience				
Experience of 1 year	0	0	1	4,55
Experience of 2-5 years	2	9,09	0	0
Experience of 6 years and more	19	86,36	0	0
Indicators according to professional performance				
Biomedical competences according to the professional training	16	72,73	6	27,27
Quality on the information reports	21	95,45	1	4,55

DISCUSSION

Years of teaching experience in medical education centers have a decisive influence on the teaching work of professors, which includes in-service education, an organizational structure of which the active survey as a research method is a part. In each academic year, in medical universities, with the guidance and supervision of the national directors of medical higher education in the Ministry of Public Health (MINSAP), planning of research periods of the academic year is established when epidemic outbreaks are common, mainly of arbovirosis such as dengue fever[5].

The fact that most of the professors included in the study have more than six years of teaching experience in medical education shows a consolidated, experienced staff with a high level of technical knowledge to conduct the research work of the students. It made possible the organization and implementation of the active survey and carried it out in a satisfactory way, given that the professors previously had the practice of having participated in other moments in this type of educational activities in the workplace, independently of being included in the category of non-biomedical professors.

When responding to the call for active survey as a research method due to the emergency that arose from the national and international expansion of COVID-19, many professors were unaware concerning the definition of active survey as research method and the actions to be taken. However, this possible limitation related to knowledge was not a barrier to initiate the active survey with the presence of professors, both biomedical and non-biomedical. The integration to the work in the community was based on the experience, because one and all knows that do research is part of their work content and it is a process in which most had already participated in previous academic courses. However, from the point of view of professional competence, most of the professors included in the study did not know, technically, what an active survey as a research method is. Although the national medical literature is not plentiful in publications that deal with the differentiation between passive and active survey as a research method, there are some materials that refer to the subject[15].

From the contents evaluated, it was highlighted the high number of professors who obtained the qualification of good and fair about the definition of clinical method, showing an adequate level of knowledge about this basic component of medical sciences. This result can be assessed as satisfactory and it is a direct consequence of the scientific-academic progress that has been made concerning the application of the clinical method at Las Tunas University of Medical Sciences in the last 10 years. In this sense, the existence of a research that manages the subject from which different academic and research activities have emerged is highlighted, such as the teaching of several editions of a postgraduate course with reference to the application of the clinical method in medical education, the scheduling of scientific events such as workshops and conferences on the teaching-learning process of the clinical method in the medical sciences, as well as the preparation of didactic materials and publications[10,16].

A similar result was achieved with reference to the identification of the stages of the epidemiological method. In the activities carried out during the last academic years in the university, related to the teaching of the clinical method, mentioned above, the linkage of this with the epidemiological method was emphasized. This result related to the training of professors was also evaluated as satisfactory, because it shows that, although there are still deficiencies in this subject matter, the non-biomedical professors know the foundations of the scientific method applied to the medical sciences. Knowledge acquisition on the relationship between the clinic and epidemiology is the scientific basis of active survey as a research method[17].

Although through different means it has been explained and insisted on the taxonomic classification of SARS-CoV-2, no satisfactory results were obtained when evaluating knowledge on its taxonomy. These explanations have been offered, both to raise the cultural background of the population, and to expand their linguistic competence. These conceptions could be considered insubstantial, but pedagogically, the student imitates the professor, who is the conductor of the teaching-learning process[12]. Furthermore, the accurate knowledge of contents, both from a linguistic and medical perspective, offers the professor a professional status and academic prestige among the students.

With respect to the ways in which theoretical knowledge is acquired in order to do research with students in the community, the mass media stands out; this coincides with what was obtained in a study conducted with the students[3]. Nevertheless, it was possible to verify that a great part of the professors recognized the importance of training courses and workshops, confirmed by means of the figures and percentages obtained from the application of the instrument.

On the other hand, the results of the study encourage a review of the performance of non-biomedical professors, which should be carried out on the basis of their teaching work in a medical university, so that their professional performance responds to the interests of the institution and to the precepts related to public health. It is not necessary that the non-biomedical professor becomes an expert in medical sciences, but that, with the professional expertise, from the subject or discipline taught, the professor contributes scientifically to the teaching-learning process of the medical education and, consequently, to medical assistance and research.

The analysis of the influence of experience and knowledge of professors for a successful development of the research showed that this depends to a great extent on the evaluated variables. It was of great importance the participation of the professors in research processes of previous academic courses. Likewise, the training of biomedical competence turned out to be a decisive element to achieve a satisfactory professional performance. Although a small part of professors participated in the workshops, they have not been taught specialized courses in medical sciences.

Among the main limitations of the study, it is reported that no materials were found to evaluate the work of non-biomedical professors in research work. This fact could be a problem for future researches.

It is concluded that the training of non-biomedical professors to conduct the active survey as a research method is adequate. The experience in medical education was pointed out as an aspect in favor of these professionals. The main deficiencies were in the differentiation between active and passive survey as a research method. The level of knowledge about the components of the clinical-epidemiological method stood out.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

CONTRIBUTION OF THE AUTHORS

VMR and SEPB participated in the conceptualization and research. YMAP, ICM and LGM participated in the formal analysis. VMR was in charge of drafting the original document. All the authors participated in the writing, revision and editing of the manuscript

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ADDITIONAL MATERIAL

Additional material can be consulted at : http://www.revgaleno.sld.cu/index.php/ump/rt/suppFiles/587

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