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# *Student scientific activity at the University of Medical Sciences of Las Tunas during 2020-2023*

# *Actividad científica estudiantil de la Universidad de Ciencias Médicas de Las Tunas durante el 2020-2023*

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**ABSTRACT**

**Introduction**: the analysis of student scientific activity is of vital importance to identify trends and outline strategies in pursuit of improving the quality of undergraduate research.

**Objective**: to characterize the scientific activity of students at the University of Medical Sciences of Las Tunas during 2020-2023.

**Method**: a descriptive cross-sectional study was carried out with the previous objective; the universe was taken as the 89 works presented during 2020-2023 to the provincial student scientific conference and the sample was the 63 awarded of all these conferences that managed to be included in the research.

**Results**: the most represented academic year was the 4th (26; 41.27 %). The career with more scientific activity was Medicine with 37 students (58.63 %). The most presented type of article was the review article with 25 researches (39.68 %). The predominant research topic was diagnosis and treatment (32; 50.79 %), and surgical sciences assistantships (29; 46.03 %). Of the total, 39.56 % (25) were published in scientific journals.

**Conclusions**: the scientific activity of students of medical sciences in Las Tunas was characterized, it is necessary to take strategies to improve the quality and characteristics of this research.

**RESUMEN**

**Introducción:** el análisis de la actividad científica estudiantil es de vital importancia para identificar tendencias y trazar estrategias en pos de mejorar la calidad de la investigación en el pregrado.

**Objetivo:** caracterizar la actividad científica de los estudiantes de la Universidad de Ciencias Médicas de Las Tunas durante el 2020-2023

**Método:** se realizó un estudio descriptivo de corte transversal con el objetivo anterior, se tomó como universo los 89 trabajos presentados durante el 2020-2023 a la jornada científica estudiantil provincial y la muestra los 63 premiados de todas estas jornadas que lograron

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incluirse en la investigación

**Resultados:** el año académico más representado fue el 4to (26; 41,27 %). La carrera con más actividad científica fue Medicina con 37 estudiantes (58,63 %). El tipo de artículo más presentado fue el Articulo de revisión con 25 investigaciones (39,68 %). El tema de investigación predominante fue Diagnóstico y tratamiento (32; 50,79 %), y las ayudantías de las Ciencias quirúrgicas (29; 46,03 %). Del total el 39,56 % (25) se encuentran publicados en revistas científicas.

**Conclusiones:** se caracterizó la actividad científica de los estudiantes de las ciencias médicas de Las Tunas, es necesario tomar estrategias para mejorar la calidad y características de estas investigaciones.

## INTRODUCTION

Scientific research plays a fundamental role in the field of medical sciences undergraduate studies; it is crucial to recognize that it not only complements the theoretical and practical training of students, but also provides them with the opportunity to explore specific areas of interest and develop research skills[1].

Student scientific activity (ACE) is defined by Hernández-García[2] as the set of tools and processes in which the student participates and which allow him or her to acquire skills in the development of research. It constitutes a determining factor in the training of the student and becomes a key element for his or her comprehensiveness, and constitutes one of the pillars of contemporary university training[2-6]. Research from the undergraduate level in Cuba is not only developed from the curricular, but also student organizations play a fundamental role, such as the Federation of University Students (FEU) and within it the Student Scientific Group (GCE), who coordinate together with the institution the development of the ACE[2].

Among the methods promoted by the FEU and the GCE is participation in student scientific events or scientific conferences, which constitute one of the most important extracurricular activities in which students participate. These provide students with the opportunity to show the skills acquired during the course with respect to scientific research and thus prepare them for their future life as a candidate

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for the country's top research centers[3].

In this context, scientific conferences represent an invaluable platform where students have the opportunity to share and analyze the scientific production they have generated throughout their academic training.[2] The analysis of the scientific production presented at the conferences is of vital importance to evaluate the impact and relevance of the research carried out by the students. These evaluations not only allow for the identification of areas of opportunity and improvement in the projects presented, but also contribute to strengthening the quality of research in the field of medical sciences undergraduate studies. Furthermore, the analysis of scientific production can serve as an indicator of the commitment and dedication of students to health research[1], a fundamental aspect in the training of professionals committed to scientific advancement and the well-being of society. Therefore, this research is carried out with the aim of characterizing the scientific activity of students at the University of Medical Sciences of Las Tunas during 2020-2023.

## METHOD

An observational, descriptive and cross-sectional study was carried out at the University of Medical Sciences of Las Tunas, from September 2020 to September 2023 with the aim of characterizing the scientific activity of students. The universe consisted of the 89 works of the scientific conferences and the sample was the 63 works awarded in the 3 editions of the Student Scientific Conference of the period. For this, an intentional probabilistic sampling was used. All the awarded works were included and students from the first and sixth year of the degree were excluded due to their transition to higher years during the course of the research. The variables studied were: academic year of the main author, work modality, quality based on the award obtained, assistantship (The type of assistantships were grouped between Clinical Sciences (CC), Surgical Sciences (CQ), Basic and preclinical sciences (CB) and Diagnostic Sciences (CD) ) and career of the main author, research topic (Prevention and health promotion (PP), Diagnosis and treatment (DT), Rehabilitation (RH), Educational cut (CE) and Bibliometric cut (TB) ) and published works. The data were collected from the database prepared with the official reports of accepted and awarded works of the event. A database was created in Microsoft Excel 2010. Descriptive statistics were applied using absolute and relative frequency.

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The approval of the Ethics Committee and the Scientific Council of the University of Medical Sciences of Las Tunas was obtained. The ethical principles of beneficence, non-maleficence, justice and autonomy established in the Second Declaration of Helsinki were respected.

## RESULTS

Regarding the students' career and academic year (**Table 1**), we were able to observe that the predominant career was Medicine with 37 students (58.63%) and the academic year was the fourth year (26; 41.27%).

**Table 1.** Academic year and major of students. University of Medical Sciences of Las Tunas, 2020-2023.

| Career | Academic year | | | | | | | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2 | | 3 | | 4 | | 5 | | No. | % |
| | No. | % | No. | % | No. | % | No. | % | | |
| Medicine | 8 | 12,7 | 5 | 7,94 | 17 | 26,98 | 7 | 11,11 | 37 | 59 |
| Odontology | 6 | 9,5 | 5 | 7,94 | 3 | 3,77 | - | - | 14 | 22 |
| Nursing | 1 | 1,6 | - | . | 5 | 7,94 | - | - | 6 | 9,5 |
| Health Technologies | 3 | 4,77 | 2 | 3,17 | 1 | 1,6 | - | - | 6 | 9,5 |

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| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Total | 18 | 28,57 | 12 | 19,05 | 26 | 41,27 | 7 | 11,11 | 63 | 100 |

**Source:** Database

Regarding the type of article and the quality of the work (**Table 2**), review articles predominated with 25 for 39.68% and the mention as quality was the most numerous (23 for 36.50%).

**Table 2.** Article type and quality. University of Medical Sciences of Las Tunas, 2020-2023.

| Item Type/Quality | Relevant | Outstanding | Mention | Total | % |
|---|---|---|---|---|---|
| Review article | 8 | 8 | 9 | 25 | 39,68 |
| Original Article | 9 | 7 | 7 | 23 | 36,50 |
| Case Presentation | 5 | 3 | 7 | 15 | 23,81 |
| Total | 22 | 18 | 23 | 63 | 100 |
| % | 34,92 | 28,57 | 36,50 | 100 | |

**Source**: Database

The most common assistantships (**Table 3**) were those related to surgical sciences with 29 (46.03%), and the predominant research topic was related to diagnosis and treatment (32 to 50.79%). It is also noted that 67% of the topics (42) were found in relation to the assistantship of the main author.

**Table 3.** Assistantship of the lead author and research topics presented. University of Medical Sciences of Las Tunas, 2020-2023.

| Assistantship/Topic | PP | DT | RH | CE | TB | Total | |
|---|---|---|---|---|---|---|---|
| CB | 1 | - | 2 | 5 | 1 | 9 | 14,28 |
| CC | 3 | 13 | 1 | - | - | 17 | 26,98 |
| CQ | 5 | 18 | 2 | 3 | 1 | 29 | 46,03 |
| CD | 5 | 1 | 2 | - | - | 8 | 12,69 |

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| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Total | 14 | 32 | 7 | 8 | 2 | 63 | 100 |
| % | 22,22 | 50,79 | 11,11 | 12,69 | 3,17 | 100 | |

**Source**: Database

Of the total number of works presented, only 39.56% (25) are published in scientific journals, of which 56.67% (14) are published in student scientific journals.

## DISCUSSION

All careers are essential for the development of scientific advances in a health system. However, it is noteworthy that the majority of the sample belongs to the Medicine career, which is consistent with another study carried out by the authors[3]. This may be due to the fact that it is one of the careers with the highest enrollment in higher education in the country, given the country's priorities of training high-quality doctors capable of practicing medicine anywhere in the world. The Dentistry, Nursing and Health Technologies careers, despite having a smaller number of students in their ranks, are fundamental pillars in the development of health[5], so the affiliation of their students to research processes should be a goal to be achieved in the near future.

The most outstanding academic year in terms of research was the fourth year of the career, which is correlated with what was expected in various scientific studies. Throughout the course, students experience an increase in their expertise in scientific research and communication, their relationship with teachers and researchers, and their lines of research are constantly defined[2,3,5]. However, other studies claim that as time goes by and the student moves through different teaching settings, the workload and study increase, leaving little time to devote to research[7]. Some students worked on research outside the line of their assistantship, perhaps due to finding other motivating topics during the course and to possible assistantship changes that occur in the sample. It is the task of the GCE of each university to ensure that the student continues researching and affiliating with the same line of research in order to maintain this result.

The type of research that predominated over the others is the Review Article. This does not agree with what was found in research that evaluates student scientific production6, where the Original

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Article is the predominant one. These constitute the basis of scientific research, since in them we find the result that gives the possibility of solving existing problems[4], so it is necessary to create strategies to encourage the increase of articles of this type, with workshops and seminars on research and scientific publication.

The FEU of medical sciences of Las Tunas has obtained in different events the first places of scientific emulation, which reflects the quality of the works presented and the research activity of said university.[3] Despite this, the predominant quality of the research was the third place or the Mention. This level corresponds to research that despite having relevance and impact still needs to be corrected or some annotations made in terms of methodology or content. The goal is to ensure that most of the research presented at scientific conferences reaches an adequate methodological condition, although taking into account that they are developed in a competitive environment, it is logical to find that there are more mentions than relevant works.

When talking about assistantship, it is pertinent to specify that the students belonging to this movement are of high academic achievement and have among their fundamental tasks to dedicate themselves to scientific research. Surgical activity is one of the fundamental pillars of care at the hospital level, being even a priority care focus in health institutions, because it involves high costs and complexity and priority care for patients.[4] This aspect agrees with the result obtained from the assistant students of surgical sciences, being the predominant ones in terms of scientific activity in Las Tunas. There are many specialties that respond to this science, and its practical nature and the direct contact of the student throughout the career with them explain the association with this type of specialties.

A lower number was also noted in the students of Diagnostic Sciences, and despite how important they are for the development of health, the student is not in contact with them in the same way as with the basic, clinical and surgical ones, which explains the results obtained in this aspect.[3] It is important to draw up teaching and extracurricular strategies where the student is more inclined towards these specialties and to get the existing ones to investigate more and in a better way, since this type of specialty has a lot of potential with respect to research.

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The motivation of students on the topic of Diagnosis and Treatment is closely related to the intrinsic curiosity of studying conditions that are observed every day in the care process, also allowing for the analysis of variables inherent to daily medical work, and since most of the students belong to the clinical area of medical teaching, the result obtained in terms of research topic is explained.[2] However, it is essential to increase research on Prevention and health promotion, as this is the basis of current medicine, where preventing the occurrence of diseases by controlling risk factors improves the quality of life and reduces morbidity and mortality in all patients. [1]

The publication of articles allows students to expand their research habit, increase their recognition and improve scientific communication skills when considering master's or doctoral studies. Their practice during their time at the university has a positive impact on individual and collective improvement.[7] Less than half of all research is published in scientific journals and only a portion of these publications belong to student scientific journals.

In the literature, there is talk about various factors that limit student scientific publication. Corrales-Reyes[8] establishes that among these we can find the lack of publication culture, the position of biomedical editors, the absence of good teaching advice and limited time for correction and editing. It is important to delve deeper into the communication and dissemination of undergraduate students' publication options, since there are, as agreed by the 9th FEU Congress, 16 student scientific journals whose sole purpose is to promote student research[3], which, despite having a leading role in this, still do not fully reach their target audience.

There are many proposals to satisfy research during university life in the health sector, but the real potential of students in their development has not yet been achieved.[5] Limited scientific activity during the degree can lead to a postgraduate degree where interest in research is increasingly less. It is important to get students passionate about scientific research in order to have professionals prepared for any proposed task and challenge to face in the future, not only from the research sphere.

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## CONCLUSIONS

Medical scientific activity in Las Tunas was predominant in the fourth year and in the Medicine degree. The Review Article predominated and the Mention quality was the most reported. The student assistants of Surgical Sciences were the predominant ones, as well as the topics related to diagnosis and treatment. Only a part was published in student scientific journals.

## DECLARATION OF CONFLICT OF INTEREST

The authors declare that they have no conflict of interest in the conduct of the research.

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## DECLARATION OF AUTHORSHIP

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