

ORIGINAL

## Research and Postgraduate Training through the Good Living for the Diabetic Program in Venezuela

### Formación Investigativa y Postgraduada a Través del Programa Buen Vivir para el Diabético en Venezuela

Tatiana González Estévez<sup>1</sup>  , Aymara Laugart Wilson<sup>2</sup>  , Daylin Elizabeth González García<sup>3</sup>  , Carlos Alberto López Macías<sup>4</sup>  , José Ramón Valdés Utrera<sup>5</sup>  

<sup>1</sup>Centro de Ingeniería Genética y Biotecnología. La Habana, Cuba.

<sup>2</sup>Universidad de Ciencias Médicas de Guantánamo. Guantánamo, Cuba.

<sup>3</sup>Filial de Ciencias Médicas Julio Trigo López. Palma Soriano, Santiago de Cuba, Cuba.

<sup>4</sup>Universidad de Ciencias Médicas de La Habana. La Habana, Cuba.

<sup>5</sup>Universidad de Ciencias Médicas de Villa Clara. Villa Clara, Cuba.

**Cite as:** González Estévez T, Laugart Wilson A, González García DE, López Macías CA, Valdés Utrera JR. Research and Postgraduate Training through the Good Living for the Diabetic Program in Venezuela. *Seminars in Medical Writing and Education*. 2025; 4:470. <https://doi.org/10.56294/mw2025470>

Submitted: 20-02-2024

Revised: 15-07-2024

Accepted: 20-03-2025

Published: 21-03-2025

Editor: PhD. Prof. Estela Morales Peralta 

Corresponding author: Tatiana González Estévez 

#### ABSTRACT

**Introduction:** health programs have an impact on society, which constitute a worldwide health priority. The Good Living Program for Diabetics in the Bolivarian Republic of Venezuela represents a strategy directed by the People's Ministry of Health, focused on reducing the amputation rate due to diabetic foot ulcers. The training of its human capital is a fundamental pillar to provide an excellent assistance service in the ambulatory care units.

**Objective:** to improve the research and postgraduate training of health professionals in health care units where diabetic foot ulcer consultations are performed.

**Method:** an Action-Research-Participation study was carried out, in which analysis-synthesis, systemic-structural, holistic-configurational and statistical-mathematical methods were used. The ethical principles required by this type of research were taken into account, in addition to the use of non-parametric tests such as McNemar's, which made it possible to prove the efficacy of the study and transformations resulting from this process.

**Results:** it is achieved the increase of scientific works presented in national and international events, as well as the activities of professional improvement associated to the treatment of diabetic foot ulcers with risk of amputation of lower limbs.

**Conclusions:** the strengthening of human resources in the training plan designed for the study, allowed the improvement of research and postgraduate training, in addition to providing content updates consistent with the fourth strategic line of the policy on health personnel in the 2030 agenda.

**Keywords:** Training; Health Care Units; Diabetic Foot Ulcer.

#### RESUMEN

**Introducción:** los programas de salud tienen un impacto en la sociedad, los cuales constituyen a nivel mundial prioridad sanitaria. El Programa Buen Vivir para el Diabético en la República Bolivariana de Venezuela, representa una estrategia dirigida por parte del Ministerio Popular para la Salud, enfocada a disminuir la tasa de amputación por úlcera de pie diabético. La formación de su capital humano, constituye pilar fundamental

para brindar un servicio asistencial de excelencia en las unidades de curas ambulatorias.

**Objetivo:** perfeccionar la formación investigativa y postgraduada del profesional de salud en unidades asistenciales donde se realizan consultas para úlcera de pie diabético.

**Método:** se realizó un estudio de Investigación-Acción-Participación, en el que se emplearon como métodos el análisis-síntesis, sistémico-estructural, holístico-configuracional y estadístico-matemático. Se tuvieron en cuenta los principios éticos que exige este tipo de investigación, además de la utilización de pruebas no paramétricas como McNemar's que posibilitó probar la eficacia del estudio y transformaciones devenidas en este proceso.

**Resultados:** se logra el incremento de los trabajos científicos presentados en eventos nacionales e internacionales, así como las actividades de superación profesional asociadas al tratamiento de las úlceras de pie diabético con riesgo de amputación de miembros inferiores.

**Conclusiones:** el fortalecimiento del recurso humano en el plan de formación diseñado para el estudio, permitió perfeccionar la formación investigativa y postgraduada, además de proporcionar actualizaciones del contenido consecuente a la cuarta línea estratégica de la política sobre el personal de salud en la agenda 2030.

**Palabras clave:** Formación; Unidades Asistenciales; Úlcera de Pie Diabético.

## INTRODUCTION

Health programs generally consist of a series of coherent, organized, and integrated activities aimed at achieving specific and previously defined objectives to improve the health status of a population from the bottom up, where governments, institutions, organizations, and ministries allocate funding and resources.<sup>(1,2)</sup>

The World Health Organization (WHO) and the Pan American Health Organization (PAHO) highlight the critical role played by their Human Resources in building resilient systems with integrated networks and a strong and decisive first level of care and also express the importance of collaboration between the education and health sectors through competency-based education for interprofessional teams at the first level of care.<sup>(3,4)</sup>

Authors such as Fernández-Carrillo E, Imbert-Puente E, et al, in research carried out on the correlation between diabetic foot and diabetic retinopathy in patients at the provincial hospital of Zaire, Angola, argue that it is vitally important that the World Health Organization (WHO) makes DM a priority line of work, due to all the complications that this disease causes both systemically to the individual, overburdening of health systems and the damage it causes to family and national economies. In Africa, as in the rest of the world and specifically in Angola, there is an increase in its prevalence.<sup>(5)</sup>

The WHO reports that approximately 422 million people in the world suffer from type 2 diabetes mellitus, of which 62 million are in the Americas region, and it is estimated that this figure will reach 109 million by 2040. It also reports that 1,5 million of the world's deaths were due to the disease, of which 244,084 occurred in the Americas.<sup>(6)</sup>

It was considered to be among the ten leading causes of death worldwide<sup>(7)</sup> and the sixth in the region.

In Venezuela, the prevalence of the disease is estimated at 6,5 %, but some experts point out that it can affect up to 10 % of the population.<sup>(9)</sup> There are 14969 reported deaths from diabetes mellitus in the country, representing the second leading cause of disability-adjusted life years, which reflects the limiting complications suffered by people with diabetes throughout their lives.<sup>(6)</sup>

One of the chronic complications of diabetes mellitus is diabetic foot. Venezuelan and Cuban researchers warn that it is one of the leading causes of hospitalization, attendance at outpatient care centers, and the most frequent reason for non-traumatic amputations in diabetic patients under 65 years of age<sup>(8,9)</sup> as well as representing a health situation that generates high economic and social costs.<sup>(8,10)</sup>

The education of healthcare professionals should enable them to carry out comprehensive assessments, which will help them to make quick, accurate, and appropriate decisions based on critical and reflective analysis of the state of health as a whole. It is undoubtedly also important to remember that in educational processes, postgraduate training and the development of research skills guarantee effectiveness in the social processes related to comprehensive community healthcare.<sup>(11)</sup>

Health specialists agree on establishing programs aimed at education and prevention to minimize disease complications.<sup>(9,10)</sup>

Health programs are oriented towards assisting vulnerable population groups based on their continuous and coordinated application at each level of care, with the introduction of advanced technologies for diagnosing, treating, and rehabilitating people with different conditions.<sup>(1,2)</sup>

In Venezuela, on August 18, 2008, a bilateral agreement program of the Cuba-Venezuela Agreement was signed by the General Directorate of Collective Health Programs of the Ministry of Popular Power for Health

(MPPS), the Good Living for Diabetics Program (PBVD) with the administration of Heberprot-P®.<sup>(12,13,14,15)</sup> The experience of implementing the program with the drug exposes the need to accredit the courses taken at the University of Health Sciences, as well as to promote cooperation between universities in the Republic of Cuba and the Bolivarian Republic of Venezuela in the realization of different modalities, specialization and/or master's degrees, such a strategy would increase knowledge and skills in the treatment of the disease, reducing its impact on the Venezuelan health system and its society.

In July 2024, the Regional Coordination of the program in the State of Anzoátegui presented the Diploma program "Comprehensive Management of the Patient with Diabetic Foot Ulcer" at the University of Health Sciences. It consists of seven modules and was approved by University Council No. 65, held on 07/06/2022, according to Resolution No. 2022-065-CUOP-04.

This research aims to improve the research and postgraduate training of healthcare professionals in healthcare units where consultations for diabetic foot ulcers are carried out.

## METHOD

A Participatory Action Research study used analysis-synthesis, systemic-structural, holistic-configurational, and statistical-mathematical methods. The ethical principles required by this type of research were taken into account, as was the use of non-parametric tests such as McNemar's, which made it possible to prove the effectiveness of the study and the transformations that occurred in this process.

Statistical records were also consulted from the National Coordination of the Good Living for Diabetics Program and the National Cardiovascular, Renal, Endocrine-Metabolic and Anti-Tobacco Health Program (CAREMT of the MPPS) to obtain the categories of analysis, the number of scientific papers presented associated with diabetic foot consultations implemented in the Venezuelan context, the number of professional development activities, research carried out in primary health care and a survey of patients with diabetic foot ulcers at risk of lower limb amputation. The ethical standards for the research development were considered in the work.

## RESULTS

The MPPS is once again implementing the program after COVID-19 with the process of purchasing Heberprot-P in 2022, distributing it in the Traditional Network and Barrio Adentro II,<sup>(16)</sup> facilitating its extension to other healthcare areas and territories of the country with the indication of academic training and completion of the Diploma in the Comprehensive Management of patients with Diabetic Foot Ulcer (DFU). The experience of applying the program with the medication was published in the scientific journal of Applied Biotechnology in 2009 in the State of Zulia;<sup>(17)</sup> numerous Venezuelan scientific journals contain reports validating the PBVD application.<sup>(18,19)</sup>

The process of research training within the substantive processes of continuing education aims to develop in professionals the capacity for problem-solving in subject areas, to encourage critical analysis, to inquire and reflect on reality, to impact the social and community environment with solutions in line with its demands; in addition to the associated cognitive updating process.<sup>(20)</sup>

The study increased scientific activity in the healthcare services of Barrio Adentro 2 and the Traditional Network. The graduation of the first edition of the diploma course associated with the consultation of diabetic foot ulcers encouraged multiple views and outlets for lines of research presented in different modalities of events.

Nineteen scientific papers were socialized in conferences at different levels during 2023, corresponding to 11 states, while in 2024, there were 17 results in 14 states.<sup>(21)</sup>

During the last year analyzed, the states' participation increased compared to the previous year, and two articles were published, which contributed to the growth of scientific production at the national level. A positive correlation of presentation translated into improved quality of the results.

In 2023, experience was gained in the approval of the Diploma in the Comprehensive Management of Patients with Diabetic Foot Ulcer by the University of Health Sciences (University Council No. 65, held on 07/06/2022, according to Resolution No. 2022-065-CUOP-04) graduating 301 professionals in 14 states in its first edition.

The National Directorate of the Program continued to foster Cuba-Venezuela working relations with CAREMT, UCS, and MMCVEN, allowing the training process to continue in 2024, with a second edition currently in progress.

Of the forms of improvement implemented, participation in Courses, Training, and Workshops increased in 2024 compared to 2023. However, this does not apply to Diploma courses due to the coverage of Heberprot P and the dynamics of the entry and exit of personnel specialized in Angiology and Vascular Surgery.

Figure 1 shows the interrelation between the processes of research and postgraduate improvement in the training and quality of the provision of healthcare services associated with the subject addressed, with a hegemonic tendency towards sustained growth and demonstrated improvement that adds up to approved doctoral training work in the context of the Cuban Medical Mission in Venezuela.

**Table 1.** Distribution of scientific papers according to status and events held during the study period, associated with the Good Living for Diabetics Program, 2024 in Venezuela

Years	States	Works	Events
2023	Miranda	Limb salvage in patients scheduled for major amputation. Case presentations.	Scientific Conference and Scientific and Methodological Seminar for the 20th Anniversary of Barrio Adentro at the State level. April 2023.
	Capital District	Behavior of diabetic foot at the Clínica Popular del Valle from January to December 2022.	Scientific Conference and Scientific and Methodological Seminar for the 20th Anniversary of Barrio Adentro. April 2023.
		Presentation of a clinical case of diabetic foot at the El Valle community clinic in the Libertador Municipality, Capital District.	Nursing Science Conference. May 2023.
		Presentation of a clinical case on the benefits of applying the Heberprot-P treatment to diabetic foot lesions.	Nursing Science Conference. May 2023.
		First National Technical Meeting on the Good Living Program for Diabetics.	Technical Workshop/February 8, 2023.
	Portuguese	Social impact of Heberprot-P® therapy in patients with diabetic foot ulcers in Venezuela.	Venezuela International Health Fair (FISVEN)/2023.
		Application of ozone therapy in patients with infected varicose ulcers. Case presentations.	National Science Conference on Ozone Therapy. January 28, 2023.
	Yaracuy	Educational intervention on risk factors and complications in diabetic patients at the Los Baraures Comprehensive Diagnostic Center (CDI).	National Science Day for Cuban Science Day. January 13, 2023.
		Ozone therapy for diabetic foot. Presentation of a case.	National Science Day for Cuban Science Day. January 13, 2023.
	Carabobo	Diabetic foot: educational strategy for prevention in diabetics from the Ruiz Pineda Aristides de Bastidas community clinic.	APS National Science Day. May 17, 2023.
		Benefits of ozone therapy in patients with diabetic foot at CDI La Trigaleña 2022-2023.	National Science Conference on Ozone Therapy. January 28, 2023.
	Cojedes	Heberprot-P and ozone therapy in elderly patients with diabetic foot ulcers.	National Science Conference on Ozone Therapy. January 28, 2023.
	Delta Amacuro	Ozone therapy. Use in ulcerous lesions of the lower limbs in patients attending the "Aristides Lira" Comprehensive Rehabilitation Room (SRI). Case study.	National Science Conference on Ozone Therapy. January 28, 2023.
	Trujillo	Advantages of using ozone therapy on patients with diabetic foot ulcers.	National Science Conference on Ozone Therapy. January 28, 2023.
Amazonas	Nursing care in the prevention of care for patients with diabetic foot.	National Science of Nursing Conference. May 12, 2023.	
Apure	Management of nursing care for a patient with diabetic foot. Case presentation.	National Science of Primary Health Care (PHC) Conference. May 17, 2023.	
New Esparta	Prevention of complications of diabetes mellitus at the El Cardón clinic, January-March 2023.	National Science Day of APS. May 17, 2023.	
2024	Miranda	Clinical and epidemiological aspect of diabetic foot ulcers in patients of the CDI Corposalud. Year 2023	WORKSHOP NEIGHBOURHOOD INSIDE
		Educational intervention on the risk of diabetic foot in patients of the Metropolitano medical office January-June 2024.	FAMILY MEDICINE
	Capital District	Effectiveness of Heberprot-P in patients with diabetic foot ulcers. Case presentation.	WORKSHOP NEIGHBOURHOOD INSIDE
		Impact of Heberprot-P treatment in patients with ischemic heel gangrene.	SCIENTIFIC CONFERENCE CDI JANUARY 23
	Capital District	Educational intervention to prevent complications of diabetic foot at the Herrera Vega health center in the Capital District from January to July 2024.	FAMILY MEDICINE
Capital District	Ozone therapy in patients with diabetic foot ulcers	National Conference of the Ozone Program.	
Capital District	Results of the use of Heberprot-P® in the treatment of Diabetic Foot in Venezuela, year 2023.	II International Scientific Conference on Medical Collaboration.	



## DISCUSSION

We live in a constantly changing world, and the work environment is no exception. The speed of technological development, the emergence of new tools, and the advent of new needs mean that the labor market is constantly evolving; for this reason, it is essential to update knowledge through continuing education. In this scenario, professional training is not only relevant but becomes necessary to adjust to the challenges that appear daily, being a necessary element for professional development, which provides a link between the investigative competencies, development, and analysis of the graduate's activity, necessary for the successful fulfillment of the social-welfare mission that this implies.<sup>(22)</sup>

The experience acquired in the theoretical and practical training of graduates in the comprehensive management of patients with diabetic foot ulcers made it possible to improve the quality of presentations in papers and publications, demonstrating knowledge and contributing to the training of other professionals in the public health system in Venezuela; this coincides with the views of Baile J,<sup>(23)</sup> who suggests reflecting on and integrating into postgraduate studies teaching-learning methods with a broad perspective of teaching, which includes theory and practice in the area of knowledge of the discipline being taught, in addition to evidence-based practice, to enhance their education.

Murillo Campuzano<sup>(24)</sup> considers the role of science and postgraduate education as a starting point, assuming that knowledge and skills will have at least the same relevance for the future of the developing world during this 21st century; similarly connoting various authors in the need to introduce changes in educational systems, contributing to transformations in performance, which has become a social demand of the socioeconomic context; as well as a commitment to internal policies in universities to improve the profile of the graduate.<sup>(25)</sup>

## CONCLUSIONS

The strengthening of human resources in the training plan designed for the study made it possible to improve the research and postgraduate training of health professionals in healthcare units where consultations for diabetic foot ulcers are carried out. In addition, content updates were provided consistent with the fourth strategic line of the policy on health personnel in the 2030 agenda.

## REFERENCES

1. Falcón Fariñas IN, de Dios Martínez A, Macías Llanes ME. Fundamentos teórico-metodológicos sobre evaluación de programas de salud. *Humanid. méd.* [Internet]. 2022 [citado 5 Mar 2025]; 22 (2). Disponible en: <https://humanidadesmedicas.sld.cu/index.php/hm/article/view/2339>
2. Valenti Pérez C. Los programas de salud como Políticas Públicas en Cuba. Conferencia llevada a cabo en Convención Internacional de Salud; Cuba Salud 2015. Ministerio Salud Pública. Disponible en: [https://www.researchgate.net/publication/281097563\\_Los\\_Programas\\_de\\_Salud\\_como\\_Politicas\\_Publicas\\_en\\_Cuba](https://www.researchgate.net/publication/281097563_Los_Programas_de_Salud_como_Politicas_Publicas_en_Cuba). 2015
3. Asamblea Mundial de la Salud, 69. (2016). Estrategia mundial de recursos humanos para la salud: personal sanitario 2030. Organización Mundial de la Salud. Disponible en: <https://iris.who.int/handle/10665/254600>
4. Organización Panamericana de la Salud. Política sobre el personal de salud 2030: fortalecimiento de los recursos humanos para la salud a fin de lograr sistemas de salud resilientes. [Documento CD60/6]. 60.o Consejo Directivo, 75.a Sesión del Comité Regional de la OMS para las Américas; del 25 al 29 de septiembre del 2023. [Internet]. Washington; 2023. Disponible en: <https://www.paho.org/es/documentos/cd606-politica-sobre-personal-salud-...>
5. Fernández-Carrillo E, Imbert-Puente E, Echevarria-Hernández E, Castro-Nteyenkengue H, Buca-Zau Jd. Correlación entre pie diabético y retinopatía diabética en pacientes del hospital provincial de Zaire, Angola. *Rev Inf Cient* [Internet]. 2023 [citado 5 Mar 2025]; 102. Disponible en: <https://revinfcientifica.sld.cu/index.php/ric/article/view/4102>
6. Organización Mundial de la Salud (OMS). (2023 a). Perfil de carga de enfermedad por diabetes 2023: República Bolivariana de Venezuela. OMS. <https://www.paho.org/es/documentos/perfil-carga-enfermedad-por-diabetes-2023-republica-bolivariana-venezuela>
7. Organización Mundial de la Salud (OMS). (2020). Las 10 principales causas de defunción. OMS. <https://www.who.int/es/news-room/fact-sheets/detail/the-top-10-causes-of-death>
8. Mena Bouza YZ, Mendoza Fonseca NL. Caracterización de pacientes con pie diabético del Hospital General Docente “Dr. Agostinho Neto”, Guantánamo. *Rev Inf Cient* [Internet]. 2018 [citado 5 Mar 2025]; 97 (1). Disponible en: <https://revinfcientifica.sld.cu/index.php/ric/article/view/1829>

9. Méndez Verastegui - C, El “Pie Diabético”: Enfoque traumatológico. <https://medicosvenezolanosonline.com/pie-diabetico/>.2021
10. Calles O, Sánchez M, Miranda T, Villalta D, Paoli M. Factores de riesgo para el desarrollo de pie diabético. *Revista Venezolana de Endocrinología y Metabolismo* [Internet]. 2020;18(2):65-79. Recuperado de: <https://www.redalyc.org/articulo.oa?id=375564082004>
11. Calvo-Torras M Ángeles. La formación de los profesionales de la salud bajo el enfoque ‘Una sola salud’. *FEM* (Ed. impresa) [Internet]. 2023 [citado 2025 Mar 05]; 26(6):229-231. Doi: <https://dx.doi.org/10.33588/fem.2606.1315>.
12. CIGB. (s/f). HEBERPROT-P. [https://www3.paho.org/cub/dmdocuments/BIO%20CIGB %20Heberprot %20P.pdf](https://www3.paho.org/cub/dmdocuments/BIO%20CIGB%20Heberprot%20P.pdf)
13. Berlanga-Acosta JA, Guillén-Nieto GE, Rodríguez-Rodríguez N, Mendoza-Mari Y, Bringas-Vega ML, Berlanga-Saez JO, García Del Barco Herrera D, Martínez-Jimenez I, Hernandez-Gutierrez S, Valdés-Sosa PA. Cellular Senescence as the Pathogenic Hub of Diabetes-Related Wound Chronicity. *Front Endocrinol (Lausanne)*. 2020 Sep 16; 11:573032. doi: 10.3389/fendo.2020.573032. PMID: 33042026; PMCID: PMC7525211.
14. Berlanga-Acosta JA, Garcia-Ojalvo A, Guillén-Nieto GE, Ayala-Avila M. Endogenous biological drivers in diabetic lower limb wounds recurrence: hypothetical reflections. *International Journal of Molecular Sciences*, 2023. doi: <https://doi.org/10.3390/ijms241210170>
15. Castillo Deprés Saymara, Geoffrey Mothabeng Thabo, Ledwaba Lotty, Ngcobo Thula K., Singh Natasha, Baldomero Hernández Julio Esmir, et al. Heberprot-P en el tratamiento de las úlceras del pie diabético. *Rev Cub Med Mil* [Internet]. 2022 Sep [citado 2025 Mar 05]; 51(3). Disponible en: [http://scielo.sld.cu/scielo.php?script=sci\\_arttext&pid=S0138-65572022000300028&lng=es](http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S0138-65572022000300028&lng=es). Epub 01-Sep-2022
16. Ministerio del Poder Popular para la Salud. Manual de pautas y procedimientos para el manejo del paciente con pie diabético basado en la Norma Oficial Venezolana del Programa Nacional de Salud Endocrino Metabólica. Ministerio Popular para la Salud. 2018.
17. Rivero Fidel E. Experiencias del Programa de atención integral a pacientes con pie diabético en el estado Zulia, Venezuela. *Biotechnol Apl* [Internet]. 2010 Jun [citado 2025 Mar 05]; 27(2):101-109. Disponible en: [http://scielo.sld.cu/scielo.php?script=sci\\_arttext&pid=S1027-28522010000200004&lng=es](http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S1027-28522010000200004&lng=es)
18. González Estevez T, Pérez Valido Y, Figueredo Quesada BL, Milián Vázquez PM, Marrero Molina L. RESULTADOS DEL USO DEL HEBERPROT-P® EN EL TRATAMIENTO DEL PIE DIABÉTICO EN VENEZUELA, AÑO 2023. *SCBV* [Internet]. 30 de junio de 2024 [citado 5 de marzo de 2025];4(1). Disponible en: <https://saludcolectivabv.ucs.gob.ve/index.php/scbv/article/view/79>
19. Henríquez Daudinot M, González Armas C, Diaz Martinez MI, Falcón Salazar JL. EVOLUCIÓN DEL TAMAÑO DE LA LESIÓN DE LAS ÚLCERAS DE PIE DIABÉTICO EN PACIENTES VENEZOLANOS TRATADOS CON HEBERPROT-P. *SCBV* [Internet]. 30 de junio de 2024 [citado 5 de marzo 2025]; 4(1). Disponible en: <https://saludcolectivabv.ucs.gob.ve/index.php/scbv/article/view/57>
20. Martín Hernández Ana Luisa, Blanco Oliveros Adalgisa F., Venegas Zayas-Bazán Marizel, Morales Echemendía Lubian. Actividades de aprendizaje que propician la formación investigativa desde la asignatura Información Científica en carreras Tecnológicas. *Rev Hum Med* [Internet]. 2022 Ago [citado 2025 Mar 05] ; 22( 2 ): 257-270. Disponible en: [http://scielo.sld.cu/scielo.php?script=sci\\_arttext&pid=S1727-81202022000200257&lng=es](http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S1727-81202022000200257&lng=es)
21. Dirección Nacional de Docencia. (2023). Base de datos de actividades científicas. Misión Médica Cubana en Venezuela.
22. Díaz-Cruz V, Saavedra-Carrion NP, Zevallos-Delgado K del P. Competencia Investigativa y Desarrollo Profesional Docente. *Revista Docentes 20* [Internet]. 2024;17(1):261-70. Doi: <http://dx.doi.org/10.37843/rtd.v17i1.471>
23. Bailey-Moreno J. Aportaciones de los estudios de posgrado en la formación de profesores universitarios.

IE REDIECH [Internet]. 20 de diciembre de 2021 [citado 5 de marzo de 2025];12:e1253. Disponible en: [https://www.rediech.org/ojs/2017/index.php/ie\\_rie\\_rediech/article/view/1253](https://www.rediech.org/ojs/2017/index.php/ie_rie_rediech/article/view/1253)

24. Campuzano GPM. La investigación científica y el posgrado, una herramienta indispensable en la Universidad del Siglo XXI. Conrado, Cienfuegos, v. 15, n. 69, p. 35-40, dic. 2019. Disponible en [http://scielo.sld.cu/scielo.php?script=sci\\_arttext&pid=S1990-86442019000400035&lng=es&nrm=iso](http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S1990-86442019000400035&lng=es&nrm=iso). Accedido en 05 marzo 2025.

25. SA Torres Vela MLTV. Formación y desarrollo de competencias investigativas en profesionales de un instituto pedagógico de Perú. REVISTA INVECOM “Estudios transdisciplinarios en comunicación y sociedad” / ISSN 2739-0063 / [www.revistainvecom.org](http://www.revistainvecom.org). Vol. 4, # 2, 2024. Licencia CC BY. Formación y desarrollo de competencias investigativas en profesionales de un instituto pedagógico de Perú. Santiago Aliardo Torres Vela y María Luisa Torres Vásquez. Disponible en : <https://ve.scielo.org/pdf/ric/v4n2/2739-0063-ric-4-02-e040234.pdf>

#### FINANCING

None.

#### CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

#### AUTHORSHIP CONTRIBUTION

*Conceptualization:* Tatiana González Estévez, Aymara Laugart Wilson.

*Data curation:* Tatiana González Estévez, Aymara Laugart Wilson, Daylin Elizabeth González García.

*Formal analysis:* Tatiana González Estévez, Aymara Laugart Wilson, Daylin Elizabeth González García.

*Research:* Tatiana González Estévez, Aymara Laugart Wilson, Daylin Elizabeth González García, Carlos Alberto López Macías, José Ramón Valdés Utrera.

*Methodology:* Tatiana González Estévez, Aymara Laugart Wilson, Daylin Elizabeth González García.

*Supervision:* Tatiana González Estévez, Daylin Elizabeth González García.

*Validation:* Tatiana González Estévez, Aymara Laugart Wilson, Daylin Elizabeth González García.

*Visualization:* Tatiana González Estévez, Aymara Laugart Wilson.

*Original drafting and editing:* Tatiana González Estévez, Aymara Laugart Wilson, Daylin Elizabeth González García, Carlos Alberto López Macías, José Ramón Valdés Utrera.

*Proofreading and editing:* Tatiana González Estévez, Aymara Laugart Wilson, Daylin Elizabeth González García.