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# MENDIVE

REVISTA DE EDUCACIÓN

*Translated from the original in Spanish*

## **Professional improvement in contact lenses in Pinar del Río. Historical evolution**

### **La superación profesional en lentes de contacto en Pinar del Río. Evolución histórica**

### **O aperfeiçoamento profissional em lentes de contacto em Pinar del Río. Evolução histórica**

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#### **ABSTRACT**

It was carried out an analysis on the process of the professionals' of the specialty Optometry training and Optics, specifically in the subspecialty contact eyeglasses, of the county Pinegrove of the River. The objective proposed in the work was directed to carry out an approach to the historical evolution of this process in the county. For he / she had it place a study that began approximately in the year 1970 of last century, until the present time. The investigation followed a mixed focus as general orientation and he / she had descriptive character. They were employees theoretical and empiric methods of qualitative and quantitative type, although they had bigger preponderance the testimony and the analysis of documents. The investigation had descriptive character and it assumed a mixed focus. The carried out historical journey allowed to check the employment of the modalities of training in the work position and training like main roads of the professionals' training, as long as the modalities of courses of they carried out outside of the county. It facilitated it to know the growing tendency in the technical and technological advances and the invigoration of the scientific potential of their professionals, what can condition other training forms, in the same county, for the graduate in Optometry and Optics that he acts in other assistance scenarios, in non-specialized consultations outside of the Ophthalmology Provincial Center. This will allow to have enough prepared personnel to cover the necessities from the population of Pinar del Río related with the attention to patient payees of contact eyeglasses that go to the consultations of Ophthalmology.

**Keywords:** eyeglasses  
of contact; optometry and  
optics; professional training.

## RESUMEN

Se realizó un análisis sobre el proceso de superación de los profesionales de la especialidad Optometría y Óptica, específicamente en la subespecialidad lentes de contacto, de la provincia de Pinar del Río. El objetivo propuesto en el trabajo estuvo dirigido a realizar un acercamiento a la evolución histórica de este proceso en la provincia. Para ello tuvo lugar un estudio que inició aproximadamente en el año 1970 del pasado siglo, hasta la actualidad. La investigación siguió un enfoque mixto como orientación general y tuvo carácter descriptivo. Fueron empleados métodos teóricos y empíricos de tipo cualitativo y cuantitativo, aunque tuvieron mayor preponderancia el testimonio y el análisis de documentos. La investigación tuvo carácter descriptivo y asumió un enfoque mixto. El recorrido histórico realizado permitió comprobar el empleo de las modalidades de entrenamiento en el puesto de trabajo y autosuperación como vías principales de superación de los profesionales, en tanto las modalidades de cursos se realizaban fuera de la provincia. Ello posibilitó conocer la tendencia creciente en los avances técnicos y tecnológicos y el fortalecimiento del potencial científico de sus profesionales, lo que puede condicionar otras formas de superación, en la misma provincia, para el licenciado en Optometría y Óptica que se desempeña en otros escenarios asistenciales, en consultas no especializadas fuera del Centro Oftalmológico provincial. Esto permitirá contar con suficiente personal preparado para cubrir las necesidades de la población pinareña relacionadas con la atención a pacientes portadores de lentes de contacto que acuden a las consultas de Oftalmología.

**Palabras clave:** lentes de contacto; optometría y óptica; superación profesional.

## RESUMO

Foi feita uma análise do processo de melhoria dos profissionais da especialidade de Optometria e Óptica, especificamente na subespecialidade de lentes de contacto, na província de Pinar del Río. O objetivo proposto no trabalho foi dirigido a fazer uma abordagem da evolução histórica deste processo na província. Para isso, foi realizado um estudo que começou aproximadamente em 1970 do século passado, até os dias de hoje. A pesquisa seguiu uma abordagem mista como orientação geral e teve um caráter descritivo. Foram utilizados métodos teóricos e empíricos de natureza qualitativa e quantitativa, embora o testemunho e a análise de documentos fossem mais prevaletentes. A pesquisa foi de natureza descritiva e teve uma abordagem mista. O percurso histórico realizado permitiu verificar o uso das modalidades de formação no local de trabalho e de auto aperfeiçoamento como principais formas de melhorar os profissionais, enquanto as modalidades de cursos eram realizadas fora da província. Isso permitiu conhecer a crescente tendência de avanços técnicos e tecnológicos e o fortalecimento do potencial científico de seus profissionais, o que pode condicionar outras formas de aperfeiçoamento, na mesma província, para o graduado em Optometria e Óptica que trabalha em outros cenários de atendimento, em consultas não especializadas fora do Centro Oftalmológico Provincial. Isto nos permitirá ter pessoal preparado suficiente para cobrir as necessidades da população de Pinar del Río relacionadas com a atenção dos pacientes que usam lentes de contato e vêm para as consultas de Oftalmologia.

**Palavras-chave:** lentes de contato; optometria e ótica; aperfeiçoamento profissional.

## INTRODUCTION

The new challenges that are imposed on humanity, characterized by the accelerated development that science has achieved in the world, increasingly need men with the capacity to create, innovate, produce and manage knowledge in correspondence with the demands that such development demands. Hence the vocational training continuing merits as important, to allowing updating in the sciences of the profession, in order to solve the problem so relevant social and labor.

On the importance of systematic study, Castro (1991) said: "Studying should not constitute an obligation, but a necessity: the deepest, the most extraordinary, the most true, the most essential need [...]" (p. 136).

However, this need should be permanent, throughout the working life, so that, once graduates of initial training, professionals can be updated, reoriented and / or overcome work systematically in the new content product arising from the scientific-technological development only then can face I will unveil the challenges of their profession.

In relation to professional development, the Constitution of the Republic of Cuba (2019) emphasizes the need for training, ongoing training and systematic updating of professionals, in order to maintain the improvement of the performance of their socio-labor activities.

Take this criterion, means recognizing the improvement as one of the priorities of the work of any sector of the Cuban economy, to being directed to the permanent promotion professionals.

In particular, the Ministry of Public Health maintains a permanent demand on the professional development of personnel services doctor s and nursing, while the characteristics of I work in all areas, facing the relationship of beings health and disease human, claim that their professional maintain or a highly competitive (Cardentey and Gonzalez, 2016).

On the other hand, the permanent and updated mastery of the contents of its various areas constitutes a condition for making correct and effective decisions as quickly as possible. In addition, technological development existing in the sector of health is required constant updating in medical Sciences that posse you achieve and maintain a growing rating as the only way to cope and provide answers to the constant demands in different areas of knowledge in this sector.

On the professional improvement in the Pedagogical Sciences in general and in Medical Education in particular, there are several experiences; These include those of authors who have socialized their contributions on the subject: Barbón, Borges & Añorga (2014); Díaz Corbea, Fleitas Ávila, Santana Ávila & Herrera Medina, (2014); González & Borroto (2015); Lazo (2015a); Lazo (2015b); Muñoz, González & Lacorte (2016); Muñoz & Sánchez (2017); López, GJ; Cañizares, O.; Lemus, ER and Valdés, M. (2017); Muñoz, Barrocas & Williams (2018); Lazo (2018), just to name a few. All have agreed that professional development enables the development and elevation of the skills of those who receive it by virtue of their performance in their work areas, while enhancing human improvement.

As regularly, the previous results require the need to deepen, through overcoming, in preparing professionals for the identification, assessment and decision making on professional issues in their areas of work performing, as a judgment of final value, actions aimed at the treatment of the health - disease relationship.

As branch of Medical Science, the Ophthalmology, in particular Optometry and the optics, has a special meaning, to being associated with one of the bodies or lenses more sensible than in humans: vision; in consequence, scholars such as Muñoz, Gonzalez and Lacorte (2016) assign a decisive role to constant improvement and continued to be maintained professionals Optometry and Optics, marked by:

[...] technological scientific development [...] especially in these specialties, where the equipment is increasingly modern with extreme sensitivity, which requires competence of the professionals who manipulate them, in addition to the necessary knowledge for the assessments that lead to value judgments, which constitutes one of the main foundations for the development of overcoming [...] (p.17).

Of Optometry and Optics, work with contact lenses or contactologia<sup>1</sup>, has maintained a permanent and significant technical and technological development in order to achieve lenses of greater comfort and effectiveness for patients. This has required constant updating and improvement to maintain and enrich the skills of

professionals in the area, in order to provide a better service to the population.

However, not all the provinces always existed the conditions throughout the revolutionary period, to develop a permanent improvement in professionals in this area of health. Although in the first years of this ophthalmological practice, the preparation of medical personnel was scarce and with low resources, today it does not behave in the same way.

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<sup>1</sup>Discipline in charge of the study and work with contact lenses.

So that one of these major problems has been overcome professionals Optometry and Optics, specifically the Contactology in recent years in the province of Pinar de Rio, has been linked to the ignorance of the possibilities that have emerged during the last 15 years to develop improvement programs that allow the permanent preparation of professionals according to the conditions of the territory itself.

It has been generally unknown that, in the province of Pinar de Rio, from the very start consultations related to contact lenses, have had certain place actions, not widespread smoothly. In addition, it has not been taken into account that, during the last five (5) to 10 years, the development, preparation and professional growth achieved, ascendingly, by the specialists of the area studied is superior. This ignorance or problem has caused that, in general, the professional improvement has been made in the capital of the country, with the consequent inconveniences that this implies.

In correspondence with this, the essential objective of this article aims to make an approach to the history of the process of professional development of professionals Optometry and Optics in Pinar de Río, specifically lenses of contact, enabling future stages of the research to contribute with proposals for the process of overcoming the optometrist in the province.

Being consistent with the above, although the authors consider the need to continue to deepen the study of the process of professionals overcoming in Optometry and Optics of man was essential in lenses of contact, estimate the first necessity of to know the historical evolution that this problem has had in the territory of Pinar del Río.

## MATERIAL AND METHODS

The research followed a mixed approach as a general orientation and was descriptive. He relied on the dialectical and historical materialist method. To search for the given cough giving response to the target were used a group of theoretical methods as historical analysis - logical , modeling , analytic synthetic and inductive-deductive ; In the empirical order s testimony, key informants, document analysis and interview were used. These methods allowed systematizing and modeling the theory that makes up this historical journey.

The study required , fundamentally, from the analysis of information obtained from various testimonies of own specialists contact logy , protagonists of the process at different stages and constituted primary or direct sources that provided data firsthand.

In addition, it was necessary to carry out a comprehensive study of articles related to professional development, published in indexed journals in globally recognized databases, through which it was possible to access and find information related to the object studied.

## RESULTS

Because of the study conducted, from the application of the methods it declared it was considered appropriate to establish that I to training or optometrists as regular study at the global level emerged in the United States of North America. The development of this profession began in 1890 when Dr. August A. Klein, an ophthalmologist from the city of Boston, recognized the need for a new profession, which would contribute from his work to the ophthalmological diagnosis of patients.

Already in 1894, in the analogue of the Klein School of Optics, the creation of an institution that was purely dedicated to optics was proposed, without entering into conflicts with the medical profession and, even more, to fill the gap between Ophthalmologists and opticians. The new school to gateway to the creation of a new profession: optometry.

At the national level, the first Optometric School starts in the year 1937, as annexed institution to the School of Medicine of the University of Havana, so that the formation of these professionals was limited to the capital of the country. Since that time, this specialty has gone through various formation processes optometrists and opticians.

Like the great majority of the specialties of Medical Sciences, also the training in Optometry and Optics has its greatest

development since the triumph of the Revolution. However, it was not until the 80s of the last century that the average technicians in ophthalmology began to demand their professional development.

Regarding Pinar del Río province, any analysis of the historical development that is intended to carry on professional development in the area of the contactology, be associated with evolution itself has had this subspecialty in the territory.

To improvement of the professional of Optometry and Optics in the subspecialty of contactology has its first indications over four makes 5 years old at the beginning of the decade of 1970. Older data that have been placed refer to consultations to patients in need of lenses of contact who began performing Dr. Juan Jose Justi; For this, it was necessary that, previously, this professional received a minimum training at the "Ramón Pando Ferrer" Ophthalmological Hospital in the city of Havana, run that in Pinar del Río there were no professionals or material conditions to carry out an adequate preparation.

The consultation, developed in the former provincial Medical Center located on Frank País Street , currently the " Antonio Briones Montoto " Stomatology Clinic , had only one keratometer and only rigid polymethylmethacrylate lenses were indicated . The initial improvement received in the capital of the country should be accompanied by the modality of self-improvement, in which the will and the self - didactic training of the aforementioned health professional predominated, as an essential route.

Approximately t res to four years later (1973 and 1974), he joined the consultation Dr. Julian Delgado, who is appointed by the Department of Health of the province to carry out his residency in ophthalmology. The new professional receives the preparation of Dr. Justi content related professional lenses of contact, following the mode of training in the workplace.

The preparation received allowed Dr. Delgado to work in the specialty for some years. However, their occupation in other medical functions, combined with the performance of an internationalist mission in Libya since 1978, caused a gap in the specialized medical services related to lenses of contact.

In the absence of specialists, and in response to the growing needs and demands of this medical service, the decision is made to appoint a General Medicine specialist to attend this consultation without extensive or deep knowledge of Ophthalmology: Dr. Salvador Medina.

Despite the excellent attitude and disposition of this professional, the reality was complex because he did not have the necessary preparation in contactology. Given this problem, it was necessary for Dr. Medina to assume his own improvement by combining self - improvement modalities with training in the workplace. In this way the next six years passed.

It was in 1984 that an ophthalmologist by profession began for the first time to attend the consultation of contact lenses in Pinar del Río. This work corresponded to Dr. Luis Vázquez, who had previous experience as an optometrist. Dr. Vázquez, as part of their professional development for the sub specialty,

receives training s Hospital "Calixto García" and the Asclepius of Havana, specifically soft lenses and rigid lenses gas permeable; together with this, it was necessary for the specialist to develop a permanent self-improvement.

The work of this specialist with closer training to the characteristics of the subspecialty, coupled with overcoming professional lenses of contact depth in hospitals with tradition and to their own self-improvement, marks the emergence of a new stage of the contactology in the province of Pinar del Río.

On the other hand, with the entry of Dr. Vázquez, a first stage of 14 years is closed. As an essential feature of the period, professionals who attended consultations Contact Lens in Pinar de Río, had little preparation, as in all cases their initial training was not related to ophthalmology and much less with the contact logy . Largely, the increasing quality of services was made possible by the high disposition and ethical training and the s attitudes positive to the professional development that developed by different routes.

With the opening of the General Teaching Hospital "Abel Santamaria Cuadrado", and since 1987, the provincial consultation lenses of contact passes this center. There is no doubt the growth in the technological development of the stage in relation to technologies such as contact lens test box (donated by patients), keratometer, radio scope, lens meter, retinoscopy, diameter rules, diopter conversion tables to millimeters and vertex distance, in addition to the instruments for refraction.

Consequently, greater professional preparation of specialists in the area is

needed for work with this new medical technology. Dr. Vázquez, by then already a renowned specialist, conducted weekly consultations and in them, he began to develop training in the workplace to the mid-level techniques that participated in this service: Aurora Pérez and María Amelia Martínez. However, at the same time and as main scenarios, they are the specialized hospitals of the capital of the country Hospital "Calixto García" and the Cuban Institute of Ophthalmology "Ramón Pando Ferrer", as well as 1st grade specialists such as Dr. Roberto Lassale del Amo and Noel Hurtado, the ones that have the greatest impact on the actions of overcoming the professionals of Pinar del Río.

Two data are relevant in relation to the object being studied. The first is that since 1987 a data base file is created in the office of lenses of contact. It started registering patients` clinic sheets with rigid gas lenses or permeable ones, which enables control, research activity and, thus, the possibility of overcoming permanent self-improvement specialists.

The second thing is related to that, despite of the participation of the hospitals and specialists from the province of Havana in the actions of overcoming professionals contactology of Pinar del Río province in the 1990s, increases the actions of this type in the General Teaching Hospital "Abel Santamaría Cuadrado". Thus, as of 1991 the Aurora Pérez technique, previously formed in the capital of the country and by Dr. Vázquez in Pinar del Río, trains Amarilys Fernández in the workplace, mainly in the content of the indication, adaptation and monitoring of rigid lenses. These overcoming actions allow increasing the number of technicians who improved their preparation in the subspecialty.

However, despite previous experiences, during this decade the process of overcoming continues through training and updating courses at the Cuban Institute of Ophthalmology "Ramón Pando Ferrer" and the Polytechnic "Salvador Allende" in Havana. Particularity is positive, on the one hand, the actions improvement was taken into account the needs and characteristics of Pinar del Río province and on the other was directed specialists Spanish. This, undoubtedly, increases the quality of preparation for putting the professionals who received contact information and experience related to technology and scientific advances most updated time.

With the beginning of the 21st century, training continues from the workplace training by the techniques Aurora Pérez, Amarilys Fernández and Sandra Arce. Over the next four years remain the same modalities of improvement: training in the workplace and the self-improvement by professionals in exercise.

Significantly for overcoming the Contactology sub specialty is the opening of the humanitarian project "Mission Miracle" in 2004, to the warmth of the Cuban relations and Venezuela within the framework of the Bolivarian Alternative for the Americas (ALBA). This project, led by the governments of Cuba and Venezuela and the presidents Fidel Castro Ruz and Hugo Chávez Frías, had the purpose that low-income people with eye diseases or refractive defects could receive a high quality medical service. "Mission Miracle" includes high technology, so it also requires raising the preparation of professionals on contactology, keeping the technological development of the time.

Because of the "Miracle Mission", at the end of 2006 the Pinar del Río

Ophthalmological Center was created with headquarters at the "Abel Santamaría Cuadrado" General Teaching Hospital. This center, opened in January 2007, including one query lenses of contact better structured and provided with new high-tech equipment such as: ophthalmometer, slit lamp monitor, autorrefractometer / keratometer, digital lens meter, among others reinforce the area of refraction in the same department.

He rigged this; create a query of cornea with equipment technology that allow better study of these patients. The advent of new technologies, together with the international commitments required by the "Miracle Mission" project, forces, first, the growth in numbers of professionals and in second order to deepen and give continuity to their training and updating from the professional improvement.

Despite the increase in the number of specialists in Pinar del Río and the increase in their preparation, the overcoming programs continue to be developed in the capital of the country at the Cuban Institute of Ophthalmology "Ramón Pando Ferrer". New professionals in contact lenses join the consultations and reinforce this ophthalmological service, among them: Mileidys Mena, Annia Linares and Yaicel García, among others that are essentially overcome through the *training modality in the workplace*, advised by specialists with more experience and preparation.

Another of the significant facts of the stage is that, as part of the "Battle of Ideas", the careers of Medical Education are increased, especially in the area of Health Technology; one of them is the Degree in Optometry and Optics. However, the non-existence of a faculty categorized as teachers of higher education made teaching in the Bachelor

of Optometry and Optics in discipline Contact Lenses, was given by the staff who served consultation at the time that this took place (teaching and learning in action). This caused, at the same time that the main form of updating, training or preparation of specialists remained the self-improvement in the specialty and in teaching.

Over the next few years, the situation maintains a similar state. Technicians are more preparation, which, at the time performing in his degree, continue training in the workplace that are incorporated into the subspecialty on contactology. This includes techniques such as Ivón Yudith Martínez, Dianivet Fernández and Anileidys Muñoz. The consultations were developed together.

An important and significant detail for the further development of the sub specialty is that, although consultations were carried out by TECHNIC professional or s, most of them also formed as licensed, which subsequently increases the potential scientific area object study.

It is from 2012 and 2013 that consultations on contact lenses usually begin to be carried out by graduates, including Damilka Robaina, Roselí Lopez, Mileidys Mena, Anileidys Muñoz and Amarilys Fernández. Interestingly, although it already exists experienced professional for growth, both in technical as bachelors and that is has advanced technology, still remains as a way main traditional improvement and updating professional outside the Pinar del Río province, the Cuban Institute of Ophthalmology "Ramón Pando Ferrer".

The entrance to the consultation of contact lenses of the Hospital General Doc entity

"Abel Santamaria Cuadrado" of Dr. María de los Ángeles Faife, from Las Tunas province and with a great experience, strengthens ophthalmologic medical service in the area of professional development. This doctor is responsible for the consultation of cornea, related to the use of contact lenses, among other professional duties.

Another of the key facts that mark the development of the improvement in the object and studied occurs in 2014: the incorporation and enrichment of the teaching staff of the profile, when completed by graduates in Optometry and Optics, already categorized, as is the case of the degree Anileidys Muñoz, one of the specialists in contact lenses, categorized as Professor Instructor.

However, the overcoming courses continue to take place outside Pinar del Río. In the months of April and May 2015 Amarilys licensed and Anileidys Fernández Muñoz enrolled, as part of professional development, one *refresher training in lenses of contact* the Cuban Ophthalmology Institute "Ramón Pando Ferrer". The results of the improvement of specialists Pinar del Río begin to appear in the investigative order when, in 2015, the graduates Anileidys Muñoz and Mileidys Mena attended the First Day International Fact of Contactology, where they receive *updated* details of lenses Contacts in the world.

At the end of 2015, the number of patients in consultation increases because, backed by Ministerial Resolution 210, the acquisition of different types of contact lenses becomes more affordable and economical. This enables greater demand and appropriation of contact lenses hydrophilic, hitherto little common in everyday clinical practice Pinar del Río, which requires

greater preparation of specialists and technicians to handle them.

The professional training of specialists from upgrading courses outside the province, training, and training in consultation, self-improvement and self-preparation, causes the growth of personal and professional teachers; An example of these is the case of the lawyer Anileidys Muñoz which, in 2017, obtained the category Assistant Professor and teacher he joined Chair of Ophthalmology.

This step gives the possibility of offering postgraduate teaching, in addition to the undergraduate course to residents of the specialty of Ophthalmology and training to fulfill internationalist mission. The subspecialty of contactology is reinforced with the incorporation of Dr. Adriana Curvelo, a specialist in Cornea, trained in the Cuban Institute of Ophthalmology "Ramón Pando Ferrer". Dr. Curvelo begins to cater specifically to patients with contact lenses, among other medical functions, and develops actions to overcome the technical and less experienced graduates.

Scientific and technological development is growing. In 2017 it is given to the consultation of contact lenses of the General Teaching Hospital "Abel Santamaría Cuadrado", three boxes of test bodies Contact permeable rigid gas; Solutions are also delivered for these types of lenses and for hydrophilic Contact Lenses, which allows increasing the quality of service. This requires continuity in the improvement and updating of specialists.

At present, the contact lens service has been extended to other care units, governed by the Pinar del Río Ophthalmological Center based at the "Abel Santamaría Cuadrado" General

Teaching Hospital and specifically by the specialists of the provincial consultation of The contact entities. Specialists attending further consultations are advised by specialists of the provincial consultation, but are not enough to complete and provide quality service based on existing demands.

The situation of professional improvement in the specialty Optometry and Optics, and specifically in contact lenses in Pinar del Río, has maintained a similar trend until today. Today there is a faculty staff consisting of specialists with a teaching category, which primarily assumes the initial training of the degree in Optometry and Optics and training in the workplace as a way of overcoming. The specialists have maintained a constant professional improvement from the modality of self-improvement and through the participation and exchange of experiences in events, conferences, workshops and scientific symposia, both national and international.

However, in spite of the favorable conditions that exist, backed by scientific and technical advances and the growth in the number of higher level professionals in the specialty, to offer sufficient and quality improvement, the latter continues to be carried out through the traditional modalities. At present it is difficult to have enough professionals prepared to meet the needs of the population related to care for patients with contact lenses attending consultations Ophthalmology.

## DISCUSSION

Performing an analysis of the historical evolution of the process of professional improvement of the degree of Optometry

and Optics in contact lenses in Pinar del Río requires first a brief study of the concept of professional improvement. This category is defined in Advanced Education as a set of teaching-learning processes that enable university graduates to acquire and continuously improve the knowledge and skills required for a better performance of their responsibilities and job functions" (Barbón, Borges & Añorga, 2014, p. 6).

Recognize the professional development as a set of processes means accepting that this process may be composed of different ways, so it coincides with Muñoz Gonzalez and Lacorte (2016), who consider alternatives to overcome for training of the or optometrists, in the search for solutions that arise in clinical practice, developing, in addition, different courses, training and research in care settings.

Given as soon raised, is evidence that e l *training in the locking position jo* has historically been the main mode of professional improvement in contact lenses in the province of Pinar del Río. This modality has been characterized by constituting non-school educational processes, fundamentally linked to the care work, devoid of a conscious school conception and organization. In all cases, they were oriented to meet urgent needs presented in the service.

The second modality used in the province has been the refresher courses ; however, this alternative improvement for professionals in the service of contact lenses , has always taken place outside the province, mainly in the Cuban Ophthalmology Institute "Ramón Pando

Ferrer" and Hospital "Calixto García" . Characteristic and essential disadvantage, these refresher courses conducted in the capital of the country, have always had a very limited enrollment to being assigned to certain specialists of who work in this type of ophthalmologic service.

The professional improvement carried out in Pinar del Río during the last 45 years with the subspecialty professionals of Contact Lenses, although insufficient in a variety of ways, to some extent has been relevant. This statement is justified that the shares have been designed and aimed at solving problems related to upgrading and professionalization of eye care in their interest to promote the continuous improvement of its development and quality execution of these ophthalmologic services.

Inauguration of the Ophthalmological Center of Pinar de Rio in the General Teaching Hospital "Abel Santamaria Cuadrado", equipped with the latest technology, facilitated the development of the s modalities described in professional improvement in contact lenses. In addition, largely also it enabled the development growing of the potential scientific specialists, encouraging that currently exist conditions scientific - technological, human and material that permit to n carry out other forms of improvement professional so schooled. These overcoming actions can be directed, not only to the protagonists of this service in the provincial Ophthalmological Center , but to all professionals who work in other care settings in order to provide better care to patients with contact lenses who go to any ophthalmology office.

## BIBLIOGRAPHIC REFERENCES

- Barbón, O. G.; Borges L. D. & Añorga J. A. (2014). La Educación Avanzada ante las exigencias de los procesos de profesionalización pedagógica en la Educación Médica. *Educación Médica Superior*. 29(2), 6-13  
Recuperado de:  
<http://www.ems.sld.cu/index.php/ems/article/view/441>
- González, M. & Borroto, M. (2015). Estrategia de superación profesional para fortalecer la formación ambiental de los profesores de la disciplina Medicina General Integral en la Facultad de Ciencias Médicas "Dr. José Assef Yara" de Ciego de Ávila. *Educación y Sociedad*, 13(2), 16-28.
- Cardentey, J. & González, R. (2016). Aspectos acerca de la superación profesional en la educación médica. *Revista Ciencias Médicas de Pinar del Río*. 30(1), 34-41
- Castro, F. (1991). *Ciencia, Tecnología y Sociedad 1988-1990*. La Habana, Cuba: Ciencias Sociales
- Díaz Corbea, A., Fleitas Ávila, A., Santana Ávila, S., & Herrera Medina, M. (2014). Formación de tecnólogos de la salud. Antecedentes y retos. *Revista cubana de Tecnología de la Salud*, 0. Suplemento Especial II Convención "Tecnología y Salud". Recuperado de <http://revtecnologia.sld.cu/index.php/tec/article/view/279/333>
- Gaceta Oficial de la república de Cuba (2019). Constitución de la República de Cuba. Recuperado de <http://media.cubadebate.cu/wp-content/uploads/2019/01/Constitucion-Cuba-2019.pdf>
- López, G. J.; Cañizares, O.; Lemus, E. R. & Valdés, M. (2017). La superación profesional en salud ocupacional como una necesidad para la atención médica integral. *Educación Médica Superior*. 31(2).
- Lazo, M. (2015a). Modelo de superación con enfoque interdisciplinario en tecnología de la salud. *Revista Cubana de Tecnología de la Salud*, 6(4), 3-13
- Lazo, M. (2015b). La formación permanente y continuada en educación ambiental del médico en la atención primaria de salud. *Revista electrónica Órbita Científica*. 21(84): ISSN: 1027-4472
- Lazo, M. (2018). Tecnología de la salud, Universidad innovadora. *Revista Cubana de Tecnología de la Salud*, 9(1): 74-85
- Muñoz, L. L., González, T. R., & Lacorte, P. (2016). La educación permanente y continuada en los tecnólogos optómetras y ópticos. *Revista Cubana de Tecnología de la Salud*, 7(1), 14-21.
- Muñoz, L. L.; Barrocas, P. J. & Williams, A. (2018). El proceso de superación de la Educación Médica y de Tecnología de la Salud particularizado en Optometría y Óptica. *Revista Cubana de Tecnología de la Salud*, 9(2): 108-115.
- Muñoz, A. & Sánchez, A. (2017). Resultados visuales en pacientes portadores de lentes de contacto por ametropías en Pinar del Río. *Revista Ciencias Médicas de Pinar del Río*, 21(1): 41-46.

**Conflict of interest:**

Authors declare not to have any conflict of interest.

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Authors participated in the writing process of this article and in the analysis of documents.



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