

Original article

Comprehensive care in Contact Lenses. Proposal for a diploma program for professional development in Optometry and Optics



**Atención integral en Contactología. Propuesta de diplomado para la
superación profesional en Optometría y Óptica**

**Atendimento integral em Lentes de Contato. Proposta de um programa de
diploma para desenvolvimento profissional em Optometria e Óptica**

Anileidys Muñoz Lazo¹  0000-0002-3067-4642  anileidysnanda@gmail.com

Juan Alberto Mena Lorenzo²  0000-0003-3695-9451  juan.mena@upr.edu.cu

¹ General Teaching Hospital "Abel Santamaría Cuadrado". Cuba.

² University of Pinar del Río "Hermanos Saíz Montes de Oca". Cuba.

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ABSTRACT

The professional development of university graduates represents a solution to health problems in the medical sciences, guaranteeing quality services. This topic is of particular importance for Optometry and Optics graduates in Pinar del Río specializing in contact lenses, where the current approach limits the dynamics and logic of the care process as it progresses through the different levels of medical care, since it is not contingent upon the preparation of primary healthcare professionals. The faculty involved is called upon to address this situation, taking into account current territorial needs. In this regard, this article aims to propose a professional development program focused on contact lens training for Optometry and Optics graduates in Pinar del Río, following a systemic, integrative, and contextualized approach. The general method adopted was dialectical and historical materialism.

Translated from the original in Spanish

Theoretical methods such as analysis and synthesis, induction and deduction, and modeling were applied. Empirical methods included document analysis, observation during consultations, and interviews. The result is a diploma program consisting of courses and training, where the method of training in the professional service activity is prioritized; making it possible to develop professional improvement in the province with an integral vision, in a planned and school-based way, involving primary health care in the contact lens service.

Keywords: contact lenses; diploma; optometry; professional development.

RESUMEN

La superación profesional de los graduados universitarios representa para las ciencias médicas una forma de solución de los problemas de salud, garantizando calidad en los servicios. Particular importancia adquiere esta temática para el Licenciado en Optometría y Óptica de Pinar del Río en Contactología; donde la concepción actual limita la dinámica y la lógica del proceso asistencial desde el tránsito por los niveles de atención médica, al no estar condicionada a la preparación del licenciado de la atención primaria de salud. Este escenario, los docentes involucrados están llamados a solucionarlo teniendo en cuenta las necesidades territoriales actuales. En esta dirección, el presente artículo tiene como objetivo proponer un programa de superación profesional dirigido a la preparación en Contactología del Licenciado en Optometría y Óptica de Pinar del Río, siguiendo un enfoque sistémico, integrador y contextualizado. Se asumió como método general el materialista dialéctico e histórico. Se aplicaron métodos del nivel teórico como el análisis y la síntesis, la inducción y la deducción y la modelación. Del nivel empírico se requirió del análisis de documentos, la observación en consultas y la entrevista. Tiene como resultado el programa de un diplomado compuesto por cursos y un entrenamiento, donde se prioriza el método de la formación en la actividad profesional de servicio; posibilitando desarrollar en la provincia una superación profesional con una visión integral, de forma planificada y escolarizada, involucrando la atención primaria de salud en el servicio de Contactología.

Palabras clave: contactología; diplomado; optometría; superación profesional.

RESUMO

O desenvolvimento profissional de graduados universitários representa uma solução para os problemas de saúde nas ciências médicas, garantindo serviços de qualidade. Este tema é de particular importância para os graduados em Optometria e Óptica em Pinar del Río, especificamente na área de Lentes de Contato. A abordagem atual limita a dinâmica e a lógica do processo de cuidado à medida que os pacientes progridem pelos diferentes níveis de atenção médica, uma vez que não se baseia na formação de profissionais de saúde da atenção primária. O corpo docente envolvido é chamado a abordar essa situação, levando em consideração as necessidades territoriais atuais. Portanto, este artigo visa propor um programa de desenvolvimento profissional com foco em Lentes de Contato para graduados em Optometria e Óptica em Pinar del Río, seguindo uma abordagem sistêmica, integrativa e contextualizada. O método geral adotado foi o materialismo dialético e histórico. Métodos teóricos como análise e síntese, indução e dedução e modelagem foram aplicados. Os métodos empíricos incluíram análise documental, observação durante consultas e entrevistas. O resultado é um programa de diploma composto por cursos e treinamentos, priorizando o treinamento prático no campo profissional. Isso possibilita o desenvolvimento do aprimoramento profissional na província com uma visão abrangente, de forma planejada e estruturada, envolvendo a atenção primária à saúde no serviço de lentes de contato.

Palavras-chave: lentes de contato; diploma; optometria; desenvolvimento profissional.

INTRODUCTION

Professional development (PD) is of utmost importance in updating the object of the profession, in order to appropriately solve socio-labor problems; It goes beyond the teaching-learning process (TLP), since it also assumes processes linked to work activity and which, in turn, are related to the development of science and technology (Bernaza *et al.*, 2017; Bernaza *et al.*, 2018).

Based on these criteria, professional development is understood as a pedagogical process involving both academic and professional demands. This gives it particular relevance in the medical sciences, where professional development, according to Santana *et al.* (2021), constitutes training oriented toward, through and for work in various services, with the aim of improving public health.

This eminently practical and transformative vision also implies comprehensive training that corresponds to the realities of healthcare; it also demands ongoing professional development aimed at deepening the development of content that enables the resolution of professional problems. Accordingly, several studies (Candelaria *et al.*, 2021; Sandrino *et al.*, 2021; Martí-Martínez *et al.*, 2022) propose professional development alternatives for resolving health-related professional problems within primary healthcare (PHC). Other authors, such as García *et al.* (2018), argue that professional development should consider all professional practice scenarios and their interrelationships.

However, in this context, particularly in Optometry and Optics (a scientific discipline within Ophthalmology), little emphasis is placed on the characteristics of clinical settings, which, in turn, influence the effectiveness and diversification of interventions. Such is the case with Contact Lenses, a service provided by Optometry and Optics professionals, where the need arises to develop knowledge and skills to address complex situations within the clinical setting. Furthermore, a significant gap exists between initial academic training and the advanced competencies required in this specific area.

In this scenario, the teachers involved are called upon to address the issue through professional development, but with a systemic, integrative, and contextualized approach. From this perspective, primary health care (PHC) plays a significant role in contact lens care, starting with specialized training for these contexts; a situation that is currently lacking in the province of Pinar del Río. Therefore, this article aims to propose a professional development program for the contact lens training of Optometry and Optics graduates in Pinar del Río, following a systemic, integrative, and contextualized approach.

MATERIALS AND METHODS

The general method adopted for this research was dialectical and historical materialism. Theoretical methods such as analysis and synthesis, induction and deduction, and modeling were applied during the theoretical construction and the development of the proposal for the SP process in contact lens.

From empirical levels, document analysis was required to compile, organize, and determine data derived from information sources, which included guides for the documentary analysis of the SP plans of the University of Medical Sciences (UCM) of Pinar del Río in the last five years and the individual

work plans of the 61 APS graduates who participated in the research and one graduate who provides the contact lens service in the province.

Observation during consultations was also used to ascertain the theoretical and practical preparation of the graduate in Optometry and Optics specializing in Contact Lenses, as well as their professional development needs and the existing technological and material resources in these healthcare settings. To this end, a guide was developed and a sample was selected using cluster random sampling, The Pedro Borrás polyclinic in the municipality of Pinar del Río was chosen; within this cluster, 12 subjects were randomly selected from the 13 that make up this clinic.

An interview was also conducted with graduates and teaching directors to learn about the state of SP in contact lens, their needs, among other elements. It was applied to the 62 graduates who participated in the research and to six managers.

Using mathematical-statistical methods and methodological triangulation, the regularities of the SP process in Contact Lenses were verified, as well as the main areas for improvement within the clinical context. Based on the information gathered, a professional development program was developed and is presented in this article.

RESULTS

The results obtained from the theoretical study allowed for the adoption of certain criteria based on legal foundations, as well as a set of judgments issued in recent years regarding professional practice. Contextualizing these arguments within the work of Optometrists and Optometrists specializing in contact lenses, it is important to highlight, above all, the importance of training, taking into account the technology available in each area of practice. This element is further reinforced by systematic professional development in response to the technological advancements occurring in contact lens practice. Both elements—training and technological updates for professionals in the field—are key when designing their professional practice.

Triangulation of the results obtained through the application of the aforementioned methods revealed some strengths and weaknesses in the SP (Specialized Professional Development) process in Contact Lenses for Optometry and Optics graduates in Pinar del Río. Among these strengths are the existences of graduates providing services in almost all healthcare areas of the province, as well as

the development of a professional development system for healthcare professionals, established by the Ministry of Public Health (MINSAP) and the UCM (University of Medical Sciences).

However, the current professional development process is asystemic, decontextualized, and non-integrative, which limits the appropriation of contact lens content and the logical dynamics of the care process as patients' progress through the different levels of medical care. This is because it is not contingent upon the preparation of the Optometrist and Optometrist in Primary Health Care. Furthermore, there are limitations in the conception of professional development, stemming from the potential of postgraduate education models for the theoretical and practical training of contact lens content, based on working with professional problems. Similarly, the current professional development process does not consider the levels of expertise that graduates should achieve, depending on the levels of medical care in which they work.

Therefore, a diploma program was proposed, consisting of a system of courses and specialized training. It has a structured character, so that the activities, topics, objectives, among other components, typify in an integrated way the set of ideas, concepts, methods, materials and others necessary, as part of the curriculum design of the program for SP in contact lens.

It recognizes the anticipatory nature of the SP process in relation to socio-labor demands. This implies confronting professional situations (problems), as well as selecting objectives, content, methods, and the rest of the didactic components, based on learning needs and scientific-technological development.

These courses are designed to complement, deepen, and update the content of Contact Lens Fitting, contributing to the achievement of this specific professional performance. Furthermore, they are designed for two modalities: in-person and online, where the use of the Information and Communication Technologies (ICTs), which offer the possibility of conducting online classes, debates in virtual platform forums, flipped classrooms, among others.

The use of emerging technologies enables the continuous updating of contact lens content, research, task completion, and general professional development. Facebook and WhatsApp groups facilitate exchanges among professionals and between professionals and instructors, among other options. Based on this, in-person and online learning activities and assessments are organized.

In turn, the training enables the systematization, consolidation, updating, and refinement of the knowledge acquired through the courses, as well as the skills necessary for providing care to contact lens patients with a high level of independence. It should take place within the provincial contact lens clinic setting, focusing on the skills that each professional can develop, taking into account the specific technological resources available in their practice.

Both approaches will be combined, so that the teaching activities of each are coherently interconnected, linking theoretical and practical knowledge. It is recognized that most teaching activities extend beyond traditional classroom settings, taking place in real-world practice through the confrontation and resolution of professional problems.

The teaching activities of the diploma program should utilize methods that promote independent and teamwork, reflection, analysis, discussion, and self-directed learning. Specifically, the training takes into account the work context; therefore, it is strictly guided and limited by the logic of the work, without affecting the clinical care process.

Based on, the training method prioritizes on-the-job experience, so that students, guided by professionals, are integrated sequentially and gradually into the work of the Contact Lens Clinic, addressing and resolving the most common professional problems, under the guidance of the professors coordinating the professional development activities. This diploma program plays a vital role as a valuable tool for integrating the primary and secondary levels of healthcare within the Contact Lens service in the province.

For the selection, planning and development of the diploma content, it was necessary to define the procedures in contact lens, which can be carried out in scenarios outside of a specialized consultation, taking into account the material and technological conditions that the assistance areas of each student possess, the functions and the professional problems they face; in addition to the needs revealed by the diagnosis carried out in order to improve the quality of service in the province.

Therefore, the program consists of the following general characteristics:

Title: Comprehensive care in contact lenses

Duration: six months part-time

Modality: virtual and in-person

Students: Graduate in Optometry and Optics who is currently working in an Optometry consultation in any healthcare area of the province (including APS).

Graduate profile: It is aimed at preparing the Bachelor of Optometry and Optics for the care of contact lens patients, according to the functions and the technological and material conditions of the different levels of health care.

General professional problem: need to develop theoretical and practical knowledge in contact lens for the Bachelor of Optometry and Optics of the province, taking into account its application, in accordance with the characteristics of the care context where he works.

General objective: to develop theoretical and practical knowledge in contact lens, based on work in contact lens consultation and taking into account the material and technological conditions that the care areas possess, enabling the improvement of their performance and the comprehensive care of the service in the province.

General organizational form: due to its theoretical-practical nature, it is fundamentally made up of courses, specialized conferences, self-preparation, among others that conceive the contents from the theory, and the training with a practical conception, allowing the implementation of knowledge through the practical class in the activity in consultation.

Teaching resources: the virtual platform, the material and technological resources of the provincial contact lens clinic, patients, among others.

Teaching strategy

The diploma program will be delivered through four courses, enabling the updating and deepening of theoretical knowledge in contact lens therapy. The main organizational methods for its development are introductory lectures and integrative seminars. Methods employed include: illustrative lectures for presenting the different topics; problem-based learning for discussion in the seminars, where systematic activities will be carried out; assignments; and case presentations. Furthermore, the program is designed to develop skills through a two-stage training model. The first stage addresses specific objectives for working in primary health care (PHC), and the second stage

corresponds to the objectives of secondary health care (SHC). Practical training in consultation settings is emphasized as a teaching method, and on-the-job training is the guiding principle.

Assessment methods: Each course will assess its content independently through standardized activities, seminars, workshops, independent assignments, and case presentations. Midterm and final assessments will be conducted during clinical practice, where each student will be required to explain or justify the procedures they perform, applying the knowledge acquired. In addition, students will be assigned research activities to be carried out in specific clinical settings, which will be discussed collectively.

Finally, each student will develop a project in which they must investigate, attend to and propose a solution to a professional problem in their area of care related to the care of patients who need the contact lens service (Table 1).

Table 1. Structure of the study plan

Forms of teaching organization	Teaching hours	Independent hours	Total hours
Course I. General fundamentals of contact lens			
Course II. Pathophysiology of contact lenses			
Course III. Contact lens management			
Course IV. Contact lenses in special situations			
Training (first level of development): technological procedures in contact lens for Primary Health Care.			
Training (second level of development): technological procedures in contact lens for the Secondary Health Care.			
Total			

DISCUSSION

This study coincides with those of Bernaza *et al.* (2017); García *et al.* (2018); López (2019); among others, who regularly agree that SP allows the solution of professional problems, the updating and improvement of comprehensive performance, which raises the quality of competence and the services provided.

Based on this idea, it is agreed with the research of Fouces *et al.* (2021), where this article highlights the limitations of continuing education programs for ophthalmologists in Cuba, which hinder the provision of quality services in primary healthcare. Therefore, according to López *et al.* (2023), the public health system must recognize the importance of professional development at different levels of care. This requires comprehensive yet differentiated systemic training that enables professionals to perform effectively at various levels of medical care (García *et al.*, 2016).

From this perspective, a systemic, contextualized, and integrative approach is fundamental to the SP process in contact lens; therefore, the real conditions of the scenarios in which it takes place, the professional level of these subjects, and their learning needs must be taken into account, considering the levels of care where they work.

Considering the characteristics of this process and agreeing with the criteria of Rodríguez and Pando (2011) on organizational forms as an integrating component of the teaching-learning process (TLP), reflecting the relationships between the other components (personal and personalized), and taking into account the role of the space and time dimensions in this process, the diploma program is assumed. depending on the needs of the research subject.

To this end, the legal criteria of Ministerial Resolution No. 140/2019 of the Postgraduate Education Regulations, specifically Article 24.1, were taken into account. This article states that the diploma program allows for specialization, updating, deepening, and broadening of professional training. It also enables individuals to contribute to achieving specific professional performance levels or to reorient those already attained. Furthermore, it has the potential to be integrated with the other primary and secondary forms of postgraduate studies.

Based on these criteria, the course is proposed within the diploma program, considering the provisions of the aforementioned legal text, specifically Article 22, which states that the course offers the possibility of complementing, deepening, or updating professional training, organized with content that covers relevant research findings or important aspects that contribute to the improvement or reorientation of performance. This also aligns with the criteria of Bernaza *et al.* (2018), who state that in this form, theoretical and methodological content prevails, making it possible to integrate the academic, work, research, and extension components; its planning leaves little room for incidental learning.

Furthermore, the training within the diploma program aims to develop skills to achieve specific performance levels in a job. It is agreed, then, that the training "(...) fills the gap between what a professional is trained to do and what they can become capable of doing (...)" (Bernaza *et al.*, 2018, p. 58).

Furthermore, this aligns with the legal criteria of the aforementioned ministerial resolution, which in Article 23.1 recognizes that training transcends its purpose of updating, refining, systematizing, and consolidating practical skills and knowledge with a high level of independence, as well as the use of new procedures and technologies. Article 23.2, states that it must take place in settings conducive to specialized performance or other activities related to the profession, under the guidance and monitoring of a tutor. Therefore, the provincial contact lens clinic represents the primary setting for the development of these specific skills.

Finally, this research aligns with the studies by Muñoz *et al.* (2025), where the concept of professional development assumes a shift from the logic of the object of science to the object of the profession, based on the integration of theoretical and practical postgraduate approaches. Therefore, the diploma program with on-the-job training fosters a combination of traditional classroom settings and the realities of contact lens practice.

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Conflict of interest

Authors declare no conflict of interests.

Authors' contribution

The authors participated in the design and writing of the article, in the search and analysis of the information contained in the consulted bibliography.



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