

# Human talent in visual health in Bogotá, Colombia, 2013-2014

Talento humano en salud visual en Bogotá, Colombia, años 2013-2014


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## ABSTRACT

*Introduction:* Human talent in visual health has been evaluated, in Bogotá and in Colombia, jointly with related professions, that is to say, not individually. *Objective:* To describe human talent in visual health in Bogotá during 2013 and 2014, in order to examine demographic and socioeconomic characteristics, undergraduate studies, professional experience, income, contract modality, among others. *Methodology:* Quantitative approach with descriptive, cross-sectional design. Databases of the National Technical Professional Council of Optometry, the District Health Secretariat of Bogotá, and the Colombian Association of Faculties of Optometry were used. A survey of 22 questions was designed and applied to 1276 optometrists in Bogotá. *Results:* 36% of the surveyed optometrists have been in practice for 0 to 5 years; while 23% for 6 to 10 years. 61% of the optometrists work 5 to 8 hours/day, while 27% work more than 8 hours/day. Higher incomes come from optometry consultation (57%), followed by sales of custom medical devices for visual and ocular health (31%). The majority of optometrists (49%) report having a monthly income of 4 to 6 times the minimum wage in force; they have indefinite-term contracts and report being dependent. *Conclusion:* Optometry offers the possibility of independent work as a differentiating factor, due to including the sales of custom medical devices, as well as teaching and research in the professional practice, which all generate additional incomes.

**Keywords:** Human talent, visual health, professional practice in optometry, optometry.

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## RESUMEN

*Introducción:* el talento humano en salud visual ha sido caracterizado en Bogotá y en Colombia en unión con profesiones afines, es decir, no individualmente. *Objetivo:* describir el talento humano en salud visual en Bogotá, durante los años 2013-2014, al determinar sus características demográficas y socioeconómicas, la institución de pregrado, la experiencia profesional, los ingresos, la modalidad de contrato, entre otros. *Metodología:* enfoque cuantitativo con diseño descriptivo, de corte transversal. Se tomaron bases de datos del Consejo Técnico Nacional Profesional de Optometría, la Secretaría Distrital de Salud de Bogotá y la Asociación Colombiana de Facultades de Optometría. Se diseñó una encuesta de 22 preguntas y se aplicó a 1276 optómetras de Bogotá. *Resultados:* 36 % de los optómetras encuestados han ejercido de 0 a 5 años; 23 %, de 6 a 10 años. El 61 % de los optómetras labora entre 5 y 8 horas/día y el 27 %, más de 8 horas/día. Los mayores ingresos son por consulta de optometría (57 %), seguido por la venta de dispositivos médicos sobre medida para la salud visual y ocular (DMSMSVO) (31 %). La mayoría de optómetras (49 %) refieren tener un ingreso mensual de 4 a 6 salarios mínimos mensuales legales vigentes; así mismo, manejan contratos a término indefinido y reportan ser dependientes. *Conclusión:* la optometría cuenta con la posibilidad de trabajo independiente, como un factor diferenciador, debido a la inclusión en la práctica profesional de la venta de DMSMSVO, la docencia y la investigación, las cuales generan ingresos adicionales.

**Palabras clave:** talento, salud, optometría, servicios.

## INTRODUCTION

Human Talent in Health, in accordance with Law 1164 of 2007, comprises “all personnel involved in the promotion, education, health information, prevention, diagnosis, treatment, rehabilitation and alleviation of the disease of all inhabitants of the National territory within the organizational structure of the provision of health services” (1). The said law establishes provisions for Human Talent in Health in relation to the planning, training, monitoring and control processes, as well as performance and ethics in professional practice through the articulation of the different actors involved in these processes. It also creates the National Council, the Human Talent in Health Committees and Observatory, and favors the creation of Health Professionals Associations and entrusts them with public functions.

Between 1964 and 1967, a study related to Human Talent was conducted, aimed at making an inventory of human resources in the health system, an objective that could not be reached due to the lack of coordination between the different sectors. Around 1970, several studies were carried out that, nevertheless, focused only on medicine,

dentistry, nursing, nutrition, and bacteriology programs (1). In 1997, and in its study titled *Human Health-Care Talent in Colombia*, the National Health Superintendence divulged the supply of professionals graduated from higher education programs; the study analyzed twelve (12) healthcare professions, including optometry, with the aim of guiding young people interested in pursuing a health-related profession.

The Health System Reform Support Program (PARS) of the Ministry of Health and Social Protection implemented, between 2000 and 2002, the long-term plan for the development and strengthening of human health-care resources in Colombia, jointly with the Centre for Development Projects (Cendex) of the Pontificia Universidad Javeriana, the Foundation for Higher Education and Development (Fedesarrollo), and the Family Health Foundation, and analyzed the supply and demand conditions, employment situation, distribution by occupational category and geographical distribution in the educational and labor markets for medicine, dentistry, nursing, bacteriology, nutrition and therapies. Professions related to visual and ocular health were included in the latter group (1).

In Colombia, between the years 2013–2014, there were ten (10) faculties or professional optometry programs offered by Higher Education Institutions (IES), five (5) of which were located in Bogotá: Universidad de La Salle, Universidad El Bosque, Universidad Antonio Nariño, Fundación Universitaria del Área Andina, Fundación Universitaria San Martín; and five (5) were outside Bogotá: Universidad Santo Tomás (Bucaramanga), Fundación Universitaria del Área Andina (Pereira), Universidad Metropolitana (Barranquilla), Universidad del Sinú (Cartagena), and Universidad Antonio Nariño (Medellin), all of which are members of the Colombian Association of Faculties of Optometry (ASCOFAOP), and from which four thousand two hundred three (4203) optometrists graduated in December 2012. In Bogotá, according to data from the Professional National Technical Council of Optometry (CTNPO), there were 1,465 optometrists (2) as of June 2012.

At present, there is a felt need to identify human talent in visual health to facilitate processes involved with the strategic planning of state and health organisms, the prevention of visual disorders and ocular diseases as well as education plans, related guilds, and the commercial sector. Undertaking a study of human talent in visual and ocular health is key for determining the sector's problems and providing effective solutions, taking advantage of human talent and defining the needs of the population for the fulfillment of professional objectives.

In accordance with the above, the aim of this study was to describe human talent in visual health in Bogotá, D. C. during the years 2013–2014, by defining the characteristics of healthcare professionals working in this field from the demographic, socioeconomic, and labor perspective, including such aspects as their undergraduate and postgraduate academic training, professional experience, command of a foreign language, consultation length and fees, among others.

Through the implementation of Law 372/1997, by which the practice of optometry is regulated

in Colombia, the field of action of primary visual and ocular care is broadened. Therefore, optometrists who graduated under previous regulations (Law 0825/1954) had to pursue further education on primary care and be granted a new license (*tarjeta profesional*) from the CTNPO, the National Professional Technical Council on Optometry, created and supported by Law 372/1997. According to Decree 1030 of 2007, all establishments where activities related to medical devices for visual and ocular health are performed must hire a scientific director, an optometrist or ophthalmologist, as well as personnel in charge of beveling and shaping the lenses and welding the frames. The Political Constitution of the Republic of 1991 sets the legal bases for human talent management, which is regulated, for the public sector, by Law 909 of 2004.

Decree Law 0825 of 1954, Law 372 of 1997, and Law 650 of 2001 regulate Colombian Optometry (3-5). Human health talent has taken on a great importance in Colombia, due in large part to the issuance of Law 1164 of 2007, establishing the processes of training and performance as axes to comply with the principles of equity, quality, ethics, integrality, coordination and effectiveness, necessary to ensure the safe healthcare of the Colombian population.

The Ministry of Health and Social Protection, through the Directorate for the Development of Human Talent in Health, leads the formulation and implementation of policies to train and maintain human talent in harmony with the requirements of the Institutions in the different job-creating sectors in the country; its functions are framed in Decree 4107 of 2011:

- Propose the principles that contribute to the formulation of policies for the training, exercise and performance of human talent in health.
- Design and coordinate the formation and training policy of human talent in health.

- Ensure the improvement of human talent to enhance its efficiency and productivity at work.
- Design and develop strategies for applied research and the evaluation of technologies aimed at improving human talent.
- To conduct studies related to the composition, distribution and incentives for human talent (6).

Table 1 describes the normativity that supports human talent in health: (7-11).

TABLE 1. Regulations related to Human Talent in Health

| REGULATIONS         | FUNCTIONS  |
|---------------------|--|
| Decree 2905 of 1977 | Created the National Council for the Training of Human Resources for Health, which attempted to guide the training process of assistant, undergraduate and postgraduate professionals.<br><br>It made viable the creation of programs or faculties.  |
| Decree 1849 of 1992 | Created the National Council for the Development of Human Resources in Health.<br><br>Formulation of the national policy for the training, distribution, development and performance of the human resource in the health sector.<br><br>Proposes curricular changes, assignment of teaching-assisted practice areas and development of the general policy for non-formal programs.   |
| Law 1164 of 2007    | Created the National Council of Human Talent in Health, whose function is the definition of policies for the development of Human Talent in Health.<br><br>Makes recommendations on the composition and functioning of the Observatory of Human Talent in Health.<br><br>Created the Single National Registry of Human Talent in Health, the health personnel who meet all the requirements for professional practice must register with this body in order to attest their suitability, upon which they are granted a single professional license number that accredits them as human talent in health. |
| Decree 860 of 2008  | Establishes transitional measures tending to guarantee the license to practice of Human Talent in Health.  |

| REGULATIONS         | FUNCTIONS  |
|---------------------|--|
| Decree 2006 of 2008 | Creates the Intersectorial Commission for Human Talent in Health, for "policy-making derived from the public office for the training, practice, and performance of human talent in health that require joint actions by the Ministries of Social Protection and National Education". |

Source: Authors.

According to the CTNPO, the National Technical Professional Council of Optometry, of the 2,684 licenses (*tarjetas profesionales*) granted up to June 2012 in Colombia, 1,465 were issued for practice in Bogotá, which means that 54.58% of the licensed optometrists work in this city. Likewise, according to data obtained from the Colombian Association of Faculties and Professional Programs of Optometry (Ascofaop) in September 2012, there are 4,575 professional optometrists, of which 86.95% graduated from optometry faculties in Bogotá (12).

## MATERIALS AND METHODS

This is a cross-sectional descriptive study with a quantitative approach. Data of the optometrists licensed under Law 372 of 1997 were taken from the CTNPO, the District Health Department of Bogotá, D.C. (SDS), and the faculties of optometry which make up the Ascofaop.

A survey of 22 questions was designed and, after adjusting the questions, a pilot survey was initially applied to 50 optometrists. It was subsequently applied to 1,226 optometrists working in opticians' shops, private practices, visual health IPS (Health Provider Institutions) in Bogotá, D.C., or residing in the city; a total of 1,276 professionals filled out the questionnaires, who had previously signed the informed consent form. Pilot test surveys were included in the total sample.

Convenience sampling was used and applied to optometrists who volunteered to participate in the study; the obtained data were tabulated,

and univariate and bivariate analyzes were performed.

*Inclusion criteria:* Optometrists working in Bogotá, D.C., in private practices, visual health IPS, or residing in the city, who voluntarily agreed to respond to the survey.

*Exclusion criteria:* Optometrists who did not sign the informed consent form.

*Ethical aspects:* In accordance with Article 11 of Resolution 8430 of 1993, the present was a riskless research (13).

## RESULTS

The results obtained from the survey are presented below.

### SOCIO-DEMOGRAPHIC RESULTS

*Age.* As seen in Figure 1, the average age of respondents was of 37.13 years, with 22 and 80 being the minimum and maximum ages, respectively. The greatest percentage of respondents was in the age range between 30 and 39 years (420 optometrists).

*Gender.* Most of the respondents were female (882 subjects at 69.1%), while 394 (30.9%) were male.

*Gender and age.* As seen in Figure 2, the highest proportion of respondents was females under 29 years of age (448 subjects, at 35.1%).

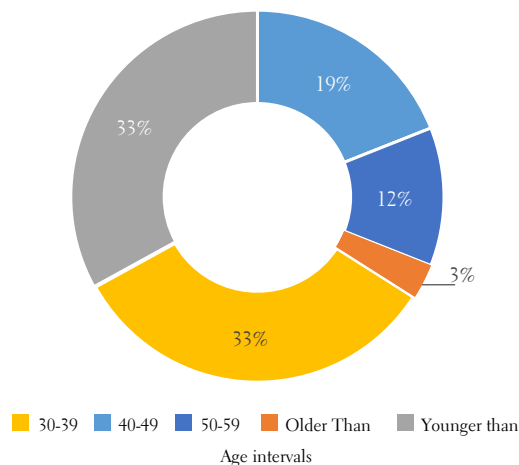


FIGURE 1. Representation of the age variable

Source: Authors.

*Marital status.* Figure 3 shows that 46% of optometrists were married (587 subjects); followed by single at 39% (498 subjects); 9% living in a common law relationship (115 subjects); 6% were divorced (75 subjects).

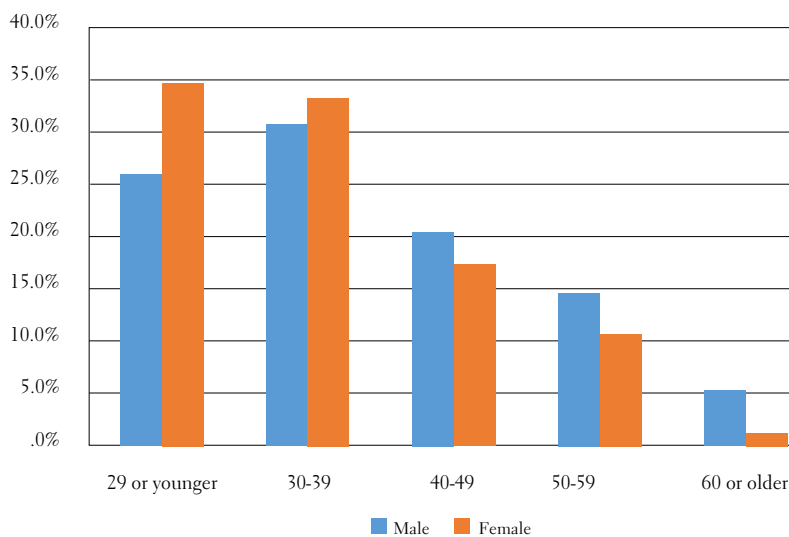


FIGURE 2. Analysis of gender and age

Source: Authors.

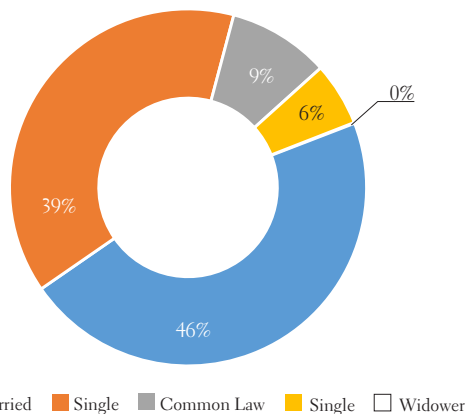


FIGURE 3. Representation of the marital status variable

Source: Authors.

*Socio-economic stratum of the optometrists.* As shown in Figure 4, 29% of the optometrists (370 subjects) fall under stratum 6, followed by 24% (306 subjects) under stratum 5, 19% (242 subjects) under stratum 4, 14% (179 subjects) under stratum 3, 7% under stratum 2, and 7% under stratum 1.

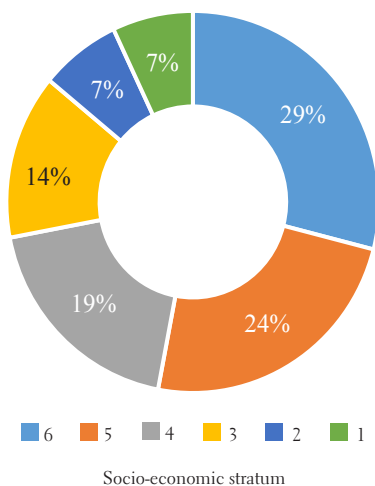


FIGURE 4. Representation of the socio-economic stratum variable

Source: Authors.

*Locality of residence.* The highest percentage of optometrists at 19% (242 subjects) live in the 11<sup>th</sup> locality of Bogotá (Suba), followed by 15% (191 subjects) in the 1<sup>st</sup> locality (Usaquén), 11% (140 subjects) in the 10<sup>th</sup> locality (Engativá), 9% (115 subjects) in the 8<sup>th</sup> locality (Kennedy), 7% (89 subjects) in the 9<sup>th</sup> and 2<sup>nd</sup> localities (Fontibón and

Chapinero), with the remaining respondents (410 subjects) living in other areas in Bogotá (Figure 5).

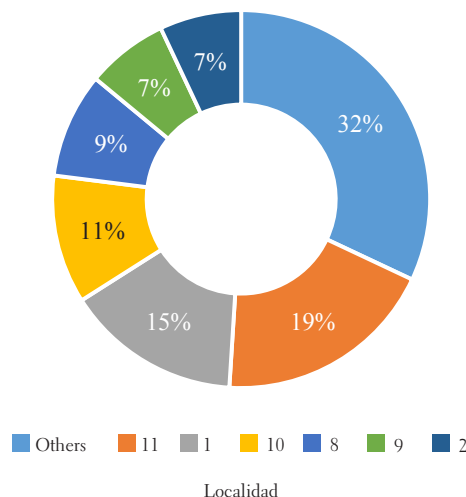


FIGURE 5. Representation of the locality of residence variable

Source: Authors.

*Housing.* The majority of optometrists, that is, 55% (702 subjects), own their homes; 28% (357 subjects) live in family homes, and the remaining 17% (217 subjects) in rented homes (Figure 6).

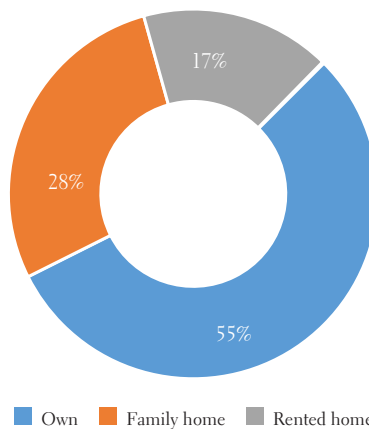


FIGURE 6. Representation of the housing variable

Source: Authors.

**CURRENT PRACTICE OF OPTOMETRY**

Of the 1276 surveyed optometrists, 97% (1233) practice their profession, 3% (43) do not. The most common causes for which optometry is not practiced

**LENGTH OF PROFESSIONAL PRACTICE**

Professional practice from 0 to 5 years was 36%; 6 to 10 years, 23%, 11 to 15 years, 18%; 16 to 20 years, 11%; 21 to 25 years, 5%; 26 to 30 years, 3% and over 30 years, 4% (Figure 7).

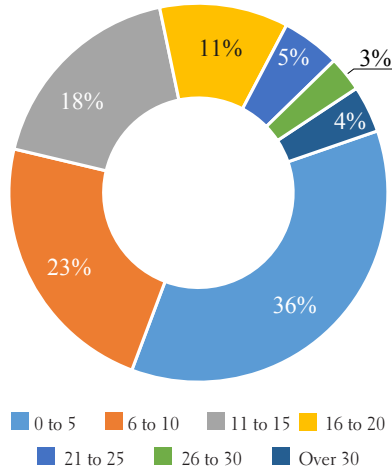


FIGURE 7. Representation of length of professional practice variable

Source: Authors.

**DAILY WORKING HOURS**

61% optometrists work 5 to 8 hours per day; 27% work more than 8 hours; and 12% work 0 to 4 hours (Figure 8).

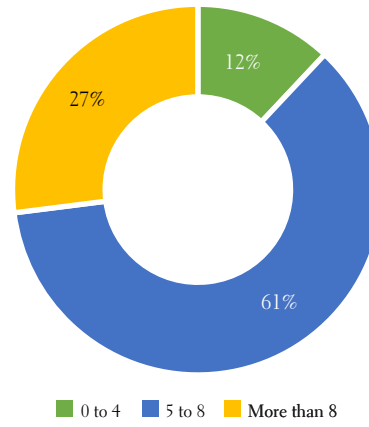


FIGURE 8. Daily working hours

Source: Authors.

**INCOME**

As shown in Figure 9, optometry consultation is the highest income-generating item for 57% of the respondents, followed by the sale of Custom-Made Medical Devices for Visual and Ocular Health (DMSMSVO) at 31%, and teaching at 4%. Visual therapies, eye surgery co-management, research, and special exams amount to a lower percentage.

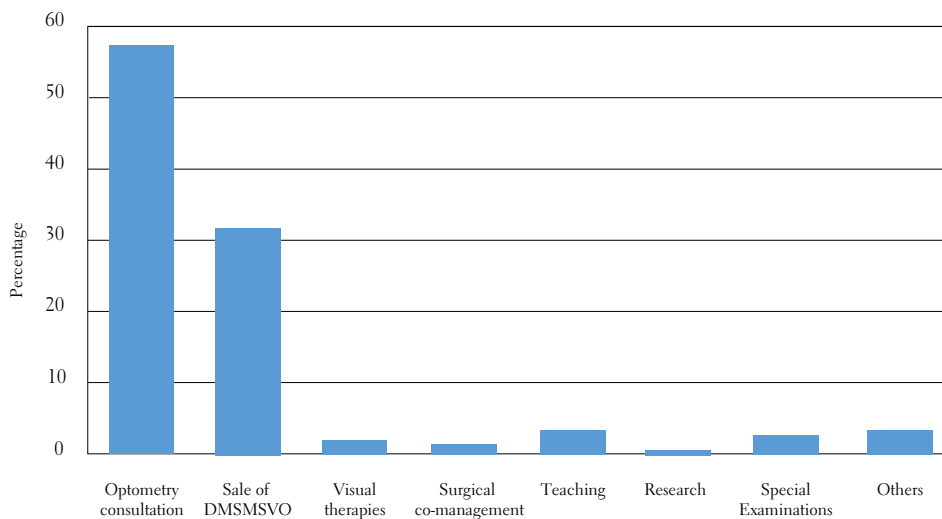


FIGURE 9. Representation of income-generating activities in optometry

Source: Authors.



**SMMLLV**

The majority of optometrists, 625 (49%), reported having a monthly income of 4 to 6 legal minimum wages, while 345 (27%) report incomes between 7–10 monthly minimum wages (SMMLLV, for its initials in Spanish), 281 (22%) between 1-3, and 25 optometrists (2%) reported an income greater than 11 SMMLLV.

**LABOR ASPECTS**

As seen in Figure 10, 625 optometrists (49%) report being dependent, 408 (32%) are independent, and 217 (17%) work under mixed contract modality, being both dependent and independent. Non response was 2%.

**TYPE OF CONTRACT**

About 408 optometrists (32%) have an indefinite-term contract, while 357 optometrists (28%) work under contract for the provision of services and 153 (12%) have fixed-term contract (Figure 11).

**TYPE OF COMPANY**

The vast majority of optometrists, 1,123 (88%) work in private companies, while only 38 (3%) work in the public sector and 64 (5%) work in both the public and private sectors (Figure 12).

**TRADE UNION INVOLVEMENT**

As seen in Figure 13, most the respondents, 1039 (81%), are not members of any trade union; 176 (14%) of them being members of the Colombian Federation of Optometrists (FEDOPTO), and 25 (2%) are members of the Colombian Association of Optometrists Specialized in Social Security and Occupational Health (ASOCOPTESO).

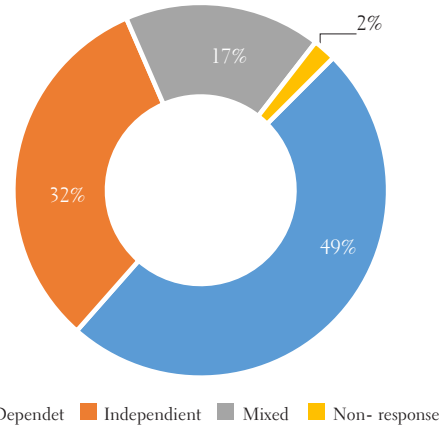


FIGURE 10. Representation of the working modality variable  
Source: Authors.

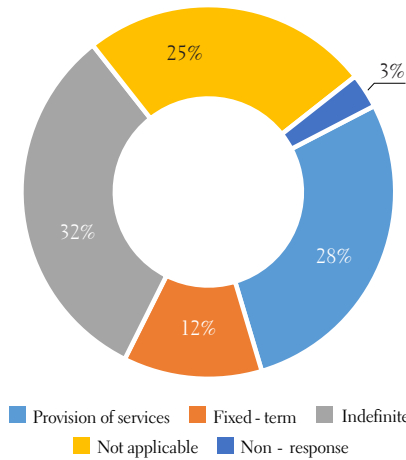


FIGURE 11. Representation of the type of contract variable  
Source: Authors.

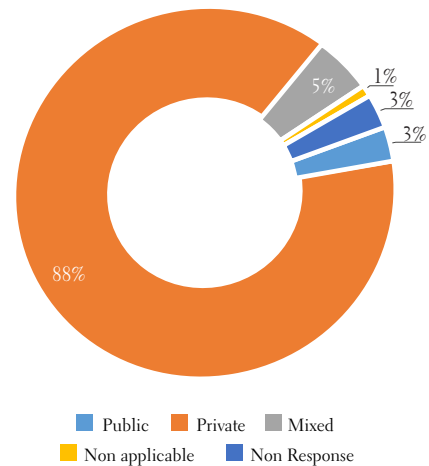


FIGURE 12. Representation of the type of company variable  
Source: Authors.



## GENERAL SYSTEM OF SOCIAL SECURITY IN HEALTH (SGSSS)

The vast majority of optometrists (1001 subjects, at 89%) are members of the contributive regime, while 60 (5%) belong to the subsidized regime, 35 (3%) are associate members (Figure 14).

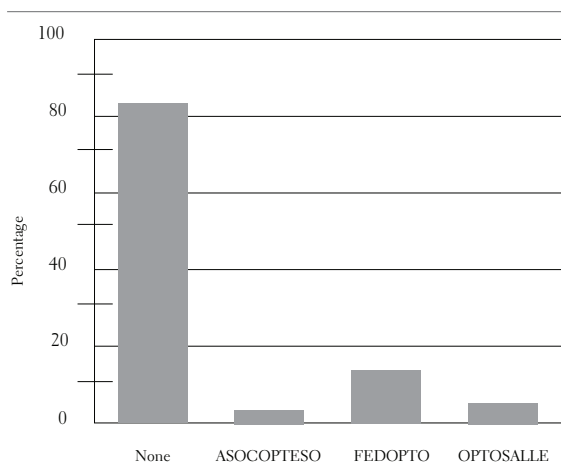


FIGURE 13. Trade union involvement

Source: Authors.

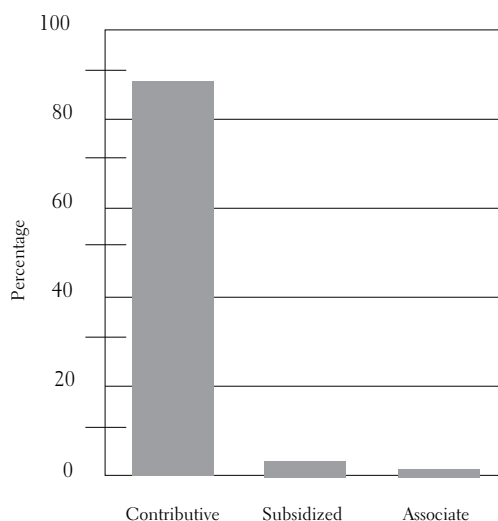


FIGURE 14. Enrollment of optometrists under the SGSSS

Source: Authors.

## UNDERGRADUATE STUDIES

Most of the surveyed optometrists (907 subjects at, 71%) graduated from Universidad de La Sal-

le, followed by 16% (203 optometrists) from Fundación Universitaria San Martín; 6% from Fundación Universitaria del Área Andina (78); 3% from Universidad Antonio Nariño (32); 1% Universidad Santo Tomás (14); 1% from Universidad El Bosque (14), among others (Figure 15).

## DISCUSSION

The studies carried out in relation to human talent in visual health in Colombia do not focus on optometry in itself—that is to say, it is included among other healthcare professions. As such, there is a lack of a comprehensive benchmark for comparing the results obtained from the present study to those of similar ones.

Universidad de La Salle has carried out research on human talent in visual health, which considers some of the items analyzed in the present study.

At the Optometry Program of Universidad de La Salle, several theses related to human talent in optometry, focused on its graduates, have been conducted, one of them under the title “Follow-up of Optometrists from the Universidad de La Salle Optometry Program who graduated between January 2000 and December 2005” (14). The said study concluded that many optometrists do not continue their vocational training process and that there is an oversupply of optometrists in Bogotá, which might be the reason for the relatively low wages earned by many. Also, there is a high inclination to pursue further training in occupational health, rather than a master’s degree or specialization, because the latter are not available or are very expensive; nevertheless, 91% of the surveyed optometrists plan for further studies in the near future.

Regarding the salary earned by optometrists, according to the conclusions reached in a study of the economic, occupational and professional situation of optometrists in Bogotá (15), most of them earn an income greater than 4 SMMLV, have job

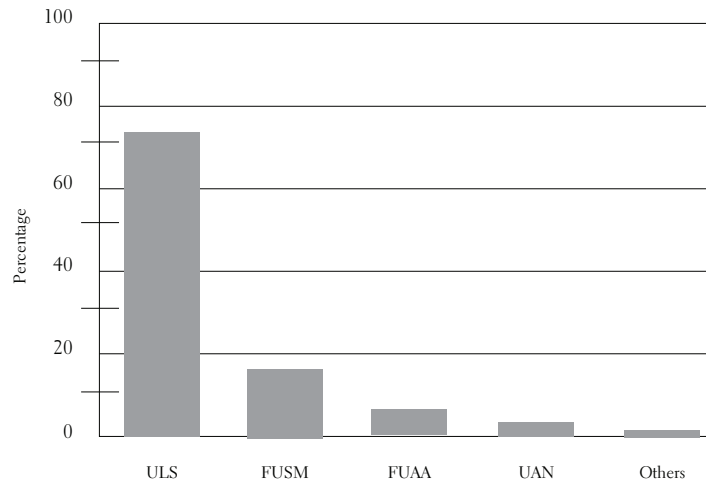


FIGURE 15. Universities in which optometrist completed undergraduate studies

ULS: Universidad de la Salle; FUSM: Fundación Universitaria San Martín; FUA: Fundación Universitaria del Área Andina; UAN: Universidad Antonio Nariño.  
Source: Authors.

stability and work independently. Based on the results of the present study, in which most optometrists report earning between 4 and 6 SMMLV, it can be concluded that since 2009 there has been no significant salary increase. Unlike the study by Bravo and Acevedo (15), this research shows that the majority of optometrists work under the dependent work contractual modality.

As for their professional training, the study by Bravo and Acevedo (15), states, as does the present study, that most optometrists graduated from the Universidad de La Salle, followed by the Fundación Universitaria San Martín.

In the follow-up study of the 2005–2010 optometry graduates from the Universidad de La Salle, Cárdenas mentions that those who finished their studies between 2000–2010 have a low tendency to join together in unions and participate in scientific communities, which is similar to the findings of the present study, where the vast majority of the surveyed optometrists report not belonging to any trade union/association.

Another study by Torres, titled “Follow-up of Graduates from the Universidad de La Salle Optometry Program from January 2006 to December 2010”,

concludes that 70% of the optometrists in this cohort practice in the city of Bogotá, and that they work in the occupational health area, nowadays referred to as Safety and Health at Work (16).

Furthermore, the work conducted by Sánchez and Muñoz (17), titled “Social, economic, employment, and professional situation of optometrists working in optometric facilities in the department of Cauca” concludes that most are in a stable socio-economic, employment and professional situation and are not constantly bringing themselves up to date in their field.

In Zabala’s research (18), titled “Occupational and socioeconomic situation of optometrists linked to optical networks in the city of Bogotá, D.C.”, it is concluded that they do not earn a reasonable compensation for their work, given their professional training; there is low motivation to pursue further studies because this does not represent an increase in their income.

López (19), in his article “The Law of Human Talent in Health, Another Brick in the Wall” shows the difficulties faced by human talent in health in Colombia:

1. The wide gap between academic training and the working world.
2. A rate of return of above 10 years for most of the professionals and related specializations. That is, the money invested in training is “recovered” after approximately a decade of professional practice.
3. An oversupply of human resources in such professions as nutrition, bacteriology, therapies, and dentistry.
4. A significant reduction of independent work as an alternative livelihood income.
5. The need to include Healthcare Administration in the medicine, dentistry, therapies, bacteriology, and nutrition academic programs.
6. The need for a change of focus in education, aimed at promoting an emphasis on technology training.

According to the “Report on Visual Health in South America 2008. UNESCO Chair in Visual Health and Development”, conducted by the Universitat Politècnica de Catalunya, in Colombia there are 1446 ophthalmologists, 4692 optometrists and 15 medical ophthalmic assistants; the document highlights that Colombia—after Brazil—is the second country in South America in terms of human talent in visual health resources, though it does not provide specific details; “Considering the global human resources involved in Visual Health clinical practice in South American countries, we notice a triple scenario: countries with human resources ranging from around 3 professionals per 100,000 inhabitants (Peru and Bolivia); countries with ratios of 5–8 professionals per 100,000 inhabitants (Paraguay, Venezuela, Brazil, Uruguay, Chile), and countries with ratios greater than 8 professionals per 100,000 inhabitants (Argentina and Colombia). Nevertheless, the South American ratios are far from

those of Spain and the United States. Among the countries we studied, Colombia has the highest proportion of human resources (13’1), which is half of the Spanish (33’7) and the American (37.2) ratios (20).

## CONCLUSIONS

Healthcare education (professional technicians, technologists, and professionals) must provide quality training and respond effectively to the needs of the population. It must also aim to strengthen the health system within the ethical framework of social responsibility, based on the principles and standards and regulate the training, exercise and performance of human talent in healthcare. Although the government determines that, while still respecting their institutional autonomy, those universities offering professional training programs in optometry should take into account the scientific knowledge and technological advances in eye and visual health and the requirements of the SGSSS Health System, the great majority of the optometrists surveyed in Bogotá work in the private sector with a smaller percentage being involved in the public sector.

It is noteworthy that, according to the analysis of the data obtained in the surveys, optometry can be considered to be a privileged profession, since those who practice it own their homes, live in strata 4 to 6, and earn most of their income from professional consultation fees or the sale of medical devices for visual and ocular health. The majority of optometrists graduated from the Universidad de La Salle, work 5–8 hours a day, under combined dependent/independent contractual modalities, with an indefinite-term contract or one for the provision of services, do not belong to any trade union and are enrolled in the contributory regime.

The present study shows the need to characterize optometrists in all regions of the country, in order

to provide accurate and up-to-date information on human talent in visual health.

It is important that the obtained information be shared in academic settings, and that eye care professionals are encouraged to form a guild, a supportive community that enables them to access professional development opportunities.

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