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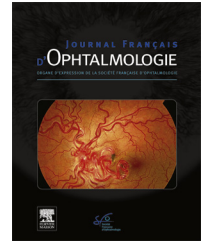


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ORIGINAL ARTICLE

Evaluation of the perception of physical and emotional health of ophthalmologists in Spain and the influence of the COVID-19 pandemic



Évaluation de la perception de la santé physique et émotionnelle des ophtalmologistes en Espagne et de l'influence de la pandémie de COVID-19

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Summary

Objective. – The main objective was to study the perception of physical and emotional health of Spanish ophthalmologists and their health habits, as well as the possible influence of the COVID-19 pandemic.

Methods. – An observational, cross-sectional, non-randomized and uncontrolled study was carried out among Spanish ophthalmologists through an online survey of 47 questions on eating habits, tobacco, alcohol, physical exercise, workload, and perception of physical and emotional state.

Results. – Of a total of 2,179 ophthalmologists, 260 (11.9%) of whom 55% were men responded to the survey, with a mean age of 52.9 ± 11.4 years. 5.8% were smokers. In total, 51.5% reported good physical health, with a mean Body Mass Index of 24.4 kg/m^2 . Overall, 53.5% reported

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depression, 66.9% tiredness, 34.6% difficulty sleeping, and 57.3% considered their work hard. Up to 28.5% of those surveyed had thought about leaving their job and 60.8% about reorganizing their workload. In total, 91.9% would continue to choose Ophthalmology as a specialty. In total, 36.2% reported an increase in workload, 42.3% worsening of physical state and 63.8% worsening of emotional state as a consequence of the COVID-19 pandemic.

Conclusions. – Spanish ophthalmologists have a positive perception of their physical and emotional health, despite having life habits that are not always healthy and feeling mostly down. The COVID-19 pandemic has had a negative influence on the physical and emotional health of ophthalmologists.

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MOTS CLÉS

Santé physique ;
Santé émotionnelle ;
COVID ;
Ophtalmologie

Résumé

Objectif. – L'objectif principal était d'étudier la perception de la santé physique et émotionnelle des ophtalmologistes espagnols et leurs habitudes de santé, ainsi que l'influence possible de la pandémie de COVID-19.

Méthodes. – Une étude observationnelle, transversale, non randomisée et non contrôlée a été réalisée auprès d'ophtalmologistes espagnols à travers une enquête en ligne de 47 questions sur les habitudes alimentaires, le tabac, l'alcool, l'exercice physique, la charge de travail, ainsi que la perception de l'état physique et émotionnel.

Résultats. – Sur un total de 2179 ophtalmologistes, 260 (11,9 %) ont répondu à l'enquête, avec un âge moyen de $52,9 \pm 11,4$ ans, 55 % étant des hommes. Au total, 5,8 % avaient une habitude de fumer; 51,5 % ont déclaré avoir une bonne santé physique, avec un indice de masse corporelle moyen de $24,4 \text{ kg/m}^2$. Dans l'ensemble, 53,5 % ont signalé une dépression, 66,9 % de la fatigue, 34,6 % des difficultés à dormir et 57,3 % considéraient leur travail comme dur. Jusqu'à 28,5 % des personnes interrogées avaient pensé à quitter leur emploi et 60,8 % à réorganiser leur charge de travail. In total, 91,9 % continueraient à choisir l'ophtalmologie comme spécialité. Au total, 36,2 % ont signalé une augmentation de la charge de travail, 42,3 % une aggravation de l'état physique et 63,8 % une aggravation de l'état émotionnel à la suite de la pandémie de COVID-19.

Conclusions. – Les ophtalmologistes espagnols ont une bonne perception de leur santé physique et émotionnelle, malgré des habitudes de vie pas toujours saines et une sensation de dépression. La pandémie de COVID-19 a eu une influence négative sur la santé physique et émotionnelle des ophtalmologistes.

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Introduction

Diseases related to life habits and health, such as those of the circulatory system, cancer, diabetes or diseases of the respiratory system, currently account for almost 70% of total deaths in Spain, having suffered a notable increase in the last decade [1].

Conversely, adherence to a healthy lifestyle is associated with a lower risk of mortality; a combination of at least four healthy lifestyle factors is associated with a reduction of the all-cause mortality risk by 66% [2].

In Spain, the prevalence of some of the most common chronic diseases (hypertension, diabetes...) increases significantly in the inactive population, nearly quadrupling the prevalence in those who practice physical activity. Nearly three quarters of the Spanish population do not practice any sport (34%) or only occasionally (39%). In addition, the practice of physical activity decreases with age and is 50% lower in women [3].

Regarding the medical profession, a study carried out on 4,832 doctors in Israel showed that 57% were overweight or obese, 21% had a fair state of health and 36% a considerable level of emotional stress [4]. In Spain, a survey of 1,053 Spanish doctors revealed that up to 13% of them did not perform any physical activity and up to 37% showed professional burnout [5]. On contrast, health styles among ophthalmologists and among European physicians have not been well documented.

Ophthalmology, like other branches of Medicine, is a specialty with working conditions that can reduce the time and energy required to maintain a healthy lifestyle. In addition, other psychological problems such as anxiety and stress are added, which have become more frequent due to the care burden, work claims, long hours and lack of resources, and can adversely affect both work and private life [6]. Furthermore, the workload of ophthalmologists is very likely to increase in the coming years, due to the aging of the population and the increase in demand for their services. Even

with over 200,000 ophthalmologists worldwide, there is a significant lack of these specialists and the increase in the older population is higher than the number of professionals needed [7,8]. Hence, this future deficit of ophthalmologists makes the assessment and detection of the level of burnout in these professionals even more important.

In addition, given the current situation of a SARS-CoV-2 pandemic, different studies have been carried out to assess the impact of this circumstance on the mental health of health professionals [9,10]. A systematic review determined that those health professionals who were in the first level of exposure had medium-high levels of anxiety, depression, worry or insomnia, although, stress levels were paradoxically below expectations (3,8–68,3%) [11]. As for the demand and assistance in Ophthalmology, an increase is to be expected in the short term given the worse control of chronic diseases (glaucoma, diabetic retinopathy) and the increase in surgical waiting lists due to the significant reduction of surgical activity and clinics [12–15]. In Ophthalmology, there is increased psychological distress among these physicians and about half of them may exhibit symptoms of depression, anxiety and insomnia [16,17].

The main objective of this study was to investigate the self-perception of physical and emotional health of ophthalmologists in Spain. The secondary objective is to determine the possible effect of the SARS-COV-2 pandemic on the physical and emotional environment of said population.

Methods

This is an observational, cross-sectional, non-randomized and uncontrolled study on the perception of physical and emotional health of the group of ophthalmologists in Spain. The study was approved by the Clinical Research Ethics Committee of the Hospital Clinico San Carlos in Madrid and complies with all the guidelines of the Declaration of Helsinki. Participants read an information sheet on the processing of their data and gave their consent before submitting the form, which was submitted the first two weeks of May 2021.

The inclusion criteria were: subjects over 18 years of age, Ophthalmology specialists or Ophthalmology residents (MIR), members of the Spanish Society of Ophthalmology (SEO) and with residence in Spain. A period of two weeks was provided to complete the survey.

An electronic questionnaire was designed using Google Forms, sent to all SEO members by email. The responses to the questionnaire were completely anonymous, and no personal data was obtained about the respondent at any time.

The questionnaire was divided into the following sections (Online material):

- epidemiological characteristics: age, sex, professional category (specialist or MIR), marital status, size of the place of residence and number of children;
- physical characteristics: Weight, height, body mass index (BMI), personal perception of physical health, smoking habit (current and past), alcohol consumption, drug consumption, daily sleep hours, weekly physical activity, minutes of weekly physical activity, consumption of at least 2 liters of water a day, regular breakfast, taking 5 or

more pieces of fruit or vegetables a day, regular consumption of processed food, regular consumption of sweetened beverages, Mediterranean diet and having followed a diet in recent months;

- emotional characteristics: perception of emotional state, depression, feeling of little interest in doing things, tiredness, difficulty sleeping, request for help from a Mental Health service, request for help in the past and difficulties at work secondary to the psychological situation;
- characteristics of the work and social life: Weekly hours worked, shift, work environment, exhaustion in the morning, feeling of hard work, belief that the doctor-patient relationship is affected by the personal emotional situation, belief that the doctor-patient relationship is affected due to fatigue and care burden, feeling upbeat and energetic at the end of the workday, adequate balance of work with personal life, thought of loss of leisure opportunities due to work, thought of leaving work, thinking of reducing work activity, if he would choose ophthalmology as his specialty again today and satisfaction of the time invested in work and in free time;
- influence of the COVID-19 pandemic: Influence on workload, physical and emotional state.

The questionnaire data was transferred to an Excel database. Statistical analysis was performed using SPSS version 22.0 (IBM Corp, Armonk, NY, USA). Categorical variables are shown as numbers and percentages and continuous variables as mean, standard deviation (SD), and range. The means of the continuous variables were compared using Student's t-test for independent groups. The proportions of categorical variables were compared using the χ^2 test. Statistical significance was set at $P < 0.05$.

Results

Of a total of 2,179 ophthalmologists who received the questionnaire, 260 (11.9%) responded. Table 1 shows the demographic characteristics of the included subjects. In total, 143 men (55%) and 117 women (45%) participated, with 258 specialists and 2 MIR.

In total, 51.5% of the participants referred a good physical health (Table 2); 5.8% had a smoking habit, 4.2% consumed alcohol on a daily basis and 15% never performed physical activity. Nearly 90% of participants have breakfast regularly and 72.3% of the ophthalmologists have a Mediterranean diet (Table 3).

Table 4 summarizes the answers related to the perception of the respondents' psychological status and mental health. Up to 51.2% felt depressed, 66.9% felt tired and 34.6% had insomnia.

Table 5 includes the characteristics of the working hours and social life of the participating ophthalmologists, while Table 6 reflects the possible influence of COVID-19 on the work load and the physical and emotional state of respondents.

Discussion

The present study reflects the perception of the physical and emotional state of Spanish ophthalmologists. Results show

Table 1 Demographic characteristics of the participants.

	Total (n = 260) (%)	Males (n = 143) (%)	Females (n = 117) (%)	P	≤ 55 years (%)	> 55 years (%)	P
Sex							
Male	143 (55)				61 (48)	81 (61.4)	0.031*
Female	117 (45)				66 (52)	51 (38.6)	
Age							
Mean (SD)	52.9 (11.4)	54.8 (11.6)	49.9 (10.6)	0.001*	43 (7.1)	61.8 (5.7)	< 0.001*
[range]—years	[26–84]	[30–84]	[26–74]		[26–54]	[55–84]	
Weight							
Mean (SD)	71.4 (13.7)	79.5 (11.4)	61.6 (9.3)	< 0.001*	68.3 (11.9)	74.3 (14.7)	< 0.001*
[range]—kilograms	[42–140]	[60–140]	[42–85]		[47–100]	[42–140]	
Height							
Mean (SD)	170.8 (8.5)	175.7 (6.1)	164.8 (7.1)	< 0.001*	170.4 (8)	171.1 (9)	0.495
[range]—centimetres	[144–195]	[160–190]	[144–195]		[154–190]	[144–195]	
Body Mass Index							
Mean (SD)	24.4 (3.6)	25.8 (3.4)	22.7 (3.2)	< 0.001*	23.4 (3.1)	25.3 (3.8)	< 0.001*
[range]—kg/m ²	[21.5–39.9]	[19.4–39.9]	[16–32.9]		[17.3–32.9]	[16–39.9]	
Professional category							
Specialist	258 (99.2)	143 (100)	115 (98.3)	0.12	125 (98.4)	132 (100)	0.148
Resident	2 (0.8)	0 (0)	2 (1.7)		2 (1.6)	0 (0)	
Marital status							
Married	210 (80.8)	120 (83.9)	90 (76.9)	0.223	99 (78)	111 (84.1)	0.021*
Divorced	16 (6.2)	10 (7)	6 (5.1)		6 (4.7)	9 (6.8)	
Single	28 (10.8)	10 (7)	18 (15.4)		21 (16.5)	7 (5.3)	
Widowed	3 (1.2)	1 (0.7)	2 (1.7)		0 (0)	3 (2.3)	
No answer	3 (1.2)	2 (1.4)	1 (0.9)		1 (0.8)	2 (1.5)	
Place of residence							
> 1 million inhabitants	74 (28.5)	37 (25.9)	37 (31.6)	0.461	41 (32.3)	32 (24.2)	0.291
500,000–1 million inhabitants	32 (12.3)	16 (11.2)	16 (13.7)		18 (14.2)	14 (10.6)	
100,000–500,000 inhabitants	93 (35.8)	57 (39.9)	36 (30.8)		40 (31.5)	53 (40.2)	
< 100,000 inhabitants	61 (23.5)	33 (23.1)	28 (23.9)		28 (22)	33 (25)	
Number of children							
0	46 (18)	19 (13.7)	27 (23.3)	0.074	30 (24)	16 (12.4)	0.062
1	40 (15.7)	19 (13.7)	21 (18.1)		22 (17.6)	17 (13.2)	
2	100 (39.2)	54 (38.8)	46 (39.7)		47 (37.6)	53 (41.1)	
3	56 (22)	36 (25.9)	20 (17.2)		23 (18.4)	33 (25.6)	
4	9 (3.5)	7 (5)	2 (1.7)		3 (2.4)	6 (4.7)	
5	3 (1.2)	3 (2.2)	0 (0)		0 (0)	3 (2.3)	
8	1 (0.4)	1 (0.7)	0 (0)		0 (0)	1 (0.8)	

*: Illustrates statistical significance ($P < 0.05$).

Table 2 Self-perception of health condition.

	Total (n = 260) (%)	Males (n = 143) (%)	Females (n = 117) (%)	P	≤ 55 years (%)	> 55 years (%)	P
Perception of physical health status							
Excellent	11 (4.2)	6 (4.2)	5 (4.3)	0.413	6 (4.7)	5 (3.8)	0.435
Very good	68 (26.2)	39 (27.3)	29 (24.8)		28 (22)	39 (29.5)	
Good	134 (51.5)	78 (54.5)	56 (47.9)		65 (51.2)	69 (52.3)	
Regular	39 (15)	16 (11.2)	23 (19.7)		22 (17.3)	17 (12.9)	
Bad	7 (2.7)	4 (2.8)	3 (2.6)		5 (3.9)	2 (1.5)	
Very bad	1 (0.4)	0 (0)	1 (0.9)		1 (0.8)	0 (0)	
Current smoking status							
Smoker	15 (5.8)	12 (8.4)	3 (2.6)	0.045*	3 (2.4)	12 (9.1)	0.02*
Non-smoker	245 (94.2)	131 (91.6)	114 (97.4)		124 (97.6)	120 (90.9)	
If current habit, years of smoking							
Mean (SD) [range]—years	35.7 (8.9) [24–50]	35.5 (9.8) [24–50]	36.7 (5.8) [30–40]	0.844	26.3 (3.2) [24–30]	38.3 (8.2) [25–50]	0.033*
If current habit, cigarettes a day							
Mean (SD) [range]—cigarettes	10.9 (6.0) [3–20]	9.8 (6.4) [3–20]	15 (0) [15]	0.017*	7.3 (3.1) [4–10]	11.8 (6.4) [3–20]	0.272
Past smoking habit							
Yes	93 (35.8)	52 (36.4)	41 (35)	0.825	28 (22)	65 (49.2)	< 0.001*
No	167 (64.2)	91 (63.6)	76 (65)		99 (78)	67 (50.8)	
If past habit, years of smoking							
Mean (SD) [range]—years	16.9 (11) [0–63]	17.4 (11.8) [0–63]	16.3 (9.9) [2–40]	0.659	9.2 (5.6) [0–20]	20.7 (11) [2–63]	< 0.001*
If past habit, cigarettes a day							
Mean (SD) [range]—cigarettes	12.3 (8.8) [0–40]	13.0 (9.2) [0–40]	11.3 (8.4) [1–30]	0.369	8 (6.8) [0–20]	14.3 (9) [1–40]	< 0.001
Alcohol consumption							
Daily	11 (4.2)	10 (7)	1 (0.9)	0.003*	3 (2.4)	8 (6.1)	0.285
Frequently	42 (16.2)	27 (18.9)	15 (12.8)		21 (16.5)	21 (15.9)	
Ocasionally	169 (65)	93 (65)	76 (65)		81 (63.8)	88 (66.7)	
No	38 (14.6)	13 (9.1)	25 (21.4)		22 (17.3)	15 (11.4)	
Drug consumption							
Yes	1 (0.4)	1 (0.7)	0 (0)	0.365	0 (0)	1 (0.8)	0.326
No	259 (99.6)	142 (99.3)	117 (100)		127 (100)	131 (99.2)	
Physical activity							
4-7 days a week	66 (25.4)	38 (26.6)	28 (23.9)	0.666	23 (18.1)	43 (32.6)	0.028*
1-3 days a week	155 (59.6)	86 (60.1)	69 (59)		83 (65.4)	71 (53.8)	
Never	39 (15)	19 (13.3)	20 (17.1)		21 (16.5)	18 (13.6)	
Minutes of physical activity per week							
Mean (SD) [range]—minutes	167.5 (199.9) [0–2000]	158.3 (143.8) [0–650]	178.7 (252.3) [0–2000]	0.413	145.7 (158.5) [0–1200]	187.9 (232.2) [0–2000]	0.090

*: Illustrates statistical significance ($P < 0.05$).

	Total (n = 260) (%)	Males (n = 143) (%)	Females (n = 117) (%)	P	≤ 55 years (%)	> 55 years (%)	P
At least 2 litres of water a day							
Yes	95 (36.5)	51 (35.7)	44 (37.6)	0.746	42 (33.1)	53 (40.2)	0.237
No	165 (63.5)	92 (64.3)	73 (62.4)		85 (66.9)	79 (59.8)	
Regular breakfast							
Yes	233 (89.6)	126 (88.1)	107 (91.5)	0.38	118 (92.9)	114 (86.4)	0.085
No	27 (10.4)	17 (11.9)	10 (8.5)		9 (7.1)	18 (13.6)	
5 or more pieces of fruit or vegetables a day							
Nearly every day	87 (33.5)	40 (28)	47 (40.2)	0.004*	28 (22)	58 (43.9)	0.002*
Some days	85 (32.7)	42 (29.4)	43 (36.8)		52 (40.9)	33 (25)	
Rarely	48 (18.5)	30 (21)	18 (15.4)		26 (20.5)	22 (16.7)	
Never	40 (15.4)	31 (21.7)	9 (7.7)		21 (16.5)	19 (14.4)	
Processed food 3–4 times a week							
Yes	42 (16.2)	23 (16.1)	19 (16.2)	0.973	29 (22.8)	13 (9.8)	0.005*
No	218 (83.8)	120 (83.9)	98 (83.8)		98 (77.2)	119 (90.2)	
Drinking sugary drinks							
Nearly every day	13 (5)	4 (2.8)	9 (7.7)	0.008*	9 (7.1)	4 (3)	0.298
Occasionally	107 (41.2)	70 (49)	37 (31.6)		53 (41.7)	54 (40.9)	
Never	140 (53.8)	69 (48.3)	71 (60.7)		65 (51.2)	74 (56.1)	
Mediterranean diet							
Always	43 (16.5)	23 (16.1)	20 (17.1)	0.381	19 (15)	23 (17.4)	0.270
Most days	188 (72.3)	101 (70.6)	87 (74.4)		93 (73.2)	95 (72)	
Some days	26 (10)	16 (11.2)	10 (8.5)		15 (11.8)	11 (8.3)	
Never	3 (1.2)	3 (2.1)	0 (0)		0 (0)	3 (2.3)	
Current or past diet plan							
Yes	46 (17.7)	28 (19.6)	18 (15.4)	0.378	20 (15.7)	26 (19.7)	0.406
No	214 (82.3)	115 (80.4)	99 (84.6)		107 (84.3)	106 (80.3)	

*: Illustrates statistical significance ($P < 0.05$).

that although 51.5% of Spanish ophthalmologists reported good physical health, a mean BMI of 24.4 kg/m² was found, close to being overweight. In total, 5.8% had a smoking habit, 4.2% consumed alcohol on a daily basis and 15% never performed physical activity; 72.3% consume regularly a Mediterranean diet. Regarding the state of emotional health, up to 51.2% of those surveyed felt depressed, 66.9% felt tired, 34.6% had difficulty sleeping, and 57.2% considered their work hard which led to 28.5% thinking about leaving their job and 60.8% about reorganizing their workload. Even so, 91.9% would continue to choose Ophthalmology as a medical specialty. The COVID-19 pandemic resulted in an increase in workload (36.2%), a worsening of physical condition (42.3%) and a worsening of emotional state (63.8%).

In comparison with the general Spanish population, ophthalmologists refer a slightly better state of physical health (51.5%). According to Precioso et al., the global prevalence of smoking in adult population in most of the European countries is over 25% and around 20-25% in Spain; much higher than that of ophthalmologists [18–20]. In general, physicians smoke less than the general population [21].

Furthermore, more than 1 in 3 ophthalmologists had a past smoking habit, above the Spanish population (25.8%) [20]. In accordance, daily alcohol consumption (4.2%) in ophthalmologists was also lower than that of the Spanish population (16.4%) [20]. In 2017, 67.2% of the Spanish population did not perform any physical exercise, in contrast to Spanish ophthalmologists, where only 15% reported doing nothing of exercise. Likewise, in Saudi Arabia, ophthalmologists reported a more frequent physical activity than the general population [22]. No differences were found between sexes, yet a study in Spain in 2016 found that the practice of physical activity was 50% lower in women than men [3]. Regarding eating habits, associating a Mediterranean diet, supplementing it with extra virgin olive oil or walnuts reduced the incidence of major cardiovascular events in high cardiovascular risk individuals [23]. That said, most of the Spanish ophthalmologists in our study followed a Mediterranean diet, reaching 88.8% if we add those who do it always or regularly.

Perceived emotional health showed a higher subjective level of depression, less interest or pleasure in doing things and more fatigue or low energy among women, as well

Table 4 Psychological health status.

	Total (n = 260) (%)	Males (n = 143) (%)	Females (n = 117) (%)	P	≤ 55 years (%)	> 55 years (%)	P
Perception of emotional state							
Excellent	12 (4.6)	7 (4.9)	5 (4.3)	0.092	5 (3.9)	7 (5.3)	0.012*
Very good	54 (20.8)	30 (21)	24 (20.5)				
Good	122 (46.9)	76 (53.1)	46 (39.3)				
Regular	56 (21.5)	24 (16.8)	32 (27.4)				
Bad	16 (6.2)	6 (4.2)	10 (8.5)				
Depression							
Yes	139 (53.5)	61 (42.7)	78 (66.7)	< 0.001*	79 (62.2)	60 (45.5)	0.007*
No	121 (46.5)	82 (57.3)	39 (33.3)		48 (37.8)	72 (54.5)	
Feeling of little interest in doing things							
Yes	127 (49.8)	59 (41.3)	68 (58.1)	0.007*	76 (59.8)	51 (38.6)	0.001*
No	133 (51.2)	84 (58.7)	49 (41.9)		51 (40.2)	81 (61.4)	
Tiredness							
Yes	174 (66.9)	84 (58.7)	90 (76.9)	0.002*	100 (78.7)	74 (56.1)	< 0.001*
No	86 (33.1)	59 (41.3)	27 (23.1)		27 (21.3)	58 (43.9)	
Difficulty sleeping							
Yes	90 (34.6)	44 (30.8)	46 (39.3)	0.15	48 (37.8)	41 (31.1)	0.254
No	170 (65.4)	99 (69.2)	71 (60.7)		79 (62.2)	91 (68.9)	
Request for help from a mental health service							
Yes	27 (10.4)	13 (9.1)	14 (12)	0.45	19 (15)	8 (6.1)	0.019*
No	233 (89.6)	130 (90.9)	103 (88)		108 (85)	124 (93.9)	
Request for help from a mental health service in the past							
Yes	55 (21.2)	21 (14.7)	34 (29.1)	0.005*	30 (23.6)	25 (18.9)	0.357
No	205 (78.8)	122 (85.3)	83 (70.9)		97 (76.4)	107 (81.1)	
Difficulties at work secondary to the psychological situation							
Extremely	1 (0.4)	1 (0.7)	0 (0)	0.156	1 (0.8)	0 (0)	0.003*
A lot	18 (6.9)	10 (7)	8 (6.8)		8 (6.3)	10 (7.6)	
A bit	2 (0.8)	0 (0)	2 (1.7)		1 (0.8)	1 (0.8)	
Few	116 (44.6)	57 (39.9)	59 (50.4)		72 (56.7)	44 (33.3)	
None	123 (47.3)	75 (52.4)	48 (41)		45 (35.4)	77 (58.3)	

*: Illustrates statistical significance ($P < 0.05$).

as among those under 55 years of age. These results are increased compared to others found in the literature, such as those in the study of quality of life and burnout in the Spanish medical professional, where the level of exhaustion or depression in physicians was 47% [24].

Regarding working life, it is noteworthy that up to 28.5% of those surveyed had thought about leaving work, higher than that found in the survey of Spanish doctors, where only 9% were considering giving up their profession. More than half of Spanish doctors worked more than 40 hours a week, close to the data hereby obtained (42.2 hours) [24]. When the emotional situation and patient care are combined, up to 43% felt less motivation in patient care in the aforementioned study [24], higher than the percentage obtained

in our sample, where 23.8% of ophthalmologists referred a deterioration of said attention due to the emotional load.

Thorough similar health styles studies are scarce in the literature, although surveys have been conducted in the general medical population. A study on behaviors and perceptions in Israeli doctors evaluated several which can be compared with our survey [4]. The perception of the state of physical health yielded worse results in Spanish ophthalmologists compared to Israeli (excellent 4.2% vs. 11.1%, good 26.2% vs. 33.5%). Spanish ophthalmologists report a healthier lifestyle with a greater physical activity, lower proportion of smoking habit and a regular daily breakfast, the latter notably surpassing the Israeli study (89.6% vs. 52.7%). A Mediterranean diet was much more frequent in Spanish

Table 5 Work and social-life related questions.

	Total (n = 260) (%)	Males (n = 143) (%)	Females (n = 117) (%)	P	≤ 55 years (%)	> 55 years (%)	P
Work life							
Shift							
Morning	51 (19.6)	16 (11.2)	35 (29.9)	0.001*	25 (19.7)	26 (19.7)	0.187
Morning-afternoon	159 (61.2)	97 (67.8)	62 (53)		82 (64.6)	77 (58.3)	
Afternoon	8 (3.1)	7 (4.9)	1 (0.9)		1 (0.8)	7 (5.3)	
Changing	42 (16.2)	23 (16.1)	19 (16.2)		19 (15)	22 (16.7)	
Type of hospital							
Public	70 (26.9)	16 (11.2)	54 (46.2)	< 0.001*	40 (31.5)	30 (22.7)	< 0.001*
Private	92 (35.4)	69 (48.3)	23 (19.7)		32 (25.2)	59 (44.7)	
Both, mostly public	66 (25.4)	38 (26.6)	28 (23.9)		44 (34.6)	22 (16.7)	
Both, mostly private	13 (5)	11 (7.7)	2 (1.7)		3 (2.4)	10 (7.6)	
Both, equally	19 (7.3)	9 (6.3)	10 (8.5)		8 (6.3)	11 (8.3)	
Weekly hours worked							
Mean (SD)	42.2 (31.4)	40.1 (13.6)	44.7 (44.3)	0.239	46.8 (42.4)	37.8 (13.3)	0.020*
[range]—hours	[0–500]	[0–85]	[0–500]		[8–500]	[0–70]	
Exhaustion in the morning							
Yes	76 (29.2)	32 (22.4)	44 (37.6)	0.007*	48 (37.8)	28 (21.2)	0.003*
No	184 (70.8)	111 (77.6)	73 (62.4)		79 (62.2)	104 (78.8)	
Feeling of hard work							
Yes	149 (57.3)	73 (51)	76 (65)	< 0.024*	86 (67.7)	63 (47.7)	0.001*
No	111 (42.7)	70 (49)	41 (35)		41 (32.3)	69 (52.3)	
Doctor-patient relationship is affected by the personal emotional situation							
Yes	62 (23.8)	29 (20.3)	33 (28.2)	0.136	44 (34.6)	18 (13.6)	< 0.001*
No	198 (76.2)	114 (79.7)	84 (71.8)		83 (65.4)	114 (86.4)	
Belief that the doctor-patient relationship is affected due to fatigue and care burden							
Yes	118 (45.4)	53 (37.1)	65 (55.6)	0.003*	78 (61.4)	40 (30.3)	< 0.001*
No	142 (54.6)	90 (62.9)	52 (44.4)		44 (34.6)	92 (69.7)	
Feeling upbeat and energetic at the end of the workday							
Always	18 (6.9)	18 (12.6)	0 (0)	0.001*	4 (3.1)	13 (9.8)	< 0.001*
Most days	106 (40.8)	61 (42.7)	45 (38.5)		40 (31.5)	66 (50)	
Half of the days	43 (16.5)	23 (16.1)	20 (17.1)		22 (17.3)	21 (15.9)	
Some days	73 (28.1)	32 (22.4)	41 (35)		51 (40.2)	22 (16.7)	
Never	20 (7.7)	9 (6.3)	11 (9.4)		10 (7.9)	10 (7.6)	
Social life							
Adequate balance of work with personal life							
Yes	129 (49.6)	73 (51)	56 (47.9)	0.609	51 (40.2)	78 (59.1)	0.002*
No	131 (50.4)	70 (49)	61 (52.1)		76 (59.8)	54 (40.9)	
Feeling of loss of leisure opportunities due to work							
Always	27 (10.4)	14 (9.8)	13 (11.1)	0.321	17 (13.4)	9 (6.8)	< 0.001*

Table 5 (Continued)

	Total (n = 260) (%)	Males (n = 143) (%)	Females (n = 117) (%)	P	≤ 55 years (%)	> 55 years (%)	P
Most days	55 (21.2)	33 (23.1)	22 (18.8)		37 (29.1)	18 (13.6)	
Half of the days	26 (10)	18 (12.6)	8 (6.8)		14 (11)	12 (9.1)	
Some days	120 (46.2)	59 (41.3)	61 (52.1)		53 (41.7)	67 (50.8)	
Never	32 (12.3)	19 (13.3)	13 (11.1)		6 (4.7)	26 (19.7)	
Thought of leaving work							
Yes	74 (28.5)	46 (32.2)	28 (23.9)	0.143	35 (27.6)	39 (29.5)	0.724
No	186 (71.5)	97 (67.8)	89 (76.1)		92 (72.4)	93 (70.5)	
Thought of reducing work activity							
Yes	158 (60.8)	96 (67.1)	62 (53)	0.020*	89 (70.1)	39 (29.5)	0.003*
No	102 (39.2)	47 (32.9)	55 (47)		38 (29.9)	93 (70.5)	
Would you choose ophthalmology as a specialty again?							
Yes	239 (91.9)	132 (92.3)	107 (91.5)	0.801	115 (90.6)	123 (93.2)	0.438
No	21 (8.1)	11 (7.7)	10 (8.5)		12 (9.4)	9 (6.8)	
Satisfaction of the time invested in work and in free time							
Totally satisfied	18 (6.9)	11 (7.7)	7 (6)	0.572	3 (2.4)	15 (11.4)	0.005*
Very satisfied	40 (15.4)	22 (15.4)	18 (15.4)		14 (11)	25 (18.9)	
Satisfied	117 (45)	68 (47.6)	49 (41.9)		61 (48)	56 (42.4)	
Little satisfied	81 (31.2)	39 (27.3)	42 (35.9)		48 (37.8)	33 (25)	
Not satisfied at all	4 (1.5)	3 (2.1)	1 (0.9)		1 (0.8)	3 (2.3)	

*: Illustrates statistical significance ($P < 0.05$).

Table 6 Effect of COVID-19.

	Total (n = 260) (%)	Males (n = 143) (%)	Females (n = 117) (%)	P	≤ 55 years (%)	> 55 years (%)	P
Effect of the pandemic in the work load							
Have increased	94 (36.2)	39 (27.3)	55 (47)	0.003*	63 (49.6)	31 (23.5)	< 0.001*
Have decreased	64 (24.6)	43 (30.1)	21 (17.9)		21 (16.5)	43 (32.6)	
No change	102 (39.2)	61 (42.7)	41 (35)		43 (33.9)	58 (43.9)	
Effect of the pandemic in the physical state							
Have increased	12 (4.6)	8 (5.6)	4 (3.4)	0.003*	7 (6.5)	5 (3.8)	0.649
Have decreased	110 (42.3)	47 (32.9)	63 (53.8)		56 (44.1)	54 (40.9)	
No change	138 (53.1)	88 (61.5)	50 (42.7)		64 (50.4)	73 (55.3)	
Effect of the pandemic in the emotional state							
Have increased	2 (0.8)	1 (0.7)	1 (0.9)	0.005*	1 (0.8)	1 (0.8)	0.792
Have decreased	166 (63.8)	79 (55.2)	87 (74.4)		84 (66.1)	82 (62.1)	
No change	92 (35.4)	63 (44.1)	29 (24.8)		42 (33.1)	49 (37.1)	

*: Illustrates statistical significance ($P < 0.05$).

ophthalmologists (88.8% vs. 33.8%), which can be influenced by the eating habits of the general Spanish population. It is striking how in both studies the intake of at least 2 liters of water a day is relatively low (36.5% vs. 35.9%), despite it being the amount recommended by the WHO. The daily consumption of processed food (16.2% vs. 17.5%) and of 5 or more pieces of fruit or vegetables (33.5% vs. 33.1%) were quite similar.

On the other hand, over 60% of the ophthalmologists surveyed reported a worsening of their emotional state secondary to COVID-19 pandemic. This data is higher than that found in the systematic review of the impact of SARS-COV-2 on the mental health of health professionals by García-Iglesias et al. [11], in which the prevalence of depression was 8.1–25%. In addition, levels of anxiety were medium-high (26,5–44,6%) along with concern and insomnia (23,6–38%), although paradoxically, stress levels were below expectations (3,8–68,3%).

Specifically in ophthalmologists, data seem to be worse, with 64.2% revealing to suffer from mental health problems. In total, 52.7% ophthalmologists in India reported depression and anxiety whereas 14% had stress. Moreover, ophthalmologists above 40 years of age with more than 10 years of experience were more likely to suffer from severe stress [9]. Another survey in Saudi Arabia reports similar results of depression (50.5%), anxiety (46.7%), and insomnia (44.9%). Depression was found to be more common among female ophthalmologists, those living with an elderly, and fellows [16]. In a Turkish survey-based study symptoms of depression, anxiety, stress and insomnia were present in 65%, 56.9%, and 43% and 46.9% of participants, respectively. Female gender, older age, residents, and lower satisfaction levels of hygiene conditions in COVID clinics were associated to higher depression scores [17]. In the present study, 36.2% of the ophthalmologists reported an increase in workload and 42.3% a worsening of their physical condition secondary to the pandemic. The perceived emotional state worsened in 63.8% of those surveyed, being more accentuated in women like in other studies, no differences in terms of age were detected.

Our study has certain limitations, mainly related to its design, based on a voluntary survey without random sampling and to a low response rate. The participation was mainly older specialists, with very few residents, probably due to the lower predisposition of young ophthalmologists to answer the survey, which raised the average age of those surveyed. The number of married people and of children were also higher than that of Spanish doctors [5]. As there is no sampling, there may be a selection bias (being voluntary, lacking data from younger doctors, among others) or a Hawthorne effect (referring to better habits than the real ones). Even so, given that it was an anonymous survey, the results were expected to be relatively reliable.

Nevertheless, a fairly large sample of ophthalmologists was obtained, with a similar number of men and women. Likewise, it is a very complete survey and abundant data was obtained on the health status and lifestyle of the respondents. Our findings allow us to outline the life habits, emotional and work situation of ophthalmologists in Spain. Among doctors, ophthalmologists' habits have not been clearly defined and much less in European countries. Due to the results obtained, it is likely that they require some

initiatives based on preventing physical, emotional, social or work health problems, in addition to promoting healthy lifestyles, which will have an impact on both personal well-being and the quality of their medical practice.

In summary, although the majority of those surveyed reported a good perception of their physical health, the average BMI obtained was very close to being overweight. Smoking and alcohol consumption were lower than in the general population and the data suggest that ophthalmologists perform more physical exercise. A significant number of ophthalmologists felt depressed and tired. In addition, COVID-19 has led to an increase in the workload and a worsening in the emotional and physical state of ophthalmologists.

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Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at <https://doi.org/10.1016/j.jfo.2022.03.010>.

Disclosure of interest

The authors declare that they have no competing interest.

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