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THE PATIENT-PHYSICIAN RELATIONSHIP AND ROLE OF EMPATHIC COMMUNICATION IN CONTACT LENS PRACTICE – MEASUREMENT OF PATIENT SATISFACTION

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ABSTRACT

Purpose: To assess the relationship between eye care practitioners and contact lens patients and to determine how empathy is associated with patients' overall satisfaction.

Methods: Multilingual electronic surveys shared by email and on social media in patients' and practitioners' groups. Ratings were converted to a numerical scale. The scores were compared using Wilcoxon rank sum tests.

Results: The survey had 804 responses: 68.4% were over 46 years old, and 58.1% were female. Only 770 reported the type of contact lens worn. Of all patients, 10.6% would not recommend their physician due to feeling excluded from decisions (55.3%), lack of personal interest (63.5%), no written recommendations (84%), and unmet expectations (77%). Scleral lens wearers were highly satisfied. Optometrists excelled in care, ratings, relationships, communication, symptom relief, and prevention.

Discussion: The findings highlight the importance of empathy in eye care and its impact on patient experiences. Factors such as contact lens type, physician recommendation, and physician type can influence the level of empathy perceived by patients. Satisfaction varied based on contact lens type, with soft and scleral lens wearers reporting better experiences. Patients valued physicians who listened, explained treatments, showed empathy, and had patient-centered communication and open-ended questions. Optometrists were scored higher than ophthalmologists in several aspects.

Conclusion: Patients, especially scleral lens patients, were generally satisfied with the services and care. Optometrists scored higher than ophthalmologists. Patients would not recommend their physicians mainly because of a lack of empathy.

Keywords: Patient-Physician Relationship; Empathy; Communication Skills; Contact Lens Wearers; Patient Satisfaction; Person-Centered Approach; Scleral Lenses; Shared Decision-Making

INTRODUCTION

The cornerstone of primary care lies in taking a holistic approach to each patient, where their needs and interests are given priority in clinical healthcare. However, there has been a noticeable shift in the past decades from a person-centered approach emphasizing empathic communication between physicians and patients towards a more task-oriented communication,[1] technical daily practice,[2] evidence-based practice, and protocol-driven care.[3,4] While this shift towards task-oriented communication may lead to efficient contact lens fitting procedures, it can inadvertently overlook the importance of the patient's experience and satisfaction. Therefore, raising awareness about this trend and prioritizing shared decision-making that considers the patient's unique characteristics and needs becomes essential.[5–9] This approach is crucial for providing effective eye care.[10]

A comprehensive approach is particularly crucial when dealing with patients using scleral lenses as they often suffer from chronic diseases, including dry eye disease.[1,2] These chronic conditions affect various aspects of life, including social relationships, education, work, nutrition, travel, leisure activities, career choices,[11,12] future.[13] They also cause fatigue, anxiety, and depression.[14]

Empathy is widely recognized as a crucial tool in fostering a person-centered approach in healthcare.[15,16] It entails several key aspects that allow physicians to establish a deep connection with their patients. Firstly, it involves understanding the patient's unique situation, perspective, and emotions, considering their experiences and challenges. Secondly, effective empathic communication involves actively conveying this understanding to the patient and seeking confirmation of its accuracy. This ensures that the physician's empathy resonates with the patient's perception of their circumstances. Lastly, empathy translates into meaningful action, as physicians apply their understanding helpfully and therapeutically, addressing the patient's needs and concerns with compassion and expertise. By embracing empathy, physicians can create a supportive and patient-centric environment that enhances the overall quality of care.[15,16]

This research aims to explore the relationships between patients and their physicians, focusing on several aspects, and to determine how empathy is associated with patients' overall satisfaction.

METHODS

An 18-item electronic survey regarding the relationship between patients and their physicians, translated into 4 languages, English, Spanish, Portuguese, and Italian, was administered. The survey forms were shared on social media in patient and practitioner groups, considering a regular follow-up appointment. Participants were asked about their physician, including gender, and profession, and were asked to rate their communication skills and empathy (communication time, listening, interest in the participants' health and personal situation, eye care services, explanation of purposes of tests and treatments, helps the participant deal with psychological problems related to an eye problem, friendly and helpful, continuity of care, cost

of services, among others). Participants were also asked if they would recommend their physician to friends or relatives.

Results were analyzed considering 3 variable outcomes: (A) the contact lens type that participants were wearing when answering the survey; (B) patients with bad experiences (those who would not recommend their physician to others); (C) education of the physician (optometrists vs ophthalmologists). Respondents were instructed to respond to each question considering their perceptions and feelings regarding their main vision care specialist (either the optometrist or the ophthalmologist). This is an important point as in some countries, such as US, ophthalmologists usually have other technicians or staff to help with the contact lens prescriptions. There were also some questions regarding their perceptions of the staff in optometric or ophthalmological practices.

Questions with possible excellent/good/fair/poor responses were converted to numbers 1 through 4 and averaged across sub-questions. Questions with yes/no responses were converted to 0/1 and averaged across sub-questions, with "don't know" responses treated as missing. The resulting scores were compared between groups using Wilcoxon rank sum tests. Responses to questions regarding time spent with a patient were likewise compared between groups using Wilcoxon rank sum tests. Analyses were conducted using R version 4.2.1 (2022-06-23).[17]

RESULTS

Table 1 summarizes the characteristics of the respondents and their physicians based on 804 responses. The majority of respondents were female (58.1%) aged 46 years or older (68.4%), with a negligible percentage being under 18 years old (0.5%). Around 30.3% of respondents reported not wearing contact lenses during the survey, and a small number (4.4%) did not specify their contact lens usage. The responses were predominantly from the USA (over 60%), followed by Barbados (9.1%), Portugal (5.5%), Italy (2.6%), the UK (2.4%), Canada (2%), and other countries. Regarding physicians, the majority were male (67.1%), with 25.4% being male optometrists and 41.3% male ophthalmologists. Female physicians accounted for a smaller proportion, with 17.2% female optometrists and 15.4% female ophthalmologists.

Table 2 provides the overall average results for different categories: physician, relationship and communication, eye care services and physician recommendation, and communication time. Over 60% of respondents rated their physician as excellent or good. However, the sub-question regarding assistance with psychological problems related to eye issues received the lowest score, with 18.8% rating their physician as fair and 12.1% rating them as poor. More than half of the respondents reported a good relationship, communication with their physician, and satisfactory eye care services. However, most respondents noted that they did not receive written recommendations (50.6%). Another question not presented in the tables focused on the respondents' perception of service costs, with 2.7% considering them unaffordable, 40.2% considering them expensive, 52.7% considering them affordable, and 4.4% considering them inexpensive. These results are from all respondents. In the following sections, results will be analyzed by contact lens type (A), considering the willing of the respondent to recommend their physician to friends or relatives (B) and considering the physician type (ophthalmologist vs optometrist).

Empathy Considering Contact Lens Type

Answers were divided according to the contact lens type that respondents were wearing by the time they answered the online questionnaire: scleral lens (n=263), corneal lens (n=180), hybrid lens (n=43), and soft lens (n=51). A total of 233 respondents reported not wearing any lens when completing the questionnaire. Thirty-four respondents did not refer to the type of contact lenses they wore and were excluded from this analysis. Scleral lens wearers had the best experiences regarding the physician (mean of 74%

TABLE 1 Demographic Characteristics of the Respondents and Their Physicians and Contact Lens Wear (Questions 1 to 6).

	TOTAL N, (%)	**Gender of the Patient**	
		FEMALE N, (%)	**MALE N, (%)**
	804, (100%)	**467, (58.1%)**	**337, (41.9%)**
Age of the Patients	Under 18: 4, (0.5%) 18-30: 56, (7.0%) 31-45: 194, (24.1%) 46-60: 256, (32.2%) 61+: 291 (36.2%)	Under 18: 0, (0%) 18-30: 29, (3.6%) 31-45: 115, (14.3%) 46-60: 153, (19.0%) 61+: 170, (21.1%)	Under 18: 4, (0.5%) 18-30: 27, (3.4%) 31-45: 79, (9.8%) 46-60: 106, (13.2%) 61+: 121, (15.0%)
Your Physician Gender	Male: 536, (67.1%) Female: 262, (32.8%) No answer: 6, (0.7%)	Male: 293, (36.4%) Female: 169 (21.0%) No answer: 1, (0.1%)	Male: 243, (30.2%) Female: 93, (11.6%) No answer: 5 (0.6%)
Your Physician is a:	Female Optometrist: 138, (17.2%) Male Optometrist: 204, (25.4%) Female Ophthalmologist: 124, (15.4%) Male Ophthalmologist: 332, (41.3%)	Female Optometrist: 87, (10.8%) Male Optometrist: 101, (12.6%) Female Ophthalmologist: 82, (10.2%) Male Ophthalmologist: 192, (23.9%)	Female Optometrist: 51, (6.3%) Male Optometrist: 103, (12.8%) Female Ophthalmologist: 42, (5.2%) Male Ophthalmologist: 140, (17.4%)
Contact Lens Wear	No lens: 233, (30.3%) Scleral lens: 263, (34.2%) Corneal GP: 180, (23.4%) Hybrid: 43, (5.6%) Soft CL: 51, (6.6%) No answer: 35 (4.4%)	No lens: 157, (19.5%) Scleral lens: 148, (18.4%) Corneal GP: 85, (10.6%) Hybrid: 21, (2.6%) Soft CL: 27, (3.4%)	No lens: 76, (9.5%) Scleral lens: 115, (14.3%) Corneal GP: 95, (11.8%) Hybrid: 22, (2.7%) Soft CL: 24, (3.0%)

The findings are categorized by patient age, physician gender, physician type, and contact lens modality. They are initially presented for all patients and subsequently segmented by gender.

rated as excellent for the different questions). Soft and scleral lens wearers had the best care regarding relationship and communication questions and eye care services. Written recommendations were reported to be given more often to soft lens wearers (56.9%) and scleral lens wearers (48.7%). However, an important proportion of patients reported not having this written information.

Empathy Considering if the Respondents Recommended or Did Not Recommend Their Physician

Answers related to the perceived physician empathy were divided by whether the respondent recommended their practitioner to a friend or relative (n=719) or did not recommend their practitioner to a friend or relative (n=85). Patients who would recommend their physician rated them significantly higher on every question. Of those who recommended their physician, 43.7% were treated by optometrists and 56.3% by ophthalmologists. Regarding those who do not recommend them, 35.3% were treated by optometrists and 64.7% by ophthalmologists.

Figure 1A presents mean scores for Question 8 sub-questions evaluating different aspects of physician performance. These include listening skills, explanation of tests and treatments, assistance with

TABLE 2 Descriptive Analysis of the General Results (Total Average) for Questions 8 To 16.

		Total Average (n=804)	Scleral Lens (n=263)	Corneal RGP (n=180)	Hybrid Lens (n=43)	Soft CL (n=51)	No CL Wearers (n=233)
How would you rate your physician							
Listens to you	Excellent	63.7%	71.5%	57.2%	60.5%	58.8%	80.7%
	Good	24.9%	18.6%	26.7%	30.2%	33.3%	21.0%
	Fair	8.7%	7.6%	12.2%	7.0%	5.9%	8.6%
	Poor	2.7%	2.3%	3.9%	2.3%	2.0%	2.6%
Explains the purpose of the tests	Excellent	62.1%	67.7%	55.6%	67.4%	56.9%	76.4%
	Good	26.7%	23.6%	28.3%	23.3%	37.3%	26.6%
	Fair	8.7%	6.8%	12.8%	4.7%	3.9%	7.7%
	Poor	2.5%	1.9%	3.3%	4.7%	2.0%	2.1%
Explains what you want to know about your symptoms and/or condition	Excellent	62.8%	69.2%	59.4%	58.1%	64.7%	78.1%
	Good	23.4%	19.8%	22.2%	25.6%	25.5%	22.3%
	Fair	11.2%	8.7%	13.9%	14.0%	7.8%	9.9%
	Poor	2.6%	2.3%	4.4%	2.3%	2.0%	2.6%
Helps you deal with psychological problems related to your eye problem	Excellent	39.6%	47.9%	33.9%	39.5%	37.3%	54.1%
	Good	29.6%	25.1%	31.1%	25.6%	39.2%	28.3%
	Fair	18.8%	17.1%	18.9%	23.3%	13.7%	19.3%
	Poor	12.1%	9.9%	16.1%	11.6%	9.8%	11.2%
Gives you good advice and treatment	Excellent	58.6%	65.4%	56.1%	55.8%	56.9%	73.8%
	Good	26.0%	22.4%	24.4%	25.6%	31.4%	25.3%
	Fair	11.7%	7.2%	16.1%	18.6%	9.8%	8.2%
	Poor	3.7%	4.9%	3.3%	0.0%	2.0%	5.6%
Helps you understand how to follow his advice	Excellent	55.6%	63.5%	52.8%	53.5%	62.7%	71.7%
	Good	29.5%	25.5%	29.4%	27.9%	27.5%	28.8%
	Fair	11.4%	7.2%	13.3%	16.3%	7.8%	8.2%
	Poor	3.5%	3.8%	4.4%	2.3%	2.0%	4.3%
Friendly and Helpful to you	Excellent	67.0%	71.9%	63.9%	65.1%	68.6%	81.1%
	Good	21.9%	19.0%	20.6%	20.9%	25.5%	21.5%
	Fair	8.3%	6.5%	11.7%	14.0%	5.9%	7.3%
	Poor	2.7%	2.7%	3.9%	0.0%	0.0%	3.0%
Answers your questions	Excellent	63.8%	69.6%	58.9%	62.8%	64.7%	78.5%
	Good	24.0%	20.9%	26.1%	23.3%	29.4%	23.6%
	Fair	10.2%	8.0%	12.2%	14.0%	5.9%	9.0%
	Poor	2.0%	1.5%	2.8%	0.0%	0.0%	1.7%
Takes enough time with you	Excellent	60.8%	68.1%	58.9%	62.8%	60.8%	76.8%
	Good	22.9%	19.8%	22.8%	16.3%	25.5%	22.3%
	Fair	11.8%	9.1%	11.7%	18.6%	9.8%	10.3%
	Poor	4.5%	3.0%	6.7%	2.3%	3.9%	3.4%

(*continues*)

TABLE 2 Continued.

		Total Average (n=804)	Scleral Lens (n=263)	Corneal RGP (n=180)	Hybrid Lens (n=43)	Soft CL (n=51)	No CL Wearers (n=233)
Relationship and Communication							
Did he/she show interest in your personal situation?	Yes	69.9%	76.8%	66.7%	67.4%	74.5%	61.8%
	No	17.9%	13.3%	22.2%	25.6%	11.8%	20.6%
	I don't know	12.2%	9.9%	11.1%	7.0%	13.7%	17.6%
Does he/she ask you open questions?	Yes	69.3%	76.0%	66.7%	69.8%	78.4%	60.1%
	No	21.4%	14.8%	23.3%	25.6%	15.7%	28.8%
	I don't know	9.3%	9.1%	10.0%	4.7%	5.9%	11.2%
Does he/she ask you closed-ended questions?	Yes	55.2%	61.6%	53.3%	41.9%	72.5%	48.1%
	No	27.0%	23.2%	25.0%	39.5%	15.7%	32.2%
	I don't know	17.8%	15.2%	21.7%	18.6%	11.8%	19.7%
Are the questions related to ocular problems?	Yes	87.9%	94.3%	85.6%	86.0%	88.2%	83.3%
	No	7.3%	3.4%	8.9%	11.6%	3.9%	11.2%
	I don't know	4.7%	2.3%	5.6%	2.3%	7.8%	5.6%
Are the questions related to your personal situation?	Yes	54.9%	62.7%	46.1%	58.1%	64.7%	47.6%
	No	39.3%	33.8%	46.7%	39.5%	25.5%	45.5%
	I don't know	5.8%	3.4%	7.2%	2.3%	9.8%	6.9%
Does he/she make it easy for you to tell him or her about your problem?	Yes	79.7%	82.5%	80.6%	76.7%	88.2%	74.2%
	No	12.9%	9.9%	12.2%	20.9%	5.9%	17.2%
	I don't know	7.3%	7.6%	7.2%	2.3%	5.9%	8.6%
Does he/she involve you in decisions about your eye care?	Yes	84.2%	87.1%	81.1%	86.0%	90.2%	81.1%
	No	10.9%	7.2%	15.0%	11.6%	7.8%	13.3%
	I don't know	4.9%	5.7%	3.9%	2.3%	2.0%	5.6%
Eye Care Services							
Did you have quick relief of symptoms?	Yes	63.2%	68.4%	63.9%	67.4%	68.6%	56.2%
	No	27.7%	25.9%	25.6%	25.6%	19.6%	31.8%
	I don't know	9.1%	5.7%	10.6%	7.0%	11.8%	12.0%
Did he/she help you to feel well so that you can perform your normal daily activities?	Yes	82.1%	85.6%	78.3%	81.4%	92.2%	79.4%
	No	10.6%	10.6%	11.7%	14.0%	2.0%	10.7%
	I don't know	7.3%	3.8%	10.0%	4.7%	5.9%	9.9%

(*continues*)

TABLE 2 Continued.

		Total Average (n=804)	Scleral Lens (n=263)	Corneal RGP (n=180)	Hybrid Lens (n=43)	Soft CL (n=51)	No CL Wearers (n=233)
Does he/she perform a thorough eye examination?	Yes	92.3%	92.8%	89.4%	95.3%	94.1%	92.3%
	No	4.6%	5.7%	5.6%	2.3%	3.9%	3.9%
	I don't know	3.1%	1.5%	5.0%	2.3%	2.0%	3.9%
Does he/she offer you recommendations for preventing complications?	Yes	79.6%	83.7%	77.8%	76.7%	90.2%	75.1%
	No	15.8%	13.3%	19.4%	20.9%	3.9%	18.0%
	I don't know	4.6%	3.0%	2.8%	2.3%	5.9%	6.9%
Continuity of Care							
Does he/she provide you written recommendations?	Yes	45.3%	48.7%	29.4%	44.2%	56.9%	49.8%
	No	50.6%	46.4%	65.6%	55.8%	41.2%	46.8%
	I don't know	4.1%	4.9%	5.0%	0.0%	2.0%	3.4%
Do you know what she/he does during the visits?	Yes	73.6%	80.2%	70.6%	76.7%	88.2%	66.1%
	No	13.3%	10.6%	17.2%	16.3%	5.9%	15.5%
	I don't know	13.1%	9.1%	12.2%	7.0%	5.9%	18.5%
Does the physician prepare the patient's expectations?	Yes	76.6%	79.8%	72.2%	74.4%	84.3%	73.4%
	No	17.8%	17.5%	21.1%	18.6%	3.9%	20.2%
	I don't know	5.6%	2.7%	6.7%	7.0%	11.8%	6.4%
Physician							
Would you recommend your physician to friends or relatives?	Yes	89.4%	90.9%	85.6%	88.4%	98.0%	88.4%
	No	10.6%	9.1%	14.4%	11.6%	2.0%	11.6%
Duration of visit/education session							
Duration of the consultation visit	5 minutes	4.1%	3.0%	3.3%	2.3%	2.0%	6.9%
	6-10 minutes	18.4%	15.2%	14.4%	20.9%	19.6%	25.3%
	11-20 minutes	32.1%	27.0%	37.2%	27.9%	27.5%	36.5%
	> 20 minutes	45.4%	54.8%	45.0%	48.8%	51%	31.3%
Duration of education sessions	5 minutes	37.4%	20.5%	40.0%	25.6%	35.3%	59.7%
	6-10 minutes	23.3%	27.0%	28.9%	27.9%	21.6%	15.0%

(*continues*)

TABLE 2 Continued.

		Total Average (n=804)	Scleral Lens (n=263)	Corneal RGP (n=180)	Hybrid Lens (n=43)	Soft CL (n=51)	No CL Wearers (n=233)
	11-20 minutes	17.9%	20.5%	19.4%	27.9%	25.5%	9.9%
	> 20 minutes	21.4%	31.9%	11.7%	18.6%	17.6%	15.5%
Total wording							
Duration of your Physician total wording	5 minutes	11.4%	8.0%	14.4%	9.3%	7.8%	14.2%
	6-10 minutes	31.3%	29.7%	30.6%	27.9%	25.5%	39.1%
	11-20 minutes	29.6%	28.9%	30.0%	37.2%	31.4%	26.6%
	> 20 minutes	27.6%	33.5%	25.0%	25.6%	35.3%	20.2%
Duration of your total wording	5 minutes	18.0%	13.7%	20.6%	11.6%	11.8%	23.6%
	6-10 minutes	35.6%	33.5%	37.8%	32.6%	33.3%	39.9%
	11-20 minutes	24.4%	24.3%	22.2%	34.9%	23.5%	24.0%
	> 20 minutes	22.0%	28.5%	19.4%	20.9%	31.4%	31.3%

Analysis considering the lens type of physician ratings. Thirty-four respondents did not report CL wear type and were excluded from the analysis by CL type but not from the total average (n=804). The table also reports results considering the lens type of questions 9, 10, 13, and 16 related to the relationship and communication, eye care services, and recommendations of the physician. Finally, results considering the lens type of questions 11 and 12 related to the communication time are also presented. Thirty-four respondents did not report CL wear type and were excluded from the analysis by CL type but not from the total average (n=804).

psychological problems, advice and quality of therapy, friendliness, helpfulness, question answering, and time spent with patients. Respondents who would recommend their physician had significantly higher scores (3.56±0.55 $p<0.001$) compared to those who wouldn't (2.01±0.58, $p<0.001$). For example, 70.8% of those who would recommend their physician rated their listening skills as excellent, while only 3.5% of those who wouldn't recommend did so. Similar trends were observed for treatment explanation (68.7% vs. 5.9% rated as excellent), question answering (71.1% vs. 2.4% rated as excellent), and friendliness and helpfulness (74.4% vs. 4.7% rated as excellent). Regarding assistance with psychological problems, 44.1% of recommended physicians were rated as excellent, significantly higher than the subgroup of respondents who wouldn't recommend (1.2%).

Regarding the communication and relationship with their physician (Figure 1B), a significant difference was found between recommenders and non-recommenders (0.828±0.21 vs. 0.365±0.31, $p<0.001$). Non-recommenders are less involved in clinical decisions (55.3% vs. 5.7% of recommenders), feel less interest from their physician (63.5% vs. 12.5%), lack open-ended and personal situation-related questions from their physician (72.9% vs. 15.3% and 68.2% vs. 35.9%, respectively), and find it difficult to discuss their problems (64.7%). In contrast, patients who would recommend their physician are satisfied with these aspects.

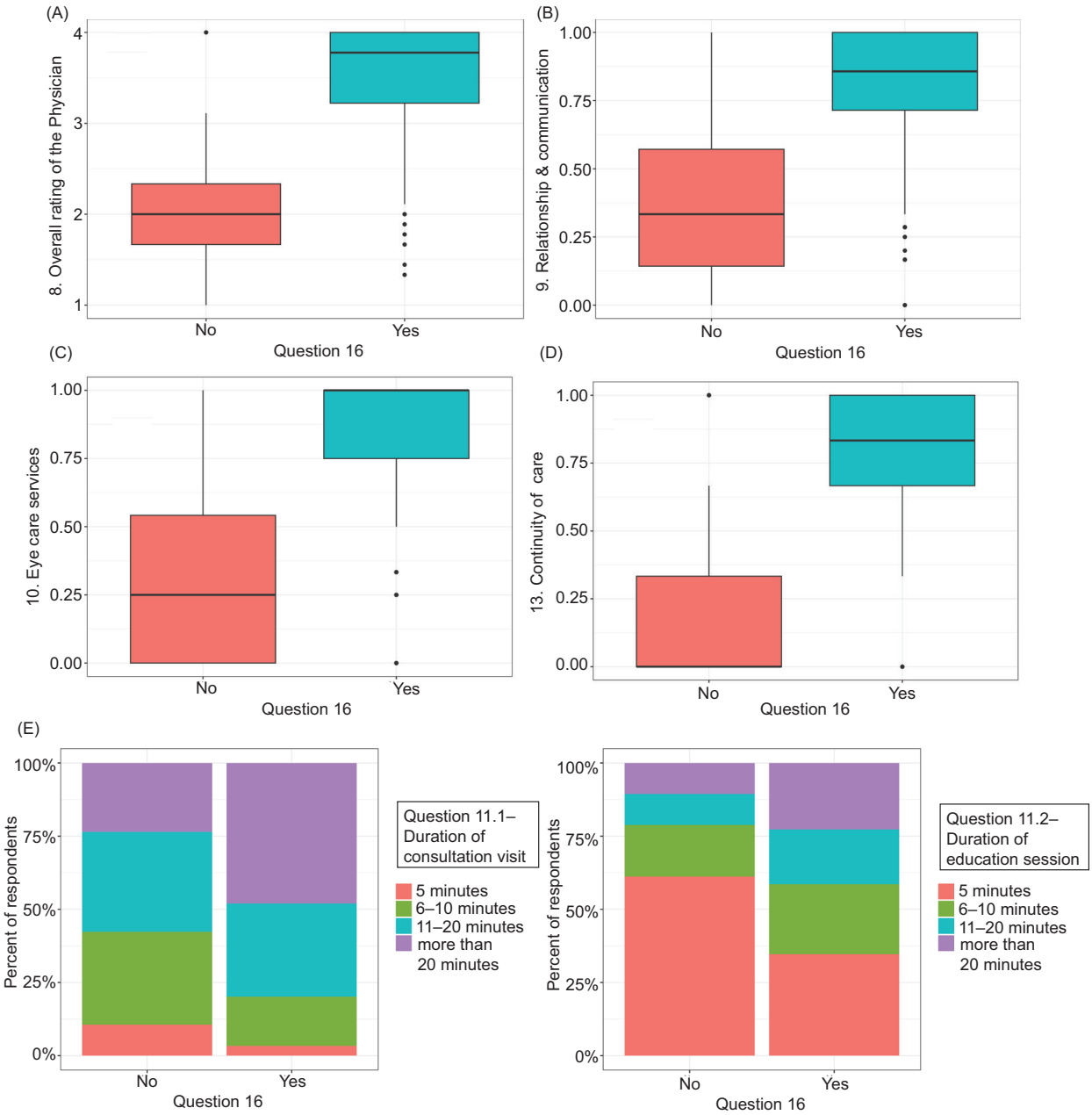

FIGURE 1. Boxplot showing the mean score for Questions 8 (A), 9 (B), 10 (C), and 13 (D), considering whether or not the patient would recommend their physician (Question 16, labeled "Yes" or "No"). Question 8 with multiple possible responses, excellent/good/fair/poor, were converted to numbers 1 through 4, respectively, and averaged across sub-questions. Questions with yes/no responses were converted to 0/1 and averaged across sub-questions, with "I Don't Know" answers being treated as missing (questions 9, 10, and 13). Figure 1 also displays tacked Barplots showing the mean score for Questions 11.1 and 11.2 (E) and 12.1 and 12.2 (F), considering whether the respondents recommended their physician or not.

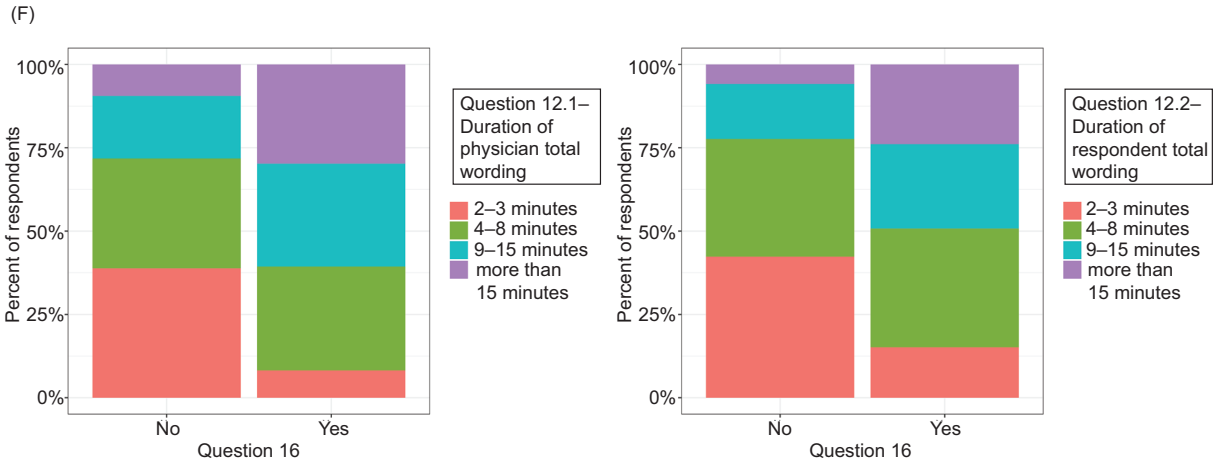

FIGURE 1. Continued.

Regarding eye care services (Figure 1C), significant differences were observed, with recommenders having higher scores for all questions (0.90±0.20 vs. 0.38±0.33, p<0.001). Over 85% of recommenders expressed satisfaction with treatment, quality of eye exams, and symptom prevention recommendations. Conversely, non-recommenders reported inadequate symptom relief (almost 70% vs. 22.8% of recommenders), difficulty performing daily activities (64.7% vs. 4.2%), and a lack of recommendations to prevent complications (68% vs 9.6%) in relation to the same topics.

Important aspects of continuity of care, such as written recommendations (Figure 1D), showed significant differences between the groups. Those who recommended their physician had higher scores (0.75±0.30 vs. 0.28±0.33, p<0.001). However, many respondents in both groups reported not receiving written information or recommendations (83.5% of recommenders and 46.7% of non-recommenders). Figure 1E shows the mean scores for Question 11 regarding communication time. Answer 1 relates to the duration of consultation visits, while answer 2 relates to the duration of education sessions for proper contact lens wear. There were statistically significant differences in both questions between recommenders and non-recommenders, with recommenders spending more time on evaluation and training (48% spent over 20 minutes). Notably, many non-recommenders mentioned spending 5 minutes or less in the training session (61.2% vs. 34.6%). Figure 1F displays the mean scores for Questions 12.1 and 12.2, which focus on the duration of the physician's total wording and the duration of the patient's total wording, respectively. Statistically significant differences were observed between the groups, with recommended physicians spending more time speaking and allowing the patient to speak.

Empathy Considering the Physician Type (Optometrist or Ophthalmologist)

Answers were divided according to the profession of the practitioner of the respondents: optometrists (n=342) or ophthalmologists (n=457). As previously mentioned, answers that required a qualitative response, such as excellent/good/fair/poor, were converted into numbers 1 to 4, respectively. The results for each question will be analyzed below.

Regarding the scores of Question 8, "How you rate your physician," on several aspects (Figure 2A), the average score of optometrists was significantly higher than ophthalmologists (3.53±0.64 vs. 3.30±0.78, p<0.001). Optometrists were consistently rated as "excellent" by most respondents, with a mean difference of 10–16% between the groups

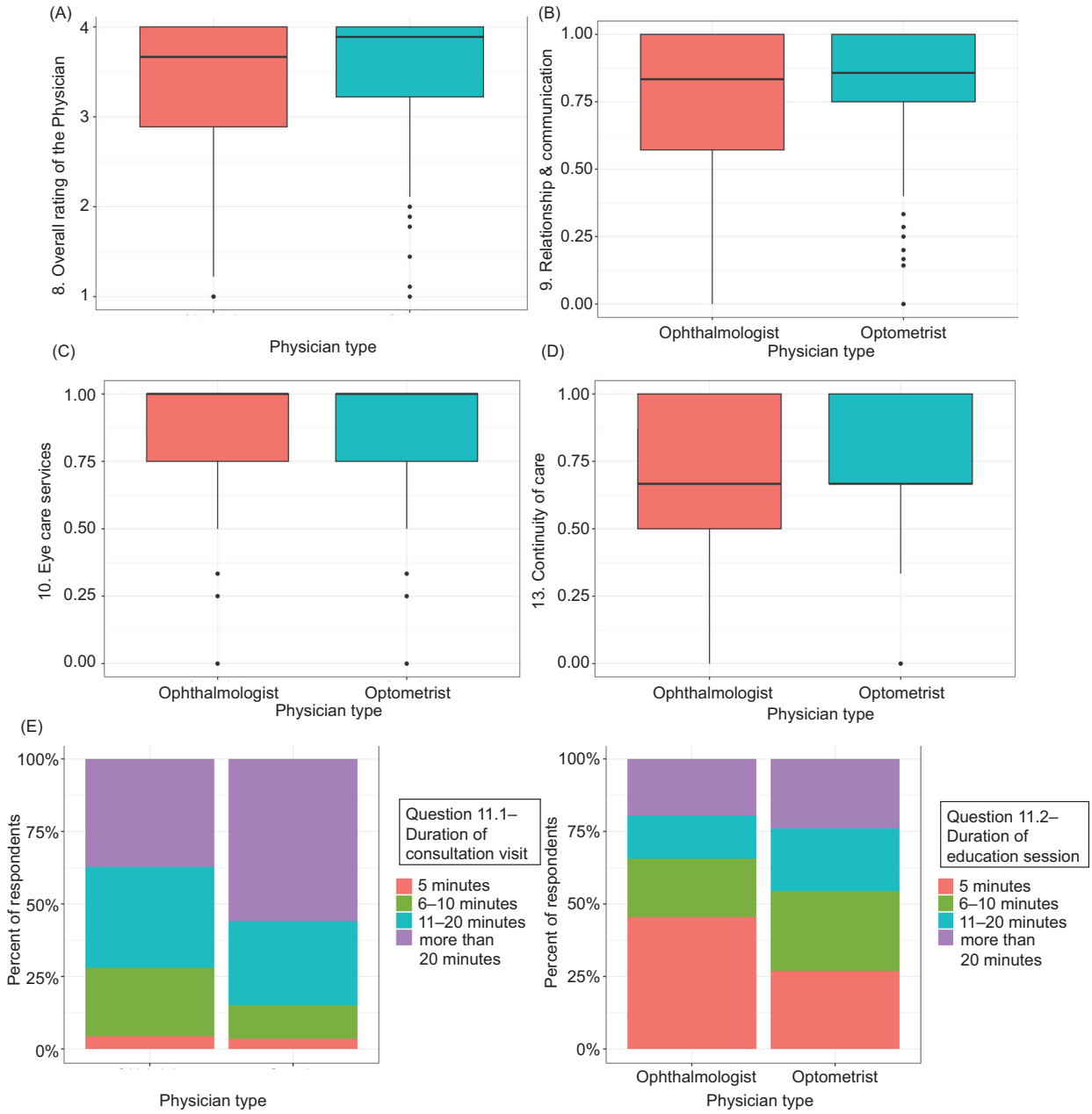

FIGURE 2. Boxplot showing the mean score for Questions 8 A), 9 (B), 10 (C) and 13 (D), considering the type of physician. Question 8 with multiple possible responses, excellent/good/fair/poor, were converted to numbers 1 through 4, respectively, and averaged across sub-questions. Questions with yes/no responses were converted to 0/1 and averaged across sub-questions, with "I Don't Know" answers being treated as missing (questions 9, 10, and 13). Figure 2 also presents stacked Barplots showing the mean score for questions 11.1 and 11.2 (E) and 12.1 and 12.2 (F) considering the type of physician.

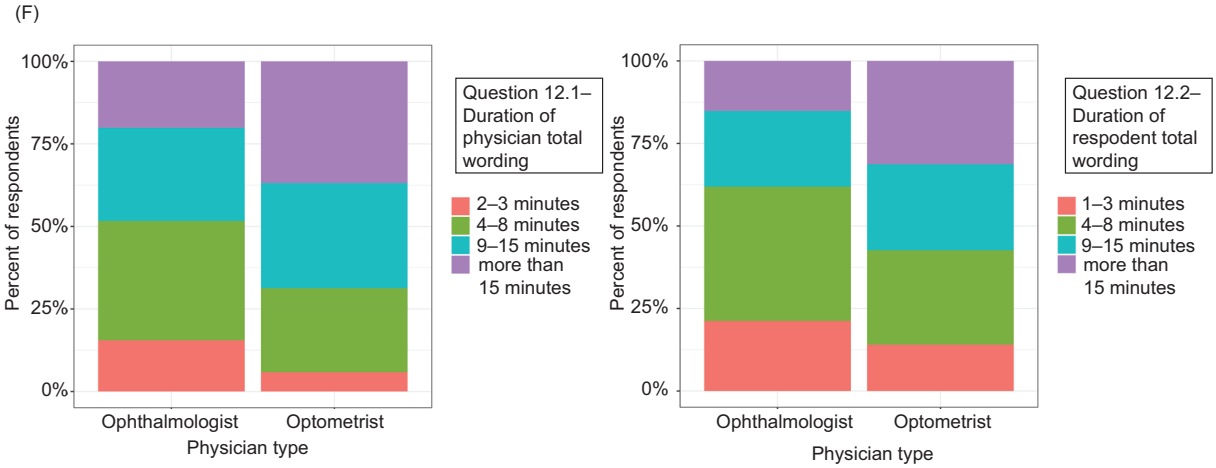

FIGURE 2. Continued.

analyzed, and received fewer "poor" ratings compared to ophthalmologists.

Figure 2B illustrates the mean scores for sub-questions in Question 9, which pertain to the relationship and communication with eye care professionals (interest, type of questions asked, decision-making involvement). Respondents with optometrists as their eye care practitioners answered affirmatively more frequently than those with ophthalmologists (0.84±0.64 vs. 0.74±0.28, $p<0.001$). On average, respondents with optometrists as eye care practitioners said that 80.4% of them showed interest in their situation during anamnesis (vs. 61.7% of ophthalmologists), 63.5% asked questions related to their personal situation (vs. 48.6% of ophthalmologists), 85.7% considered ease to talk to them about their problems (vs. 75.1% of Ophthalmologists). An average of 84% considered that they were involved in the treatment decisions with their practitioners.

Figure 2C showcases the mean scores for sub-questions in Question 10, focusing on eye care services (symptom relief, eye examination, prevention recommendations). Respondents with optometrists as their practitioners answered affirmatively more often than those with ophthalmologists (0.87±0.25 vs. 0.82±0.28, $p=0.00137$). On average, 69% of the respondents have their symptoms relieved (vs .59% treated by ophthalmologists), and 83.9% said they were given recommendations to prevent complications (vs. 76.4% of ophthalmologists). On the other hand, more respondents treated by ophthalmologists reported that they had a thorough eye examination (92.6% vs. 91.8% of optometrists).

Figure 2D displays the scores for Question 13, which assesses the continuity of care (written recommendations, understanding of care instructions). Optometrists and ophthalmologists had no significant differences in this aspect (0.71±0.33 vs. 0.69±0.35, $p=0.729$). Notably, only 45.3% of respondents stated that they received written recommendations after their appointments.

Figure 2E displays the mean scores for Question 11, which assesses communication time. Optometrists spent more time with patients during consultation visits and contact lens education sessions than ophthalmologists. Notably, a higher percentage of ophthalmologists were mentioned as spending 5 minutes or less in the training session (45.5% vs. 26.9% of optometrists). Figure 2F presents the mean scores for questions 12.1 and 12.2, which relate to the duration of the physician and total wording. Optometrists spent more time speaking and allowing the patient to speak than ophthalmologists.

On average, 91.2% of respondents treated by optometrists would recommend their eye care practitioner to their friends, and 88% of respondents

treated by ophthalmologists would recommend their eye care practitioner to their friends.

DISCUSSION

The study examined patient-physician relationships in eye care services. Overall, 60% of respondents rated their physicians positively. While ease of care and physician ratings were high, assistance with psychological problems received lower scores. However, patients who would recommend their physician gave significantly higher ratings (44.1% excellent) than those who would not (1.2%).

Previous studies have shown that patient satisfaction is more closely associated with specific aspects of the therapeutic alliance[18–20] rather than treatment outcomes.[21,22] This alliance is based on a supportive relationship between the physician and the patient, where the physician is perceived as helpful, reliable, and successful in achieving common goals.[19] Our findings support this theory as patient satisfaction with physician communication and relationship strongly influences their likelihood to recommend the physician. However, patient satisfaction is also likely to be linked to their specific ocular condition, the nature of the scheduled appointment (routine follow-up, contact lens fitting, treatment, etc.), and the appointment's location (private practice, public facility, hospital, clinic, university, optical store, etc.). Regrettably, this data was not directly gathered during this study.

Time allocation also plays a significant role, as patients receiving more time during consultations and/or education sessions are more likely to recommend their physicians, regardless of the type of examination/ appointment. These findings align with previous research highlighting the importance of effective communication in healthcare, leading to improved patient satisfaction, understanding, and relationships.[23-31] Generally, patients are more satisfied when they perceive the doctor is more empathic.

Patients who recommend their practitioner also rated listening skills, treatment explanations, answer quality, friendliness, and helpfulness higher. This emphasizes the importance of a patient-centered approach, involving patients and demonstrating genuine concern. Improved communication, shared decision-making, and an open environment enhance satisfaction and promote positive recommendations. Physician personality, empathy, and communication are crucial for higher satisfaction. The consultation itself can serve as a therapeutic intervention, complementing prescribed therapy. Positive patient experiences strongly influence their likelihood of recommending their physician.

Some reports have emphasized the importance of patient-centered communication in delivering safe and high-quality medical care.[23–25] Patient-centeredness refers to considering patients' perspectives and preferences in care and providing them with the necessary information to participate in medical decision-making.[26,27] There is a growing body of evidence linking these communication skills to positive outcomes, making patient-centered communication a critical aspect of medical practice.[24,28] The Institute of Medicine has identified "patient-centeredness" as one of the key indicators shaping the future of healthcare quality. Medical education also aligns with this goal, as accrediting and licensing bodies in the United States require and assess proficiency in patient-centered communication skills over the next decade.[29] Additionally, a patient-centered approach involves open-ended questions that allow patients to provide detailed responses rather than short answers.[30] By using this approach, physicians can uncover patients' true understanding and attitudes. It also enables the physician to identify missing information and provide necessary explanations based on the patient's response. The "ask-tell-ask" sequence, which involves asking open-ended questions, providing information, and then assessing the patient's understanding, is a valuable technique. While many medical school curricula now include training in patient-doctor communication, physicians often lean towards a more data-driven approach, relying on closed-ended yes/no questions. However, recent research suggests that open-ended questions

do not significantly increase the time required for consultations.[31] Physicians' belief that open-ended questions are time-consuming, combined with the growing time pressure they experience, may contribute to their tendency to rely on closed-ended questions the majority of the time.[30]

When examining the type of contact lenses respondents wore, the study found that soft and scleral lens wearers reported the highest satisfaction in most categories. On the other hand, corneal and hybrid lens wearers had more mixed experiences. Among the different types of lenses, scleral lens wearers generally had the most positive experiences across various aspects of eye care, including ease of getting care, physician rating, staff attitude, relationship and communication, eye care services, and cost perception. This could be related to the rigid follow-up schedules to assess the success of the scleral lens fitting and corneal physiology. This inevitably leads to a closer relationship with the eye care provider and fewer complications, increasing patient satisfaction and confidence. Soft lens wearers also received high ratings for relationship, communication, and eye care services. In fact, soft lenses tend to be easier to fit (considering the potentially non-severe ocular condition of these patients), providing more instant improvement and gratification compared to other kinds of lenses that potentially need more follow-up appointments to complete the fitting satisfactorily. These findings highlight the differences in experiences and perceptions among individuals wearing different types of contact lenses, with scleral lens wearers generally reporting the most favorable outcomes.

A significant proportion of respondents reported not receiving written recommendations, and the perception of the cost of services varied among the respondents. Written recommendations were more commonly received by soft and scleral lens wearers, indicating a potential area for improvement for other lens wearers. Previous research has shown that written instructions can improve compliance with hygiene practices,[32] and visual imagery has a greater impact on recall and awareness.[33–35] Written recommendations and visual infographics are crucial to consider as they positively affect patient understanding and adherence to instructions provided by the physicians, enhancing overall eye health and reducing the risk of complications.

The affordability of services varied across lens types, with a substantial proportion of respondents finding them expensive. This suggests that cost considerations may influence patients' perceptions and decisions regarding their choice of contact lenses. Understanding these variations in experiences and perceptions based on lens type can assist eye care practitioners in tailoring their services and addressing the specific needs of different lens wearers. Nevertheless, the concept of affordability is influenced by various factors that vary from one country to another. Costs are likely affected by elements like insurance coverage and universal healthcare.

The study compared the experiences of patients treated by optometrists and ophthalmologists, revealing significant differences in ratings between the two groups. However, it is important to highlight that, depending on the country, the roles of optometrists and ophthalmologists in the contact lens practice may differ substantially. In some countries, ophthalmologists are not traditionally trained to fit specialty contact lenses and may hire specialized technicians or optometrists to do the fittings. In the present study, participants were asked to rate their optometrist or ophthalmologist specifically and not other staff that may have helped their practitioners during the fitting, which could envy the results and make it difficult to compare both physicians. Even considering this limitation, there are interesting results regarding the patient-physician relationship and communication, which could not be directly influenced by the contact lens fitting itself but by empathy. Optometrists received higher scores in physician ratings, patient-physician relationship, and communication, including communication time and physician involvement. They allocated more time for speaking and allowed patients to express themselves during

consultations. They were also rated higher in terms of symptom relief and prevention recommendations. Optometrists spent more time with patients during evaluations and training sessions, resulting in higher ratings. Ophthalmologists received higher ratings for providing thorough eye examinations. These items could be skewed by who performed the contact lens fitting. If ophthalmologists do not perform the fitting, they will not spend time in the training sessions (maybe in charge of other staff). Most respondents found both optometric and ophthalmological services affordable and would recommend their practitioners. These findings provide insights into the disparities between optometrists and ophthalmologists, aiming to enhance patient satisfaction. However, it is impossible to draw solid conclusions about optometrist vs ophthalmologist empathic communication as it didn't collect specific information about the roles of ophthalmologists and optometrists in patient care nor the nature of the visit the respondents were evaluating. This absence of data could significantly impact and potentially skew the results of the comparison between optometrists and ophthalmologists. The nature of the examinations carried out by these professionals can be quite distinct, and this is likely to influence patient experiences. For example, if patients typically visit optometrists for contact lens fittings but see ophthalmologists for their annual eye exams and complications related to contact lens wear, which may involve assessing their corneal condition, the duration and rapport developed during these appointments can vary significantly. The data presented in this study offers a general perspective. Regardless of the type of patient examination and the healthcare setting in which they occurred, optometrists received higher ratings than ophthalmologists. It's reasonable to assume that these rating differences may be attributed to various factors, such as the nature of the appointment (whether it's related to contact lens fitting, a follow-up, a general check-up, etc.) and the location of the appointment (whether it's in a hospital or a private practice, for instance).

CONCLUSION

Empathy and effective communication are crucial in fostering positive experiences and patient satisfaction. Consultation and education session timing greatly influence overall satisfaction. Optometrists generally were scored higher than ophthalmologists in delivering satisfactory care, but improvements are needed in addressing psychological concerns and providing written recommendations. These findings provide valuable insights for healthcare providers and policymakers to enhance patient experiences and strengthen patient-physician relationships. Identifying areas for improvement allows professionals to enhance the quality of care and promote better health outcomes.

DECLARATION OF INTEREST AND DISCLOSURES

None

DISCLOSURE OF FUNDINGS

None

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REFERENCES

1. Butalid L, Bensing JM, Verhaak PFM. Talking about psychosocial problems: An observational study on changes in doctor-patient communication in general practice between 1977 and 2008. Patient Educ Couns. Mar 2014;94(3):314–321. https://doi.org/10.1016/j.pec.2013.11.004
2. Mercer SW, Cawston PG, Bikker AP. Quality in general practice consultations; a qualitative study of the views of patients living in an area of high socio-economic deprivation in Scotland. Bmc Fam Pract. Apr 19 2007;8. https://doi.org/Artn2210.1186/1471-2296-8-22

3. Butalid L, Verhaak PFM, Tromp F, Bensing JM. Changes in the quality of doctor-patient communication between 1982 and 2001: an observational study on hypertension care as perceived by patients and general practitioners. BMJ Open. 2011;1(1). https://doi.org/ARTNe00020310.1136/bmjopen-2011-000203
4. Barratt A. Evidence Based Medicine and Shared Decision Making: The challenge of getting both evidence and preferences into health care. Patient Educ Couns. Dec 2008;73(3):407–412. https://doi.org/10.1016/j.pec.2008.07.054
5. Coulter A, Entwistle VA, Eccles A, Ryan S, Shepperd S, Perera R. Personalised care planning for adults with chronic or long-term health conditions. Cochrane Database Syst Rev. Mar 3 2015;2015(3):CD010523. https://doi.org/10.1002/14651858.CD010523.pub2
6. Bensing J. Bridging the gap. The separate worlds of evidence-based medicine and patient-centered medicine. Patient Educ Couns. Jan 2000;39(1):17–25. https://doi.org/10.1016/S0738-3991(99)00087-7
7. Rider EA, Kurtz S, Slade D, et al. The International Charter for Human Values in Healthcare: An interprofessional global collaboration to enhance values and communication in healthcare. Patient Educ Couns. Sep 2014;96(3):273–280. https://doi.org/10.1016/j.pec.2014.06.017
8. de Haes H. Dilemmas in patient centeredness and shared decision making: A case for vulnerability. Patient Educ Couns. Sep 2006;62(3):291–298. https://doi.org/10.1016/j.pec.2006.06.012
9. Bayne H, Neukrug E, Hays D, Britton B. A comprehensive model for optimizing empathy in person-centered care. Patient Educ Couns. Nov 2013;93(2):209–215. https://doi.org/10.1016/j.pec.2013.05.016
10. Stange KC, Ferrer RL. The paradox of primary care. Ann Fam Med. Jul-Aug 2009;7(4):293–299. https://doi.org/10.1370/afm.1023
11. Perrin JM, Gnanasekaran S, Delahaye J. Psychological aspects of chronic health conditions. Pediatr Rev. Mar 2012;33(3):99–109. https://doi.org/10.1542/pir.33-3-99
12. Midence K. The Effects of Chronic Illness on Children and Their Families - an Overview. Genet Soc Gen Psych. Aug 1994;120(3):311–326.
13. Roncevic N, Stojadinovic A, Odri I. [Chronic diseases in adolescence]. Med Pregl. Jan-Feb 2006; 59(1–2):33–37. https://doi.org/10.2298/mpns0602033r
14. Milin M, Cornec D, Chastaing M, et al. Le syndrome sec est associé à la fatigue, l'anxiété, la dépression et l'altération de la qualité de vie, de façon identique chez les patients atteints ou non de syndrome de Gougerot-Sjögren primitif. Revue du Rhumatisme. 2017/07/01/ 2017;84(4):331–335. https://doi.org/10.1016/j.rhum.2017.04.005
15. Mercer SW, Reynolds WJ. Empathy and quality of care. Brit J Gen Pract. Oct 2002;52:S9–S12.
16. Hojat M, Gonnella JS, Nasca TJ, Mangione S, Vergare M, Magee M. Physician empathy: Definition, components, measurement, and relationship to gender and specialty. Am J Psychiat. Sep 2002; 159(9):1563–1569. https://doi.org/10.1176/appi.ajp.159.9.1563
17. R Core Team. R: A Language and Environment for Statistical Computing. R Foundation for Statistical Computing. 2022; Vienna. Available at: https://www.R-project.org
18. Thompson TD, Weiss M. Homeopathy—what are the active ingredients? An exploratory study using the UK Medical Research Council's framework for the evaluation of complex interventions. BMC Complement Altern Med. Nov 13 2006;6:37. https://doi.org/10.1186/1472-6882-6-37
19. Hannöver W, Dogs CP, Kordy H. Patientenzufriedenheit – ein Maß für Behandlungserfolg? Psychotherapeut. 2000/09/01 2000;45(5):292–300. https://doi.org/10.1007/s002780000094
20. Michlig M, Ausfeld-Hafter B, Busato A. Patient satisfaction with primary care: a comparison between conventional care and traditional Chinese medicine. Complement Ther Med. Dec 2008;16(6):350–358. https://doi.org/10.1016/j.ctim.2007.12.001
21. Attkisson CC, Zwick R. The client satisfaction questionnaire. Psychometric properties and correlations with service utilization and psychotherapy outcome. Eval Program Plann. 1982;5(3):233–237. https://doi.org/10.1016/0149-7189(82)90074-x
22. Goldstein MS, Glik D. Use of and satisfaction with homeopathy in a patient population. Altern Ther Health Med. Mar 1998;4(2):60–5.
23. Maurette P, Sfa CAMR. To err is human: building a safer health system. Ann Fr Anesth. Jun

2002;21(6):453-454. https://doi.org/10.1016/S0750-7658(02)00670-6
24. Crossing the Quality Chasm: A New Health System for the 21st Century. 2001.
25. Foundation A, Foundation A-A, European Federation of Internal M. Medical professionalism in the new millenium: a physician charter. J Am Coll Surg. Jan 2003;196(1):115–8. https://doi.org/10.1016/s1072-7515(02)01617-4
26. Genteis M, Edgman-Levitan S, Dalay J, Delbanco T. Through the patient's eyes: Understanding and promoting patient-centered care. J Healthcare Qual. 05/01 2003;25:47. https://doi.org/10.1097/01445442-200305000-00015
27. Laine C, Davidoff F. Patient-centered medicine. A professional evolution. JAMA. Jan 10 1996;275(2):152–156.
28. Wise TN. The medical interview: Clinical care, education, and research – Lipkin,M. Psychosomatics. Jul-Aug 1997;38(4):392–393. https://doi.org/10.1016/S0033-3182(97)71448-8
29. Roter DL, Hall JA. Physician gender and patient-centered communication: a critical review of empirical research. Annu Rev Public Health. 2004;25:497–519. https://doi.org/10.1146/annurev.publhealth.25.101802.123134
30. Friedman DS, Hahn SR, Gelb L, et al. Doctor-patient communication, health-related beliefs, and adherence in glaucoma results from the Glaucoma Adherence and Persistency Study. Ophthalmology. Aug 2008;115(8):1320-7;1327 e1–3. https://doi.org/10.1016/j.ophtha.2007.11.023
31. Hahn SR, Lipton RB, Sheftell FD, et al. Healthcare provider-patient communication and migraine assessment: results of the American Migraine Communication Study, phase II. Curr Med Res Opin. Jun 2008;24(6):1711–1718. https://doi.org/10.1185/03007990802122388
32. Tilia D, Lazon de la Jara P, Zhu H, Naduvilath TJ, Holden BA. The effect of compliance on contact lens case contamination. Optom Vis Sci. Mar 2014;91(3):262–271. https://doi.org/10.1097/OPX.0000000000000163
33. De Beni R, Moe A. Imagery and rehearsal as study strategies for written or orally presented passages. Psychon B Rev. Dec 2003;10(4):975–980. https://doi.org/10.3758/Bf03196561
34. Mayeaux EJ, Jr., Murphy PW, Arnold C, Davis TC, Jackson RH, Sentell T. Improving patient education for patients with low literacy skills. Am Fam Physician. Jan 1996;53(1):205–211.
35. Arshad M, Carnt N, Tan J, Stapleton F. Compliance behaviour change in contact lens wearers: a randomised controlled trial. Eye (Lond). Mar 2021;35(3):988–995. https://doi.org/10.1038/s41433-020-1015-9