

Patient experience of tele-optometry in the comprehensive eye examination; a pilot study

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Purpose

Continued advancement in technology in healthcare is bringing the option of tele-optometry to the comprehensive eye examination. This study aims to evaluate if the tele-optometric exam experience is non-inferior to the traditional in-person comprehensive eye examination via post examination satisfaction surveys.

Methods

A cohort of 30 students participated in the study, excluding those with active ocular disease or recent ocular surgery. The tele-optometric comprehensive eye exam was completed by an in-person technician via DigitalOptometrics™ platform and videoconferencing with an investigator optometrist. This was followed by the Gold standard in-person comprehensive eye exam by an investigator optometrist. 2 masked clinicians independently reviewed the exam findings and determined if the exams were equivalent in various categories. A satisfaction survey was provided at the conclusion of each exam. Meta-analysis of results was completed via Fisher's method.

Results

100% of participants believed the in-person exam addressed their concerns, were satisfied with the care they received, and rated exam quality positively. Of note, 96.67% believed the tele-optometric exam addressed their concerns while the remaining 3.33% were neutral. 80% of tele-optometric participants were satisfied with their care, while 20% were neutral and 0% dissatisfied. 73.3% rated the quality of the exam as positive, 23.3% neutral and 3.3% negative. As neutral was not a discriminating factor for positive or negative experiences, neutral responses were omitted from statistical calculations. Using Fisher analysis, $p = \sim 1$ for all three questions in table 1. Preliminary analysis indicates no statistically significant difference between the 2 exams based on concerns addressed, satisfaction and quality of exam given $p > 0.05$. Within the limits of our pilot, the results support the null hypothesis of non-inferiority.

Conclusion

With the increase in digital exposure across professions to meet the needs of consumers, tele-optometry will likely continue to be adopted not only for disease management in rural areas, but also for comprehensive eye examinations. Our data suggests that initial experiences for patients were positive or comparative to that of an in-person gold standard comprehensive eye examination supporting our hypothesis.

Table 1: post in-person and tele-optometry exam survey questions and results

	In-Person Examination			Tele-Optometry Examination		
The examination addressed my concerns.	Agree 100%	Neutral 0%	Disagree 0%	Agree 96.67%	Neutral 3.33%	Disagree 0%
I am thoroughly satisfied with the care I received today.	Agree 100%	Neutral 0%	Disagree 0%	Agree 80%	Neutral 20%	Disagree 0%
Rate the quality of the exam you had today.	Good 100%	Neutral 0%	Poor 0%	Good 73.3%	Neutral 23.3%	Poor 3.3%

Table 2: post-study survey results

It was a concern that you did not have the optometrist in the examination room today.			
Agree 36.7%	Neutral 36.7%	Disagree 26.6%	Not answered 0%
I would recommend tele-optometric comprehensive eye examination to my friends and/or family members.			
Agree 36.7%	Neutral 40%	Disagree 23.3%	Not answered 0%
Would you be more likely to return for a tele-optometric or in-person for your annual comprehensive eye examination?			
Tele-optometric 10%	In-person 90%	Not answered 0%	
I am in favor of having digital images attached to my health record.			
Agree 100%	Neutral 0%	Disagree 0%	Not answered 0%
Technology will improve the quality of medical care.			
Agree 80%	Neutral 20%	Disagree 0%	Not answered 0%
Technology will result in poor doctor-patient relationships.			
Agree 36.7%	Neutral 43.3%	Disagree 20%	Not answered 0%
What is the likelihood that you would choose an optometrist offering tele-optometric exams over those that do not?			
Likely 16.7%	Neutral 40%	Less Likely 43.3%	Not answered 0%
Please answer the following questions regarding comparisons between tele-optometric and in-person office examinations.			
a) Overall quality of the visit.			
Tele-optometric 0%	In-person 70%	No difference 10%	Not answered 20%
b) Personal connection I feel with the clinician.			
Tele-optometric 0%	In-person 73.3%	No difference 6.7%	Not answered 20%
c) Confidence my ocular concern is being taken care of.			
Tele-optometric 0%	In-person 53.3%	No difference 26.7%	Not answered 20%
d) Comfort I feel sharing personal or private information.			
Tele-optometric 0%	In-person 53.5%	No difference 26.7%	Not answered 20%
e) Amount of time I spend with my clinician.			
Tele-optometric 10%	In-person 56.7%	No difference 13.3%	Not answered 20%