

PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below.

ARTICLE DETAILS

Title (Provisional)

Knowledge and attitude of myope or their guardians toward refractive surgery in Suzhou, China: a cross-sectional survey

Authors

Mu, Liqian; Qian, Yifeng

VERSION 1 - REVIEW

Reviewer	1
Name	Molina, Iliana
Affiliation	University of California at San Diego Department of Ophthalmology at the Shiley Eye Institute
Date	08-Nov-2024
COI	None

There are small grammatical errors but the paper is clear and informative

The reviewer provided a marked copy with additional comments. Please contact the publisher for full details.

Reviewer	2
Name	PAWAR, NEELAM
Affiliation	ARAVIND EYE HOSPITAL, PEDIATRIC AND SQUINT
Date	21-Nov-2024
COI	NIH D43 SCHOLAR

The discussion is not appropriate.For example

The Annals paper by Nizal et al describes about knowledge in undergradates medical student which is merely discussed.

There is random discussion about myopia risk factor well as refractive surgery.Overall which makes manuscript incoherent.

There is no mention about awareness of type of refractive surgery.

Irrelevant references which are not related to myopia are more. The overall quality of paper is not up to mark and does not give reader any clear message and description about knowledge and attitude.

Reviewer	3
Name	Wang, Dongwen
Affiliation	Arizona State University
Date	30-Dec-2024
COI	None

This manuscript reports a study to assess the myopic patients or their guardians from a Chinese city regarding their knowledge and attitude about refractive surgery. Although the overall objective of the study is a step to better understand the large patient population with myopia, the paper can be improved in the following aspects:

Study objectives:

1. The study assumes that refractive surgery will change the knowledge/attitude of patients/guardians (page 6, line 80-81). However, it seems there is no evidence to support a direct effect like this. If the authors are interested in the educational interventions implemented by healthcare providers or the self-education by patients/guardians before refractive surgery, they should design the study to specifically collect the related data to answer such questions.

Methods:

2. The authors should justify the decision to treat the patient/guardian self-administered online survey as an intervention (page 3, line 27-28) that can potentially change their knowledge and attitude on refractive surgery.

3. Include a clear description of the sample, such as the socio-demographic characteristics, clinical profiles, and surgical outcomes. Address the potential selection biases by using a convenient sample without discussing its representativeness (page 6, line 98). The knowledge/attitude of patients vs. the knowledge/attitude of guardians are two different concepts (page 6, line 89) - the manuscript should clarify this point and provide data for each category.

4. In a cross-sectional observational study, the pre-surgery and post-surgery samples could be very different. Instead of having a longitudinal follow up of the same sample before and after the surgery, directly comparing the knowledge/attitude between these two samples cross-sectionally is like to compare apples with oranges.

5. The self-designed instruments to measure the knowledge and attitudes (page 4, line 51) should be validated first before use. Using a convenient sample for both validation of the measure and deriving the change of knowledge/attitude at the same time is problematic. It is unknown how 70% and 50% were selected as the cut-off values to measure the knowledge and attitude (page 7, line 115-119).

6. The inclusion criteria "who would undergo refractive surgery" is problematic without including a timeframe (page 6, line 92-93). For example, this might be randomly interpreted as planning to have the surgery in the next 3-6 months or the next 3-5 years.

7. With the 581 responses from the survey, claiming "no patient involved" (page 6, line 87) is incorrect.

8. Consider to use multiple channels of data collections (for example, interview, chart review, etc.) to provide corroborations of the data.

Conclusion:

9. Without descriptions of any educational interventions, it is problematic to make a conclusion to highlight the importance of educational intervention.

General Comment:

The manuscript can benefit from English editing.

Reviewer	4
Name	Liu, Rui
Affiliation	Fudan University, Eye and ENT Hospital
Date	02-Jan-2025
COI	None

This study investigates the knowledge and attitudes of myopes or their guardians toward refractive surgery before and after the procedure. It uses a large sample size (581 participants) and a self-designed questionnaire to measure these factors. The results show that while participants had positive attitudes toward refractive surgery preoperatively, their knowledge was insufficient. However, both knowledge and attitude scores improved significantly postoperatively.

The study addresses an important issue in ophthalmology by highlighting the need for improved patient education prior to refractive surgery. The methodology is generally sound, and the findings contribute valuable insights into patient perspectives.

However, the paper has some limitations that need to be addressed, including sample bias, potential issues with the self-designed questionnaire, and the inability to establish causality due to the cross-sectional design. Additionally, the imbalance in sample size between

preoperative and postoperative groups and the accuracy of the references should be revisited.

Overall, the study provides useful findings, but addressing these concerns will enhance the clarity, reliability, and generalizability of the results.

1. Given that the preoperative and postoperative groups consist of different individuals, could you provide a detailed comparison of their baseline characteristics (e.g., age, gender, education level, etc.)? How do these characteristics compare between the two groups, and are there any significant differences that could introduce confounding bias?

2. The questionnaire used in this study is self-designed, which may introduce potential biases, such as response biases or the omission of relevant variables. Could you provide further justification for choosing a self-designed tool rather than using an established, validated instrument? How did you ensure the reliability and validity of the questionnaire, especially regarding the specific items that had low accuracy rates both pre- and post-surgery?

3. The study employs a cross-sectional design, which limits the ability to establish causal relationships. While improvements in knowledge and attitudes are observed post-surgery, could you discuss the potential confounding factors or alternative explanations for these changes? For instance, might the observed improvements be influenced by other factors, such as increased interaction with healthcare professionals or changes in societal attitudes towards refractive surgery?

4. There is a significant imbalance in the number of participants between the preoperative (164) and postoperative (417) groups. Could you explain how you handled this discrepancy in your analysis? Did you perform any statistical corrections to account for the potential impact of this imbalance on the reliability and validity of the results?

5. Please carefully review the reference list for accuracy. For example, reference 9 appears to be missing the journal name. Could the authors verify and update all references accordingly to ensure that all citation details are complete and accurate?

VERSION 1 - AUTHOR RESPONSE

Reviewer 1

Comment: There are small grammatical errors but the paper is clear and informative

Response: We thank Reviewer for the feedback. The entire manuscript has been thoroughly revised to improve English language clarity and ensure grammatical accuracy.

Reviewer 2

Comment: The discussion is not appropriate. For example The Annals paper by Nizal et al describes about knowledge in undergradates medical student which is merely discussed.

There is random discussion about myopia risk factor well as refractive surgery. Overall which makes manuscript incoherent.

Response: We thank Reviewer for the suggestion. Discussion section was fully revised to better present study findings.

Comment: There is no mention about awareness of type of refractive surgery.

Response: We thank Reviewer for the comment. Discussion section was updated to discuss awareness in more detail.

Comment: Irrelevant references which are not related to myopia are more. The overall quality of paper is not up to mark and does not give reader any clear message and description about knowledge and attitude.

Response: We thank Reviewer for the comment. The entire manuscript has been thoroughly revised to improve English language clarity and ensure grammatical/logical accuracy.

Reviewer 3

Comment: 1. The study assumes that refractive surgery will change the knowledge/attitude of patients/guardians (page 6, line 80-81). However, it seems there is no evidence to support a direct effect like this. If the authors are interested in the educational interventions implemented by healthcare providers or the self-education by patients/guardians before refractory surgery, they should design the study to specifically collect the related data to answer such questions.

Response: We thank Reviewer for the comment. We acknowledge your concern regarding the assumption of refractive surgery influencing the knowledge and attitudes of patients/guardians. However, we would like to clarify that this study was designed as a cross-sectional study. Its primary aim was not to establish a direct causal relationship between refractive surgery and changes in knowledge or attitudes but rather to assess and compare these variables before and after surgery. This approach allows us to identify potential differences in knowledge and attitudes at these stages, which can help healthcare providers tailor educational interventions to meet the specific needs of patients at different points in their care journey. We agree that further longitudinal studies or interventional designs would be needed to establish a direct causal effect or to evaluate the impact of specific educational strategies.

Comment: Methods :2. The authors should justify the decision to treat the patient/guardian self-administered online survey as an intervention (page 3, line 27-28) that can potentially change their knowledge and attitude on refractive surgery.

Response: We thank Reviewer for the comment. Although we recognize that the process of answering the questionnaire can itself stimulate reflection and awareness, it is not classified as an intervention. Abstract section was revised and the line in question deleted.

Comment: 3. Include a clear description of the sample, such as the socio-demographic characteristics, clinical profiles, and surgical outcomes. Address the potential selection biases by using a convenient sample without discussing its representativeness (page 6, line 98). The knowledge/attitude of patients vs. the knowledge/attitude of guardians are two different concepts (page 6, line 89) - the manuscript should clarify this point and provide data for each category.

Response: We thank Reviewer for the suggestion. The Inclusion/exclusion criteria in the Methods section were updated. Results section was additionally revised to present more detailed characteristics of patients/guardians.

Comment: 4. In a cross-sectional observational study, the pre-surgery and post-surgery samples could be very different. Instead of having a longitudinal follow up of the same sample before and after the surgery, directly comparing the knowledge/attitude between these two samples cross-sectionally is like to compare apples with oranges.

Response: We thank Reviewer for the suggestion. We acknowledge the limitation inherent in cross-sectional studies when comparing two distinct groups, such as pre-surgery and post-surgery participants. However, we would like to clarify that this study was not designed to directly compare knowledge and attitudes before and after surgery as if they were from the same individuals. We aimed to explore and identify potential differences in knowledge and attitudes at these two stages, providing insights into the educational needs of patients at different points in the refractive surgery. This approach might help to inform healthcare providers about where targeted interventions may be most needed, rather than making direct longitudinal comparisons. To address potential misunderstandings, we have revised the discussion section to clarify this distinction and acknowledge the limitations of the study design.

Comment: 5. The self-designed instruments to measure the knowledge and attitudes (page 4, line 51) should be validated first before use. Using a convenient sample for both validation of the measure and deriving the change of knowledge/attitude at the same time is problematic. It

is unknown how 70% and 50% were selected as the cut-off values to measure the knowledge and attitude (page 7, line 115-119).

Response: We thank Reviewer for the comment. Validity and reliability of questionnaire were assessed in a small scale pilot survey (with 50 questionnaires dispatched). The Cronbach's alpha (α) of the questionnaire was 0.8547, indicating that the internal consistency of the questionnaire was satisfactory. In addition, in order to further verify the validity of the questionnaire, we have added the confirmatory factor analysis. The Limitation section of the manuscript was updated to discuss the limitation of using convenient sample for validation and measuring. The description of cut-off values in the Methods section was updated with references.

Comment: 6. The inclusion criteria "who would undergo refractive surgery" is problematic without including a timeframe (page 6, line 92-93). For example, this might be randomly interpreted as planning to have the surgery in the next 3-6 months or the next 3-5 years.

Response: We thank Reviewer for the suggestion. In this study patients who plan to undergo surgery during next 6 months were included. The Inclusion/exclusion criteria in the Methods section were updated.

Comment: With the 581 responses from the survey, claiming "no patient involved" (page 6, line 87) is incorrect.

Response: We thank Reviewer for the comment. We have revised the "Patient and public involvement" subsection.

Comment: Consider to use multiple channels of data collections (for example, interview, chart review, etc.) to provide corroborations of the data.

Response: We thank Reviewer for the suggestion. We agree that incorporating multiple channels of data collection, such as interviews or chart reviews, could provide a more comprehensive understanding of the factors influencing knowledge and attitudes about refractive surgery and strengthen the validity of the findings. In future research, we will consider integrating additional data collection approaches to corroborate and enrich the findings, ensuring a more robust analysis.

Comment: Conclusion: Without descriptions of any educational interventions, it is problematic to make a conclusion to highlight the importance of educational intervention.

Response: We thank Reviewer for the suggestion. The Discussion section was updated to discuss educational interventions and their effect in more details.

Comment: The manuscript can benefit from English editing.

Response: We thank Reviewer for the suggestion. The entire manuscript has been thoroughly revised to improve English language.

Reviewer 4

Comment: 1. Given that the preoperative and postoperative groups consist of different individuals, could you provide a detailed comparison of their baseline characteristics (e.g., age, gender, education level, etc.)? How do these characteristics compare between the two groups, and are there any significant differences that could introduce confounding bias?

Response: We thank Reviewer for the suggestion. Results section has been updated and more detailed characteristics of subgroups was provided. At the same time, we have updated some statements of limitations.

Comment: 2. The questionnaire used in this study is self-designed, which may introduce potential biases, such as response biases or the omission of relevant variables. Could you provide further justification for choosing a self-designed tool rather than using an established, validated instrument? How did you ensure the reliability and validity of the questionnaire, especially regarding the specific items that had low accuracy rates both pre- and post-surgery?

Response: We thank Reviewer for the suggestion. We chose to use a self-designed questionnaire because, while few established instruments exist (such as Patient Satisfaction Questionnaire), they often lack the necessary cultural and linguistic specificity required for the Chinese population. Our tool was developed based on a thorough review of previously published works, ensuring alignment with existing literature, while also incorporating contextually relevant items tailored to our target population and presented in the Chinese language for clarity and accessibility. To ensure reliability and validity, we conducted a pretest prior to the main study. The pretest involved a sample of participants representative of the study population and demonstrated sufficient validity and reliability of the instrument. Although some specific items had low accuracy rates pre- and post-surgery, these were likely reflective of gaps in knowledge rather than flaws in the questionnaire itself, further emphasizing the need for tailored educational interventions. In addition, in order to further verify the validity of the questionnaire, we have added the confirmatory factor analysis.

Comment: 3. The study employs a cross-sectional design, which limits the ability to establish causal relationships. While improvements in knowledge and attitudes are observed post-surgery, could you discuss the potential confounding factors or alternative explanations for

these changes? For instance, might the observed improvements be influenced by other factors, such as increased interaction with healthcare professionals or changes in societal attitudes towards refractive surgery?

Response: We thank Reviewer for the suggestion. Discussion section was revised to include more detailed discussion of potential confounders and acknowledge the limitations of the study design.

Comment: 4. There is a significant imbalance in the number of participants between the preoperative (164) and postoperative (417) groups. Could you explain how you handled this discrepancy in your analysis? Did you perform any statistical corrections to account for the potential impact of this imbalance on the reliability and validity of the results?

Response: We thank Reviewer for the suggestion. This cross-sectional study should not directly compare the two groups but rather explore knowledge and attitudes at different stages of the surgical process. To avoid any misunderstanding, we have revised the Discussion section to emphasize this point. Additionally, we have acknowledged this imbalance as a limitation of the study, noting that a larger preoperative sample size would improve the robustness of future analyses. While no statistical corrections were applied in this study due to the cross-sectional design, we recognize the importance of addressing such discrepancies and will consider strategies to achieve a more balanced sample in future research.

Comment: 5. Please carefully review the reference list for accuracy. For example, reference 9 appears to be missing the journal name. Could the authors verify and update all references accordingly to ensure that all citation details are complete and accurate?

Response: We thank Reviewer for the suggestion. The Reference list was reviewed and updated.

VERSION 2 - REVIEW

Reviewer	4
Name	Liu, Rui
Affiliation	Fudan University, Eye and ENT Hospital
Date	21-Feb-2025
COI	

I appreciate the effort the authors have put into addressing the reviewers' comments and improving the quality of the manuscript. The revisions have significantly enhanced the clarity and presentation of the findings, and the manuscript is now much closer to being suitable for publication.

However, there are still a few minor issues that need to be addressed before the manuscript can be fully accepted. These are outlined below:

1. Page 19, Line 42: "Patients with agriculture account are usually older and have higher myopia, thus the outcome of refractive surgery may be impaired." The term "agriculture account" is not accurate and should be replaced with "agricultural household registration" to ensure clarity and proper terminology.
2. Page 39, Line 24: "For excimer laser surgery, the cornea need to by >450 nm, and the anticipated thickness of residual corneal flap after the surgery is >250 um (>280 um is recommended), and should be >50% of the thickness before surgery." The phrase "need to by" is a typographical error and should be corrected to "need to be."
3. Reference 9 is still incomplete, as the journal name is missing. Additionally, it is important to ensure that all references are accurate and formatted correctly according to the journal's guidelines. The corrected citation of Ref 9 should read: "Zeried FM, Alnehmi DA, Osuagwu UL. A survey on knowledge and attitude of Saudi female students toward refractive correction. Clinical and Experimental Optometry. 2020;103(2):184-91. DOI:10.1111/cxo.12919."

VERSION 2 - AUTHOR RESPONSE

Reviewer 4

Comment 1. Page 19, Line 42: "Patients with agriculture account are usually older and have higher myopia, thus the outcome of refractive surgery may be impaired." The term "agriculture account" is not accurate and should be replaced with "agricultural household registration" to ensure clarity and proper terminology.

Response: We sincerely appreciate your careful review. The term "agriculture account" has been revised to "agricultural household registration" in the revised manuscript.

Comment 2. Page 39, Line 24: "For excimer laser surgery, the cornea need to by >450 nm, and the anticipated thickness of residual corneal flap after the surgery is >250 um (>280 um is recommended), and should be >50% of the thickness before surgery." The phrase "need to by" is a typographical error and should be corrected to "need to be."

Response: Thank you for identifying this oversight. The typographical error has been corrected to "need to be" in the revised text.

Comment 3. *Reference 9 is still incomplete, as the journal name is missing. Additionally, it is important to ensure that all references are accurate and formatted correctly according to the journal's guidelines. The corrected citation of Ref 9 should read: “Zeried FM, Alnehmi DA, Osuagwu UL. A survey on knowledge and attitude of Saudi female students toward refractive correction. Clinical and Experimental Optometry. 2020;103(2):184-91. DOI:10.1111/cxo.12919.”*

Response: We deeply appreciate your attention to detail. Reference 9 has been updated to include the journal name (Clinical and Experimental Optometry), volume, page numbers, and DOI, as recommended. The revised citation now adheres strictly to the journal’s formatting guidelines.