Author’s response to reviews

Title: Ocular Surface Health in Shanghai University Students: A Cross-sectional Study

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Version: 2 Date: 30 Mar 2018

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Thank you, dear editor! Here's our reply to reviewers.

1. Please add the diagnosis criteria of DED. What is golden standard of tear film evaluation?

Reply: Thank you for your comments and constructive suggestions! We really appreciate it!

On November 21, 2014, the final consensus meeting was held in Tokyo, by the Asia Dry Eye Society (ADES) definition committee members (Drs. Tsubota, Yokoi, Shimazaki, Watanabe, Kim, Tchah, Hyon, Yoon, Seo, Sun, Chen, Liang, Li and Liu), who agreed to the new definition as follows: “Dry eye is a multifactorial disease characterized by unstable tear film causing a variety of symptoms and/or visual impairment, potentially accompanied by ocular surface damage.”

In 2016, the Asia Cornea Society (ADES) and the Dry Eye Society Japan implemented new diagnostic criteria for DED that enabled diagnosis with two positive items, namely subjective symptoms and decreased TBUT (≤5 seconds). Patients should have symptoms of either
discomfort or visual disturbance, which could be applied by a variety of methods, including direct or validated questionnaires, such as Ocular Surface Disease Index (OSDI), McMonnies questionnaire, Women's Health Study Questionnaire, or the recently reported dry eye-related QOL score (DEQS) and so on. In this article, we use the OSDI scale as the symptom assessment criteria.

To evaluate tear film, TBUT is a reproducible index with important clinically reference value. The decreased TBUT (≤5 seconds) is considered as one of the diagnostic basis for the dry eye disease (DED) and associated tear film disorders (TFS).

We’ve added the description of DED on page 5 under the Background section.

Supplementary references:


2. We have noticed that there is corneal epithelium staining in this young college student. Do you investigate the contact lens wearing and refractive surgery history of these students, since this is very common in college student, and it really influence the status of ocular surface health.

Reply: Good point, and thank you! We had investigated the contact lens wearing of these students in the questionnaire survey and the examination and analysis was reported in Table 2. However, no significant relations were found between contact lens wearing and DED, cornea fluorescein staining or corneal perception (P > 0.05). But the number of the freshmen undergoing refractive surgery is extremely small, so we didn’t discuss this factor here. Relevant statements were added into the manuscript on page 11 under the Discussion section.

3. In line 28 to 36 of page 8;
And in line 58 to 59 of page 14:

Although I can understand the inner intentions that the author wants to express, I still hope to reinforce and modify the grammar and expressions.

Reply: Thank you! Line28 to 36 of page 8 and line 58 to 59 of page 14 are all modified now.

4. In line 58 of page 12:

If the sixth word 'DES' refers to 'DED'?

Reply: Thank you very much for your comment! DES refers to dry eye system as used in the citation. It is now deleted and ‘dry eye system’ is used instead.

5. As to the anxiety scale, are there differences between fresh student and high grade students? According to published paper, how many factors which can influence the anxiety scale except ocular surface health?

Reply: Thank you for your comments and constructive suggestions! Because of the design of the project, the goal of our research is mainly for the fresh students, who have not so much pressure to face employment or deep learning, the anxiety scale of them may has some difference from those graduating students. However, this article did not cover research in this area.

SAS can reflect the subjective feelings of psychosis seekers with anxious tendencies, but the scale total score can only serve as a reference index rather than an absolute standard. As currently known, these factors that affect anxiety: Biological factors, such as genetic and physiological diseases, include DED; social factors, such as dense cities, crowded living spaces, tension, and high work pressure, psychological factors, stressful events such as natural disasters, etc, hormone levels, such as thyroid hormone, norepinephrine secretion disorder and so on.

Relevant statements were added into the manuscript on page 11 under the Discussion section.
Supplementary reference:


6. You mentioned "keeping eye strain for a long time" as a related factor of DED, so can you describe the function of blinking pattern in DED?

Reply: Thank you! Blinking is the coordinated movement of eyelid closure and opening. The blinking action prevents the lipid layer from contacting the mucus layer, maintains the thickness of the tear layer in the tear film, and maintains the stability of the tear film. The blinking eyelid closure moves from the outer abutment to the inner apposition and gradually completes, causing tears to move in the direction of the tear lake. The external environment and the individual's mental state can change the number of blinks.

Any stimulation can significantly increase the number of blinks, air dryness and fluidity, emotional anger, such as anger, panic, and increased blink rate. On the contrary, the number of blinks was reduced when people focused and observed closely especially in VDT users, who tend to forget the blink of an eye when they focus on the computer and the terminal such as a mobile phone for a long time at a close distance, causing an abnormal distribution of tears and tear secretion, which in turn leads to an increase in eye discomfort.

Relevant modifications and statements were added on page 13-14 of the manuscript under the Discussion section.

Supplementary reference: