ADITUM

Journal of Ophthalmology and Vision Care

Open Access Editorial Article

Facemask/COVID-19-Induced Bias in Ocular Surface Investigations

Reza Rastmanesh
The American Physical Society, College Park, MD, USA.

Article Info

Received: March 14, 2023
Accepted: June 16, 2023
Published: June 27, 2023

***Corresponding author:** Reza Rastmanesh, The American Physical Society, College Park, MD, USA.

Citation: Reza Rastmanesh. (2023) "Facemask/COVID-19-Induced Bias in Ocular Surface Investigations", Ophthalmology and Vision Care, 4(1); DOI: http;//doi.org/06.2023/1.1039.

Abstract:

Facemask/COVID-19-Induced Bias in Ophthalmological Investigations:
A broad array of questionnaires is used to measure dry eye symptoms [1]. The three mostly used dry eye specific instruments include ocular comfort index (OCI), ocular surface disease index (OSDI), and McMonnies questionnaire, originally developed by Johnson et al [2], Walt et al [3] and McConnies et al [4], respectively. According to the quality assessment by Khadke et al [1], OCI has been recommended as having the highest-quality patient-reported outcome instrument in terms of dry eye severity.

Since appearance of COVID-19, i.e., within two recent years, an increasing number of investigations have been carried out to measure dry eye symptoms and its severity in different disease settings. The majority of these studies have used OSDI as gold standard. The critical and neglected point is that facemask wearing negatively -directly or indirectly- affect the ocular surface and results in dry eye creation or worsening pre-existing eye dryness *per se* [5]. This clearly produces a bias that should be separately taken into account when analyzing data in an attempt to segregate facemask-induced eye dryness form other types of dry eye.

Future studies investigating the relationship between dry eye and other settings (such as (i) disease settings [like Sjogren syndrome, diabetes, etc.], (ii) gender-specific differences, (iii) treatment settings, (iv) prevention settings, and (v) relationship settings)]), should critically consider the importance of choosing a proper dry eye specific instrument based on the primary outcome of interest. For instance, in some settings, it is equally important to use a questionnaire to monitor diurnal and symptoms changes over long period of times. In such cases, it is critical to decide which tool is the most suitable for a particular application based on its efficiency/validity in that domain/setting.

There is urgent need to modify currently used ocular surface questionnaires, because dry eye is associated with many other medical conditions. There is also an urgent need to develop and validate a specific questionnaire to quantify facemask-induced dry eye to be used in COVID-19 pandemic. This might facilitate the discovery of better preventive measures and therapeutic agents for the management of dry eye symptoms based on the setting and characteristics of the target disease.

I hope that this letter will trigger an enthusiasm for development of novel tools to measure eye dryness quantitatively in real world settings during the COVID-19 pandemic. This letter has implications for the contemporary clinical trials, for extrapolation of retrospective/prospective data in different settings, revisiting the criteria of quality assessment, and re-interpretation of previous results. There are also implications for dry mouth since a similar scenario applies to dry mouth and ageusia/dysgeusia/amblygeustia during COVID-19 pandemic.

Conflict of interest: Author has no competing or conflict of interest.

References:

1. Khadka J, McAlinden C, Pesudovs K: Quality assessment of ophthalmic questionnaires: review and recommendations. Optometry and Vision Science 2013;90:720-744.

biomedical science, particularly in the diagnosis of ocular Johnson ME, Murphy PJ: Measurement of ocular surface irritation on a linear interval scale with the ocular comfort index. Investigative ophthalmology & visual science 2007;48:4451-4458.

2. Walt JG, Rowe MM, Stern KL: Evaluating the functional impact of dry eye: the Ocular Surface Disease Index. Drug Inf J 1997;31:b5.

3. McMonnies CW, Ho A: Patient history in screening for dry eye conditions. Journal of the American Optometric Association 1987;58:296-301.

4. Krolo I, Blazeka M, Merdzo I, Vrtar I, Sabol I, Petric-Vickovic I: Mask-Associated Dry Eye During COVID-19 Pandemic-How Face Masks Contribute to Dry Eye Disease Symptoms. Med Arch 2021;75:144-148.