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## CLEANING TECHNIQUE OF SPECTACLES DURING COVID-19 study of Knowledge Attitude and Practice

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MUNICIPALEYE HOSPITAL.**ABSTRACT****PURPOSE**

To create awareness of not using alcohol-based liquids on the spectacles to clean the lenses or frame. To assess the effect of sanitizer on spectacle lenses and frame.

**STUDY DESIGN:**

Questionnaire based study.

**METHOD:**

Questionnaire based survey was shared to all the spectacle wearers and results were obtained from the same.

**RESULTS:**

The questionnaire was shared in a telephonic way and 220 spectacle wearers filled up the google form and from them 90 of them have used sanitizer on their spectacles and it adversely affected their glasses as well as their quality of life, and it was indirectly cost effective too. Also, it was observed that they always use some different material of cloth to clean the spectacles which should not be done as it can also damage the special coated lenses.

**CONCLUSION:**

It was concluded that spectacle wearers should not use sanitizer or any alcohol-based liquid on their spectacle to clean or sanitize the lenses.

**KEY WORDS:** Spectacle frames, Lenses, COVID-19, Sanitizer**INTRODUCTION****MODES OF TRANSMISSION OF VIRUS CAUSING COVID-19**

We know that the disease is caused by SARS-COV-2, virus which spreads between people in several different ways. The virus can spread from an infected person's mouth or nose in small liquid particles when they cough, sneeze, speak, sing or breathe. These particles range from larger respiratory droplets to smaller aerosols.

Current evidence suggests that the virus spreads mainly between people who are in close contact with each other, typically within 1 meter (short range). A person can be infected when aerosols or droplets containing the virus are inhaled or come directly into contact with the eyes, nose or mouth. The virus can also spread in poorly ventilated and/or crowded indoor sitting, where people tend to spend longer period of time. This is because aerosols remain suspended in the air or travel farther than 1 meter (long range).

## **CORONAVIRUS AND EYEGLASSES**

Your eyeglasses (lenses and frames) can potentially transfer viruses, such as COVID-19, to your eyes, nose and mouth. Viruses and bacteria are easily transferred from our surroundings to our hands and from there to our glasses. Research shows that coronavirus can remain on glass surfaces for as long as for 9 days. We are often not aware that we touch our faces, eyes and nose as often as we do, and that is why washing our hands is so important. People who are over 40 often need reading or computer glasses. When we put on and then take off our eyeglasses, we can inadvertently be transferring the virus. This age group is more susceptible to other compromising factors such as diabetes, high blood pressure and respiratory illness are at higher risk for more serious complications from COVID-19.

As the spreading of covid-19 was not under control and so the use of sanitizer was increased by the people in everything. People were using sanitizer to clean their hands, clothes, shoes, watch, wallet, keys and everything which they were using in their daily routine. Some of the spectacle wearers also used sanitizer on their spectacles which affected their spectacles very badly in various different ways.

- 1) Lenses were scratched
- 2) Lenses got aberration
- 3) Anti-reflection coating fades away

## **TIPS TO MAINTAIN EYEGLASSES**

Here are some great tips to take care of your eyeglasses that will help you make them last for longer period of time.

- 1) RINSE
- 2) SPRAY CAREFULLY
- 3) AIR DRY
- 4) USE THE RIGHT CLOTH
- 5) GRIP FIRMLY
- 6) STORE PROPERLY
- 7) Place-Carefully
- 8) Wash-Often

## **DO'S and DONT'S**

- Do always wet your lenses before wiping or cleaning them, to prevent micro-scratches from dust particles that may be on them.
- Don't wipe lenses when they are dry.
- Do use the special micro-fiber cloth supplied by your eye care practitioner to wipe or to dry your lenses.
- Don't use a liberal amount of liquid eyeglasses cleaner on both sides of the lenses to get any dirt or dust to lift off lens surfaces.
- Don't use dish soap, detergents or regular glass cleaner because they can damage the lens coating and may leave a film.

- Do wet your lenses under lukewarm water if no eyeglass lens cleaner is available.
- Don't use other liquids like ALCOHOL OR SALIVA.
- Do wash the special cloth on a regular basis to keep it clean and free of lint or dirt.
- Don't dry the special cloth with the dryer, let it air-dry.
- Do use a good quality soft paper towel if no cleaning cloth is available.
- Don't use a paper towel made of recycled materials because they can scratch the lenses.
- Do blot the lenses dry and avoid rubbing them if possible.
- Don't use tissues because some have lotions or oils embedded, and can leave lint behind.
- Do keep your frames straight and comfortable on your face by visiting your eye care practitioner periodically for an adjustment.
- Don't allow anyone without proper training to handle or adjust your glasses.

### **Purpose:**

The purpose of this study was to create awareness about not using alcohol on the spectacle glasses as it affects the lenses as well as it hampers the vision.

### **AIM**

To study or survey the maintenance protocol of spectacles during COVID-19

### **REVIEW OF LITERATURE**

Birgit Fritz studied "A view to a kill? – Ambient bacterial load of frames and lenses of spectacles and evaluation of different cleaning methods" it was published on 28<sup>th</sup> November 2018 and concluded that the spectacles could represent a reservoir for pathogens causing recurring eye infections. However, we also demonstrated that superficial cleaning with impregnated lens wipescan reduce microbial load and thus help prevent bacterial transfer.

Mill Creek Vision explained "How to disinfect glasses to help prevent Covid-19" It was published on 1<sup>st</sup> April 2020 and gave the results that rubbing-alcohol at home, and although it may seem like a perfectly good idea to use it to disinfect your specs, we discourage you from doing so. It may be too harsh for your eyeglasses, especially if you have any special coatings on your lenses. Other products you should stay away from include ammonia, bleach, or anything with high concentrations of acid, such as lemon juice or vinegar, which can damage lens coatings and some eyewear materials.

Saundra Young explained about the "Face Masks and Foggy Glasses: A COVID Consequence" it was published on 20<sup>th</sup> October 2020 and concluded that how it affects the quality of life.

### **MATERIAL:**

Across-sectional study using online questionnaire was conducted during November-2020 to October-2021 at C.H. Nagari Municipal Eye Hospital, Ahmedabad. The data was collected from 220 Spectacle Wearers in the tertiary eye care hospital in the year of 2021.

### **Inclusion criteria:**

All Spectacle wearers.

### **Exclusion criteria:**

Patient not wearing spectacles and emmetropes.

**METHODOLOGY:**

This study was a cross-sectional online survey conducted among 220 individuals during November-2020 to October-2021 at C.H. Nagari Municipal Eye Hospital, Ahmedabad. An online survey on knowledge and behavior of “CLEANING TECHNIQUES OF SPECTACLES DURING COVID-19” using self-administered questionnaire was introduced to all spectacle wearers.

All spectacle wearers who were willing to participate in the survey could access the telephonic survey mobile google form.

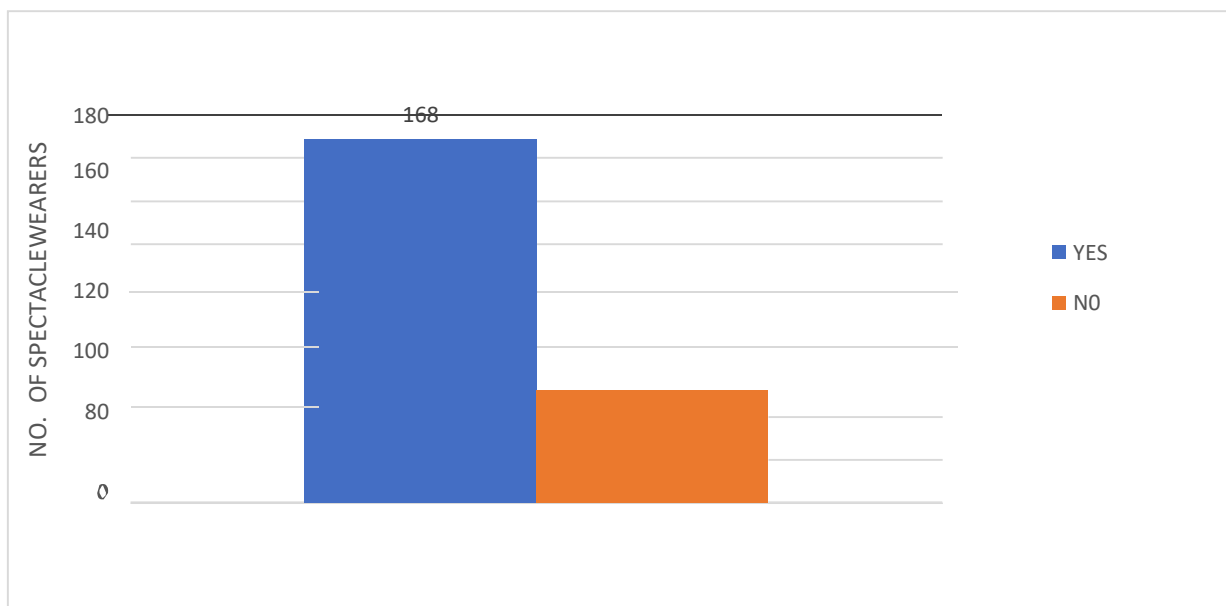
The questionnaire was in English language and was verified and validated by expert panel it was composed of 3 sections, first section was demographic data (i.e., name, age, gender) and about eye check-up.

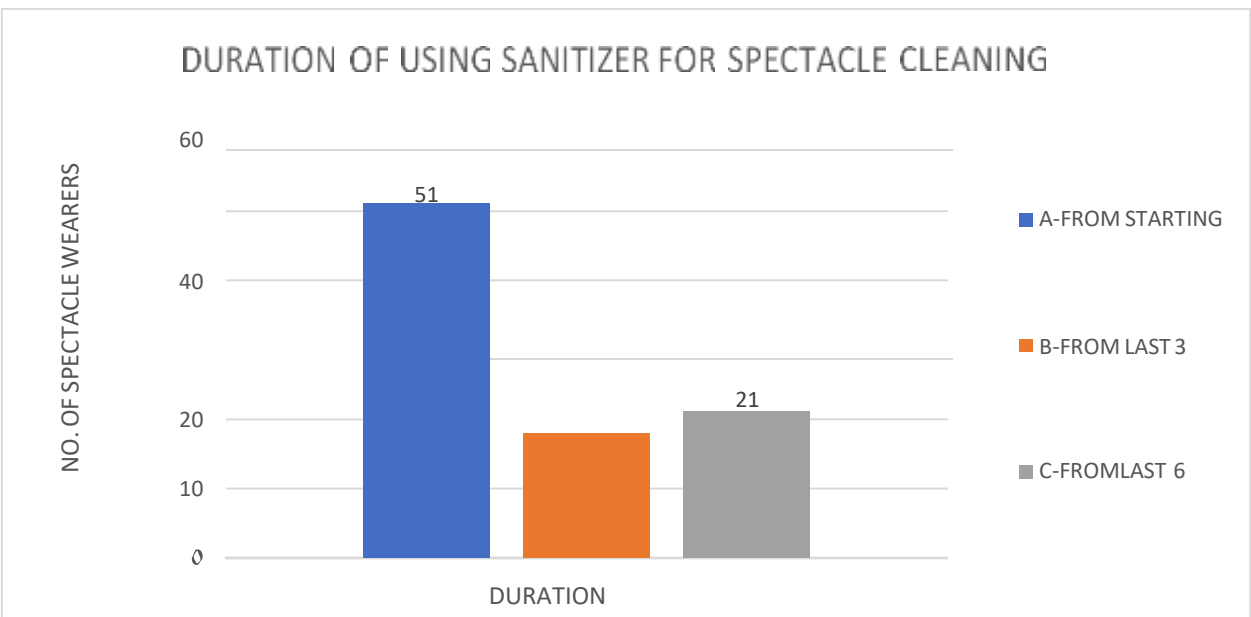
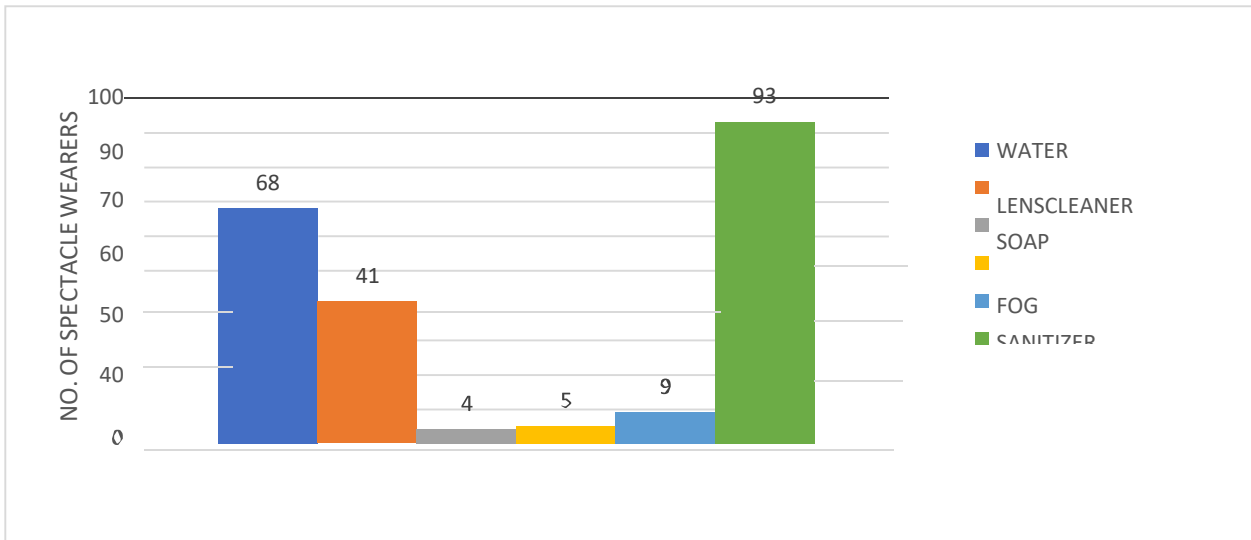
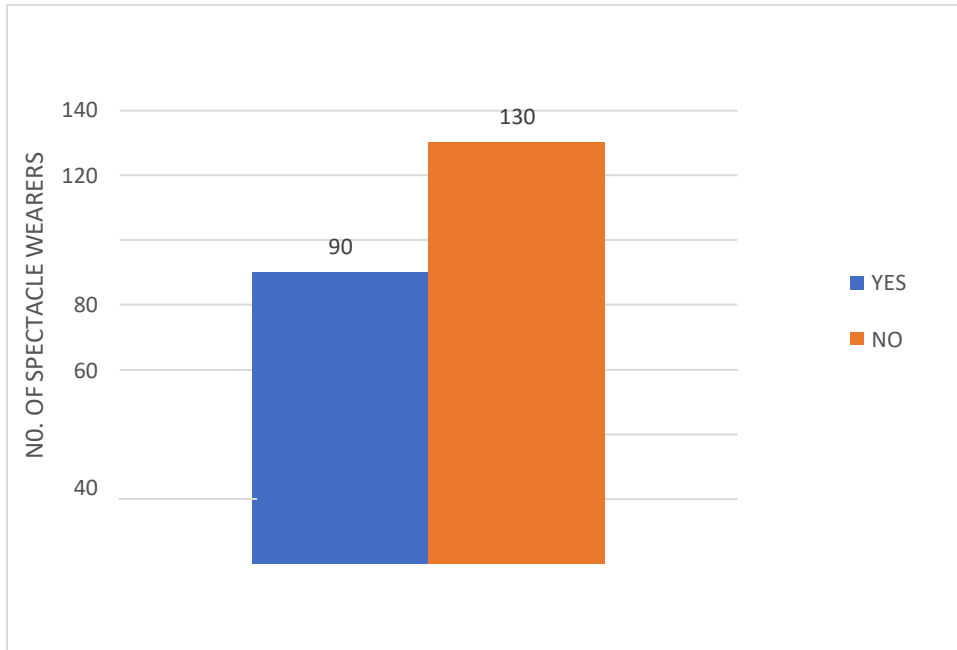
The second section was asked about spectacle handling during COVID-19.

The third section contained questions about cleaning techniques of spectacles during COVID-19.

**SCORE:**

Out of 11 questions, the score was summarized to determine total behavioral and knowledge score. Statistical analysis has been done to analyze the data.





## RESULTS

**DO YOU WASH YOUR HANDS BEFORE TOUCHING THE SPECTACLES DUE TO ONGOING PERIOD OF COVID-19?**

**WITH WHAT DO YOU CLEAN YOUR SPECTACLES?**

**HAVE YOU EVER USED SANITIZER TO CLEAN YOUR SPECTACLES?**

**IF YOU HAVE USED SANITIZER ON YOUR SPECTACLES THEN FROM WHEN?**

**WHAT EFFECTS HAVE YOU SEEN IN SPECTACLES AFTER USING SANITIZER?**

|                                       |    |
|---------------------------------------|----|
| COLOR & COATING,<br>SPREAD, SCRATCHES | 35 |
| FOGGING                               | 10 |
| BLUR VISION                           | 16 |
| CLEANING                              | 22 |
| DAMAGE TO FRAME                       | 7  |

## DISCUSSION

During Covid-19 era, the use of alcohol-based liquids have been progressively increased to sanitize the things. As, we all know that coronavirus has been infected through nose, eyes and mouth, people take more precautions in cleaning/sanitizing accessories of face like masks spectacles etc.

On the research of reviews, it has been seen that various articles/studies are going on related to COVID-19. This makes me more curious to study on COVID-19. It has been found that so many people use alcohol-based liquids to sanitize spectacle frames & lenses.

Brigit Fitz gave a study about "Ambient bacterial load of frames and lenses of spectacles and evaluation of different cleaning methods." The aim of his study was to investigate site-dependent microbial loads on worn spectacles using cultivation-based techniques. In addition, he investigated four different cleaning techniques for their efficacy in reducing microbial loads on spectacle lens. They concluded that superficial cleaning with impregnated lens wiper can reduce microbial load and thus help prevent bacterial transfer.

### **Some of the questions were regarding cleaning habits:**

In our study we tried to observe that, how spectacle wearers clean their spectacles in various different ways with different cloth and liquids. The results obtained were 81 spectacle wearers get their nose pads changed till they last, 67 of them never get it changed. Hence most of the spectacle wearers never get the nose pads changed at regular interval.

Another observation was on the spectacles cleaning patterns during COVID-19. And the results were surprising because most of the people (93 of them) used sanitizer to clean their spectacle which is not good for spectacles and eyes. 68 of them used water. Using sanitizer is very much harmful such as it creates **scratches, smudges** on spectacle lens which decreases the vision as a result they do accommodate more, which hampers the vision, patient may have **headache, eyestrain** and various different problems.

Another observation was on the materials used for spectacles cleaning and the results were: 108 of them used selvet to clean their spectacles, 86 of them used everything (selvet, brush, dress, tissue paper, handkerchief) to clean their spectacles which can harm the lenses as every time some different material cannot suit the lens. 168 spectacle wearers washed their hands before touching the spectacles and 52 of them did not. So, this concludes that washing hands before touching the spectacles is very much necessary these days due to spreading of COVID-19.

Mill Creek Vision gave a study “HOW TO DISINFECT GLASSES TO HELP PREVENT COVID-19”. The aim of the study was to observe the Do’s and Don’ts for spectacle cleaning during COVID-19. He concluded that one should clean their spectacle with lukewarm water and dish soap and lens cleaning wipes. Dry the spectacles with micro-fibril cloth. One should avoid rubbing alcohol, household cleaners or products with high concentrated acid to clean spectacles.

In our study we have included measures for disinfection of glasses to prevent COVID-19. And results were 130 of them have never used sanitizer to clean their spectacles and 89 of them have used it. Using sanitizer for special coating lenses is harmful but due to the fear of pandemic we have observed the trend in people for using sanitizer even in cleaning of **spectacles** and 51 of them have used sanitizer from the starting of COVID-19, they have also seen the effect of sanitizer in various different ways.

And we have specifically included the question on the types of effects on spectacles after using sanitizer, results observed were 35 of them have seen **colour coating and scratches issues** which hampers their vision, 9 of them have faced **fogging issues**, 16 of them have **blurring of vision**, 22 of them have problem in **cleaning the spectacles** after using sanitizer it gets stucked on the lenses as it is alcohol based, 7 of them have faced problem about **damaging of the frame** because some of the sanitizers are highly concentrated which can harm the frame. As the spectacle wearers have used sanitizer on their spectacles which directly affects their quality of life as it hampers their vision and scratches, smudges, aberrations were seen. It is indirectly too costly.

Saundra Young studied about Face Masks and Foggy Glasses: A COVID Consequence. She explained that how foggy glasses, face masks, soapy water, shaving cream etc., which indirectly shows effect on glasses.

In our study we have observed the effects on spectacles after using sanitizer and the results observed were that spectacle wearers have seen fogging issue after using the sanitizer on their spectacles.

### **Summary:**

Do not use alcohol to disinfect or sanitize your glasses.

Avoid using household cleaners or products with high concentrations of acid. Clean your glasses with a lukewarm water, or lens wipes.

Dry your glasses with a microfiber cloth to prevent smudging and scratching.

## CONCLUSION

It concludes that spectacle wearers should not use sanitizer to sanitize or clean their spectacles or any alcohol-based liquid as it harms the spectacles as well as the frames. After using sanitizer or alcohol based liquid various different effects have been studied and proved, that use of sanitizing every things have been increased. So, because of unawareness of use of alcohol-based liquids adversely affect spectacle wearers vision.

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## QUESTIONNAIRE

- 1) AGE
- 2) GENDER
- 3) How often do you get your eyes checked?
  - a. Every 6 months
  - b. 6-8 months
  - c. 8 months to 1 year



- d. 1-2 years
  - e. No specific time
- 4) From whom do you get your eyes checked?
- a. Ophthalmologist
  - b. Optometrist
  - c. Certified optician
- 5) Do you get your nose pads changed at regular interval due to ongoing period of COVID-19?  
(if yes then when?)
- a. 1-2 months
  - b. 2-5 months
  - c. 5 months to 1 year
  - d. Till nose pads lasts
  - e. Never
- 6) Do you wash your hands before touching the spectacles due to ongoing period of COVID-19?
- a. Yes
  - b. No
- 7) With what do you clean your spectacles?
- a. Water
  - b. Lens cleaner
  - c. Soap
  - d. Fog
  - e. Sanitizer
  - f. All of the above
- 8) What kind of cloth do you use to clean your spectacles?
- a. Selvet
  - b. Brush
  - c. Dress

- d. Tissue paper
- e. Handkerchief
- f. All of the above

9) Have you ever used sanitizer to clean your spectacles?

- a. Yes
- b. No

9 (A) If you have used sanitizer on your spectacles then from when?

- a. From starting of COVID-19
- b. From last 3 months
- c. From last 6 months

9(B) What affects you have seen on spectacles after using sanitizer?

10) How often do you wash/sanitize the selvet?

- a. Before use
- b. After use
- c. Every time

11) How often do you change the selvet by which you clean your spectacles?

- a. After 1 week
- b. After 1 month
- c. After 1 year
- d. Never