

# CVS Prevalence among those between the Ages of 18 and 40 from a Eye Care Facility

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**Abstract:** **Background:** Computer Vision Syndrome Prevalence among those between the ages of 18 and 40 from a Tertiary Eye Care Facility. **Methods:** In relation to the ancillary findings, values were chosen in order to indirectly establish the mean ametropia as well. Utilizing the mean value score that was calculated by comparing the values on the survey, the outcome was calculated. The total group included patients from both urban and remote regions. Along with the age range and gender ratio, the address underwent a demographic analysis. With the more prevalent subjective methods in this area of study, empirically verified signs of Dry Eye Syndrome are also taken into account. Patients were chosen from 240 eyes of 120 Subjects at an eye care center, with no prior trauma history and varying symptomatic effects and consequences. **Results:** 240 eyeballs from 120 participants were analyzed in this study. In the series of tables up top, the patient demographics were displayed. Table 1 displays the gender bifurcation overall vs. the total core population present. Figure 2 illustrates the relevance of digital device exposure over a day and night cycle, i. e., by displaying the percentile integrated value of 5.8 (Night) / 3.2 (Day) for the exposure to digital devices according to usage time. To further add, careful follow - up for the same could also support a higher prevalence regarding the evaluations of CVS symptoms in relation to the timing of the consumption. When we look at Figure 3, which divides the participant's CVS symptoms into Mild, Moderate, and Severe categories, we can see how the symptoms are distributed among them. The results have shown that Dryness has been classified as severe with a level of 4.4 over the bar and that the majority of cases fall within the Mild Bar Range of 4.5. **Conclusions:** The majority of people in the public, according to the current study, reported experiencing severe Dryness as one of their CVS symptoms while using computers. Due to obvious reasons, participants between the ages of 18 and 25 were more susceptible. Studies have shown that transient discomfort lowers work effectiveness and, in turn, production, even though computer use has not yet been shown to cause any permanent eye damage.

**Keywords:** Computer Vision Syndrome, Digital Devices, DES: Digital Eye Strain, VF: Visual Fatigue

## 1. Introduction

Computer vision syndrome is a condition that has been acknowledged as a health problem for more than 20 years.<sup>1</sup> Because there are so many different digital devices that could cause problems, the disease is also known as visual fatigue and digital eye strain. It might be more appropriate to use these phrases when speaking with patients and the general public, who might not consider devices like tablets and smartphones to be computers.<sup>2,3</sup> The dramatic rise in the use of digital gadgets in recent years has put millions of people of all ages at risk for developing Dry Eye Syndrome as well.<sup>4,5</sup> Although the condition's symptoms are often transient, it can nonetheless cause severe, recurrent agony for sufferers and may have significant economic effects when people who work with computers have more frequent errors and breaks. Across all age groups in developed countries, the usage of digital devices has increased dramatically over the past several years, particularly in the field of mobile media.<sup>6</sup> A survey carried out across several European nations, including England, found that by the age of three, 68% of children regularly use a computer and 54% participate in online activities.

As people get older, they use technology more and more. 37% of people in the US over the age of 60 use digital gadgets for five hours or more every day, according to recent data. In contrast to younger folks, who prefer using smartphones for internet browsing, this age group prefers to use laptops and desktop computers. Social media use and

multitasking are particularly prevalent among younger persons, with 87% of those between the ages of 20 and 29 reporting that they use two or more digital devices simultaneously.<sup>7</sup> In the last 20 years, the prevalence of Dry Eye Syndrome has received attention in the academic literature. Estimating prevalence is challenging because of the great variety of usage conditions (both occupationally and socially), the major changes in these over time, and the range of methods that have been employed to identify patients. According to recent studies, millions of people suffer from Dry Eye Syndrome, which is a fairly common problem that is related to modern technology and usage patterns.<sup>8</sup> Overall, the 2016 Digital Eye Strain research, which comprised survey responses from more than 10,000 US participants, indicated a prevalence of self-reported symptoms of 65%. In comparison to men, women were more likely to report having symptoms (69% vs. 60% prevalence). People who used two or more devices simultaneously reported Dry Eye Syndrome more frequently than those who only used one device at a time, with prevalence rates of 75% and 53%, respectively. In 2012, 520 office workers in New York City participated in a study, and it was discovered that women were more likely than males to experience computer-related symptoms.<sup>9,10, and 11</sup>

In connection to Computer Vision Syndrome, gender differences in the prevalence of dry eyes may be responsible for this finding. In a recent meta-analysis of data from 365 individuals, the prevalence of dry eye illness was estimated to be 49.5% overall among computer users, with a range of 9.5% to 87.5%.<sup>12,13,14</sup>

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**2. Methods**

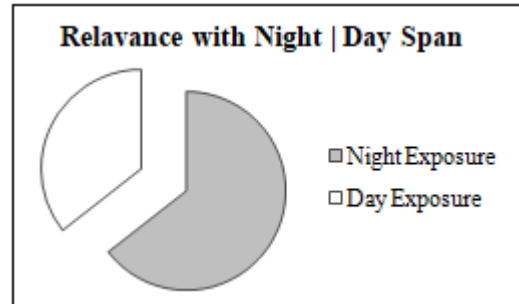
With the more prevalent subjective methods in this area of study, empirically verified signs of Dry Eye Syndrome are also taken into account. Patients were chosen from 240 eyes of 120 Subjects at an eye care center, with no prior trauma history and varying symptomatic effects and consequences. For the stepwise evaluation of symptoms, clinical visual assessments were performed. In relation to the ancillary findings, values were chosen in order to indirectly establish the mean ametropia as well. Utilizing the mean value score that was calculated by comparing the values on the survey, the outcome was calculated. The total group included patients from both urban and remote regions. Along with the age range and gender ratio, the address underwent a demographic analysis.

This prospective cohort study was carried out over the course of a full year. The prevalence among the patients was evaluated through surveys as well as assessments. Participants who met the criterion for inclusion had to be in good visual health. Participants with prior contact lens and refractive surgery, corneal scarring, and systemic disease histories were excluded as the exclusion criteria. According to the questionnaire and clinical evaluations utilized for the

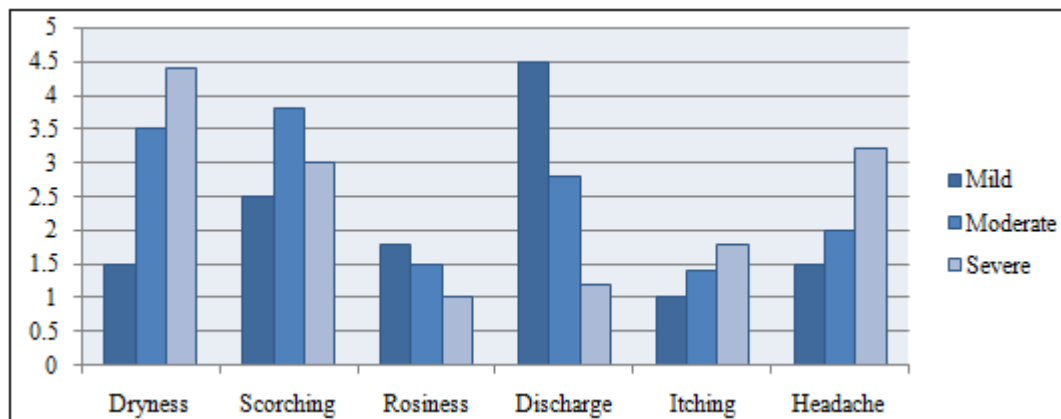
study, Computer Vision Syndrome symptoms were identified. All of the participants were contacted by the researchers, who first took their systemic and ocular histories before doing thorough eye exams, asking them to complete a questionnaire, and noting their answers thereby.

**Table 1:** Gender Bifurcation | Total Core % Distribution of Participants

Gender	Percentage
Male	63%
Female	37%



**Figure 1:** Relevence of Digital Device exposure with Day – Night span.



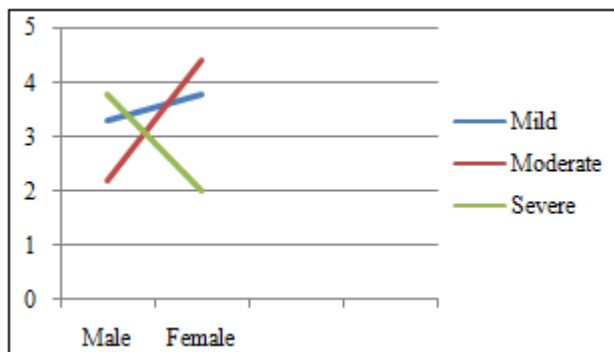
**Figure 2:** Distribution of Participant’s symptoms of CVS

**3. Results**

240 eyeballs from 120 participants were analyzed in this study. In the series of tables up top, the patient demographics were displayed. A Tertiary Eye Care Facility conducted this test to ascertain the real prevalence of Computer Vision Syndrome in individuals between the ages of 18 and 40. M|F 63% | 37% is determined by the Table 1 shown below, which displays the gender bifurcation overall vs. the total core population present. Figure 2 illustrates the relevance of digital device exposure over a day and night cycle, i. e., by displaying the percentile integrated value of 5.8 (Night) | 3.2 (Day) for the exposure to digital devices according to usage time. To further add, careful follow - up for the same could also support a higher prevalence regarding the evaluations of CVS symptoms in relation to the timing of the consumption. When we look at Figure 3, which divides the participant's CVS symptoms into Mild, Moderate, and Severe categories, we can see how the symptoms are distributed among them. The results have shown that Dryness has been classified as severe with a level

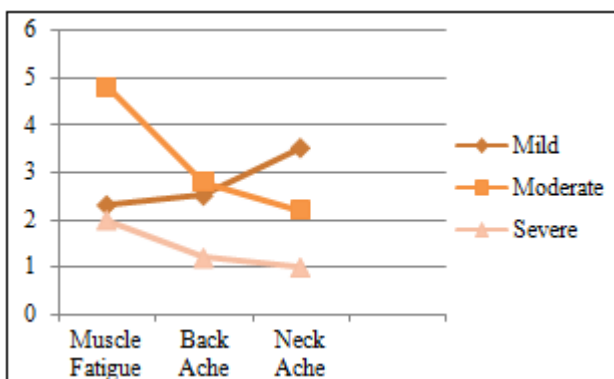
of 4.4 over the bar and that the majority of cases fall within the Mild Bar Range of 4.5. Population - wise headache was discovered to be fairly severe, with a range of 3.2 over the Bar Representation. Over the representation, rest parameters are shown. Males experienced overall symptoms that were more severe, measuring at 3.8, compared to females, who experienced moderate symptoms, measuring at 4.4.

Males experienced overall symptoms that were more severe, measuring at 3. 8, compared to females, who Muscle fatigueness was identified as the most common symptom related with the use of digital devices, scoring 4.8 (Moderate) in the associated ergonomic parameters Prevalence over the Population.



**Figure 3:** Distribution of Participants (Gender Bifurcation in accordance to Symptoms)

Note: Above depicted Figures (1, 2, and 3) are for the bifurcations of Gender Ratio in accordance to symptom specificity, exposure as well as the impact.



**Figure 4:** Associated Ergonomic terms Prevalence over the Population

#### 4. Discussion

We disregarded the prevalence characteristics associated with the gender divide in this study, along with working hours and exposure to digital devices during the day or at night. Additionally, characteristics that contribute to ergonomic problems, such as neck pain and muscular fatiguensness rate, were also identified. More specifically, all the characteristics that were ruled out were rated based on the Mild, Moderate, and Severe words, which are the three main categories.

#### 5. Conclusion

The current study found that the use of computers, visual display devices, workplace lighting, rest periods, and eye drops all had an effect on the manifestation of CVS. It is advised that employees take breaks between jobs, restrict the amount of time they spend in front of screens, use eye drops, and improve the lighting in their workspaces to decrease the problem. The recent study found that the majority of participants in the general population listed severe Dryness as one of their CVS symptoms that they experienced while using computers. Participants aged 18 to 25 were more sensitive, for obvious reasons. Even though computer use has not yet been proven to result in any lasting eye damage, studies have shown that temporary discomfort reduces work effectiveness and, in turn, production. Professionals in health and education advise teachers and students to use computers

with ergonomic awareness. Higher education institutions' curricula should cover CVS prevention because both academic and professional activities now frequently use computers.<sup>15, 16</sup>

#### 6. Disclaimer

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**Conflict of Interest:** None

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