Applied Visual Ergonomics - A Compelling Consideration for the New Normal

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Introduction

- In this pandemic, **digital work has increased** for each individual which was on the verge of happening as hybrid way of working has been taken up by a lot of workplaces.
- **Eye strain** is one of the **important side effect** of this new work culture. The use of computers for long periods of time is likely to lead to the development of a clinical syndrome called **Computer Vision Syndrome (CVS)**
- Computer Vision Syndrome or digital eye strain is a combination of eye and **visual problems because of increased visual demands**.

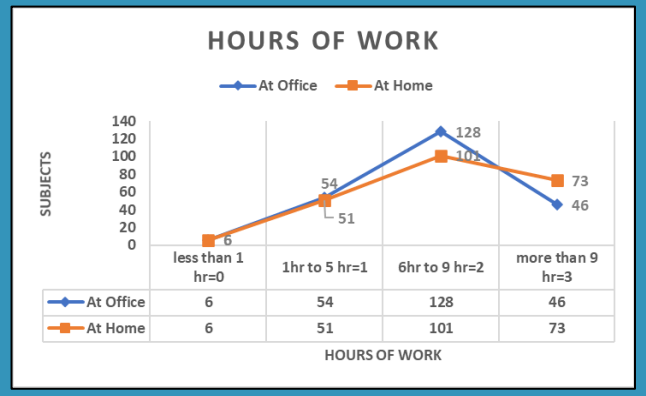
Objective

1. To establish the assumption that **eye strain** is one of the important **side effect of this new work culture** and it relates to other eye symptoms as well.

2. To **propose strategies for mitigation** via appropriate implementation of visual ergonomics and human factors.

Methods

1. Online Survey
2. 231 professionals Age range 23-61
3. CVSS Questionnaire
   - 3.1. Eye health
   - 3.2. Visual ergonomics and design
   - 3.3. Computer activity and environment
4. Statistical Tool Used: Pearson's correlation coefficient



Results and Conclusions

- The study indicates that there is a **marked increase in the hours spent in front of a screen** in the work from home scenarios.
- Increased mobile or tablet use has shown a correlation with squinting (r = 0.30)
- Squinting to see and eye strain are correlated (r = 0.45).
- Overall awareness about refresh rate is very low (21%).
- The people who face eye strain reported that the letters on the screen became blurry after continuous use (r = 0.56)
- Eye strain also correlates to increased light sensitivity (r = 0.54) and dry eyes (r = 0.54)
- The study has established a definite indication of **onset of computer vision syndrome** in the majority of the people who are now working from home on screens for extended hours.
- The understanding of visual ergonomics within the '**person to computer-screen' visual interaction** is required

Digital work has increased and offices are adopting hybrid work cultures; applied visual ergonomics is thus going to be a compelling need within the 'person to computer-screen' interactions.

Mitigation Strategies

- **Screen lighting should be within 5x of average room lighting**
- **Screen should be dust or smudge free. Use of anti-glare screen**
- **Glare from windows on the workstation should be avoided**
- **Higher refresh rate (>120 Hz) reduces the eye related symptoms and increases individual's functionality**
- **Screen should be 10-20 ° below the eye level**
- **It is recommended that the viewing distance should be of 30 to 40 inches**

References

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