INTRODUCTION

Computer Vision Syndrome (CVS) is a term used to describe a wide range of visual symptoms experienced by operators of visual display terminals (VDTs) [1].

Ocular Symptoms

- Headache
- Decreased cognitive abilities
- Neck and shoulder pain

Non-ocular Symptoms

- Headache
- Decreased cognitive abilities
- Neck and shoulder pain

As many as 90% of VDT users report at least one symptom (ocular or non-ocular) [3], with ocular symptoms being reported by as many as 47.5% of VDT employees in an American study [4]. 31.9% in an Italian study [5] and 63.5% in an Australian study [6].

Computer use continues to increase within the workplace, and the amount of VDT exposure (>4 hours per day) has a strong relationship with the severity of reported CVS symptoms [1, 7, 8].

Despite a high prevalence of VDT employees reporting CVS, there are limitations to knowledge available, there have been limited efforts to disseminate that knowledge to the workplace [1,2].

MECHANISMS OF CVS

Ocular CVS Symptoms: Contributing factors – workplace:

- Image quality
  - Too small and low resolution will make fonts difficult to decipher
  - High contrast or brightness tends to make the image blurry
  - A low refresh rate on the screen appear to the computer user as flicker on the screen.

- Work station design
  - If the monitor is too high, it can lead to an upward position of the eye, which increases surface exposure [1,8].
  - Glare (overall light levels, reflected light on the screen and bright spot) increases difficulty in interpreting images and readability [1,12].

- Environmental factors
  - Dry air, high intensity and excessive air movement can lead to evaporation of eye moisture [1].

Negative Visual Adjustments

- Squinting (improves visual accommodation and vergence), but it can lead to ocular muscle fatigue [9].
- Reduced frequency and quality of blinking to view an image can lead to dry eyes [10,19,20].

Non-ocular CVS Symptoms: Contributing factors – workplace:

- Workstation setup
  - Sustained viewing at the computer monitor can lead to increased activity of the trapezius muscle [9].

- Poor image quality and cognitive overloading
  - Link between poor image quality or inability to read the screen can cause a reduction in cognitive performance [12].

OBJECTIVES

Objectives:

- Review underlying mechanisms for CVS,
- Discussion of contributing factors to CVS, and
- Provide intervention strategies that occupational therapy practitioners can use to address CVS in the workplace.

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