

OCCURRENCE AND POTENTIAL DETERMINANTS OF VISUALLY INDUCED SYMPTOMS IN SPECTATORS OF THREE DIMENSIONAL (3D) STEREOSCOPIC MOVIES

Angelo G Solimini, *Sapienza University of Rome, Italy*
Domitilla Di Thiene, *Sapienza University of Rome, Italy*
Alice Mannocci, *Sapienza University of Rome, Italy*
Giuseppe La Torre, *Sapienza University of Rome, Italy*

Background and aims. The increasing popularity of commercial movies showing three dimensional (3D) computer generated images has raised concern about image safety and possible adverse side effects on viewers. We aim to quantify the occurrence and potential determinants of visually induced symptoms in spectators of 3D movies.

Methods. Self administered questionnaires were distributed to individuals who saw a 3D movie in a cinema in the past 6 months. The questionnaire contains 20 items related to socio-demographic, individual and movie vision characteristics and visually induced symptoms (internal consistency of symptom section, Chronbach alpha=0.69). We asked to report symptoms at 3 different times: during, right after and after 2 hours from movie vision.

Results. We enrolled 177 adults (age range: 18-64 years). At least 1 symptom was reported by 61% of participants. Symptoms were reported by 54.5% individuals during the movie vision, by 35.7% right after and by 11% after 2 hours from the vision. The most frequent symptoms were tired eyes (reported by 35.1% during; 13.6% right after; 3.2% after 2 hours), dizziness (14.3%, 9.1%, 0.6%) and headache (12.3%, 2.3%, 5.2%). Significant associations during the movie vision were: Tired eyes – freq. car sickness OR 2.19; 95%IC 1.06-4.52; Tired eyes – daily computer use OR 2.14 (95%IC 1.04-4.39); Dizziness-frequent headache OR 3.05 (95%IC 1.13-8.24); Dizziness- frequent car sickness OR 3.33 (95%IC 1.29-8.6). After the movie vision: Nausea–lateral and close to the screen viewing position OR 5.31 (95%IC 1.16-24.2)

Conclusions. Visually induced symptoms can result from the vision of 3D movies in cinemas. The high occurrence of symptoms, although of mild intensity and rapid disappearance, and the resulting associations with some individual and vision characteristics suggest to get additional insights on individual susceptibility factors.