
Many important occupations require people to work effectively together for long periods of time and at all hours of day and night. Thus there is a need to understand the effect of fatigue attributable to sleep loss on the performance of teams as opposed to individuals.

Sixteen teams participated; each comprised of 4 members. Participants arrived at 08:00 on day 1 and departed at 17:00 on day 3. Familiarisation to the place and task was done on day 1. The formal experiment ran continuously from 08:00 on day 2 to 12:00 on day 3 (28 hrs). The individual and team decision making consisted of 14 consecutive blocks, each consisted of 2 hrs duration. Each 2 hr block comprised 1hr 40 mins of sustained cognitive work and 20 mins break. Team and individual threat assessment task (TITAN) was given which is a computer based simulation of a naval shipboard surveillance and threat assessment task designed for assessing performance was given. Three team members made threat assessments on the above task and then forwarded their judgements electronically to the team leader, who made a final assessment on behalf of the team.

Fatigue due to sleep loss (assessed by oral temperature & Stanford Sleepiness Scores) increased task assessment error and target processing time of the task. The performance was better due to fatigue associated with sleep loss in a team compared with individual task performance.

The divergent result (some studies showed fatigue due to sleep loss, increased the team performance and some studies showed the opposite result) was explained with the collective effort model (Karau and Williams, 1993) and were attributable to difference between independent and interdependent team tasks.


Neck posture is an important issue for musculoskeletal health and it adds to the effect of added weight. So it is important to determine whether HMD can force the wearer to change his neck and body posture.

Seven paramedics (more than 5yrs of experience) simulated treatment of cardiac patients in two conditions and two scenarios. The two conditions were with and without HMD and the two scenarios included baseline observations (checking pulse, BP, respiratory rate, temperature, Sa-O2) and others (cannulations, CPR & intubations). The simulations were done on a training dummy lying on its back on the ground. Posture assessment was done by rapid upper limb assessment method (RULA). The RULA method assesses the severity of postural loading by coding the postures adopted by the arm, fore-arm, wrist, neck, trunk and legs.

For both the conditions and the scenarios the most frequently adopted neck posture was flexed by greater than 20°. HMD condition had a greater percentage of postures with the neck flexion by greater than 20° and neck being rotated and laterally flexed. HMD conditions for cannulations, CPR and intubations produced significant neck flexion than baseline observations. Most of the postures adopted involved the trunk being flexed by 20° to 60°. In scenario (cannulations, CPR, intubation) there were difference of body postures in both the conditions. HMD conditions had higher significant postures with the trunk rotated. The body postures showed significant flexion with HMD for the baseline observations.

The theory suggested was that the restriction of field of vision contributed to the paramedics modifying their neck and body posture. These were supported in interviews recorded after the testing session.