



Sleep and sleepiness while on watch in a simulated "4 hours on 8 hours off" maritime watch system

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Introduction

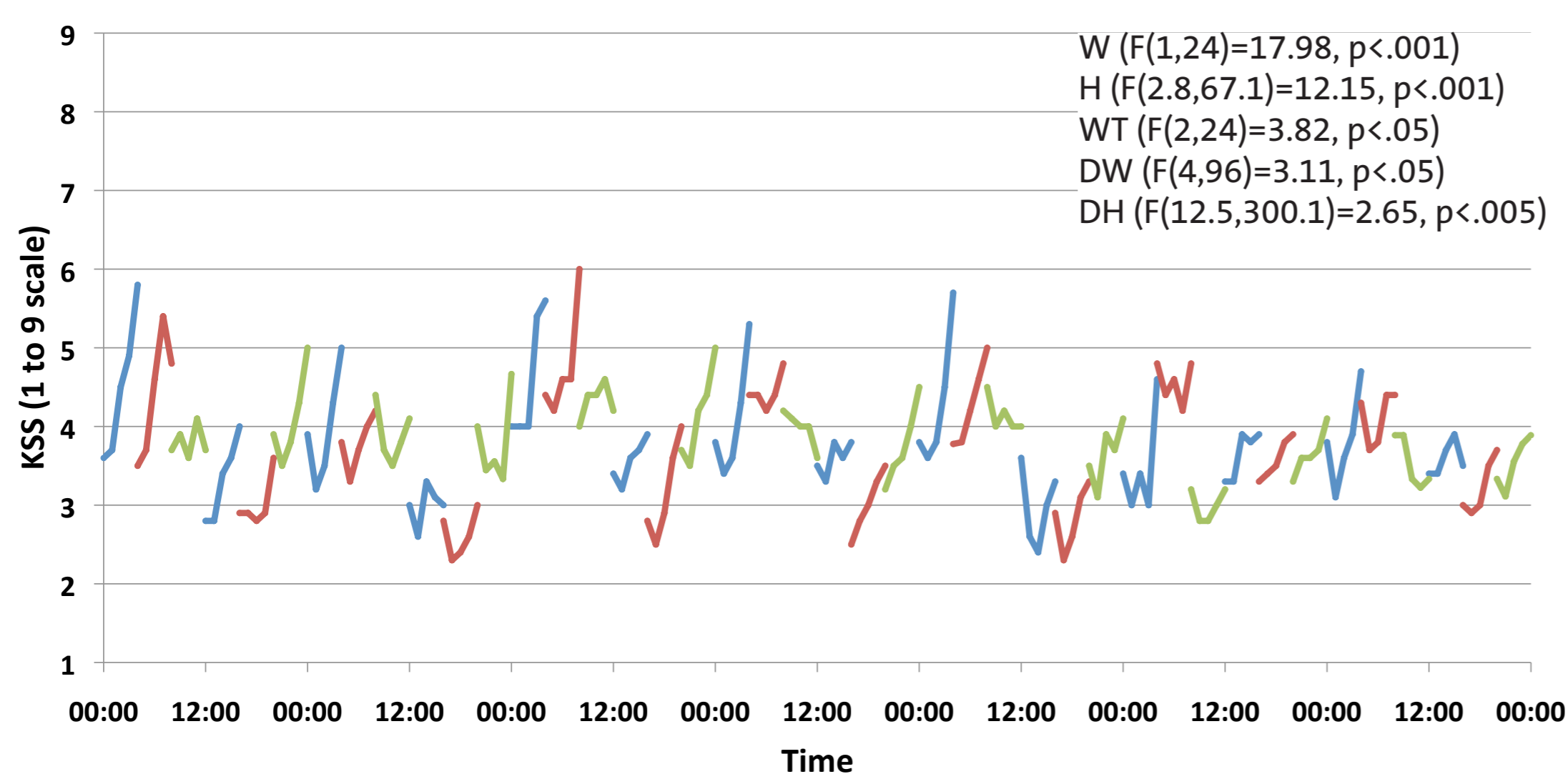
- Seafarer fatigue – with ships being operated on a 24/7 basis – poses a risk to traffic safety at sea and has already contributed to many accidents
- This study investigates sleep and sleepiness in a simulated 4 on / 8 off watch system during 1 week
- In addition, the effects of a disturbed free watch on sleep and sleepiness during the subsequent watch was investigated

Conclusion

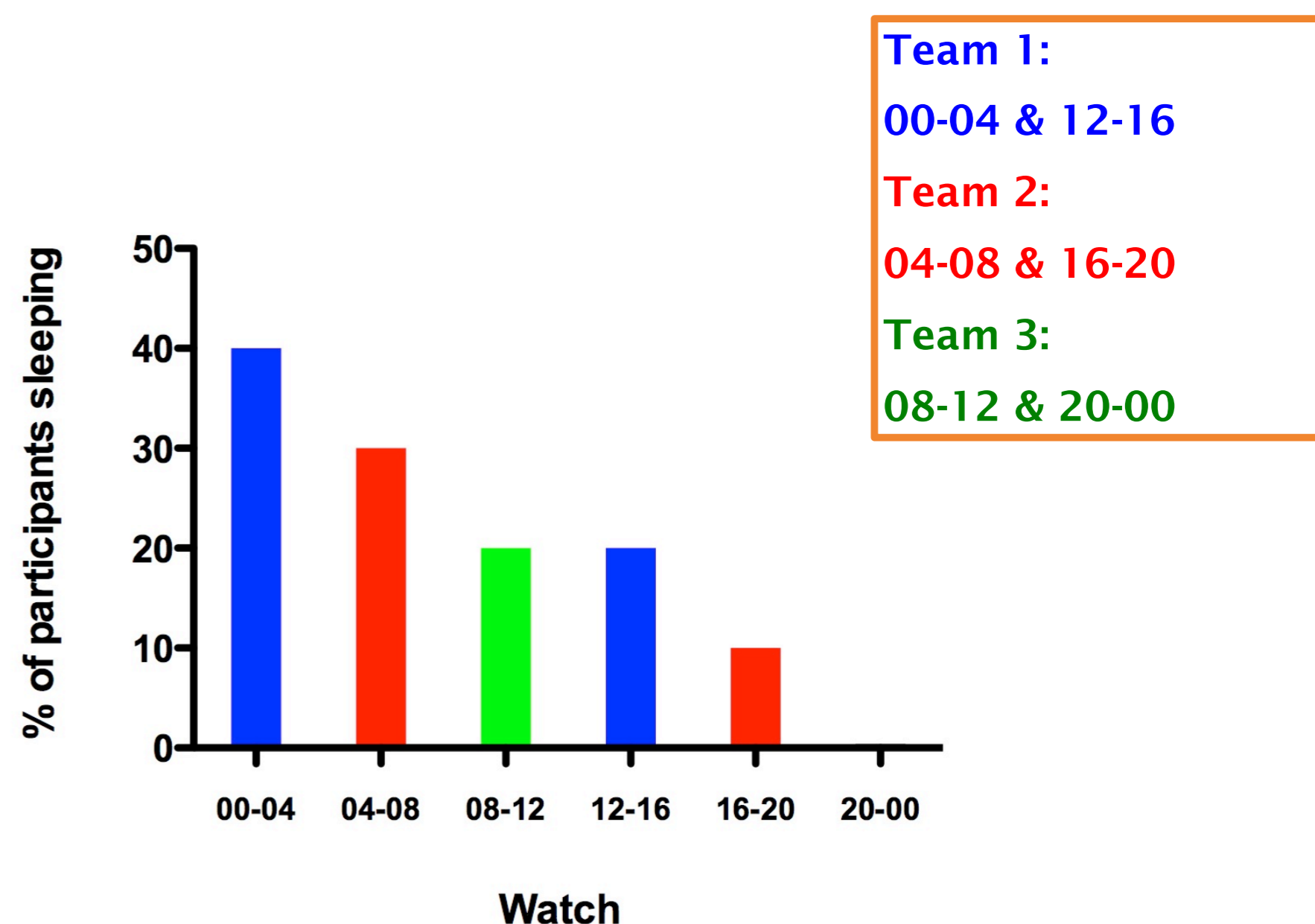
- Sleepiness peaks during the ends of night & early morning watches
- Sleep on watch is most prevalent during night and early morning
- A free watch disturbed with low demanding paper work increases sleepiness and sleep on watch
- Daily sleep duration is lowest in the team working 04:00 to 08:00

Results

Sleepiness peaks during the end of night and early morning watches....

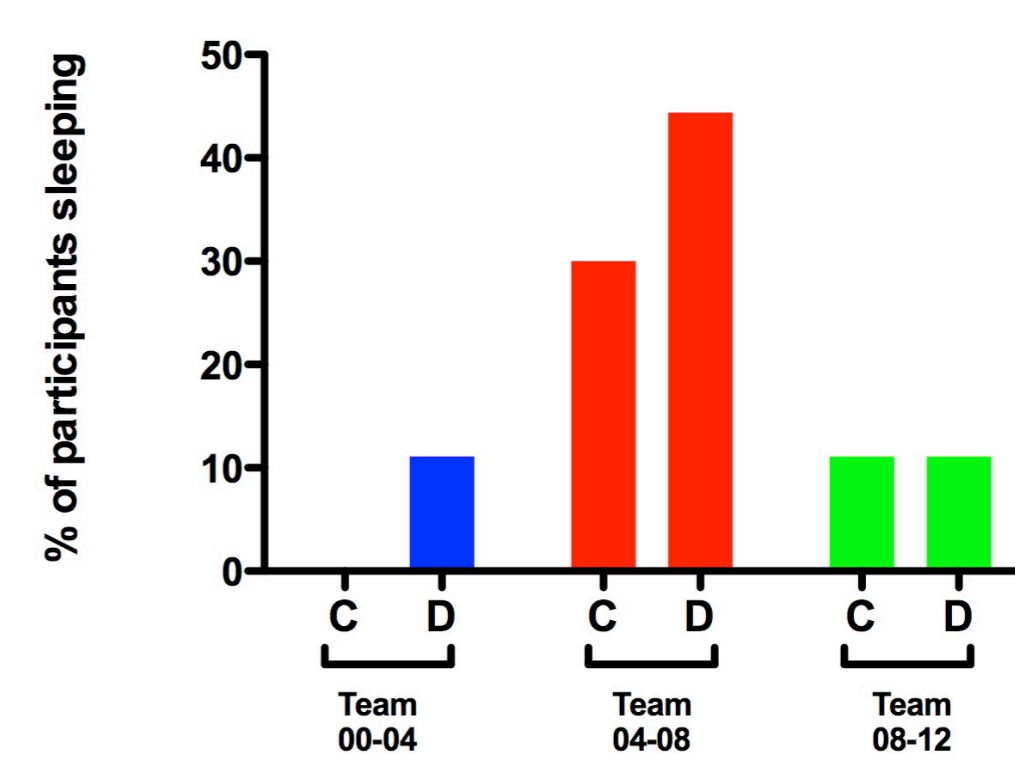
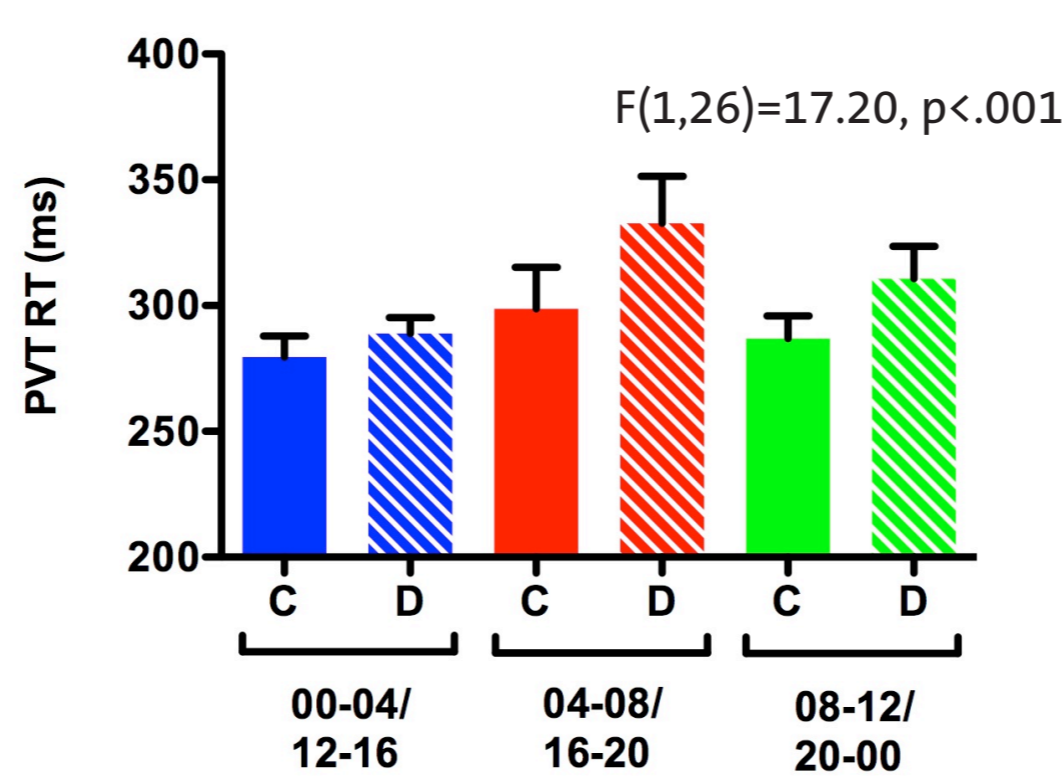
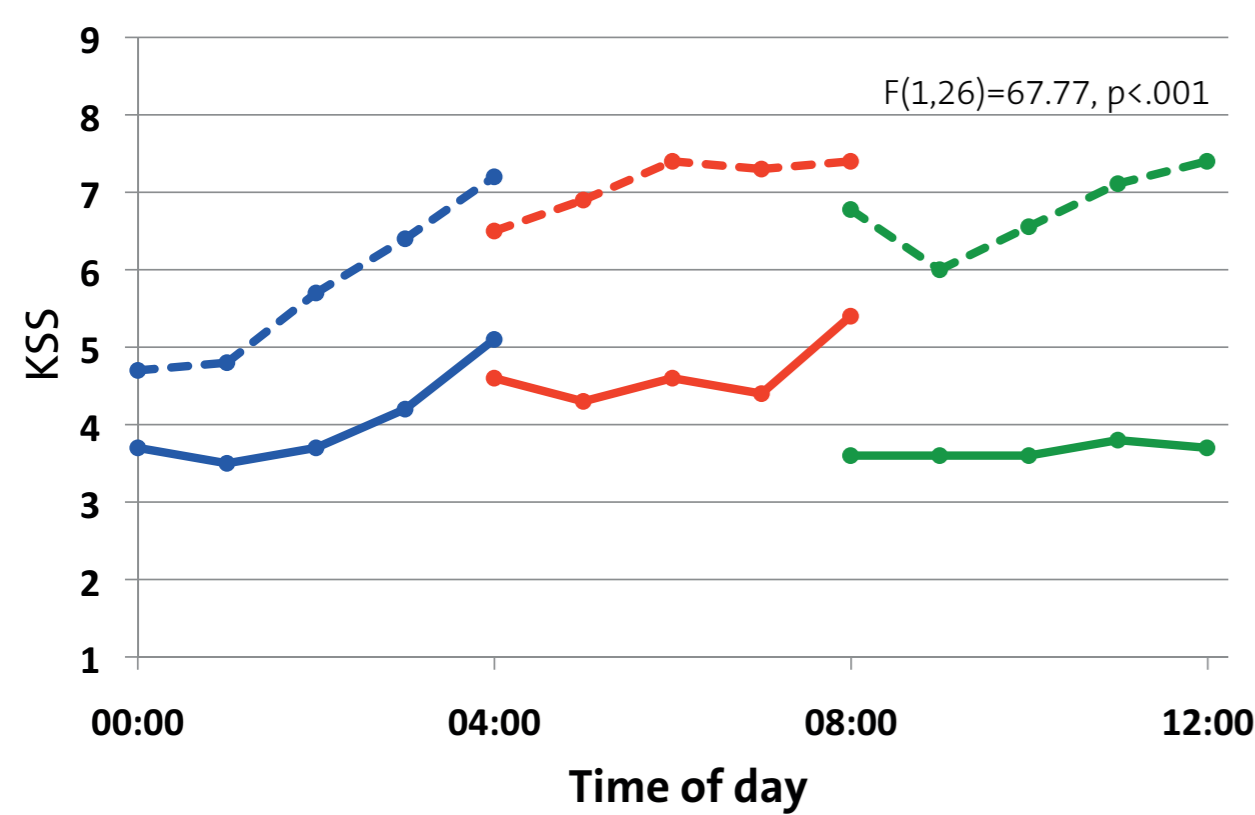


...when also most sleep on duty occurs.



Disturbance, by paper work, of a single free watch increases sleepiness in all watch teams during the following watch...

In terms of Karolinska Sleepiness Scale (KSS) & Psychomotor Vigilance Test (PVT) reaction time. Sleep on watch increases after a free watch disturbance

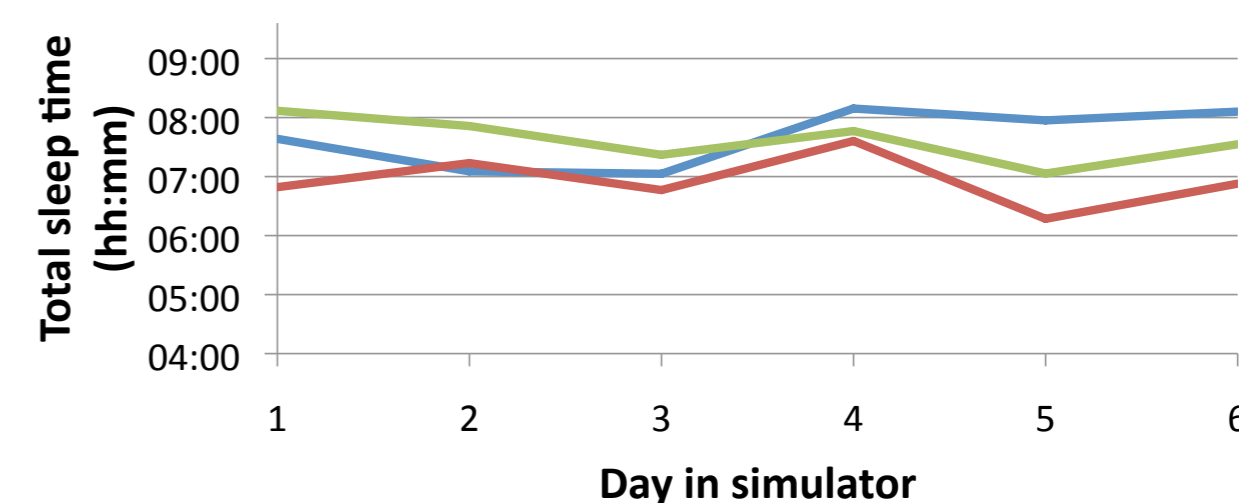


Methods

30 bridge officers (aged 30 ± 6 yrs; 29 men) with on average 7 years experience at sea participated in 5 parallel bridge simulators during two separate experimental weeks. The 3 watch teams started with a full training day in the simulators and then, from day 1 on, started an identical voyage in the North Sea and the English Channel. The free watch disturbance was counterbalanced and took place between day 2 and 3 or day 5 and 6 (see Figure; red =work, green = time off). Participants rated their sleepiness every hour (Karolinska Sleepiness Scale, KSS) and carried out a 5-minute psychomotor vigilance test (PVT) at the start and the end of every watch. In addition, EEG was recorded during six watches (see Figure).

Repeated measures ANOVAs were used with day (D), watch (W), and hours in watch (H) as within subject factors and watch team (T) as between subject factor. Only significant effects (p<.05) are indicated with their F values.

The daily total sleep duration was lowest for the team working 04-08 and 16-20



CONTACT