Verbal episodic memory is relatively spared in elderly insomniacs

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It has been shown that cognitive performance and sleep efficiency decreases with age. Studies on relationships between sleep and cognitive performance in insomnia patients have given equivocal results. We compared episodic verbal memory performance of elderly insomniacs and age matched controls and explored the relationship with subjective sleep quality.
39 Unmedicated elderly with insomnia as evaluated by the Dutch Sleep Disorders Questionnaire and the Pittsburgh Sleep Quality Index, were compared to 14 age matched controls. The subjects completed the Athens Insomnia Scale, the Epworth Sleepiness Scale (ESS), Buschke Selective Reminding Test (SRT) with a 20 minute delayed recall and a visual verbal learning task using unrelated word-pairs with an overnight recall (VPA).
Insomniacs reported significantly more complaints on all sleep-related scales but the ESS, compared to the controls. Within the controls, daytime sleepiness was associated with impairment of short-term memory performance on the VPA ($r=-0.68$, $p<0.05$) and SRT($r=-0.51$, $p<0.05$), wordlist learning correlated positively with subjective sleep quality SRT($r=-0.70$, $p<0.05$) and overnight word-pair retention was negatively related to subjective insomnia severity ($r=-0.78$,$p<0.01$). Surprisingly, the insomniacs performed *better* on wordlist learning than the controls ($t= 2.19$, $p<0.05$), and both wordlist learning and retention correlated moderately *positive* with subjective sleep complaints and subjective insomnia severity within in the insomniacs ($r>0.26$ & $r<0.42$, $p<0.05$).
Thus, in healthy elderly verbal word-pair learning and overnight retention were impaired when subjective sleep was suboptimal and daytime sleepiness negatively affected verbal learning. However, in elderly insomniacs wordlist learning and short-term retention were enhanced with increased subjective insomnia severity and daytime sleepiness did not affect verbal learning. This relatively spared cognitive performance seen in elderly insomniacs might be related to an increased arousal level, which has been proposed as a mechanism involved in insomnia. We hypothesize that hyper arousal in insomniacs may counteract their age-related cognitive performance decline.

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