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Title: Impact of gender on driving performance on an office based advanced driving simulator (MiniSim)

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Body: Introduction- Untreated OSAS patients are at increased risk of having road traffic accidents. We have previously shown that untreated OSAS patients perform worse on the MiniSim than controls (failure rate-24% v/s 12%, p-0.03, OR-2.2). Previous simple simulator studies have suggested that women perform differently during simulated driving than men. However women are less likely than men to be involved in accidents while driving at speed, suggesting that simple simulators may be less useful for predicting accident risk in women. We investigated the effect of gender upon performance on the MiniSim. Methods- 178 (52+/-11 yrs, ESS 13+/-7, ODI 32+/-24, males-154, females-24) untreated OSAS patients and 95 controls (50+/-15 yrs, ESS 3+/- 2, males-52, females-43) were included. All performed a 90km motorway driving simulation. Outcomes pass or fail, based on preset criteria, were compared between gender in patients and in controls. Results- Females perform worse on a driving simulator task when compared to males both in controls and in patients respectively.

Comparing impact of gender in controls and driving simulator performance

Controls	Fail	No Fail
Females	7 (6%)	36
Males	2 (4%)	50

Chi square, P- 0.03, OR- 4.8

Comparing impact of gender in patients and driving simulator performance

Untreated OSAS Patients	Fail	No Fail
Females	10 (42%)	14

Males	35(23%)	119
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Chi square, P- 0.04, OR- 2.4

Conclusion- PC based driving simulator performance and task failure is gender dependent. This needs to be considered when interpreting results from PC based advanced driving simulators.