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Title: 2-step community screening strategy for OSA

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Body: Introduction: Philips-Netherlands has intended to screen its Dutch employees (13.000) for OSA. For screening is a high specificity needed. Objectives: due to the large number of employees and the small amount of studies on screening for OSA, a screening strategy had to be developed in a pilot study. Methods: 1861 Philips employees were invited by e-mail. Sleep Questionnaires (Q), type IV portable monitoring (PM), and a standard home-polysomnography were done. Uni-variate analysis and logistic regression analysis was performed to determine the optimal screening strategy. OSA was defined as $AHI > 15$, or $AHI > 5$ with symptoms but without overt insomnia. Results: 249 Persons gave informed consent, 235 returned all Q, 190 did both sleep studies and from 176 (9,5%) all data were available. The StopQ, StopBangQ, BerlinQ, Epworth Sleepiness Scale, Pittsburgh Sleep Quality Index, and Athens Insomnia Scale were positive in 45%, 57%, 36%, 9%, 34%, and 7%, respectively. Using PM a $RDI > 15$ was found in 61 persons (35%). Finally, OSA was diagnosed in 65 persons (37%). Age, presence of heart failure or arrhythmias, absence of insomnia, BerlinQ- Question 5 (breathing stops), and 3-way scoring of the BerlinQ and StopBang Q predicted OSA. Step 1 of the screening strategy is based on the mentioned predictor variables, resulting in subjects with a low, intermediate and high probability of OSA. In step 2 the intermediate group is split into low and high probability for OSA, based on PM with a RDI cutoff of 15. This 2- step strategy has a sensitivity of 66%, and specificity of 89%. For an estimated prevalence of 9%, the pos. and neg. predictive values will be 38% and 96%, respectively. Conclusion: Screening for OSA in an employees population is feasible.