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Title: Quality of life among sleep apnea patients before and after treatment with continuous positive airway pressure (CPAP) compared to controls from the general population

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Body: The aim of this study was to compare health-related quality of life between patients with obstructive sleep apnea (OSA) and subjects from the general population. Also, the change in quality of life with CPAP treatment was explored. The OSA subjects (n=822) were untreated newly diagnosed with moderate or severe OSA. The control subjects (n=742) were randomly selected Icelanders ≥40 years old. Quality of life was measured by the Short Form 12 (SF-12) which gives a physical component score (PCS) and mental component score (MCS). Scoring are transformed into a scale ranging from 0 (worst possible health) to 100 (best possible health). The change with CPAP treatment was assessed after two years and 90.1% (n=741) of the OSA subjects finished the follow up. Untreated OSA patients reported worse quality of life than controls (mean PCS 40.1±10.9 vs. 50.7±8.0 for controls (p<0.0001) and mean ± MCS 48.4±10.9 vs. 51.4±4.7 for controls (p<0.0001)). Among OSA patients, both mental and physical health improved from baseline to follow up (mean change for PCS = 2.57±9.4 and for MCS = 2.37 ± 11.12). Altogether, 64% of OSA patients were using CPAP at the follow up and most of them were full users. Among CPAP users, there was an increase in MCS of 2.6 ± 11.1 vs. 1.9 ± 11.3 among non-users and in PCS of 3.0 ± 9.0 vs. 1.8 ± 10.2 among non-users. The difference between users and non-users was however non significant. OSA patients report severely impaired quality of life compared to controls. Both physical and mental health improve from baseline to follow up for OSA patients but the improvement is not significantly greater among CPAP users.