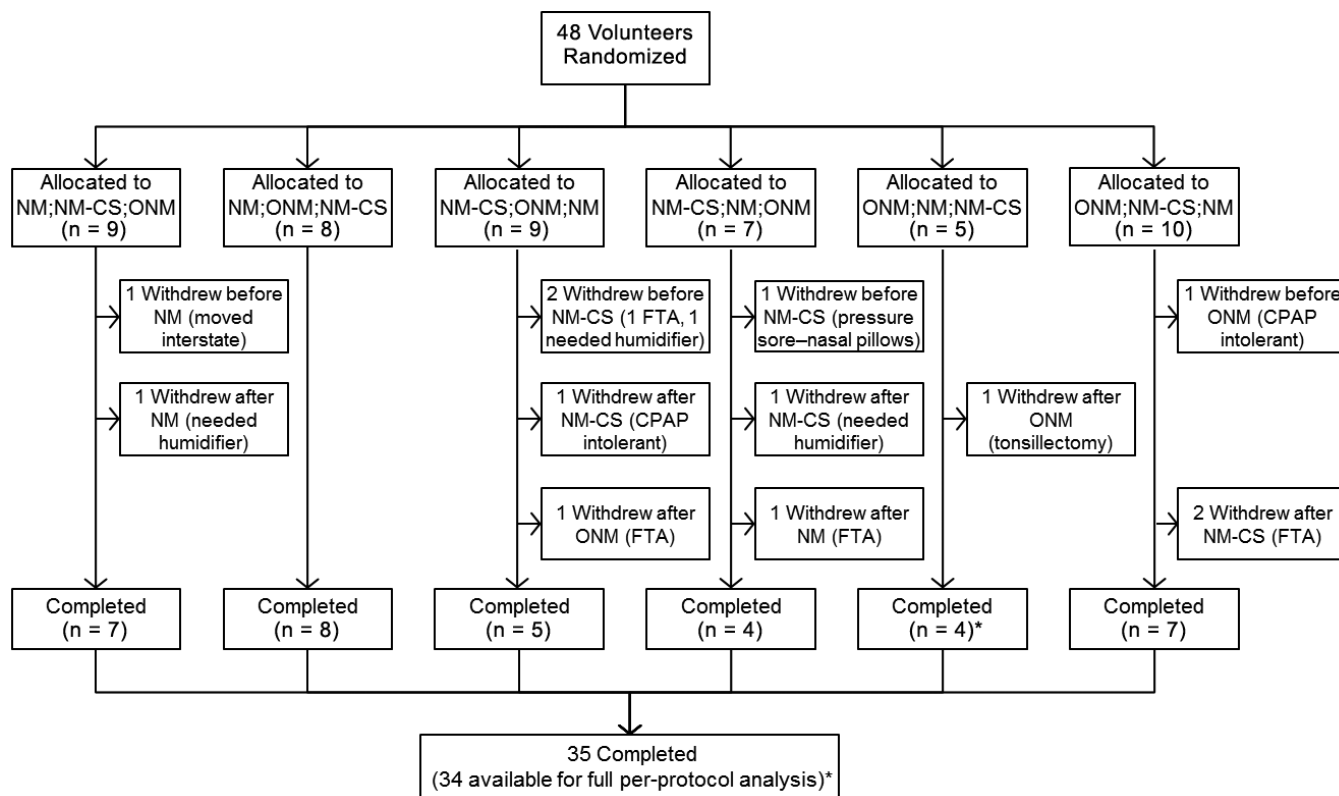


Figure 1—Study flow diagram showing study mask allocations and withdrawals.



* = a faulty CPAP data card led to missing NM treatment data in 1 patient who completed the full protocol. CPAP = continuous positive airway pressure, FTA = failed to attend subsequent appointment, NM = nasal mask, NM-CS = nasal mask with chinstrap, ONM = oronasal mask.

Table 1—Patient characteristics at baseline.

	Full Sample	Complete Data
n (% male)	48 (66.7)	34 (67.6)
Age (years)	54.9 ± 13.1	56.6 ± 1.8
Height (cm)	170.1 ± 8.1	170.3 ± 1.4
Weight (kg)	103.9 ± 20.7	103.4 ± 3.6
BMI (kg/m ²)	35.8 ± 7.2	35.3 ± 1.1
AHI (events/h)	55.6 ± 21.1	57.6 ± 3.6
ESS	9.4 ± 4.3	9.3 ± 0.7
CPAP (cmH ₂ O)	9.7 ± 2.6	10.0 ± 0.4
AHI ≥ 45 (%)	63	64
AHI 30–45 + ESS > 10 (%)	17	18
AHI 30–45 + CV Risk (%)	21	18

Values are mean ± standard deviation or frequency where indicated. AHI = apnea-hypopnea index, BMI = body mass index, CPAP = continuous positive airway pressure, CV = cardiovascular, ESS = Epworth Sleepiness Scale.

with a residual AHI ≥ 10 events/h, but no significant difference between mask interfaces in *post hoc* comparisons.

In backward stepwise multiple regression, baseline AHI, body mass index, and CPAP pressure were the only significant independent predictors of residual AHI with the ONM (standardized β = 0.28, 0.29 and −0.79; P = .026, .030 and < .001 respectively; adjusted model r² = 0.53, P < .001).

Mask Comfort Questionnaire

Data on symptoms or complaints with each interface type are presented in **Table 3**. NM was the easiest mask to fit, caused fewer complaints of mask noise, and was perceived to leak less than the ONM. Other occasional problems included problems fitting the mask, itchiness, hot to wear causing sweating, cold air and teeth sensitivity, and some problems relating to dentures. Patient preference for the NM was significantly greater than for the NM-CS and ONM.

DISCUSSION

The selection of a CPAP mask interface is made with the objective of achieving maximum adherence and therapeutic benefit, hence patient comfort and an effective seal are critical. There was no significant difference in the level of CPAP adherence between mask types, but time in large leak was higher in the ONM versus NM, and the NM was perceived to be easier to fit and keep in place, to leak less, be quieter, and provide a more restful sleep than the ONM. Patient preference was for the NM.

Given that early CPAP adherence and side effects have been shown to be independent predictors of long-term CPAP adherence,⁶ it is perhaps surprising that CPAP adherence was not different between the three different CPAP interface types. An early study by Mortimore et al.¹⁹ demonstrated a