OBSTRUCTIVE SLEEP APNOEA (OSA) IN REGIONAL AND REMOTE INDIGENOUS AUSTRALIANS

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BACKGROUND

Despite Aboriginal and Torres Strait islander people having increased risk factors for OSA (diabetes, obesity) and high levels of comorbid associated conditions (chronic non-communicable diseases) there are currently no published data relating to the nature of sleep-related breathing disorders affecting Indigenous adults. Although there is considerable information from metropolitan services regarding diagnostic and management pathways for OSA, there is less information regarding care for Australians living in regional and remote Australia and particularly for Indigenous Australians.

AIMS/OBJECTIVES

The aim of this study was to compare the use of sleep diagnostic tests, the risks, and cofactors, and outcomes of the care of Indigenous and non-indigenous Australian adults in regional and remote Australia in whom sleep related breathing disorders have been diagnosed.

METHODS

A retrospective cohort study of 200 sequential subjects: 100 Aboriginal and/or Torres Strait Islander people and 100 non-Indigenous Australians in northern Queensland and Central Australia. Subjects were eighteen years or older with a diagnosed sleep disorder (AHI > 15). Retrospective data collected from patients' medical records included: demographics; co-morbidities; BMI; fatigue score; referral source and management details for 12 months following diagnosis. Follow up included the number of reviews booked and number of reviews attended.

Machines can be 'fragile'

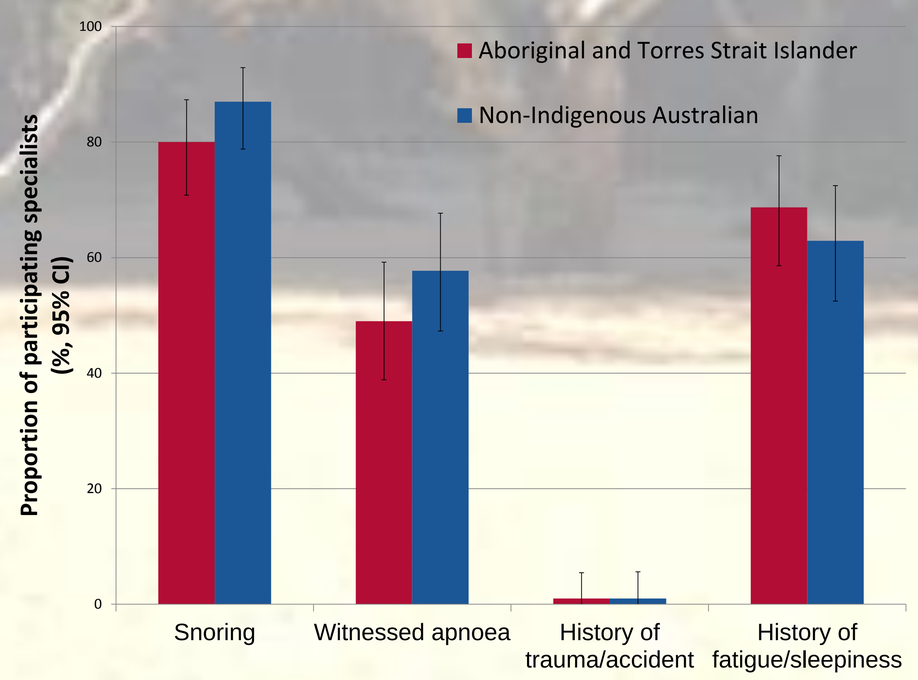
RESULTS

Subject Characteristics

	Aboriginal &/or Torres Strait Islander	Non-Indigenous Australian
Number	100	100
Age (mean,SD)	47.3 (12.6)	50.7 (12.7)
	Ethnicity *n* (%)	
Aboriginal	86 (43%)	-
Torres Strait Islander	12 (6%)	-
Aboriginal & Torres Strait Is.	2 (1%)	-
Gender (% female,95% CI)	48.0 (38 - 57)	26.0 (18 - 36)*
Location (% very remote,95% CI)	37.9 (28 - 48)	8.4 (4 - 16)*
	Co-morbidities *(%,95% CI)*	
Chronic lung disease	34.0 (25 - 44)	22.2 (15 - 32)
Heart disease	28.0 (20 - 38)	13.1 (7- 21)*
Chronic kidney disease	14.6 (8 - 23)	2.50(0 - 9)*
Peptic ulcer disease	19.8 (12 - 30)	22.80 (14 - 34)
Diabetes	51.0 (41 – 61)	24.20 (16 - 34)*
Hypertension	72.0 (62 - 81)	39.40 (30 - 50)*
Upper Airway Obstruction	9.00 (4 -17)	26.30 (17- 38)*
BMI (mean, SD)	40.0 (10.7)	34.9 (10.2)*
(%, 95% CI) *Underweight <20*	0	0
Normal 20-25	1.2 (0. 7)	7.1 (3 -15)
Overweight 26-30	4.9 (1 - 12)	16.7 (9 - 26)
Obese >30	93.8 (86 - 98)	76.2 (66 - 85)
ESS (Median,IQR)	10 (7, 15)	10 (6, 15)
ESS assessed (%,95% CI)	92.0 (85 - 97)	97.0 (92 - 99)

ESS – Epworth Sleepiness Score, *p<0.05

Indication for diagnostic sleep study



Diagnosis and Follow Up

	Aboriginal &/or Torres Strait Islander	Non-Indigenous Australian
Time between referral and diagnostic study (Median weeks, IQR)	27.5 (13.0-62.2)	24.9 (11.7-47.6)
Diagnosis (%, 95% CI)		
Obstructive sleep apnoea	98 (93-100)	97 (91-99)
Central sleep apnoea	0	2 (0 - 7)
Cheyne Stokes respiration	2 (0 - 7)	2 (0 - 7)
Apnoea Hypopnoea Index (AHI) (Median events/hour, IQR)	34.5 (19 - 77)	29.4 (15 - 57)
Treatment recommendation (%, 95% CI)		
CPAP	69 (59 - 78)	67 (56 - 76)
ENT referral	3 (1 - 9)	7 (0 - 6)
Lifestyle modification	42 (32 - 52)	14 (8 - 23)*
Bilevel ventilation	3 (1 - 9)	1 (0 - 6)
Follow-up for 12 months following diagnostic study		
Failed to attend any reviews (%, 95% CI)	38 (27 - 49)	19 (11 - 30)*
Time to first review following diagnostic study (Median weeks, IQR)	22.3 (9.9 - 33.3)	20.6 (12.4 - 32.1)

p<0.05

DISCUSSION

Accessing sleep services is a significant issue for Indigenous and non-Indigenous Australians living in regional and remote communities. Aboriginal and Torres Strait Islanders suffering from sleep disorders are more likely to be; younger, female, obese and have a history of chronic disease.

Access to sleep services in these regional and remote communities is poorer than that seen in Australia overall (see Table below), particularly for Aboriginal and Torres Strait Islander people. Reasons for this may include:

1. Population at much lower risk

Unlikely, especially in Indigenous Australians with greater obesity and co-morbidities.

2. Accessing other diagnostic services

Likely for non-Indigenous Australians but unlikely for Indigenous Australians who rarely access private healthcare.

3. Differing referral patterns

Only people perceived likely to be able to attend, afford and/or comply with treatment are referred for diagnostic sleep studies.

Diagnostic study rates

	Aboriginal and Torres Strait Islander	Non-Indigenous Australian	All	*p* value
Number of sleep studies/100,000/yr (95% CI)				
FNQ	44 (32 - 59)	30 (20 - 43)	32 (22 - 45)	0.130
CA	104 (85 - 126)	203 (176 - 233)	163 (139 -190)	<0.001
All	62 (47 - 79)	50 (37 - 66)	52 (39 - 68)	0.298
P Value	<0.001	<0.001	<0.001	
Number of positive sleep studies/100,000/yr (95% CI)				
FNQ	30 (20-43)	16 (9 -26)	18 (11 - 28)	0.054
CA	73 (57-92)	121 (100 - 144)	101 (82 - 123)	<0.001
All	43 (31-58)	28 (19 - 40)	31 (21 - 44)	0.095
P Value	<0.001	<0.001	<0.001	

Overall Australian rate (2012) 575/100,000/pa

FNQ – Far North Queensland, CA – Central Australia

There is a poorer uptake of treatment following sleep studies in Indigenous Australians. This may occur because:

1. more remote and more limited access to follow-up services
2. cost implications (replacement of machines, masks etc).

CONCLUSION

Appropriate and more accessible diagnostic and treatment sleep services are required in regional and remote Australia. Further research is required to validate appropriate screening tools and pathways of care especially for Aboriginal and Torres Strait Islander peoples.

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