TITLE

Obesity and its association with sociodemographic factors, health behaviours, and health status among Aboriginal and non-Aboriginal adults in New South Wales, Australia

RUNNING TITLE

Obesity among Aboriginal and non-Aboriginal adults

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SUPPORTING INFORMATION FILE 1

Socio-demographic variables included: sex; age (categorised as 45-64 versus 65 years and older, and when used for adjustment, in 5-year increments up to age <80, and ≥80 years); annual household income before tax (<$20000, $20000-$39999, $40000-$69999 or ≥$70000); highest qualification (no school certificate, school certificate, trade/apprenticeship/certificate/diploma, or university degree); and employment status (employed or not employed). Remoteness was categorised as major city, regional area or remote area, based on the postcode's mean Accessibility Remoteness Index of Australia Plus score.[1] Area-level disadvantage was measured using the 2006 Socio-Economic Index for Areas (SEIFA) Index of Relative Socio-Economic Disadvantage,[2] collapsed into study population tertiles: most disadvantaged (SEIFA values 639-970), middle disadvantage (971-1013) and least disadvantaged (1014-1 149).

Health behaviour variables included: smoking status (ex-, current, or never-smoker); average daily fruit and average daily vegetable consumption (<2 or ≥2 and <5 or ≥5 servings respectively[3]); and alcohol consumption (0, 1-14 or ≥14 drinks per week). The average number of sessions of physical activity longer than 10 minutes,[4] weighted by activity vigorousness, was categorised as <7, 7-14 or ≥14 sessions per week. Total daily screen-time was categorised as 0-3, 3-5 or ≥5 hours per day, and standing time as 0-3, 3-6 or ≥6 hours per day, based on responses to the question 'About how many hours in each 24 h day do you usually spend doing the following: watching television or using a computer; sitting; sleeping; standing?'
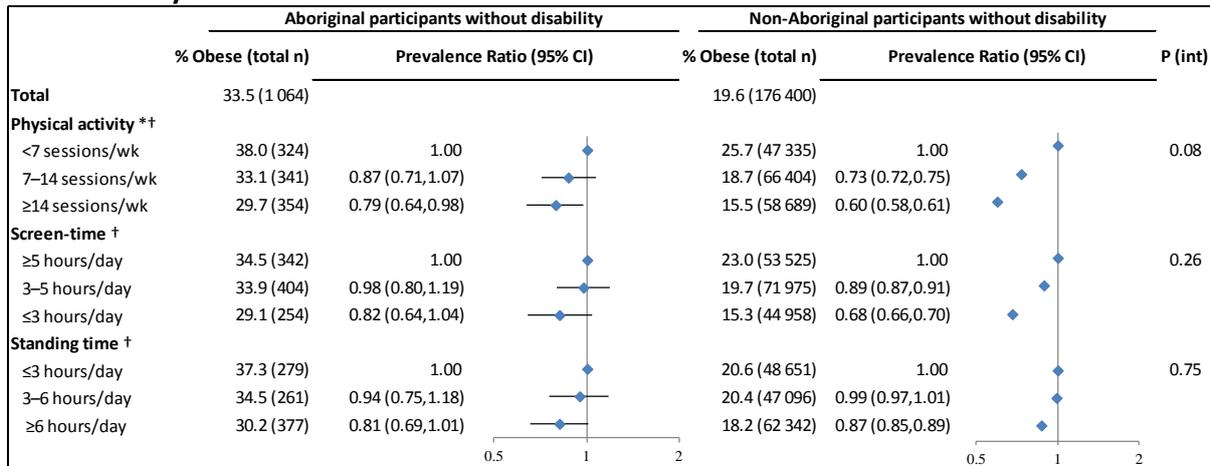
Health status: Participants were defined as having prior serious illness if they self-reported a doctor diagnosis of heart disease, stroke or diabetes. Self-rated health was categorised as excellent/very good, good or fair/poor. Level of psychological distress was based on participants' Kessler Psychological Distress (K-10) score,[5-7] categorised as low (<16), moderate (16-22), high (22-30) or very high (≥30). Functional limitation was based on the physical functioning subscale of the Medical

Outcomes Score;[8] participants were categorised as having no limitation (scores of 100), minor/moderate limitation (75-<100) or moderate/severe limitation (<75). Participants were defined as having a disability if they reported needing assistance with daily tasks because of long-term illness or disability. Participants were categorised as full-time carers (caring for a sick or disabled person 20+ hours per week), part-time carers (<20 hours per week) or non-carers (0 hours).

SUPPORTING INFORMATION FILE 2

Given the potential link between functional limitation and ability to be physically active, we conducted additional analyses excluding participants with disability or functional limitation for the calculation of obesity PRs by physical activity, screen-time and standing time (Figure S1). After excluding participants with disability or functional limitation, the relationship of BMI to physical activity, screen-time and standing time within the Aboriginal and non-Aboriginal samples did not materially change, and the interactions for physical activity and screen-time were no longer significant (p-value for interaction=0.08, 0.26); the p-value for interaction for standing time remained non-significant (0.75). This demonstrates the importance of considering obesity risk and preventive factors within the context of people's capabilities.

Figure S1: Obesity prevalence and prevalence ratios among Aboriginal and non-Aboriginal participants according to physical activity, screen-time and standing time, excluding participants with disability or functional limitation

	Aboriginal participants without disability		Non-Aboriginal participants without disability		P (int)
	% Obese (total n)	Prevalence Ratio (95% CI)	% Obese (total n)	Prevalence Ratio (95% CI)	
Total	33.5 (1 064)		19.6 (176 400)		
Physical activity *†					
<7 sessions/wk	38.0 (324)	1.00	25.7 (47 335)	1.00	0.08
7–14 sessions/wk	33.1 (341)	0.87 (0.71,1.07)	18.7 (66 404)	0.73 (0.72,0.75)	
≥14 sessions/wk	29.7 (354)	0.79 (0.64,0.98)	15.5 (58 689)	0.60 (0.58,0.61)	
Screen-time †					
≥5 hours/day	34.5 (342)	1.00	23.0 (53 525)	1.00	0.26
3–5 hours/day	33.9 (404)	0.98 (0.80,1.19)	19.7 (71 975)	0.89 (0.87,0.91)	
≤3 hours/day	29.1 (254)	0.82 (0.64,1.04)	15.3 (44 958)	0.68 (0.66,0.70)	
Standing time †					
≤3 hours/day	37.3 (279)	1.00	20.6 (48 651)	1.00	0.75
3–6 hours/day	34.5 (261)	0.94 (0.75,1.18)	20.4 (47 096)	0.99 (0.97,1.01)	
≥6 hours/day	30.2 (377)	0.81 (0.69,1.01)	18.2 (62 342)	0.87 (0.85,0.89)	

Participants were excluded if they reported major disability (needing assistance with daily tasks because of long-term illness or disability) or moderate/severe functional limitation (<75 on the physical functioning subscale of the Medical Outcomes Score); 451 Aboriginal participants (50.1% obese) and 36 901 non-Aboriginal participants (35.3% obese) were excluded from these analyses. Prevalence Ratios are adjusted for age (in 5-year increments up to age <80, and ≥80 years) and sex.

*Significant trend across categories among Aboriginal participants.

† Significant trend across categories among non-Aboriginal participants.

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