

Stress in the workplace, occupation and the risk of unhealthy weight in Baby Boomers and Generation X workers in South Australia, Australia.

Pilkington R¹, Taylor AW¹, Hugo G² & Wittert G¹

¹The Discipline of Medicine, ² Geography Environment and Population; The University of Adelaide, Australia.

Introduction

The workplace has been targeted as an ideal setting in which to create a health-promoting environment with the aim of decreasing rates of overweight and obesity.

In Australia, Baby Boomers (1946-65) and Generation X (1966-80) make up 77% of the working population ¹ with 70% of these cohorts overweight or obese².

The aim of this study is to examine generational differences in the association between work stress, occupation, psychological distress and the risk of overweight and obesity.

The results will highlight specific groups that may be at increased risk of overweight or obesity.



Methods

Baby Boomers and Generation X cohort participants from the North West Adelaide Health Study (NWAHS) and the Florey Adelaide Male Ageing Study (FAMAS), both of which are population-based longitudinal biomedical studies, were asked to partake in a telephone survey in October 2011 as a part of an Australian Research Council funded project, "Australia's Baby Boomer Generation, Obesity and Work – Patterns, Causes and Implications" (LP0990065). A detailed description of both cohorts is available elsewhere ^{3, 4}.

Data from the 2011 survey were linked to clinic-measured waist circumference (WC) and multivariable logistic regression models on weighted data were conducted with high WC (Males ≥95cm; Females ≥80cm)⁵ as the dependant variable.

Job strain, occupation and psychological distress were the independent variables. Work related stress was defined using the Karasek job demand/control model which hypothesizes that an individual working in a position with low control and high demands, will experience high job strain⁶ which in turn will lead to an increased risk of ill health⁷. The Kessler-10 is a ten item self-report screening tool based on anxiety and depressive symptoms that was used to measure psychological distress⁸. Occupation was self-report.

All models were adjusted for sex, education and shift work status; age was also adjusted for in the stratified models. Model 1 included generation as a covariate. Model 2 examined only Generation X and Model 3 only Boomers. Adjusted odds ratios (OR) and 95% confidence intervals are reported.

Results

Generation X respondents were aged from 31 to 45 at time of survey and Baby Boomers were aged 46 to 65 years. The mean age was 46 years and 49.4% of respondents were male.

Table 1 presents the fully adjusted models for three separate analyses examining the association between job strain, occupation, psychological distress and a high waist circumference.

Model 1 with generation as a covariate, demonstrates that Baby Boomers, community and personal service workers, and respondents with psychological distress had increased odds of a high WC.

Model 2, examining Generation X only, demonstrates that having a low strain or passive job, working as community and personal service workers and experiencing psychological distress is associated with a high WC.

Model 3 presents results for Baby Boomers and illustrates that those in a low strain position were significantly less likely to have high WC and community and personal service workers demonstrated greater odds of high waist circumference.

Table 1 : Associations between Job strain, occupation, psychological distress and a high waist circumference

	Model 1		Model 2		Model 3	
	Generation as covariate (adj. sex, shift work, education & physical activity)		Generation X only (adj. age, sex, shift work, education & physical activity)		Baby Boomers only	
	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)
Generation membership						
Generation X	1.00	(ref)				
Baby Boomers	1.62	(1.27-2.10)				
Job strain						
Active Job (High control high demands)	1.00	(ref)	1.00	(ref)	1.00	(ref)
Low Strain (High control low demands)	1.41	(0.98-2.02)	3.31	(1.95-5.64)	0.47	(0.27-0.83)
Passive Job (Low control low demands)	1.27	(0.88-1.82)	1.95	(1.10-3.46)	0.67	(0.39-1.15)
High Strain (Low control high demands)	1.14	(0.79-1.66)	1.61	(0.93-2.78)	0.68	(0.38-1.23)
Occupation						
Managers	1.00	(ref)	1.00	(ref)	1.00	(ref)
Professionals	1.36	(0.86-2.15)	1.3	(0.66-2.56)	1.43	(0.73-2.80)
Technicians & trades workers	0.65	(0.40-1.06)	0.49	(0.24-1.01)	0.85	(0.41-1.75)
Community & personal service workers	2.31	(1.28-4.16)	3.06	(1.16-8.10)	2.17	(1.00-4.72)
Clerical & administrative workers	1.41	(0.86-2.31)	1.34	(0.60-2.99)	1.64	(0.85-3.18)
Sales workers	1.44	(0.80-2.63)	1.29	(0.52-3.19)	1.75	(0.73-4.22)
Machinery operators & drivers	0.77	(0.46-1.58)	0.43	(0.17-1.10)	1.35	(0.53-3.45)
Labourers	1.39	(0.84-2.65)	2.01	(0.81-5.02)	1.06	(0.48-2.36)
Psychological distress						
No psychological distress	1.00	(ref)	1.00	(ref)	1.00	(ref)
Psychological distress	1.77	(1.20-2.60)	2.58	(1.45-4.58)	1.31	(0.74-2.31)

Conclusions

Our research has investigated the relationship between job strain, occupation, psychological distress and high WC in Generation X and Baby Boomers.

This study does not lend support to the theory that high job strain (low control, high demands) has a relationship with overweight or obesity, as the Karasek theory might suggest⁶.

Odds of a high WC is greater for Generation Xers in low strain and passive jobs and with psychological distress. This reaffirms the relationship between depression and obesity demonstrated previously⁹ and raises questions about the role of job demands in the development of unhealthy weight.

Community and personal services workers demonstrated significantly higher odds of a high waist circumference for both generations. Table 2 displays the specific occupations within this category.

Table 2 : Occupations within the 'community and personal services category'

Occupation	Examples
Health and welfare support workers	Ambulance officers, paramedics, enrolled nurses, massage therapists
Carers and aides	Child carers, education aides, personal carers
Hospitality workers	Bar attendants, café workers, gaming workers, waiters
Protective service workers	Defence force members, fire fighters, police, prison and security officers
Sports and personal service workers	Fitness instructors, sports coaches, driving instructors, tourism guides

Source: Australian New Zealand Standard Classification of Occupations, First Edition

Many of these positions involve shift work which has an accepted relationship with weight gain,¹⁰ although this was adjusted for in the analysis. These occupations are also involved in what could be referred to as 'people work' with previous research suggesting that working in the services sector increases stress and impacts on psychological and physical health^{11,12}.

This research highlights specific groups at risk of overweight and obesity that should be targeted in workplace programs and policies to support the adoption of healthy behaviours.

References

- 2006 Census of Population and Housing Labour Force Status by AGE and Sex [database on the Internet]. Australian Bureau of Statistics 2006 [cited 24/09/2012]. Available from: <http://www.censusdata.abs.gov.au/ABSNavigation?prenav/ViewData?action=404&documentproductno=08&documenttype=Details&order=1&tabname=Details&areacode=08&issu=2006&producttype=Census>
- Australian Institute of Health and Welfare. Australia's health 2010. Canberra. AIHW 2010.
- Grant JF, Taylor AW, Ruffin RE, et al. Cohort Profile: The North West Adelaide Health Study (NWAHS). Int J Epidemiol. 2008 Dec;38(6):1479-86.
- Martin S, Haren M, Taylor A, et al. Cohort profile: the Florey Adelaide Male Ageing Study (FAMAS). Int J Epidemiol. 2007 Apr;36(2):302-6.
- World Health Organisation. Waist circumference and Waist-hip ratio: Report of a WHO expert consultation. Geneva 2008 8-11 December.
- Karasek R, Brisson C, Kawakami N, et al. The Job Content Questionnaire (JCQ): an instrument for internationally comparative assessments of psychosocial job characteristics. J Occup Health Psychol. 1998 Oct;3(4):322-55.
- Ostry AS, Radi S, Louie AM, et al. Psychosocial and other working conditions in relation to body mass index in a representative sample of Australian workers. BMC Public Health. 2006;6:53.
- Andrews G, Slade T. Interpreting scores on the Kessler Psychological Distress Scale (K10). Aust N Z J Public Health. 2001 Dec;25(6):494-7.
- Luppino FS, de Wit LM, Bouvy PF, et al. Overweight, obesity, and depression: a systematic review and meta-analysis of longitudinal studies. Arch Gen Psychiatry. 2010 Mar;67(3):220-9.
- Gelleber A, Gluck ME, Tanowitz M, et al. Work-shift period and weight change. Nutrition. 2000 Jan;16(1):27-9.
- Dollard MF, LaMontagne AD, Caulfield N, et al. Job Stress in the Australian and International Health and Community Services Sector: A Review of the Literature. International Journal of Stress Management. 2007 ;14(4):417-45.
- Borritz M, Rugulies R, Bjorner JB, et al. Burnout among employees in human service work: design and baseline findings of the PUMA study. Scandinavian journal of public health. 2006;34(1):49-58.

