

Chittleborough C¹, Phillips P², Baldock K¹, Taylor A³, & the North West Adelaide Health Study Team

¹ Diabetes Clearing House, Population Research and Outcome Studies Unit, South Australian Department of Health

² Endocrinology, The Queen Elizabeth Hospital, South Australia

³ Population Research and Outcome Studies Unit, South Australian Department of Health

INTRODUCTION

Men and women have different biological and social experiences of health, therefore sex specific analyses are necessary to quantify and explore these differences. This study aimed to examine differences in demographic and risk factor profiles between males and females with impaired fasting glucose (IFG) in a representative population sample.

METHODS

Data were obtained from the North West Adelaide Health Study (n=4060), a representative cohort designed to study a large population sample by stage of disease. All households within this region with a telephone connected and the telephone number listed in the Electronic White Pages were eligible for random selection. Within each household, the person who had their birthday last and was aged 18 years or older, was selected for interview and invited to attend the Study clinic. Of those interviewed, 69% participated in the clinic visit, where biomedical data was collected.

Demographic and self-reported risk factor information was obtained via questionnaire. IFG was defined as a fasting plasma glucose (FPG) level of at least 6.1mmol/L and less than 7.0mmol/L.

RESULTS

The prevalence of IFG among males was 6.2% (95% CI 4.8–6.9), which was statistically significantly higher than the prevalence among females (3.1%; 95% CI 2.3–3.7).

Table 1: Multivariate odds ratios for females (n=1949) for factors associated with IFG compared to normal glucose

Variable	%	OR	(95% CI OR)	p value
Age group				
18 to 49 years	0.8	1.00		
50 to 59 years	5.4	6.32	(2.65 – 15.08)	<0.001
60 to 69 years	5.8	6.53	(2.51 – 17.04)	<0.001
70+ years	9.7	9.19	(3.76 – 22.44)	<0.001
Area of residence				
Western suburbs	1.8	1.00		
Northern suburbs	4.2	2.94	(1.53 – 5.67)	0.001
Alcohol risk				
Non drinker	4.8	1.00		
Low risk	2.2	0.73	(0.38 – 1.38)	0.33
Intermediate to very high risk	7.3	2.98	(1.10 – 8.05)	0.03
High waist hip ratio (>1.0 men, >0.85 women)				
No	1.6	1.00		
Yes	8.3	3.12	(1.71 – 5.71)	<0.001

Multivariate logistic regression showed that females with IFG were significantly more likely to be aged 50 years or over, living in the northern suburbs of Adelaide, and consume alcohol at an intermediate to very high risk level (for females: average daily intake of 4 drinks, or 9-12 drinks in any day) than females with normal glucose (Table 1).

Multivariate logistic regression showed that males with IFG were significantly more likely to be aged 50 years or over, living in the northern suburbs of Adelaide, consume alcohol at a low risk level (for males: average daily intake of 4 drinks, or 9-12 drinks in any day), have high blood pressure, and have high cholesterol than males with normal glucose (Table 2).

IFG was associated with obesity in males as measured by body mass index, but for females IFG was associated with a high waist hip ratio.

Table 2: Multivariate odds ratios for males (n=1844) for factors associated with IFG compared to normal glucose

Variable	%	OR	(95% CI OR)	p value
Age group				
18 to 49 years	3.8	1.00		
50 to 59 years	12.8	2.59	(1.57 – 4.26)	<0.001
60 to 69 years	10.9	2.13	(1.16 – 3.93)	0.02
70+ years	9.5	2.42	(1.29 – 4.51)	0.006
Area of residence				
Western suburbs	3.5	1.00		
Northern suburbs	8.5	2.63	(1.68 – 4.12)	<0.001
Alcohol risk				
Non drinker	5.7	1.00		
Low risk	10.5	1.76	(1.05 – 2.92)	0.03
Intermediate to very high risk	4.7	0.84	(0.36 – 1.95)	0.68
Body Mass Index				
Acceptable (BMI <25.0)	3.1	1.00		
Overweight (BMI 25.0 – 29.9)	6.0	1.35	(0.76 – 2.40)	0.31
Obese (BMI ≥ 30.0)	10.8	2.19	(1.20 – 3.98)	0.01
High blood pressure (≥140/90mmHg)				
No	3.6	1.00		
Yes	13.0	2.34	(1.52 – 3.59)	<0.001
High total cholesterol (≥5.5mmol/L)				
No	4.7	1.00		
Yes	9.2	1.58	(1.06 – 2.37)	0.03

CONCLUSIONS

The prevalence of IFG was higher among males, but males and females with IFG had similar demographic and risk factor profiles, including age, area of residence and obesity. High blood pressure and high cholesterol was associated with IFG among males but not females, and an interesting difference was that body mass index was associated with IFG among males, whereas waist hip ratio was significant for females.