

Conclusions: The association between geographical area and cervical cancer persists after controlling for 10 other factors. The results are consistent with a multiple infectious aetiology of cervical cancer and suggest that there may be additional risk factors associated with geographical characteristics.

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Desire for the body normal: body image and discrepancies between self reported and measured height and weight in a British population

ICRF GPRG,
Department of Public
Health and Primary
Care,
University of Oxford,
Gibson Building,
Radcliffe Infirmary,
Oxford OX2 6HE
S Ziebland
A Fuller
J Muir

Health Promotion
Sciences Unit, London
School of Hygiene and
Tropical Medicine,
London
M Thorogood

Correspondence to:
Ms S Ziebland.

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Sue Ziebland, Margaret Thorogood, Alice Fuller, John Muir

In surveys of self reported height and weight a systematic bias towards declaring more inches and fewer pounds than is confirmed by subsequent objective measurement has been noted.^{1,2} A recent analysis of 11 284 participants in the North American national health and nutrition examination survey found that weight and height were reported with only small errors on average, but misclassification was significant within important subgroups. Heavier people under reported their weight and exaggerated their height more than lighter people. It was

concluded that these systematic discrepancies were consistent with American cultural ideals.³ Data are therefore presented to examine the possibility that these biases may be found in a British population.

During the OXCHECK trial of nurse health checks in general practice, a health and lifestyle questionnaire was completed at the study outset. A health check was subsequently performed and the information from these enables the comparison of self reported height and weight, and also body image, with objective meas-

Table 1 Discrepancies in reported height (in) by measured body mass index

	BMI <20	(95% CI)	BMI 20-24	(95% CI)	BMI 25-29	(95% CI)	BMI >30	(95% CI)
Men								
No	13		392		424		86	
All	0.23	NS	0.35	(0.24,0.46)	0.38	(0.28,0.48)	0.62	(0.41,0.81)
Age group:								
35-44	0.40	NS	0.31	(0.15,0.47)	0.27	(0.08,0.47)	0.54	(0.17,0.92)
45-54	0.33	NS	0.32	(0.12,0.51)	0.37	(0.22,0.52)	0.60	(0.22,0.98)
55-65	0.50	NS	0.47	(0.26,0.69)	0.49	(0.28,0.70)	0.47	(0.27,1.06)
Women								
No	61		542		370		181	
All	0.15	NS	0.37	(0.20,0.46)	0.44	(0.34,0.56)	0.64	(0.48,0.79)
Age group:								
35-44	0.13	NS	0.18	(0.03,0.33)	0.21	(0.16,0.26)	0.40	(0.13,0.66)
45-54	-0.25	NS	0.27	(0.11,0.42)	0.41	(0.26,0.56)	0.30	(0.11,0.50)
55-64	0.46	NS	0.87	(0.69,1.04)	0.68	(0.45,0.92)	1.13	(0.86,1.41)

Table 2 Discrepancies in weight (lb) by measured body mass index

	BMI <20	(95% CI)	BMI 20-24	(95% CI)	BMI 25-29	(95% CI)	BMI >30	95% CI
Men								
No	3		378		435		58	
All	5.67	NS	-0.31	NS	-2.72	(-3.43, -1.99)	-6.98	(-9.56, -4.40)
Age group:								
35-44	(1)	NS	-1.60	(-2.56, -0.64)	-4.44	(-5.61, -3.27)	-10.26	(-16.6, -4.54)
45-54	(1)	NS	-0.33	NS	-1.88	(-3.08, -0.69)	-5.59	(-10.7, -0.50)
55-64	(1)	NS	1.69	(0.22,3.15)	-1.95	(-0.55, -0.36)	-5.23	(-8.39, -2.07)
Women								
No	41		534		385		131	
All	1.66	NS	-1.07	(-1.60, -0.53)	-4.04	(-4.88, -3.20)	-7.34	(-9.22, -5.46)
Age group:								
35-44	0.90	NS	-1.76	(-0.95, -2.56)	-5.73	(-7.43, -4.03)	-10.38	(-13.8, -6.96)
45-54	2.00	NS	-0.97	(-0.10, -1.84)	-3.95	(-5.37, -2.53)	-7.28	(-10.4, -4.22)
55-64	5.60	NS	0.13	NS	-2.68	(-3.92, -1.44)	-5.66	(-8.76, -2.56)

Note: measures above the 95th and below the 5th percentile have been excluded.

Table 3 Body image by measured body mass index and gender

Image	Men				Women			
	BMI <20	BMI 20-24	BMI 25-29	BMI >30	BMI <20	BMI 20-24	BMI 25-29	BMI >30
No	3	366	409	51	35	517	369	124
Too light (%)	(2)	6	-	-	26	2	-	-
About right (%)	(1)	76	27	(2)	67	57	10	-
Too heavy (%)		12	68	96	(1)	37	84	96
Don't know (%)		6	5	-	(1)	4	6	4

urements. The questionnaire was sent to men and women aged 35 to 64 during 1989 (80.3% response rate). The analysis was based on the 2205 (66% of those who were initially sent a questionnaire) who subsequently took up a health check offer during 1989-90. The OX-CHECK method has been previously published.⁴

As measured body mass index increased, so did overestimates of height and underestimates of weight (see tables 1-3). The greatest discrepancy is evident for both men and women with a body mass index over 30. The few respondents (3 men and 41 women) with a body mass index under 20 *over* reported their weight. The oldest age groups for obese men and women had the biggest mean difference between self reported and measured height. It was, however, the younger obese and overweight men and women who had the greatest disparity between self reported and measured weight.

Respondents were asked if they thought they were the right weight for their height, too light, or too heavy. Of those with a body mass index between 20 and 25 ("normal"), 76% of men compared with 57% of women thought that they were about the right weight. Amongst those with a body mass index between 25 and 29 ("overweight") 27% of men but only 10% of women considered their weight "about right".

Discussion: In this sample the gap between self reported and measured height was small and there was no apparent difference between men and women. Adults may be measured rarely and much of the observed discrepancy may be due to simple error, based on measurements performed long ago. Some respondents may be reporting their preferred, rather than actual weight. Women in the "over-

weight" group under report their weight more than men, which may reflect a body image preference for brawny, muscled male bodies and svelte women.

The data reported here are only for those respondents who both completed a health and lifestyle questionnaire and attended a health check. It is possible that these respondents may be more willing, or more able, to provide accurate assessments of their height and weight. The disparity between reported and measured height and weight in this sample may, therefore, be an underestimate of that in the general population.

In 1992, 42% of men and 29% of women were classified as overweight and 12% of men and 15% of women as obese (Office of Population Censuses and Surveys, 1994). The data reported here suggest that overweight men are more satisfied with their bodyshape than overweight women. It may be that what is categorised as a male (BMI) in the overweight range is considered acceptable or even desirable by men. This may explain the apparent anomaly of the higher prevalence of overweight among men and obesity among women. Excess body weight has been highlighted as an increasing problem and researchers using self reported measures need to be aware that under reporting of weight and over reporting of height is positively associated with body mass index.

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