

Why are SHIS findings different from those previously reported by other studies?

SHIS was based on a nationally representative household sample designed to produce national and regional estimates. All interviewers and supervisors used a standardized methodology for household selection and data collection. All laboratory work was done with a standardized approach at a central location. SHIS used computer-assisted personal interviewing (CAPI) to improve the quality and the timeliness of data. The computer software used in data collection (DatStat) included range and consistency checks for all variables, hence eliminating interviewers' errors. Moreover, the software picked the eligible household member at random from a roster, thereby eliminating selection bias at the household level.

Finally, SHIS applied an advanced statistical approach in post-collection management of the data. The final weights used for individuals were based on the probability of selection and a post-stratification factor to ensure a representative sample of the Kingdom. More important, SHIS adjusted for self-selection bias among those who went to the clinic and those who did not. In health studies, sick persons or those who are not feeling well are more likely to accept physical exams and undergo blood analyses. SHIS weights adjusted for this bias and applied an approach to correct the estimates to be representative of the general population and not of those who decided to go to the clinics.

The table below shows that individuals who decided to visit the local health clinic and provide blood samples were different from those who did not. Our analyses showed that individuals who decided to participate were more likely to have health conditions or have been told by a physician that they had a pre-condition. Basically, the group of individuals who agreed to participate was statistically different from the group of those who did not. SHIS applied a weighting methodology that accounted for this difference and produced nationally representative estimates rather than estimates among this self-selected group.

Table: Differences between those who participated in the laboratory exams and those who did not

Factors	Categories	Participated in the lab exam		Bivariate analysis		Multivariate analysis	
		No (row %)	Yes (row %)	Chi ²	P value	Adjusted O.R.	95% C.I.
Gender	Males	3,085 (58.2)	2,211 (41.8)	15.6	< 0.001	Reference	
	Females	3,010 (54.5)	2,515 (45.5)			1.2	1.1 - 1.3
Age	15 - 24	1,406 (59.0)	976 (41.0)	76.8	< 0.001	Reference	
	25 - 34	1,672 (60.6)	1,085 (39.4)			0.9	0.8 - 1.0
	35 - 44	1,314 (56.2)	1,025 (43.8)			1.05	0.9 - 1.2
	45 - 54	774 (50.9)	746 (49.1)			1.2	1.1 - 1.4
	55 - 64	455 (52.8)	407 (47.2)			1.2	1.0 - 1.4
	65 - 74	249 (45.9)	293 (54.1)			1.6	1.3 - 2.0
	75+	173 (51.9)	160 (48.1)			1.2	1.0 - 1.6
Routine medical checkup	Never	4,468 (56.8)	3,401 (43.2)	7.6	0.05		
	Within 2013	997 (54.4)	837 (45.6)				
	within 2012	391 (54.0)	333 (46.0)				
	2005 - 2011	241 (60.2)	159 (39.8)				
Fruit and vegetable consumption	< 5 servings per day	5,592 (56.30)	4,337 (43.7)	0.02	0.9		
	5+ servings per day	343 (56.4)	265 (43.6)				
Current smoking status	Non-smoker	5,189 (54.8)	4,272 (45.2)	65.6	< 0.001		
	Smoker	908 (66.5)	458 (93.5)				
BMI kg/m²	< 25	2,070 (59.7)	1,398 (40.3)	67.7	< 0.001	Reference	
	25.00-29.99	1,195 (57.5)	1,477 (42.5)			1.1	0.9 - 1.2
	30.00-34.99	1,577 (51.5)	1,482 (48.5)			1.3	1.1 - 1.4
	≥ 35	185 (44.8)	228 (55.2)			1.7	1.3 - 2.1
Self-rated health	Excellent or very good	4,626 (58.7)	3,249 (41.3)	73.1	< 0.001		
	Good	1,026 (50.5)	1,004 (49.5)				
	Fair or poor	420 (47.7)	461 (52.3)				
Asthma	No	5,880 (56.5)	4,532 (43.5)	4.6	0.03		
	Yes	200 (51.0)	192 (49.0)				
COPD	No	6,066 (56.3)	4,709 (43.7)	0.7	0.4		
	Yes	14 (48.3)	15 (51.7)				
Pre-diabetes	No	5,996 (56.6)	4,603 (43.4)	20.5	< 0.001	Reference	
	Yes	83 (40.7)	121 (59.3)			1.7	1.2 - 2.2
Diabetes	No	5,415 (57.3)	4,027 (42.7)	31.4	< 0.001		
	Yes	616 (49.0)	641 (51.0)				
Blood pressure	No	5,518 (57.0)	4,161 (43.0)	21.9	< 0.001		
	Yes	511 (49.4)	523 (50.6)				
Cholesterol	No	5,574 (57.0)	4,206 (43.0)	16.3	< 0.001		
	Yes	379 (49.5)	387 (50.5)				
Total		6,097 (56.3)	4,730 (43.7)				