TABLE 31 Prevalence of T2DM in ethnic minorities

Author and year	Mode of assessment	Results						Reasons for differences and other relevant data
Mather *et al.* 1985[141]	Self-reported questionnaires and ascertained from local diabetic clinics			**Asians**	**Europeans**	**Afro-Caribbeans**		Seven times as many Asians as Europeans had been diagnosed between the ages of 30 and 54 years but similar numbers were diagnosed at <25 years BMI were the same in Asian and European populations. Significant differences in BMI between men and women in Asians but not in Europeans Mortality from circulatory disease and ischaemic heart disease was 1.80 and 2.02 times higher, respectively, in South Asians compared with Europeans in those aged 30–64 years at baseline ($p<0.05$) MI requiring hospital admissions and history of laser therapy for retinopathy are higher in South Asians than Europeans No difference was found between Asians and Europeans in stroke, hypertension and amputation
		Sample size		34,230	27,075	3780		
		No. of diabetics		761	324	44		
		Males/females		453/308	162/162			
		Overall prevalence (1981 Census) (%)		6.4	1.2 (5.3 times higher in Asians)			
		3 years' Census adjustment (%)		4.6	1.2 (3.8 times higher in Asians)			
		Men/women (%)		2.6/1.9	1.2			
		Age at diabetes mellitus diagnosis	<25 years	22	27			
			30–54 years	523	76			
		BMI (kg/m^2) (*n*)		25.7 ± 3.9 (*n* = 424)	25.6 ± 4.3 (*n* = 232)			
		Men/women		25.2 ± 3.7/26.7 ± 4.3 ($p<0.001$)	25.5 ± 3.9/25.7 ± 4.8 (NS)			
Mather *et al.* 1998[169] (11-year follow-up study)	Mortality ascertained by death certificates and questionnaire survey for morbidity			**Asians**	**Europeans**	**Rate ratio (95% CI)**		
		Sample size (diagnosed with diabetes mellitus in 1984)		730	304			
		Mean age in 1984 (years)		55	67			
		Deaths		242 (33%)	172 (57%)			
		All-cause mortality rate (number and rate)	30–54 years	72/386 (18.4)	8/57 (13.5)	150 (0.72 to 3.12)		
			55–64 years	95/220 (49.4)	22/63 (39.3)	120 (0.75 to 0.91)		
			65–74 years	56/97 (75.4)	61/94 (87.3)	0.90 (0.62 to 1.31)		
			75+ years	19/27 (116.3)	81/90 (200.3)	0.53 (0.31 to 0.89)		
				Morbidity (*n*/%)				
				Asians	**Europeans**	**OR**	***p*-value**	
		Sample size		461	129			
		MI		82 (20)	9 (8)	3.8 (1.8 to 8.0)	0.001	
		Stroke		53 (13)	11 (9)	1.9 (0.9 to 3.9)	0.1	
		Renal disease		10 (2)	2 (2)	1.8 (0.3 to 9.3)	0.5	
		Laser treatment for retinopathy		149 (36)	32 (27)	1.7 (1.1to 2.8)	0.03	
		Hypertension		189 (45)	47 (40)	1.3 (0.8 to 2.0)	0.2	
		Amputation of leg or foot		12 (3)	3 (3)	1.0 (0.3 to 3.9)	0.9	

Author and year	Mode of assessment	Results				Reasons for differences and other relevant data
Samanta *et al.* 1987[385]	Symptoms and doctor diagnosis		**Asians**	**White Caucasians**		Prevalence of T2DM is significantly higher in Asians in all age bands, approximately twice as high as in white Caucasians
		Sample size	*20,053*	*18,068*		
			Asians	**Caucasians**	**RR (95% CI)**	
		16- to 29-year-olds				
		No. with diabetes	12/9438	0/4619		
		Prevalence (%)	0.1	–	>2	
		30- to 44-year-olds				
		No. with diabetes	77/5569	22/3023		
		Prevalence (%)	1.4	0.7	1.9 (1.1 to 2.9)	
		45- to 64-year-olds				
		No. with diabetes	418/3925	241/4102		
		Prevalence (%)	10.6	5.9	1.8 (1.5 to 2.2)	
		≥ 65 years				
		No. with diabetes	228/1121	516/6324		
		Prevalence (%)	20.3	8.2	2.5 (2.1 to 2.9)	

continued

TABLE 31 Prevalence of T2DM in ethnic minorities (*continued*)

Author and year	Mode of assessment	Results					Reasons for differences and other relevant data
Simmons *et al.* 1989[148] (preliminary results)	Whole blood glucose by glucose oxidase analyser. After overnight fast OGTT was done in screen positives and 10% of screen negatives. Diabetes mellitus ascertained by 1985 WHO criteria		**Asians**		**Whites**		Prevalence of diabetes mellitus was four times higher in Asian men than white men, and twice as high in Asian women as in white women
		Sample size	2283		1710		
		No. screened	2130		1242		
		No. who had OGTT	281		161		
			Males	**Females**	**Males**	**Females**	
		No. of known diabetics	63	47	21	24	
		No. of new diabetics	29	19	4	12	
		No. with IGT	12	18	16	14	
		Unadjusted prevalence of diabetes (%)	8.8	5.7	4	4.6	
		Age-adjusted prevalence (%)	11.2	8.9	2.8	4.3	
		Undiagnosed diabetes mellitus (%)	30		26		
Simmons *et al.* 1991[62] (final results)	Same as above		**Asians**		**Europids**		Undiagnosed diabetes mellitus is higher in Europids than Asians (64.9% vs 40.2%)
		Sample size for screening	3692		3529		
		Known diabetics	223		104		
		Sample size for OGTT	780		719		Asians have higher prevalence of diabetes mellitus and IGT than Europids, more so in males
		New diabetics	98		69		
		IGT	87		104		
			Males	**Females**	**Males**	**Females**	Higher ratio of T2DM to IGT in Asians suggests that greater proportion of Asians with IGT become diabetic
		Overall crude prevalence of diabetes mellitus (%)	9.7	7.5	3.6	6.4	
		Age-adjusted prevalence with 95% CI					
		T2DM (all)	12.4 (11.0 to 13.8)	11.2 (10.0 to 12.5)	3.2 (2.6 to 4.0)	4.7 (4.0 to 5.5)	
		T2DM (known)	7.2 (6.1 to 8.3)	6.8 (5.8 to 7.9)	1.4 (1.0 to 1.9)	1.5 (1.2 to 2.1)	
		T2DM (new)	5.2 (4.4 to 6.3)	4.3 (3.6 to 5.3)	1.8 (1.4 to 2.4)	3.1 (2.5 to 3.8)	
		IGT	9.8 (8.7 to 11.2)	11.2 (10.0 to 12.6)	5.7 (4.8 to 6.6)	6.8 (5.9 to 7.8)	
		Prevalence ratio with 95% CI					
		T2DM/IGT	1.27 (1.17 to 1.51)	0.97 (0.83 to 1.14)	0.56 (0.43 to 0.73)	0.69 (0.58 to 0.82)	
			Europid vs Asians: males		**Europid vs Asians: females**		
		T2DM	3.9 (3.1 to 5.0)		2.4 (2.0 to 2.9)		
		IGT	1.7 (1.4 to 2.1)		1.6 (1.4 to 1.9)		

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Author and year	Mode of assessment	Results						Reasons for differences and other relevant data
Cruickshank *et al.* 1991[149]	Oral GTT with 75 g of glucose after fasting blood samples and followed by 2-hour blood sample. Diabetes mellitus diagnosed by WHO 1985 criteria		**Gujarati Indians**		**Whites**		**Afro-Caribbeans**		Mean fasting and 2-hour C-peptide concentration in Gujarati Indians were significantly higher than the other two groups ($p<0.001$). No significant differences between the White and Afro-Caribbean groups Mean Insulin response levels were higher *only* at 2-hour values in Indians during GTT compared with the other two groups Logistic regression to examine association of C-peptide or insulin concentration with T2DM showed a powerful effect of C-peptide ($p=0.005$) and insulin concentration ($p=0.009$) on T2DM. Once these two were added age, sex and WHR were no longer related to T2DM and the ethnic group was of borderline significance or non-significant
			Males	**Females**	**Males**	**Females**	**Males**	**Females**	
		Sample size	47	60	49	52	53	53	
		Mean (SD)							
		BMI (kg/m^2)	25.2 (3.0)	26.8 (5.0)	26.2 (4.0)	26.3 (5.0)	26.0 (4.0)	29.1 (5.0)	
		WHR	0.946 (0.06)	0.888 (0.09)	0.914 (0.06)	0.835 (0.07)	0.918 (0.06)	0.882 (0.08)	
		SBP (mmHg)	137 (20)	123 (25)	129 (20)	128 (18)	138 (18)	132 (19)	
		DBP(mmHg)	77 (13)	66 (14)	77 (14)	75 (12)	84 (12)	81 (11)	
		IGT							
		% (95%CI)	25 (12 to 38)	32 (20 to 44)	25 (12 to 37)	14 (4 to 23)	4 (0 to 9)	17 (7 to 27)	
		No.	12	19	12	7	2	9	
		New diabetics							
		% (95% CI)	8 (0 to 16)	13 (4 to 22)	4 (0 to 10)	0 13 (4 to 22)	4 (0 to 9)		
		No.	4	8	2		7	2	
		Known diabetics							
		% (95% CI)	23 (11 to 36)	15 (6 to 24)	0	2 (0 to 6)	28 (16 to 40)	13 (4 to 22)	
		No.	11	9		1	15	7	
		Change in C-peptide and insulin during GTT							
			Gujarati Indians		**Whites**		**Afro-Caribbeans**		
		C-peptide (pmol/l): mean (SD)							
		Fasting	924 (589)[a]		801 (311)		780 (392)		
		0.5hr	2058 (845)		2131 (704)		2073 (937)		
		2 h	3705 (2059)[a]		2692 (1056)		2508 (1403)		
		Insulin (pmol/l): mean (SD)							
		Fasting	99.3 (53.0)		68.7 (47.0)		85.4 (56.0)		
		0.5 hour	460 (308)		334 (164)		447 (306)		
		2 hour	626 (453)[a]		312 (215)		390 (322)		
		Notes:							
		a Significantly greater than in other two groups ($p<0.001$ ANOVA)							
		Regression analysis for indicators of T2DM show significant association between T2DM and fasting C-peptide [OR 2.1 (1.4 to 3.0), $p=0.0003$] and insulin concentration [1.77 (1.20 to 2.70), $p=0.004$]							
		Effect of ethnic group is displaced by inclusion of these factors in the model							

GTT, glucose tolerance test.

continued

TABLE 31 Prevalence of T2DM in ethnic minorities (*continued*)

Author and year	Mode of assessment	Results						Reasons for differences and other relevant data
Samanta *et al.* 1991[155]	Plasma glucose at diagnosis and age at diagnosis ascertained by case notes. Complication measured by investigations		**Asians**		**Caucasians**		***p*-value**	Asians are older at diagnosis, have higher rates of diabetes mellitus in the first-degree relative, and less ketonuria at presentation Peripheral vascular disease and retinopathy were less but renal disease was more in Asians than in Caucasians. Ischaemic heart rate was similar between the two ethnic groups
		Sample size	456		451			
		All data number (%) or mean with SD						
		Age at diagnosis (years)	46.5 (12.8)		40.6 (17.5)		<0.01	
		Plasma glucose at diagnosis	18.2 (4.5)		19.3 (4.7)		<0.01	
		No ketonuria at diagnosis	362 (85.3)		202 (47.8)			
		Severe ketonuria	21 (4.9)		99 (23.4)		<0.01 for both status	
		HbA_{1c}	9.4 (2.5)		9.1 (2.3)		<0.05	
		Total cholesterol	5.98 (1.7)		6.01 (1.5)		NS	
		Triglycerides	2.03 (0.5)		2.02 (0.7)		NS	
		BMI (kg/m^2)	26 (0.04)		25 (0.04)		0.05	
		Hypertension	86 (18.5)		85 (19.5)		NS	
		Physical exercise	<0.01					
		Sedentary	122 (26.9)		90 (20.1)			
		Moderate	294 (64.8)		210 (46.9)			
		Active or fit	318 (8.3)		148 (33.1)			
		Complications of diabetes						
			Asians		**Caucasians**			
			Males	**Females**	**Males**	**Females**	***p*-value**	**RR (95% CI)**
		Sample size	283	173	266	185		
		Prevalence of large vessel disease (%)						
		Heart vascular disease	66 (23.8)	48 (27.7)	65 (24.4)	36 (19.5)	NS	1.15 (0.84 to 1.57)
		Perivascular disease	11 (3.9)	6 (3.5)	31 (11.7)	11 (5.9)	<0.05	0.51 (0.27 to 0.96)
		Cerebrovascular disease	8 (2.8)	2 (1.2)	11 (4.1)	5 (2.7)	NS	0.61 (0.27 to 1.37)
		Prevalence of small vessel disease (%)						
		Eye disease	30 (10.6)	23 (13.3)	84 (31.6)	62 (33.5)	<0.01	0.31 (0.19 to 0.51)
		Cataracts	30 (10.6)	15 (8.7)	17 (6.4)	6 (3.2)	Not reported	6.35 (1.43 to 28.16)
		Kidney disease	69 (24.4)	33 (19.1)	35 (13.2)	22 (11.9)	<0.01	3.36 (1.88 to 5.99)
		Raised serum creatinine	27 (9.5)	5 (2.9)	13 (4.9)	12 (6.5)	Not reported	0.65 (0.25 to 1.70)
		Note: The *p*-value is the difference between Asians and Caucasians and not for the RR						

Author and year	Mode of assessment	Results						Reasons for differences and other relevant data
McKeigue *et al.* 1991[58]	Serum insulin by radioimmunoassay based on double-antibody solid-phase technique, cholesterol and triglycerides by enzymatic calorimetric technique Skinfold thicknesses were measured with callipers (Holtain, Dafyd, UK)		**South Asians**		**Europeans**			Prevalence of diabetes was 4.3 times higher, mean serum insulin levels 1.4 times higher in fasting state and 2.1 times higher after glucose in South Asians than in Europeans Total cholesterol was lower in South Asians than Europeans Insulin resistance syndrome in South Asians is due to high dietary energy intake, decreased physical activity, and increased central obesity
			Males	**Females**	**Males**	**Females**		
		Sample size	1421	291	1515	246		
		Note: All results are age-adjusted mean with 95% CI						
		Diabetes						
		Prevalence (%)	19.6 (17.5 to 21.7)	16.1 (11.7 to 20.5)	4.8 (3.7 to 5.8)	2.3 (only six cases)		
		Serum insulin (μL)[a]						
		Fasting	9.8 (9.5 to 10.2)	7.5 (7.0 to 8.0)	7.2 (7.0 to 7.4)	4.8 (4.5 to 5.2)		
		2 hours after glucose	41 (39 to 43)	44 (40 to 48)	19 (19 to 20)	21 (19 to 23)		
		BMI (kg/m^2)	25.7 (25.5 to 25.8)	27.0 (26.5 to 27.5)	25.9 (25.7 to 26.1)	25.2 (24.7 to 25.7)		
		WHR	0.98 (0.97 to 0.98)	0.85 (0.84 to 0.86)	0.94 (0.93 to 0.94)	0.76 (0.75 to 0.77)		
		Total cholesterol (mmol/l)	5.98 (5.91 to 6.04)	5.96 (5.82 to 6.09)	6.11 (6.06 to 6.17)	6.29 (6.16 to 6.43)		
		HDL-C	1.16 (1.15 to 1.18)	1.38 (1.34 to 1.42)	1.25 (1.23 to 1.27)	1.58 (1.53 to 1.62)		
		Fasting triglyceride[a]	1.73 (1.68 to 1.79)	1.38 (1.31 to 1.46)	1.48 (1.44 to 1.52)	1.21 (1.14 to 1.28)		
		% fall in triglyceride						
		Fasting to 2 hours[a]	1 (0 to 2)	8 (6 to 10)	6 (6 to 7)	16 (15 to 18)		
		a Excluding diabetics						
		Afro-Caribbeans (only 209 men) had a high prevalence of diabetes [14.6% (9.6 to 19.5)] but serum insulin levels, BMI and WHR were no higher in this group than in European men. Afro-Caribbeans had lower cholesterol than Europeans (5.87 vs 6.11 mmol/l)						
		CHD risk factors in South Asians, by subgroup, compared with native British men						
			Native British	**Sikh**	**Punjabi Hindu**	**Gujarati Hindu**	**Muslim**	***p*-value[a]**
		Sample size	1268	731	159	127	211	
		Diabetes prevalence (%)	5	20	19	22	19	NS
		Smokers (%)	30	4	21	33	30	< 0.001
		Total cholesterol (mmol/l)	6.12 (0.03)	6.06 (0.04)	5.94 (0.09)	5.45 (0.10)	5.95 (0.08)	< 0.001
		HDL-C	1.24	1.22	1.17	1.14	1.04	< 0.001
		WHR	0.932	0.979	0.981	0.972	0.977	NS
		Median SBP (mmHg)	121	128	126	122	120	< 0.001
		a Differences among South Asian subgroups						

continued

TABLE 31 Prevalence of T2DM in ethnic minorities (*continued*)

Author and year	Mode of assessment	Results					Reasons for differences and other relevant data
			Men		Women		
			South Asians	Europeans	South Asians	Europeans	
McKeigue *et al.* 1992[137] (same study as above but reported relationship of glucose intolerance to body fat pattern)	Serum insulin by radioimmunoassay based on double-antibody solid-phase technique, cholesterol and triglycerides by enzymatic calorimetric technique Skinfold thicknesses were measured with callipers (Holtain, Dafyd, UK)	*Age-standardised prevalence*					Age-standardised prevalence of glucose tolerance (IGT and diabetes) was 26% in South Asians and 7% in Europeans
		IGT (%)	7	3	8	3	The strongest univariate relationship with glucose tolerance were with waist girth, abdominal diameter and subscapular skinfold
		Known diabetic (%)	13	3	9	2	
		New diabetic (%)	6	2	6	0	
		Age-adjusted means for anthropometric measurements					
		Waist girth	92.6	91.1[a]	83.1	75.7[a]	Association was stronger with WHR and subscapular–anterior thigh skinfold ratio than the BMI
		Abdominal diameter	21.9	21.3[a]	20.4	17.9[a]	
		Subscapular–triceps skinfold ratio	2.01	1.65[a]	1.08	0.88[a]	
		Subscapular–anterior thigh skinfold ratio	1.72	1.42[a]	0.78	0.57[a]	
		a $p<0.001$ for differences between Europeans and South Asians within each sex					No significant relationship between physical activity and glucose tolerance, although most men in both groups were physically inactive
		Logistic regression analysis of univariate associations between glucose intolerance and anthropometric variables (controlled for age)					

Author and year	Mode of assessment	Results				Reasons for differences and other relevant data
		Standardised logistic regression coefficients				
			South Asian men	**European men**	**South Asian women**	
		Waist girth	1.54[a]	2.00[a]	2.16[a]	
		Abdominal diameter	1.59[a]	1.99[a]	2.17[a]	
		Hip girth	1.17[b]	1.53[a]	0.85	
		Thigh girth	1.12[c]	1.32[b]	0.96	
		Skinfolds				
		Triceps	1.15[d]	1.53[a]	1.16	
		Subscapular	1.56[a]	1.94[a]	1.89[a]	
		Anterior thigh	1.06	1.10	0.76[d]	
		Composite indices				
		BMI (kg/m^2)	1.43[a]	1.97[a]	1.62[b]	
		WHR	1.81[a]	2.27[a]	3.41[a]	
		Subscapular–triceps skinfold ratio	1.37[a]	1.40[a]	1.51[b]	
		Subscapular–anterior thigh skinfold ratio	1.45[a]	1.76[a]	2.26[a]	
		Notes:				
		a $p<0.001$,				
		b $p<0.01$,				
		c $p<0.1$,				
		d $p<0.05$,				
		for association between glucose tolerance and anthropometric variable				
		European women excluded because of small numbers				

continued

TABLE 31 Prevalence of T2DM in ethnic minorities (*continued*)

Author and year	Mode of assessment	Results					Reasons for differences and other relevant data
Simmons D *et al.* 1992[150]	Capillary whole blood glucose measurement followed by OGTT with 75 g if ≥ 6mmol/l within 2 hours of meal or ≥ 5mmol/l 2 hours or more post prandial and random of 10% of others			Gujaratis			T2DM high in Gujarati Muslims compared with others owing to excess of previously diagnosed diabetes They have similar diet to Gujarati Hindus and same meat consumption as Pakistanis Kin marriages are common in Gujarati Muslims and 60% of Gujarati Muslims had married their first cousins
			Punjabi Sikhs	**Pakistani Muslims**	**Muslims**	**Hindus**	**Punjabi Hindus**	
		Sample size	1930	928	276	664	348	
		Age-adjusted prevalence of T2DM/1000 (95% CI)						
		Males	89 (72 to 110)	91 (67 to 120)	160 (107 to 228)	84 (57 to 120)	113 (74 to 171)	
		Females	75 (60 to 94)	103 (78 to 133)	204 (144 to 283)	88 (62 to 122)	116 (77 to 174)	
		Mean BMI (kg/m^2) (95% CI)						
		Males	26 (25.7 to 26.3)	25.1 (24.7 to 25.6)	24.5 (23.6 to 25.3)	24.4 (24 to 24.9)	25.3 (24.7 to 25.8)	
		Females	25.8 (25.4 to 26.1)	26 (25.5 to 26.5)	26.1 (25.3 to 27.1)	25.1 (24.5 to 25.6)	25.9 (25.2 to 26.9)	
		Percentage of undiagnosed T2DM						
		Males	49	42	20	42	29	
		Females	32	53	18	42	45	

Author and year	Mode of assessment	Results						Reasons for differences and other relevant data
UKPDS Group 1994[145]	FPG by venous sample. Ophthalmic assessment by ophthalmoscope, retinal colour photography; cholesterol by precipitation methods		**Asians**		**Caucasians**		**Afro-Caribbeans**		Age at diagnosis is lower in Asians than in Caucasians and Afro-Caribbeans Blood pressure is lower in Asians than other groups and Afro-Caribbeans have significantly higher DBP than Caucasians Asians mostly had a first-degree relative with diabetes mellitus Although the clinical and biochemical differences exist between the three ethnic groups, there were no significant differences in prevalence of complications at diagnosis of diabetes mellitus
			Males	**Females**	**Males**	**Females**	**Males**	**Females**	
		Sample size	362	172	2425	1752	219	168	
		Biophysical characteristics (mean ± SD)							
		Age at diagnosis	46.8 ± 8.6[b]	47.6 ± 8.8[b]	51.8 ± 8.8	52.9 ± 8.7	51.6 ± 7.4	50.2 ± 7.2[b]	
		BMI (kg/m^2)	25.9 ± 3.8[b]	28.4 ± 4.8[b]	28.2 ± 4.8	30.7 ± 6.6	26.6 ± 3.4	29.5 ± 4.8[a]	
		WHR	0.95 ± 0.05[b]	0.88 ± 0.08[a]	0.94 ± 0.06	0.86 ± 0.08	0.93 ± 0.05	0.86 ± 0.07	
		SBP (mmHg)	123 ± 16[b]	129 ± 19[b]	134 ± 19	140 ± 21	133 ± 18	139 ± 20	
		DBP (mmHg)	79 ± 10[a]	81 ± 9	82 ± 10	81 ± 9	84 ± 10[a]	86 ± 11[b]	
		Biochemical characteristics (mean ± SD)							
		Fasting plasma							
		Glucose	11.0 ± 3.5	11.9 ± 3.4	11.6 ± 3.6	12.4 ± 3.8	12.3 ± 3.7[a]	12.8 ± 3.7	
		HbA_{1c} (%)	9 ± 2.2	9.0 ± 2.1	9.1 ± 2.2	9.3 ± 2.2	9.9 ± 2.5[b]	10.0 ± 2.6[b]	
		Insulin							
		Sensitivity (%)	21.5[b]	19.6[a]	24.3	20.8	30.4[b]	24.8[b]	
		Total cholesterol	5.3 ± 1.0	5.3 ± 1.0[b]	5.5 ± 1.1	5.9 ± 1.2	5.3 ± 1.2	5.6 ± 1.3	
		HDL-C	1.0 ± 0.24	1.08 ± 0.24	1.01 ± 0.24	1.09 ± 0.25	1.13 ± 0.26[b]	1.23 ± 0.28[b]	
			Asians		**Caucasians**		**Afro-Caribbeans**		
			Males	**Females**	**Males**	**Females**	**Males**	**Females**	
		Sample size	362	172	2425	1752	219	168	
		Prevalence of hypertension, macrovascular and microvascular disease							
		Percentage hypertensive	19[a]	30[b]	34	46	33	54	
		Prevalence of MI (%)	1	0	2	1	0	1	
		Retinopathy (%)	18	11	22	16	26	23	
		Cerebrovascular accident (%)	1	0	1	2	1	2	
		a $p < 0.001$							
		b $p < 0.0$							
		The *p*-values are Asians and Afro-Caribbeans vs Caucasians after adjustment for age							

continued

TABLE 31 Prevalence of T2DM in ethnic minorities (*continued*)

Author and year	Mode of assessment	Results					Reasons for differences and other relevant data
Potts *et al.* 1994[152]	Whole blood glucose and plasma cholesterol measured by oxidase methods on an LM3 Microstat analyser		**Asians**		**Europids**		Asians had higher FPG and cholesterol levels, as well as higher WHR, WTR and subscapular–triceps skinfold ratio
			Males	**Females**	**Males**	**Females**	
		Sample size	40	40	40	40	
		All results are mean with 95% CI					Glucose and cholesterol concentrations correlated positively in all groups with WHR in both ethnic groups
		Glucose (mmol/l)	5.1 (4.9 to 5.2)	5.1 (4.9 to 5.2)	4.6 (4.5 to 4.7)	4.5 (4.4 to 4.7)	
		Cholesterol (mmol/l)	5.5 (5.4 to 5.6)	5.2 (5.0 to 5.3)	5.2 (5.1 to 5.3)	4.6 (4.3 to 4.8)	
		BMI (kg/m^2)	21.3 (20.4 to 22.1)	22.0 (21.2 to 22.7)	22.5 (21.7 to 23.2)	23.1 (21.9 to 24.2)	
		WHR	0.87 (0.85 to 0.89)	0.79 (0.78 to 0.81)	0.80 (0.79 to 0.81)	0.73 (0.71 to 0.75)	
		WTR	1.46 (1.44 to 1.48)	1.23 (1.19 to 1.27)	1.40 (1.37 to 1.42)	1.17 (1.15 to 1.19)	
		Subscapular–triceps skinfold ratio	1.44 (1.32 to 1.55)	1.38 (1.31 to 1.45)	0.99 (0.93 to 1.05)	0.93 (0.87 to 1.00)	

Author and year	Mode of assessment	Results						Reasons for differences and other relevant data
Ramaiya *et al.* 1995[158]	Glucose analysed using Yellow Springs instruments in Tanzania and glucose oxidase method in UK. DM diagnosed using WHO criteria		Gujarati Asians in Tanzania		Gujarati Asians in UK			Mean fasting and 2-hour glucose levels are significantly higher in South Asians from Bhatia community in Gujarat living in Tanzania than in the same community living in the UK High prevalence of IGT (both sexes), newly diagnosed diabetes (women) and hypercholesterolaemia (men) among Asians in Tanzania, whereas newly diagnosed HT is much more frequently found in women in the UK In the UK, levels of physical activity did not show significant relation with 2-hour glucose compared with Tanzania, where it had significant negative association ($r = -0.43$; $p < 0.001$)
			Males	**Females**	**Males**	**Females**	***p*-value**	
		Sample size	111	111	92	88		
		Level of physical activity (%)						
		Sedentary	63.5	84.6	26.4	29.5		
		Light to moderate	28.4	15.4	37.4	34.1		
		Heavy	8.1	0.0	36.2	36.4[a]	< 0.001;[b] < 0.001	
		Smokers (%)	24.3	0.0	7.7	0.0[a]	< 0.001	
		Alcohol (%)	19.8	0.0	48.4	5.7[a]	< 0.001;[b] < 0.01	
		Between Gujarati Asians (Bhatia community) living in Tanzania and in the UK:						
		a Difference in males						
		b Difference in females						
			Gujarati Asians in Tanzania	**Gujarati Asians in the UK**	***p*-value**			
		Sample size	222	180				
		Biochemical variables adjusted for age, sex and BMI (mean)						
		Fasting glucose (mmol/l)	5.5	5.1	< 0.001			
		2 h glucose (mmol/l)	6.8	6.0	< 0.001			
		Serum cholesterol (mmol/l)	4.8	4.8	0.7			
		Serum triglycerides (mmol/l)	1.3	1.5	< 0.03			
		SBP (mmHg)	127	135	< 0.01			
		DBP (mmHg)	80	82	0.20			
		Age- and sex-adjusted prevalence rates (%)						
		IGT	28.4	11.45	0.001			
		Newly diagnosed diabetes mellitus	8.6	1.5	< 0.01			
		Known diabetes mellitus	7.0	5.9	0.40			
		Hypercholesterolaemia	8.9	1.7	0.002			
		Hypertryglyceridaemia	22.7	21.7	0.45			
		Newly diagnosed hypertension	7.8	12.4	0.08			
		Known hypertension	12.5	8.5	0.13			
		Overweight	24.3	26.8	0.32			
		Obesity	19.0	15.6	0.22			

continued

TABLE 31 Prevalence of T2DM in ethnic minorities (*continued*)

Author and year	Mode of assessment	Results						Reasons for differences and other relevant data
Cappuccio *et al.* 1997[136]	Diabetes mellitus diagnosed by either glycosuria checked by urine diastix or by oral GTT (diagnosis by WHO Criteria)		**South Asians**		**Whites**		**African decent**		Age-adjusted prevalence rates between Hindus and Muslims differed only for obesity and smoking (low among Hindus and high in Muslims) Prevalence rates did not differ between Caribbeans and West Africans except smoking (low among West Africans) One-third of diabetics were unaware of status in South Asians
		Sample size	505		524		549		
		Age-adjusted prevalence rates of risk factors for CVD:% (95% CI)							
			Men	**Women**	**Men**	**Women**	**Men**	**Women**	
		Diabetes	25.4 (20 to 32)	20.5 (15 to 27)	6.7 (4 to 11)	5.2 (3 to 9)	17.9 (12 to 25)	14.9 (11 to 20)	
		HT	27.9 (23 to 34)	26.1 (21 to 32)	17.8 (13 to 24)	12.7 (9 to 17)	36.8 (30 to 44)	39.8 (35 to 45)	
		BMI > 30 kg/m^2	8.4 (5 to 12)	19.7 (15 to 25)	14.8 (11 to 20)	18.8 (15 to 24)	14.8 (11 to 21)	39.8 (35 to 45)	
		Cholesterol > 5.2 mmol/l	67.9 (62 to 74)	67.6 (62 to 74)	77.8 (73 to 83)	78.1 (73 to 83)	58.0 (51 to 65)	60.6 (55 to 66)	
		Smoking	25.2 (20–31)	2.9 (1–6)	39.6 (33 to 46)	33.3 (28 to 39)	18.6 (14 to 25)	9.2 (7 to 13)	
		Both men and women of South Asian and African decent have three- to fourfold higher prevalence of diabetes than the white people, with a prevalence ratio of 3.8 (95% CI 2.6 to 5.6) in South Asians and 2.7 (95% CI 1.8 to 4.0) in Africans							

GTT, glucose tolerance test.

Author and year	Mode of assessment	Results				Reasons for differences and other relevant data
Mather *et al.* 1998[169,170]	Microalbuminuria by in-house immunoturbidimetric method, HbA_{1c} by high-performance liquid chromatography method; cholesterol by automated enzymatic method, nitrites and leucocytes by Labstix and creatinine by blanked Jaffe method		**South Asians**	**Europeans**	***p*-value**	Prevalence of microalbuminuria in South Asians in men and women is increased by 1.2- and 1.7-fold, respectively, compared with the Europeans There was no evidence of any interaction between risk factors and ethnicity on risk of albuminuria
		Sample size (M/F)	*542/347*	*347/236*		
		Microalbuminuria (% ± SE)				
		Men	40 ± 2.1	33 ± 2.6	0.003	
		Women	33 ± 2.8	19 ± 2.6	< 0.0001	
		Albumin–creatinine ratio (95% CI)				
		Men	2.40 (2.14 to 2.71)	1.95 (1.95 to 2.29)	0.04	
		Women	2.89 (2.47 to 3.30)	2.05 (1.69 to 2.50)	0.01	
		Age-adjusted as there were significant differences in age between the South Asians and Europeans.				
		HbA_{1c} (95% CI)	1.64 (1.43 to 1.89)	1.43 (1.19 to 1.72)		
		Relationship between risk factors (age, sex, duration of diabetes mellitus, age of diagnosis, HbA_{1c}, blood pressure, cholesterol, triglycerides, smoking, previous MI, type of treatment and retinopathy) and microalbuminuria was examined by standardised regression and found SBP, HbA_{1c}, triglycerides and retinopathy were all identified as risk factors for albumin–creatinine ratio, of which retinopathy was strongest variable				

continued

TABLE 31 Prevalence of T2DM in ethnic minorities (*continued*)

Author and year	Mode of assessment	Results				Reasons for differences and other relevant data
Davies *et al.* 1999[140]	Self-testing for glucosuria 1 hour after main meal by post		**Asians**	**Caucasians**	***p*-value**	A total of 123 new cases were identified or diagnosed as a result of screening programme (80 in Asians and 43 in Caucasians)
		Sample size	2134	1991		
		Glucosuria (self-testing)				
	Oral GTT (75 g) after 10-hour fast in people with glucosuria. Repeat OGTT after 2 weeks	No. (%) (95% CI)	175 (8.2) [7.4 to 9.0]	64 (3.2) [2.6 to 3.8]	< 0.001	Additional 63 newly diagnosed cases of diabetes (46 in Asians and 17 in Caucasians)
		Sample size	152	50		
		Diabetes (OGTT)				
		No. (%) [95% CI]	46 (30.3) [27.4 to 37.2]	17 (34) [27.5 to 40.5]	< 0.001	Cost/person screened for whole programme was approximately £1.10, and £72 for each case of diabetes diagnosed
		IGT	24 (15.8)[10.7–20.9]	5 (10) [5.9 to 14.1]		
		Prevalence of diabetes before and after screening in screened and total populations				
		Before screening				Asians had low response for screening for glucosuria
			369/6640 (5.6 ± 0.3)	88/3856 (2.3 ± 0.2)		
		After screening				
		In screened population	449/2503 (17.9 ± 0.8)	131/2075 (6.3 ± 0.5)		
		In total population	449/6566 (6.8 ± 0.3)	131/3787 (3.6 ± 0.3)		

GTT, glucose tolerance test.

Author and year	Mode of assessment	Results				Reasons for differences and other relevant data
Harris *et al.* 2000[151]	Comparing diabetes prevalence using full WHO criteria (i.e. fasting and 2 hour post-load sample) and ADA or new partial WHO criteria (using fasting glucose alone)		**South Asians**	**Caucasians**	**African descent**	Overall 61/1067 (5.7%) qualified for newly diagnosed diabetes mellitus using WHO criteria compared with 35/1067 (3.3%) by ADA criteria No. of individuals with impaired glucose homeostasis was 13.7% with WHO criteria compared with 3.8% by ADA criteria
		Sample size	340	380	347	
		Based on new full WHO criteria: based on fasting and post-load glucose samples: n (%)				
		Diabetes prevalence	31 (9.1)	10 (2.6)	20 (5.8)	
		IGT prevalence	62 (18.2)	30 (7.9)	35 (10.1)	
		IFG prevalence	7 (2.1)	6 (1.6)	6 (1.7)	
		Based on ADA and new partial WHO criteria: based on FPG alone: n (%)				
		Diabetes prevalence	17 (5.0)	4 (1.1)	14 (4.0)	
		IFG prevalence	15 (4.4)	11 (2.9)	15 (4.3)	

continued

TABLE 31 Prevalence of T2DM in ethnic minorities (*continued*)

Author and year	Mode of assessment	Results						Reasons for differences and other relevant data
Riste *et al.* 2001[142]	Plasma glucose assessed by standardised glucose oxidase analyser and ascertained by WHO 1999 criteria		**Pakistanis**		**Europeans**		**Afro-Caribbeans**		Pakistan men and women have largest waist-hip ratio, most obese with high BMI and physically inactive compared with Afro-Caribbeans and Europeans Multiple regression shows independent association with both fasting and 2-hour plasma glucose with WC (0.39, $p<0.001$)
			Males	**Females**	**Males**	**Females**	**Males**	**Females**	
		Sample size	67	65	219	252	131	185	
		Characteristics: mean (95% CI)							
		Physically active (%)	6.8 (0 to 130	5.2 (0 to 11)	37.8 (25 to 53)	29 (13 to 46)	25 (14 to 37)	34 (23 to 45)	
		BMI (kg/m^2)	27.5 (27 to 29)	29.6 (28 to 31)	27.4 (27 to 28)	27.2 (27 to 28)	26.9 (26 to 27)	30.2 (29 to 31)	
		WHR	0.96	0.88	0.92	0.81	0.92	0.84	
		Age-adjusted prevalence of known and newly detected T2DM: % (95% CI)							
		Glucose tested	52	52	66	83	76	95	
		New diabetics	18 (7.6 to 28.5)	21.9 (10.7 to 33.2)	14.1 (5.7 to 22.5)	16.8 (8.8 to 24.9)	9.2 (2.7 to 15.7)	6.0 (1.2 to 10.7)	
		Known and new	29.9 (19 to 40.9)	35.7 (24 to 47.3)	20.8 (15.5 to 26.1)	19.9 (15 to 24.8)	23.4 (17 to 29.6)	20.8 (15 to 26.6)	
		Known and new diabetes, with male and females combined	33 (25 to 41)		20 (17 to 24)		22 (18 to 26)		

Author and year	Mode of assessment	Results				Reasons for differences and other relevant data
Chowdhury *et al.* 2002[153]	Diabetes diagnosed on at least two FPG levels of >7 mmol/l or random plasma glucose. Neuropathy using Semmes–Weinstein filament, insulin sensitivity by HOMA		**South Asians**	**Europeans**	***p*-value**	South Asians have higher prevalence of diabetic complication and increased absolute risk of CVD at the time of diagnosis At diagnosis, one-quarter of all patients had evidence of at least one diabetic complication South Asians have higher WHR, decreased HDL-C with no difference in total cholesterol levels Analysis of South Asian cohort (Indian, Pakistani, Bangladeshi and Sri Lankan) separately showed no significant difference from the combined South Asian cohort in all clinical parameters
		Sample size	165	127		
		Demographic characteristics at diagnosis (data as mean ± SD unless otherwise stated)				
		Family history of diabetes mellitus: *n* (%)	86 (52.1)	41 (32.3)	<0.001	
		Family history of early vascular disease: *n* (%)	68 (41.2)	27 (21.2)	<0.001	
		FPG (mmol/l)	9.4 ± 2.4	9.5 ± 2.6	0.45	
		HbA_{1c} (%)	8.6 ± 1.4	8.4 ± 1.9	0.17	
		Beta-cell function (%)	46.2 ± 9.6	41.7 ± 10.2	<0.001	
		Insulin sensitivity (%)	28.7 ± 6.7	32.8 ± 7.5	0.05	
		Evidence of macrovascular disease at diagnosis: *n* (%)	26 (15.7)	12 (9.4)	<0.001	
		Prevalence of microvascular complications at diagnosis: n *(%)*				
		Neuropathy	5 (3)	8 (6.3)	0.08	
		Microalbuminuria	22 (13.3)	7 (5.5)	<0.001	
		Macroalbuminuria	8 (4.8)	3 (2.3)	<0.001	
		Background retinopathy	23 (13.9)	8 (6.3)	<0.001	
		Sight-threatening retinopathy	6 (3.6)	2 (1.6)	<0.001	
		Overall	45 (27.3)	21 (16.5)	<0.001	
		Cardiovascular risk factors at diagnosis (data as mean ± SD unless otherwise stated)				
		Current smokers: *n* (%)	39 (23.6)	28 (22)	0.46	
		BMI (kg/m^2)	26.0 ± 5.4	27.2 ± 5.3	0.07	
		WHR	0.95 ± 0.2	0.90 ± 0.2	0.05	
		Total cholesterol (mmol/l)	5.2 ± 1.3	5.4 ± 1.2	0.38	
		LDL-C (mmol/l)	3.3 ± 0.8	3.5 ± 0.7	0.19	
		HDL-C (mmol/l)	1.0 ± 0.3	1.3 ± 0.2	<0.001	
		Absolute 10-year CHD risk (%)	16.9 ± 5.4	13.7 ± 4.6	<0.001	

HOMA, homeostasis model assessment.

continued

TABLE 31 Prevalence of T2DM in ethnic minorities (*continued*)

Author and year	Mode of assessment	Results			Reasons for differences and other relevant data
National Statistics health report for England – 2004[7]	Health survey	**Prevalence of doctor-diagnosed diabetes weighted for non-response: *n* (%)**			Diabetes more common in men than in women in all ethnic minorities except Pakistani women Diabetes mellitus is higher among Indians, followed by Black Caribbeans and Bangladeshis
			Men	**Women**	
		Indian	903 (9.2)	1067 (5.9)	
		Pakistani	423 (7.3)	499 (8.4)	
		Bangladeshi	178 (8)	208 (4.5)	
		Black Caribbean	480 (9.5)	676 (7.6)	
		Black African	377 (4.3)	476 (2.0)	
		Chinese	151 (3.4)	163 (3.3)	
		General population	7202 (3.8)	7634 (3.1)	

Author and year	Mode of assessment	Results				Reasons for differences and other relevant data
Mukhopadhyay *et al.* 2005[144]	Retrospective analysis		**South Asians**	**Europeans**	***p*-value**	South Asians had lower BMI and blood pressure (both SBP and DBP) but there was no significant difference in cholesterol level between the groups Reasons for deterioration could be owing to lower compliance with medication in South Asians, cultural or language barrier presenting difficulty in strict adherence to glycaemic control
		At baseline (either as %, mean with SD, median with IQR)				
		Age at diagnosis	45.9 (11.0)	57.3 (11.6)	< 0.001	
		Time to referral (years)	3.2 (1.6 to 7.4)	1.9 (1.4 to 5.8)	< 0.001	
		BMI (kg/m^2)	28.7 (4.9)	29.9 (5.6)	0.003	
		Total cholesterol	5.57 (1.08)	5.71 (1.28)	0.136	
		Triglycerides	2.27 (1.60 to 3.05)	2.23 (1.58 to 3.28)	0.857	
		HDL-C	1.13 (0.30)	1.16 (0.31)	0.234	
		SBP (mmHg)	139.5 (21.9)	150.9 (22.3)	< 0.001	
		DBP (mmHg)	83.5 (12.1)	86.7 (12.5)	< 0.001	
		HbA_{1c} (%)	7.46 (2.26)	7.27 (2.040	0.221	
		At follow-up (after mean of 5.3 years)				
		Current smokers (%)	13.4	26.6	< 0.001	
		ΔCholesterol	–0.60 (–1.7 to 0.10)	–0.90 (–1.9 to 0.05)	0.044	
		ΔSBP (mmHg)	4.23 (21.27)	–1.85 (23.38)	< 0.001	
		ΔDBP (mmHg)	–6.23 (13.87)	–11.15 (14.41)	< 0.001	
		ΔHbA_{1c}	1.31 (2.31)	0.82 (2.2)	< 0.003	
		HbA_{1c}	8.09%	8.74%	< 0.001	

continued

TABLE 31 Prevalence of T2DM in ethnic minorities (*continued*)

Author and year	Mode of assessment	Results					Reasons for differences and other relevant data
Whincup *et al.* 2005[147]	FPG by Falcor 600 automated analysis; serum insulin using specific enzyme-linked immunosorbent assays and insulin resistance by HOMA		**South Asian**	**European**	**Difference (95% CI)**	***p*-value**	Differences in fasting glucose concentration as well as insulin level, and insulin resistance is well advanced by adolescence
		Sample size	90	1248			
		BMI (kg/m^2)[a]	20.4	20.7	–1.7% (–6.0% to 2.4%)	0.42	
		Percentage body fat	27.9	26.2	1.7 (0.2 to 3.2)	0.02	
		WHR[a]	0.76	0.75	0.55% (–1.01% to 1.98%)	0.47	
		Subscapular–triceps skinfold ratio	0.857	0.782	0.074 (0.019 to 0.129)	0.008	
		Glucose (mmol/l)	5.22	5.04	0.19 (0.08 to 0.29)	0.0005	
		Insulin (μl)[a]	10.81	8.96	17.2% (7.2% to 26.1%)	0.001	
		Insulin resistance (HOMA)[a]	2.50	1.99	20.2% (9.9% to 29.4%)	0.003	
		a Geometric means and percentage differences					
		All means and differences adjusted for sex, age and time of day					
		IFG was markedly higher in the South Asians (5.6 vs 1.5%, OR 3.9, 95% CI 1.4 to 10.9, $p = < 0.0001$)					

HOMA, homeostasis model assessment.

TABLE 31 Prevalence of T2DM in ethnic minorities (*continued*)

Author and year	Mode of assessment	Results					Reasons for differences and other relevant data
Patel *et al.* 2006[159]	Venous blood samples and diabetes mellitus diagnosed by WHO criteria. Serum cholesterol, triglycerides, HDL calculated by Mira autoanalyser. LDL by Friedewald formula		**Gujarati Indians**				Most striking factor between the migrants and indigenous population was on nutrition. There was increased dietary energy intake in the migrants with significant contribution by fat intake Serum cholesterol, triglycerides, BMI, WHR were all higher in the Gujarati immigrants compared with those in India
			Sandwell, UK		**Navsari, India**		
			Men	**Women**	**Men**	**Women**	
		Sample size	119	123	139	155	
		Characteristics and nutritional factors: % or mean (95% CI)					
		Known diabetics (%)	14.5 (8.1 to 21.00)	7.7 (2.9 to 12.5)	9.1 (4.3 to 13.8)	3.9 (0.9 to 7.0)	
		New diabetics (%)	5.1 (0.7 to 9.4)	8.9 (3.4 to 14.5)	9.1 (4.0 to 14.2)	7.1 (2.9 to 11.4)	
		Non-diabetic IGT (%)	3.3 (0.5 to 6.1)	7.5 (2.8 to 12.3)	17.7 (11.3 to 24.0)	16.3 (9.5 to 23.0)	
		BMI (kg/m^2) (mean)	25.9 (25.1 to 26.7)[a]	26.6 (25.7 to 27.3)[a]	21.0 (20.3 to 21.7)	20.8 (20.3 to 21.6)	
		WHR	0.92 (0.90 to 0.94)[a]	0.82 (0.81 to 0.84)[b]	0.87 (0.86 to 0.88)	0.79 (0.78 to 0.80)	
		Current smokers (%)	10.2 (4.5 to 15.0)[a]	0	39.7 (31.6 to 47.8)	3.2 (0 to 6.4)	
		Alcohol (%)	75.8 (69.1 to 82.6)[b]	29.6 (21.4 to 37.8)[b]	60.0 (51.9 to 68.2)	0.7 (0 to 2.2)	
		Physical activity (kcal/day)	2350 (2200 to 2490)[a]	1750 (1640 to 1870)	1820 (1630 to 2000)	1680 (1540 to 1810)	
		Energy intake (kcal/day)	2330 (2160 to 2510)[a]	1690 (1580 to 1790)[a]	1440 (1390 to 1590)	1210 (1090 to 1330)	
		Dietary energy from fat	38.8 (37.4 to 40.00[a]	39.5 (38.5 to 40.4)[a]	31.2 (28.6 to 33.9)	31.7 (29.5 to 33.9)	
		Biochemical characteristics: mean with 95% CI					
		Sample size	103	108	116	144	
		Serum cholesterol	5.36 (5.17 to 5.56)[a]	5.28 (5.10 to 5.47)[a]	4.82 (4.62 to 5.02)	4.84 (4.68 to 5.01)	
		Triglycerides	1.22 (1.12 to 1.33)[a]	1.05 (0.96 to 1.14)[a]	0.91 (0.84 to 0.99)	0.84 (0.78 to 0.90)	
		Plasma insulin (mU/l)	10.6 (9.4 to 11.9)[a]	10.3 (9.2 to 11.6)[a]	7.4 (6.6 to 8.4)	8.6 (7.7 to 9.6)	
		Statistical significance between Navsari and Sandwell: [a]$p<0.001$; [b]$p<0.05$					

continued

TABLE 31 Prevalence of T2DM in ethnic minorities (*continued*)

Author and year	Mode of assessment	Results				Reasons for differences and other relevant data
Odugbesan *et al.* 1989[175]	From patient records. Complication identified by physical signs at presentation at regular clinic review	*Age-specific prevalence (%) of known diabetics in West Indians*				A total of 95% were diagnosed after the age of 30 years The reasons reported by authors for the higher prevalence compared with native West Indians were dietary changes and rapid transition in way of life, obesity, decreased physical activity and psychological stress
		Age (years)	No. of diabetic patients	Unadjusted prevalence	Adjusted prevalence	
		0–19	1/5343	0.02	0.02	
		20–29	4/1400	0.28	0.18	
		30–44	7/1605	0.43	0.38	
		45–64	191/2520	7.57	7.93	
		>65	48/198	24.24	5.03	
		Notes:				
		Crude prevalence rate was 2.2% (males = 2.3%; females = 2.2%)				
		Adjusted age-specific prevalence rate was calculated assuming that the population had aged by 6 years between previous census (1981) and survey				
		Diabetic micro- and macrovascular complications in 251 West Indian diabetic patients				
		Complications	***n***	**%**		
		Hypertension	99	40		
		Proteinuria	14	6		
		Retinopathy	53	21		
		Cataracts	43	17		
		Neuropathy	28	11		
		Peripheral vascular diseases	22	9		
		Ischaemic heart disease	10	4		