

Diabetes Trends and Determinants among Thai Adults from 2004 to 2020

SUPPLEMENTARY FILE

Table S1. Trends in awareness of diabetes between 2004 and 2020

Characteristics	2004 % (95%CI)	2009 %(95%CI)	2014 %(95%CI)	2020 %(95%CI)	Change 2020-2004		Change 2020-2014	
					OR (95%CI)	P-value	OR (95%CI)	P-value
All	42.3 (37.0,47.6)	65.9 (60.2,71.6)	54.1 (47.8,60.5)	62.8 (59.9,65.8)	1.23 (1.16, 1.30)	<0.001	1.09 (1.01, 1.18)	0.028
Sex								
Men	34.7 (28.9,40.5)	54.1 (43.6,64.6)	49.0 (43.3,54.6)	58.3 (52.4,64.3)	1.27 (1.17, 1.37)	<0.001	1.10 (1.01, 1.20)	0.036
Women	49.5 (42.9,56.0)	77.0 (71.4,82.6)	59.0 (49.6,68.3)	67.1 (61.4,72.7)	1.19 (1.09, 1.31)	<0.001	1.08 (0.97, 1.22)	0.169
Age group								
20-39	22.4 (15.6,29.2)	46.0 (35.1,56.9)	18.1 (4.3,31.9)	36.7 (26.6,46.7)	1.16 (1.03, 1.30)	0.017	1.22 (1.02, 1.47)	0.033
45-59	46.9 (40.9,53.0)	67.2 (59.9,74.5)	56.6 (50.9,62.3)	62.3 (59.8,64.8)	1.17 (1.10, 1.25)	<0.001	1.06 (0.99, 1.13)	0.094
>=60	55.9 (52.4,59.4)	77.8 (73.0,82.6)	72.9 (68.4,77.4)	84.1 (80.8,87.4)	1.33 (1.27, 1.38)	<0.001	1.12 (1.06, 1.19)	<0.001
Area of residence								
Urban	46.5 (41.6,51.3)	71.5 (63.4,79.5)	55.8 (50.6,60.9)	62.5 (60.4,64.7)	1.17 (1.12, 1.23)	<0.001	1.07 (1.01, 1.14)	0.037
Rural	40.4 (33.8,47.0)	62.0 (56.5,67.4)	52.9 (45.1,60.8)	63.0 (58.3,67.6)	1.25 (1.16, 1.36)	<0.001	1.11 (1.01, 1.22)	0.044
Education								
Primary	43.9 (38.6, 49.3)	65.3 (59.1, 71.6)	58.0 (53.4, 62.6)	68.7 (64.6, 72.8)	1.28 (1.19, 1.38)	<0.001	1.11 (1.04, 1.19)	0.002
Secondary	34.8 (27.9, 41.7)	66.2 (56.5, 75.9)	44.8 (31.7, 57.9)	57.6 (50.8, 64.4)	1.26 (1.15, 1.37)	<0.001	1.14 (0.97, 1.32)	0.102
Wealth index								
Q1	-	59.0 (50.1, 68.0)	55.1 (47.3, 62.8)	56.5 (46.5, 66.5)	-	-	1.01 (0.90, 1.14)	0.809
Q2	-	61.5 (47.8, 75.3)	52.0 (35.7, 68.3)	63.4 (54.4, 72.3)	-	-	1.12 (0.93, 1.35)	0.220
Q3	-	65.7 (58.5, 73.0)	50.4 (40.9, 60.0)	56.3 (43.0, 69.7)	-	-	1.06 (0.89, 1.27)	0.500
Q4	-	67.9 (58.0, 77.7)	58.2 (46.0, 70.5)	72.5 (64.1, 80.9)	-	-	1.15 (0.99, 1.35)	0.075
Q5	-	72.9 (64.8, 81.0)	53.1 (43.2, 63.1)	66.9 (59.3, 74.5)	-	-	1.15 (1.00, 1.30)	0.037

Table S2. Trends in treated diabetes between 2004 and 2020

Characteristics	2004 % (95%CI)	2009 %(95%CI)	2014 %(95%CI)	2020 %(95%CI)	Change 2020-2004		Change 2020-2014	
					OR (95%CI)	P-value	OR (95%CI)	P-value
All	40.2 (35.1, 45.3)	62.3 (56.3, 68.3)	51.2 (45.1, 57.3)	42.9 (39.0, 46.9)	1.03 (0.97, 1.09)	0.353	0.92 (0.85, 1.00)	0.055
Sex								
Men	32.1 (27.0,37.2)	48.7 (37.9,59.4)	44.8 (38.9,50.6)	38.1 (32.9,43.3)	1.06 (1.01, 1.12)	0.025	0.94 (0.86, 1.02)	0.131
Women	47.8 (41.4,54.1)	75.1 (69.9,80.2)	57.3 (48.3,66.3)	47.4 (41.4,53.4)	1.00 (0.90, 1.10)	0.943	0.91 (0.80, 1.02)	0.105
Age group								
20-39	19.9 (13.3,26.6)	35.6 (24.3,46.9)	18.0 (4.3,31.7)	23.0 (15.2,30.8)	1.04 (0.94, 1.15)	0.467	1.07 (0.90, 1.27)	0.424
45-59	45.0 (39.0,51.0)	64.6 (57.5,71.7)	53.3 (46.0,60.5)	35.2 (30.1,40.2)	0.91 (0.85, 0.98)	0.016	0.83 (0.76, 0.92)	0.001
≥60	53.6 (50.2,57.0)	75.1 (70.6,79.6)	70.0 (65.2,74.8)	83.2 (79.8,86.6)	1.34 (1.30, 1.39)	<0.001	1.15 (1.07, 1.22)	<0.001
Area of residence								
Urban	42.9 (39.5,46.3)	65.6 (58.1,73.2)	50.8 (44.1,57.5)	40.9 (35.3,46.5)	0.98 (0.93, 1.04)	0.481	0.91 (0.81, 1.01)	0.076
Rural	38.9 (32.2,45.5)	59.8 (53.3,66.3)	51.6 (44.1,59.0)	44.0 (38.7,49.2)	1.05 (0.98, 1.13)	0.167	0.93 (0.84, 1.02)	0.133
Education								
Primary	41.7 (36.4, 47.1)	62.3 (56.7, 67.9)	55.0 (49.7, 60.3)	46.1 (42.7, 49.5)	1.04 (0.98, 1.11)	0.147	0.92 (0.85, 0.98)	0.015
Secondary	32.2 (25.5, 38.9)	61.1 (49.9, 72.4)	42.0 (30.2, 53.9)	40.8 (32.3, 49.3)	1.09 (0.98, 1.21)	0.098	0.99 (0.85, 1.15)	0.874
Wealth index								
Q1	-	56.0 (46.2, 65.7)	53.5 (46.5, 60.4)	37.5 (30.4, 44.6)	-	-	0.85 (0.77, 0.94)	0.003
Q2	-	59.1 (45.7, 72.5)	50.4 (34.8, 65.9)	39.9 (30.8, 49.1)	-	-	0.90 (0.75, 1.08)	0.249
Q3	-	63.3 (56.0, 70.6)	50.0 (40.4, 59.4)	40.1 (31.9, 48.3)	-	-	0.91 (0.78, 1.05)	0.182
Q4	-	62.8 (54.0, 71.6)	55.0 (41.1, 68.8)	54.0 (44.4, 63.5)	-	-	0.99 (0.84, 1.17)	0.904
Q5	-	68.3 (60.5, 76.1)	48.5 (40.6, 56.4)	46.1 (35.0, 57.3)	-	-	0.98 (0.85, 1.13)	0.74

Table S3. Trends in controlled diabetes between 2004 and 2020

Characteristics	2004 % (95%CI)	2009 %(95%CI)	2014 %(95%CI)	2020 %(95%CI)	Change 2020-2004		Change 2020-2014	
					OR (95%CI)	P-value	OR (95%CI)	P-value
All	12.6 (10.0,15.1)	27.2 (22.5,31.9)	21.2 (16.5,25.9)	20.5 (17.8,23.1)	1.08 (1.05, 1.12)	<0.001	0.99 (0.95, 1.04)	0.766
Sex								
Men	8.4 (6.6,10.2)	19.0 (12.3,25.7)	20.8 (14.4,27.3)	21.4 (17.0,25.8)	1.14 (1.09, 1.19)	<0.001	1.01 (0.92, 1.09)	0.897
Women	16.5 (12.3,20.6)	34.9 (30.4,39.4)	21.6 (16.9,26.2)	19.6 (15.3,24.0)	1.03 (0.96, 1.10)	0.352	0.98 (0.92, 1.04)	0.518
Age group								
20-39	3.5 (-0.3,7.3)	12.8 (2.7,22.9)	5.1 (-0.4,10.5)	15.8 (7.0,24.7)	1.13 (1.03, 1.24)	0.009	1.12 (1.01, 1.25)	0.035
45-59	13.5 (9.8,17.3)	25.9 (20.8,31.0)	20.5 (13.8,27.2)	16.0 (12.2,19.7)	1.03 (0.98, 1.09)	0.223	0.96 (0.89, 1.03)	0.243
>=60	22.2 (20.1,24.3)	43.2 (38.4,48.0)	34.9 (27.0,42.8)	38.4 (34.6,42.2)	1.18 (1.13, 1.23)	<0.001	1.04 (0.95, 1.13)	0.387
Area of residence								
Urban	12.1 (9.9,14.2)	27.0 (20.6,33.3)	19.8 (15.6,24.0)	22.3 (19.2,25.5)	1.11 (1.06, 1.16)	<0.001	1.03 (0.97, 1.08)	0.353
Rural	12.7 (9.3,16.1)	27.2 (21.2,33.1)	22.4 (15.9,28.9)	19.3 (15.0,23.6)	1.07 (1.02, 1.12)	0.008	0.97 (0.91, 1.04)	0.358
Education								
Primary	13.5 (10.5, 16.4)	29.3 (23.6, 35.0)	23.3 (15.7, 30.8)	22.8 (19.3, 26.3)	1.10 (1.05, 1.15)	<0.001	1.00 (0.92, 1.08)	0.916
Secondary	7.9 (5.9, 9.8)	20.0 (12.3, 27.0)	16.3 (12.2, 20.4)	19.7 (15.9, 23.5)	1.13 (1.08, 1.18)	<0.001	1.03 (0.97, 1.10)	0.277
Wealth index								
Q1	-	31.0 (21.8, 40.3)	16.9 (10.3, 23.5)	18.1 (13.9, 22.3)	-	-	1.01 (0.95, 1.08)	0.702
Q2	-	26.7 (16.7, 36.7)	19.0 (11.2, 26.7)	17.9 (13.2, 22.7)	-	-	0.99 (0.90, 1.09)	0.824
Q3	-	25.6 (17.6, 33.6)	18.6 (13.0, 24.2)	20.0 (14.7, 25.2)	-	-	1.01 (0.94, 1.10)	0.721
Q4	-	26.3 (20.4, 32.1)	24.1 (17.5, 30.7)	26.8 (20.1, 33.5)	-	-	1.03 (0.95, 1.11)	0.487
Q5	-	25.9 (19.1, 32.7)	17.6 (12.8, 22.5)	20.2 (14.9, 25.5)	-	-	1.03 (0.96, 1.09)	0.412

NHES Relevant Questionnaires

Topic	Question	Answer
Diabetes	Have you ever been diagnosed with diabetes by a doctor?	Yes/No
	Have you taken anti-glycemic medication for diabetes in the past two weeks?	Yes/No
Smoking	Have you ever smoked in your entire life?	Yes/No
	Do you currently smoke cigarettes?	Yes/No
Alcohol	During the past 30 days, have you drunk any alcoholic beverages?	Yes/No
CVD History	Have you ever been diagnosed with cardiovascular diseases by a doctor?	Yes/No
Hypertension	Have you ever been diagnosed with high blood pressure by a doctor?	Yes/No
	Have you taken anti-hypertensive medication in the past two weeks?	Yes/No
Physical activity	Global Physical Activity Questionnaire (GPAQ)	