

Supplementary Table 1. Association between tobacco use and self-reported heart disease (HD) with and without exclusion of participants who started the use of respective tobacco product after their HD was diagnosed

Tobacco use	Participants without HD (%)	With exclusion [†]		Without exclusion	
		HD cases (%)	Adjusted ORs (95% CIs) *	HD cases (%)	Adjusted ORs (95% CIs) *
Water-pipe smoking					
<i>Ever vs. never use</i>					
Never	46,499 (99.0)	2990 (98.1)	Reference	2990 (98.1)	Reference
Ever	474 (1.0)	51 (1.7)	1.09 (0.80-1.48)	59 (1.9)	1.27 (0.95-1.69)
<i>Moderate-high vs. never-low use</i>					
≤ 50 water-pipe-years	46,872 (99.8)	3022 (99.4)	Reference	3030 (99.4)	Reference
> 50 water-pipe-years	101 (0.2)	19 (0.6)	1.83 (1.10-3.07)	19 (0.6)	1.82 (1.09-3.05)
<i>Cumulative use</i>					
Never	46,499 (99.0)	2990 (98.3)	Reference	2990 (98.1)	Reference
≤ 50 water-pipe-years	373 (0.8)	32 (1.0)	0.87 (0.60-1.28)	40 (1.3)	1.10 (0.78-1.56)
50.1 – 100	46 (0.1)	6 (0.2)	1.25 (0.52-3.03)	6 (0.2)	1.26 (0.52-3.04)
100.1 – 180	38 (0.1)	5 (0.2)	1.49 (0.57-3.87)	5 (0.2)	1.49 (0.57-3.87)
> 180	17 (0.04)	8 (0.3)	3.75 (1.52-9.22)	8 (0.3)	3.75 (1.52-9.23)
			<i>P</i> trend: 0.04		<i>P</i> trend: 0.008
Cigarette smoking					
<i>Ever vs. never use</i>					
Never	39,040 (83.1)	2405 (79.7)	Reference	2405 (78.9)	Reference
Ever	7941 (16.9)	614 (20.3)	1.63 (1.45-1.83)	644 (21.1)	1.74 (1.55-1.94)
<i>Moderate-high vs. never-low use</i>					
≤ 5 pack-years	41,628 (88.6)	2559 (85.3)	Reference	2584 (84.8)	Reference
> 5 pack-years	5353 (11.4)	460 (14.7)	1.76 (1.55-1.99)	465 (15.2)	1.74 (1.54-1.97)

Cumulative use

Never	39,040 (83.1)	2405 (79.7)	Reference	2405 (78.9)	Reference
≤ 5 pack-years	2588 (5.5)	154 (5.1)	1.26 (1.05-1.52)	179 (5.9)	1.49 (1.26-1.77)
5.1 – 10	1187 (2.5)	73 (2.4)	1.43 (1.11-1.84)	76 (2.5)	1.50 (1.17-1.93)
10.1 – 20.0	1677 (3.6)	121 (4.0)	1.73 (1.41-2.13)	122 (4.0)	1.77 (1.44-2.17)
> 20	2489 (5.3)	266 (8.8)	2.04 (1.74-2.38)	267 (8.7)	2.07 (1.77-2.41)
			<i>P</i> trend: <0.001		<i>P</i> trend: <0.001

Nass chewing**Ever vs. never use**

Never	43,489 (92.5)	2775 (92.5)	Reference	2775 (91.0)	Reference
Ever	3501 (7.5)	225 (7.5)	0.85 (0.73-1.00)	276 (9.0)	1.06 (0.91-1.22)

Moderate-high vs. never-low use

≤ 50 nass-years	45,167 (96.1)	2859 (95.3)	Reference	2906 (95.3)	Reference
> 50 nass-years	1823 (3.9)	141 (4.7)	0.95 (0.79-1.15)	145 (4.7)	0.94 (0.78-1.14)

Cumulative use

Never	43,489 (92.5)	2775 (92.5)	Reference	2775 (91.0)	Reference
≤ 50 nass-years	1678 (3.6)	84 (2.8)	0.75 (0.60-0.95)	131 (4.3)	1.19 (0.97-1.44)
50.1 – 100	592 (1.3)	43 (1.4)	0.98 (0.71-1.36)	45 (1.5)	1.04 (0.75-1.43)
100.1 – 180	497 (1.0)	35 (1.2)	0.90 (0.62-1.28)	36 (1.2)	0.93 (0.65-1.32)
> 180	734 (1.6)	63 (2.1)	0.91 (0.69-1.20)	64 (2.1)	0.93 (0.70-1.22)
			<i>P</i> trend: 0.24		<i>P</i> trend: 0.80

CI, confidence interval; OR, odds ratio. Numbers may not add up to the total numbers due to missing data in some variables.

* All results for each tobacco product were adjusted for cumulative use of the other products listed in this table, as well as for age, sex, ethnicity, place of residence, education level, wealth, physical activity, body mass index, hypertension, and self-reported diabetes.

† Among HD cases, those who started the use of the tobacco product after receiving a diagnosis of HD were excluded from the analyses related to the respective product.

Supplementary Table 2. Distribution of intake of selected medications in the Golestan Cohort Study, baseline data

Medication	HD cases (%)	Participants without HD (%)
Nitrate compounds *	940 (30.8)	171 (0.4)
Anti angina (not specified)	43 (1.4)	0 (0.0)
Cardiac medicine (not specified)	134 (4.4)	14 (0.03)
Atorvastatin	51 (1.7)	36 (0.1)
Amlodipine	201 (6.6)	373 (0.8)
Verapamil	22 (0.7)	23 (0.1)
Metoprolol	25 (0.8)	17 (0.04)
Diltiazem	152 (5.0)	42 (0.1)
Enalapril	182 (6.0)	573 (1.2)
Aspirin	935 (30.7)	927 (2.0)
Warfarin, Ticlopidine, Clopidogrel	56 (1.8)	27 (0.1)
Beta blocker	1108 (36.3)	5704 (12.1)
Lipid lowering	190 (6.2)	672 (1.4)
Glucose lowering	395 (13.0)	2078 (4.4)
Digoxin	145 (4.8)	27 (0.1)
Plus nitrate compounds *	49 (1.6)	5 (0.0)

HD, heart disease

* Including medications containing trinitroglycerin, isosorbide dinitrate, and glyceryltrinitrate compounds.

Supplementary Table 3. Association between some traditional risk factors of IHD and self-reported HD in the Golestan Cohort Study

Characteristics	Unadjusted OR (95% CI)	Adjusted OR (95% CI) *
Age (years)	1.06 (1.05-1.06)	1.05 (1.04-1.05)
Physical activity		
Irregular non-intense	Reference	Reference
Regular non-intense	0.66 (0.60-0.72)	0.73 (0.66-0.81)
Regular or irregular intense	0.45 (0.39-0.52)	0.59 (0.50-0.69)
	<i>P</i> trend: <0.001	<i>P</i> trend: <0.001
BMI (kg/m²)	1.03 (1.03-1.04)	1.03 (1.02-1.04)
Hypertension †		
Normotensive	Reference	Reference
Hypertensive	2.80 (2.60-3.03)	1.99 (1.83-2.17)
Self-reported diabetes		
Non-diabetic	Reference	Reference
Diabetic	3.51 (3.18-3.88)	2.47 (2.23-2.74)

BMI, body mass index; CI, confidence interval; HD, heart disease; IHD, ischemic heart disease; OR, odds ratio.

* Adjusted for other variables in this table and for sex, ethnicity, place of residence, education level, wealth, and cumulative use of water-pipe, cigarette, and nass at baseline.

† Including self-reported hypertension and individuals with high blood pressure at the baseline examination.

Supplementary Table 4. Association between water-pipe smoking and self-reported HD in the Golestan Cohort Study using different cutpoints

Water-pipe smoking (water-pipe-years) †	HD cases (%)	Participants without HD (%)	Unadjusted OR (95% CI)	Adjusted OR (95% CI) *
Never	2990 (98.3)	46,499 (99.0)	Reference	Reference
< 39	30 (1.0)	353 (0.7)	1.32 (0.91-1.92)	0.88 (0.59-1.30)
≥ 39	21 (0.7)	121 (0.3)	2.70 (1.70-4.30)	1.65 (1.01-2.69)
			<i>P</i> trend: <0.001	<i>P</i> trend: 0.23
Never	2990 (98.3)	46,499 (99.0)	Reference	Reference
< 50	32 (1.1)	373 (0.8)	1.33 (0.93-1.92)	0.87 (0.60-1.28)
≥ 50	19 (0.6)	101 (0.2)	2.93 (1.79-4.78)	1.83 (1.04-3.05)
			<i>P</i> trend: <0.001	<i>P</i> trend: 0.19
Never	2990 (98.3)	46,499 (99.0)	Reference	Reference
< 40	31 (1.0)	360 (0.8)	1.34 (0.93-1.94)	0.89 (0.60-1.30)
40-79	7 (0.2)	47 (0.1)	2.32 (1.05-5.13)	1.30 (0.56-3.00)
≥ 80	13 (0.4)	67 (0.1)	3.02 (1.66-5.47)	1.95 (1.05-3.63)
			<i>P</i> trend: <0.001	<i>P</i> trend: 0.13
Never	2990 (98.3)	46,499 (99.0)	Reference	Reference
< 50	32 (1.1)	373 (0.8)	1.33 (0.93-1.91)	0.87 (0.60-1.28)
50-99	6 (0.2)	46 (0.1)	2.03 (0.86-4.74)	1.25 (0.52-3.03)
≥ 100	13 (0.4)	55 (0.1)	3.68 (2.00-6.72)	2.30 (1.22-4.35)
			<i>P</i> trend: <0.001	<i>P</i> trend: 0.08

CI, confidence interval; HD, heart disease; OR, odds ratio.

* Adjusted for age, sex, ethnicity, place of residence, education level, wealth, physical activity, body mass index, hypertension, self-reported diabetes, and cumulative use of cigarette and nass (variables were as shown in Tables 1 and 2).

† Cumulative use; 100 water-pipe-years, for example, indicates water-pipe use equivalent to use 10 times per day for 10 years (or use 5 times per day for 20 years). Among HD cases, those who started hookah smoking after HD being diagnosed were excluded from the analyses.

Supplementary Table 5. Association of self-reported HD with water-pipe smoking and nass chewing among never cigarette smokers

Characteristics	HD cases (%)	Participants without HD (%)	Unadjusted OR (95% CI)	Adjusted OR (95% CI) *
Water-pipe smoking †				
Never use	2363 (98.5)	38,646 (99.0)	Reference	Reference
≤ 50 water-pipe-years	22 (0.9)	290 (0.7)	1.24 (0.80-1.92)	0.86 (0.55-1.36)
50.1 – 100	5 (0.2)	38 (0.1)	2.15 (0.85-5.47)	1.33 (0.50-3.49)
100.1 – 180	4 (0.2)	36 (0.1)	1.82 (0.64-5.11)	1.27 (0.44-3.67)
> 180	6 (0.2)	13 (0.03)	7.54 (2.87-19.88)	3.91 (1.31-11.66)
			<i>P</i> trend: <0.001	<i>P</i> trend: 0.05
Nass chewing †				
Never use	2295 (95.9)	37,396 (95.8)	Reference	Reference
≤ 50 nass-years	40 (1.7)	696 (1.8)	0.94 (0.68-1.29)	0.99 (0.71-1.38)
50.1 – 100	15 (0.6)	278 (0.7)	0.88 (0.52-1.48)	0.81 (0.47-1.39)
100.1 – 180	17 (0.7)	148 (0.6)	1.12 (0.68-1.83)	0.98 (0.59-1.63)
> 180	26 (1.1)	420 (1.1)	1.01 (0.68-1.50)	0.75 (0.50-1.14)
			<i>P</i> trend: 0.27	<i>P</i> trend: 0.19

CI, confidence interval; HD, heart disease; OR, odds ratio.

* Adjusted for cumulative use of the other tobacco product in this table, age, sex, ethnicity, place of residence, education level, wealth, physical activity, body mass index, hypertension, and self-reported diabetes (variables were as shown in Tables 1 and 2).

† Cumulative use. Those who started the use of the tobacco product after HD being diagnosed were excluded from the analyses related to the respective product.

Supplementary Table 6. Distribution of covariates by water-pipe smoking

Covariate	Never	Ever (water-pipe- years)			
		≤ 50	50.1-100	100.1-180	> 180
Total	49,489 (99.00)	405 (0.81)	52 (0.10)	43 (0.09)	25 (0.05)
Age (years)	52.1 (9.0)	54.5 (9.7)	58.7 (9.1)	59.6 (8.5)	64.8 (9.2)
Sex					
Women	28,453 (98.81)	265 (0.92)	31 (0.11)	31 (0.11)	15 (0.05)
Men	21,036 (99.14)	140 (0.66)	21 (0.10)	12 (0.06)	10 (0.05)
Ethnicity					
Non-Turkmen	12,291 (96.26)	363 (2.84)	48 (0.38)	42 (0.33)	24 (0.19)
Turkmen	37,198 (99.87)	42 (0.11)	4 (0.01)	1 (0.00)	1 (0.00)
Place of residence					
Rural	39,639 (99.10)	273 (0.68)	37 (0.09)	35 (0.09)	17 (0.04)
Urban	9850 (98.37)	132 (1.32)	15 (0.15)	8 (0.08)	8 (0.08)
Education					
No School	34,679 (98.80)	320 (0.91)	44 (0.13)	37 (0.11)	20 (0.06)
Primary/middle school	10,605 (99.14)	73 (0.68)	8 (0.07)	6 (0.06)	5 (0.05)
High school	3143 (99.68)	10 (0.32)	0 (0.00)	0 (0.00)	0 (0.00)
University	1062 (99.81)	2 (0.19)	0 (0.00)	0 (0.00)	0 (0.00)
Wealth					
Low	14,385 (98.66)	138 (0.95)	21 (0.14)	26 (0.18)	10 (0.07)
Low-Medium	9965 (98.75)	101 (1.00)	13 (0.13)	4 (0.04)	8 (0.08)
Medium-High	12,256 (99.29)	71 (0.58)	9 (0.07)	6 (0.05)	2 (0.02)
High	12,880 (99.11)	95 (0.73)	9 (0.07)	7 (0.05)	5 (0.04)
Physical activity					
Irregular non-intense	30,296 (98.91)	253 (0.83)	35 (0.11)	29 (0.09)	18 (0.06)
Regular non-intense	13,414 (99.17)	88 (0.65)	11 (0.08)	9 (0.07)	4 (0.03)
Regular or irregular intense	5614 (98.66)	63 (1.11)	6 (0.11)	5 (0.09)	2 (0.04)
BMI (kg/m²)	26.7 (5.5)	25.9 (5.4)	24.0 (4.9)	24.1 (5.2)	24.6 (4.9)
Hypertension †					
Normotensive	28,309 (98.94)	237 (0.83)	31 (0.11)	25 (0.09)	10 (0.03)
Hypertensive	20,960 (98.95)	168 (0.79)	21 (0.10)	18 (0.08)	15 (0.07)
Self-reported diabetes					
Non-diabetic	46,097 (98.99)	360 (0.77)	43 (0.09)	42 (0.09)	23 (0.05)
Diabetic	3,392 (98.35)	45 (1.30)	9 (0.26)	1 (0.03)	2 (0.06)

Figures are the number of participants (percentage), except for age and body mass index (BMI), for which mean (standard deviation) is presented. Numbers may not add up to the total numbers due to missing data in some variables. Among HD cases, those who started water-pipe smoking after HD being diagnosed were excluded.

† Including self-reported hypertension and individuals with high blood pressure at the baseline examination.

Supplementary Table 7. Distribution of covariates by cigarette smoking

Covariate	Never	Ever (pack-years)			
		≤ 5	5.1-10	10.1-20	> 20
Total	41,445 (82.89)	2742 (5.48)	1260 (2.52)	1798 (3.6)	2755 (5.51)
Age (years)	52.0 (9.0)	51.9 (9.2)	51.7 (8.8)	51.5 (8.8)	55.2 (9.0)
Sex					
Women	28,373 (98.52)	284 (0.99)	58 (0.20)	46 (0.16)	39 (0.14)
Men	13,072 (61.66)	2458 (11.59)	1202 (5.67)	1752 (8.26)	2716 (12.81)
Ethnicity					
Non-Turkmen	10,713 (83.83)	714 (5.59)	266 (2.08)	435 (3.40)	651 (5.09)
Turkmen	30,732 (82.57)	2028 (5.45)	994 (2.67)	1363 (3.66)	2104 (5.65)
Place of residence					
Rural	33,263 (83.20)	2222 (5.56)	989 (2.47)	1380 (3.45)	2127 (5.32)
Urban	8182 (81.66)	520 (5.19)	271 (2.70)	418 (4.17)	628 (6.27)
Education					
No School	30,923 (88.13)	1351 (3.85)	530 (1.51)	806 (2.30)	1479 (4.21)
Primary/middle school	7668 (71.67)	935 (8.74)	474 (4.43)	669 (6.25)	953 (8.91)
High school	2102 (66.73)	348 (11.05)	202 (6.41)	241 (7.65)	257 (8.16)
University	752 (70.81)	108 (10.17)	54 (5.08)	82 (7.72)	66 (6.21)
Wealth					
Low	11,896 (81.65)	883 (6.06)	377 (2.59)	549 (3.77)	865 (5.94)
Low-Medium	8434 (83.57)	524 (5.19)	240 (2.38)	340 (3.37)	554 (5.49)
Medium-High	10,315 (83.61)	640 (5.19)	302 (2.45)	428 (3.47)	652 (5.28)
High	10,797 (83.07)	695 (5.35)	341 (2.62)	481 (3.70)	684 (5.26)
Physical activity					
Irregular non-intense	27,215 (88.87)	1045 (3.41)	463 (1.51)	660 (2.16)	1240 (4.05)
Regular non-intense	10,217 (75.58)	1093 (8.08)	523 (3.87)	746 (5.52)	940 (6.95)
Regular or irregular intense	3862 (67.86)	597 (10.49)	273 (4.80)	389 (6.84)	570 (10.02)
BMI (kg/m²)	27.2 (5.5)	24.8 (4.8)	24.2 (4.7)	24.0 (4.6)	23.7 (4.5)
Hypertension †					
Normotensive	22,904 (80.07)	1817 (6.35)	862 (3.01)	1233 (4.31)	1788 (6.25)
Hypertensive	18,373 (86.76)	911 (4.30)	391 (1.85)	547 (2.58)	954 (4.51)
Self-reported diabetes					
Non-diabetic	38,398 (82.48)	2607 (5.60)	1204 (2.59)	1732 (3.72)	2612 (5.61)
Diabetic	3047 (88.40)	135 (3.92)	56 (1.62)	66 (1.91)	143 (4.15)

Figures are the number of participants (percentage), except for age and body mass index (BMI), for which mean (standard deviation) is presented. Numbers may not add up to the total numbers due to missing data in some variables. Among HD cases, those who started cigarette smoking after HD being diagnosed were excluded.

† Including self-reported hypertension and individuals with high blood pressure at the baseline examination.

Supplementary Table 8. Distribution of covariates by nass chewing

Covariate	Never	Ever (nass-year)			
		≤ 50	50.1-100	100.1-180	> 180
Total	46,264 (92.55)	1762 (3.52)	635 (1.27)	532 (1.06)	797 (1.59)
Age (years)	51.8 (8.9)	53.8 (9.4)	56.5 (9.6)	57.8 (9.1)	61.6 (8.8)
Sex					
Women	28,511 (98.98)	213 (0.74)	40 (0.14)	15 (0.05)	26 (0.09)
Men	17,753 (83.80)	1549 (7.31)	595 (2.81)	517 (2.44)	771 (3.64)
Ethnicity					
Non-Turkmen	11,826 (92.55)	457 (3.58)	149 (1.17)	130 (1.02)	216 (1.69)
Turkmen	34,438 (92.55)	1305 (3.51)	486 (1.31)	402 (1.08)	581 (1.56)
Place of residence					
Rural	36,498 (91.34)	1633 (4.09)	592 (1.48)	495 (1.24)	742 (1.86)
Urban	9766 (97.37)	129 (1.29)	43 (0.43)	37 (0.37)	55 (0.55)
Education					
No School	32,344 (92.19)	1175 (3.35)	476 (1.36)	412 (1.17)	678 (1.93)
Primary/middle school	9851 (92.13)	488 (4.56)	138 (1.29)	107 (1.00)	109 (1.02)
High school	3009 (95.58)	96 (3.05)	21 (0.67)	12 (0.38)	10 (0.32)
University	1060 (99.62)	3 (0.28)	0 (0.00)	1 (0.09)	0 (0.00)
Wealth					
Low	12,748 (87.49)	851 (5.84)	294 (2.02)	261 (1.79)	417 (2.86)
Low-Medium	9201 (91.23)	407 (4.04)	166 (1.65)	127 (1.26)	185 (1.83)
Medium-High	11,656 (94.48)	321 (2.60)	118 (0.96)	101 (0.82)	141 (1.14)
High	12,656 (97.41)	183 (1.41)	57 (0.44)	43 (0.33)	54 (0.42)
Physical activity					
Irregular non-intense	28,779 (94.00)	810 (2.65)	319 (1.04)	261 (0.87)	442 (1.44)
Regular non-intense	12,399 (91.72)	550 (4.07)	184 (1.36)	149 (1.10)	236 (1.75)
Regular or irregular intense	4926 (86.57)	400 (7.03)	129 (2.27)	118 (2.07)	117 (2.06)
BMI (kg/m²)	26.9 (5.5)	23.3 (4.5)	23.6 (4.6)	22.9 (4.2)	23.1 (4.2)
Hypertension †					
Normotensive	26,287 (91.91)	1166 (4.08)	408 (1.43)	312 (1.09)	429 (1.50)
Hypertensive	19,776 (93.42)	584 (2.76)	225 (1.06)	218 (1.03)	365 (1.72)
Self-reported diabetes					
Non-diabetic	42,968 (92.32)	1693 (3.64)	615 (1.32)	502 (1.08)	765 (1.64)
Diabetic	3296 (95.62)	69 (2.00)	20 (0.58)	30 (0.87)	32 (0.93)

Figures are the number of participants (percentage), except for age and body mass index (BMI), for which mean (standard deviation) is presented. Numbers may not add up to the total numbers due to missing data in some variables. Among HD cases, those who started nass chewing after HD being diagnosed were excluded.

† Including self-reported hypertension and individuals with high blood pressure at the baseline examination.