Supplementary Online Content

Geldsetzer P, Manne-Goehler J, Theilmann M, et al. Diabetes and hypertension in India: a nationally representative study of 1.3 million adults *JAMA Intern Med*. Published online January 29, 2018. doi:10.1001/jamainternmed.2017.8094

Supplement. **eMethods 1.** Methodology of the AHS and DLHS-4

eFigure 1. States and Union Territories covered by each survey

eMethods 2. Matching Annual Health Survey biomarker data to participants' socio-demographic data

eMethods 3. Computation of the household wealth index

eMethods 4. Computation of sampling weights

eTable 1. Sample characteristics stratified by whether the blood glucose or blood pressure measurement was missing

eTable 2. National diabetes and hypertension prevalence by age group and sex

eTable 3. National diabetes prevalence assuming all AHS respondents were unfasted

eFigure 2. Hypertension prevalence by five-year age group for India and WHO/NCD-RisC regions

eFigure 3. Prevalence of diabetes by rural versus urban residence, sex, and household wealth quintile assuming all AHS respondents were unfasted

eFigure 4. Prevalence of diabetes and hypertension by rural versus urban residence, sex, and education

eFigure 5. Prevalence of diabetes by rural versus urban residence, sex, and education assuming all AHS respondents were unfasted

eTable 4. Regression results for diabetes assuming all AHS participants were unfasted

eTable 5. Regression results for diabetes among those in whom fasting status could be ascertained (i.e., DLHS-4 participants only)

eFigure 6. The predicted probability of diabetes by age group, rural-urban location, and household wealth quintile assuming AHS participants were unfasted

eFigure 7. The predicted probability of diabetes by age group, rural-urban location, and household wealth quintile among those in whom fasting status could be ascertained (i.e., DLHS-4 participants only)

eTable 6. State-level age-standardized diabetes and hypertension prevalence estimates by sex

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eTable 7. State-level age-standardized diabetes and hypertension prevalence estimates by rural versus urban location

eTable 8. State-level crude diabetes and hypertension prevalence estimates by age group

eTable 9. State-level age-standardized diabetes prevalence estimates by sex assuming all AHS respondents were unfasted

eTable 10. State-level age-standardized diabetes prevalence estimates by rural versus urban location assuming all AHS respondents were unfasted

eTable 11. State-level crude diabetes prevalence estimates by age group assuming all AHS respondents were unfasted

eFigure 8. Association of the state- and district-level age-standardized prevalence of diabetes with mean household wealth quintile

eFigure 9. Association of the state- and district-level age-standardized prevalence of hypertension with mean household wealth quintile

eFigure 10. Comparison of age-standardized national diabetes prevalence reported in different studies

eReferences

This supplementary material has been provided by the authors to give readers additional information about their work.

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eMethods 1. Methodology of the AHS and DLHS-4

We pooled data from two large household surveys in India: The District-Level Household Survey-4 (DLHS-4) and the second update of the Annual Health Survey (AHS). eFigure1 shows the states and Union Territories covered by each survey. Both surveys are representative at the district level. They jointly cover all 29 states of India except Jammu and Kashmir (data were not collected due to violent conflicts) and Gujarat (data were not available in the public domain), and five of India's seven Union Territories (data were not available for Dadra and Nagar Haveli, and Lakshadweep). The two states and two Union Territories not included in this analysis only accounted for 6% of India's population in 2011 (the time of the last census).[1] Both surveys administered a questionnaire to the household head to ascertain socio-demographic information for each household member (regardless of whether the individual was present or absent at the time of the interviewer's visit), and measured blood glucose (BG) and blood pressure (BP) in each household member aged 18 years and older. All participants were asked to fast overnight until the time of the BG measurement in the morning. BG was measured once using the SD CodeFree handheld glucometer. BP was measured twice in the left upper arm (with the patient sitting) using an electronic BP monitor (Rossmax AW150). Data collectors were instructed to ensure a gap of at least three minutes between BP measurements. As part of the standard protocol, participants were asked to place their left arm on a flat surface (palm facing up) with the center of the upper arm being at approximately the same height as the heart, and instructed to refrain from talking during the measurement.

Annual Health Survey:

Data for the AHS were collected between 2012 and 2013 in all 284 districts of nine states of India, which were selected because they had the highest rate of infant and child mortality in the country in 2010.[2] The two-stage cluster random sampling design of the AHS was self-weighting at the district level. In the first stage, villages in rural areas and census enumeration blocks in urban areas were selected through simple random sampling with probability proportional to population size (using projections from the 2001 India Census). In the second stage, households were selected through systematic random sampling (sampling the first household randomly, and then selecting every alternate household). The AHS dataset containing participants' socio-demographic information was merged with the dataset containing BP measurements as outlined in eMethods2.

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District-Level Household Survey-4:

Data for the DLHS-4 were collected between 2012 and 2014 in all 336 districts of 18 states and five Union Territories (also referred to as 'states' in the manuscript) of India.[2] In the first stage, census villages in rural areas were selected through probability proportional to population size (again, using projections from the 2001 India Census), and urban frame survey blocks in urban areas through simple random sampling. In the second stage, households were selected through systematic random sampling.[3]

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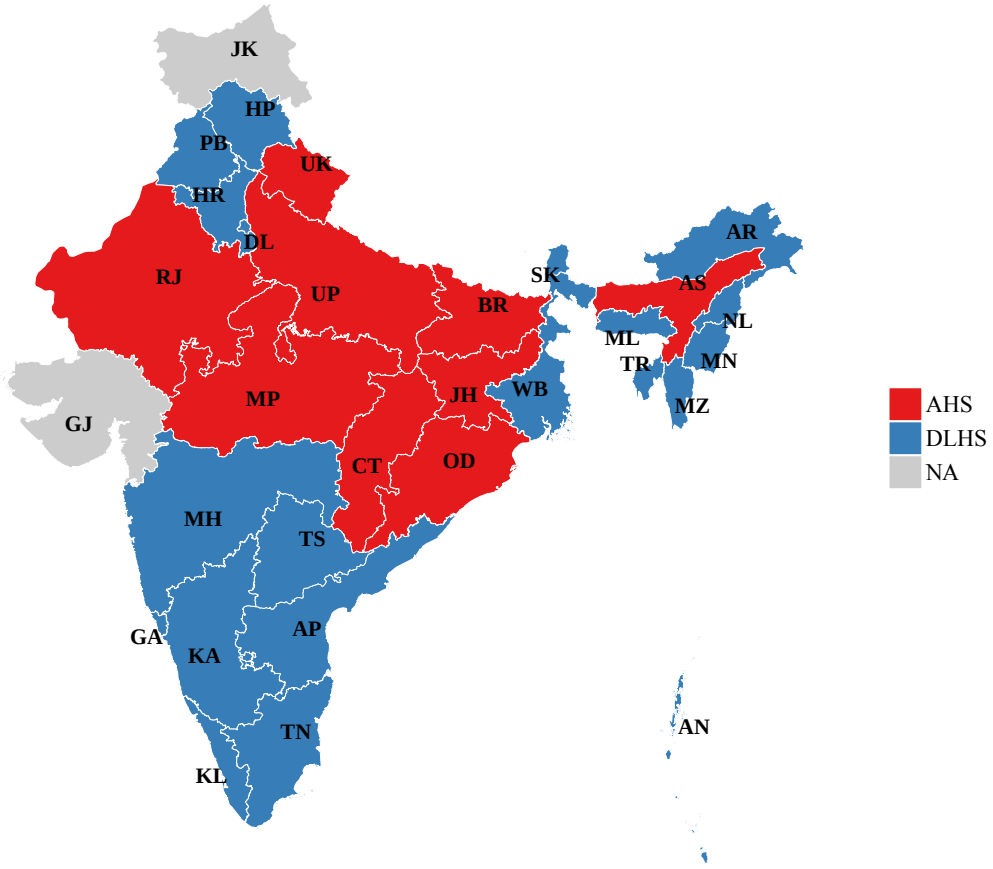
eFigure 1. States and Union Territories covered by each survey[a]



[a] The Union Territories, Chandigarh, Daman and Diu, and Puducherry, which were all covered by the DLHS-4, are not visible in the map due to their small area.

Abbreviations: AP, Andhra Pradesh; AR, Arunachal Pradesh; AS, Assam; BR, Bihar; CT, Chhattisgarh; DL, Delhi; GA, Goa; GJ, Gujarat; HR, Haryana; HP, Himachal Pradesh; JK, Jammu & Kashmir; JH, Jharkhand; KA, Karnataka; KL, Kerala; MP, Madhya Pradesh; MH, Maharashtra; MN, Manipur; ML, Meghalaya; MZ, Mizoram; NL, Nagaland; OD, Odisha (Orissa); PB, Punjab; RJ, Rajasthan; SK, Sikkim; TN, Tamil Nadu; TS, Telangana State; TR, Tripura; UP, Uttar Pradesh; UK, Uttarakhand (Uttaranchal); WB, West Bengal

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eMethods 2. Matching Annual Health Survey biomarker data to participants' socio-demographic data

Annual Health Survey (AHS) data in the public domain does not have a unique identifier that allows for merging of the 'laboratory dataset', which contains BG and BP measurements, to the dataset that contains respondents' full socio-demographic information. We thus merged these datasets using an indicator composed of the state, district, stratum (indicating rural versus urban location and village size), a household identifier that is unique within each primary sampling unit, and a household member serial number given during data entry as well as one assigned after data entry.

607,227 out of 1,028,545 (59.0%) non-pregnant adults in the laboratory dataset were successfully matched to their corresponding socio-demographic information. As detailed in the tables below, participants who were not matched had similar characteristics as those who were matched. Participants were merged independently of whether their BG or BP measurement was missing.

Across all nine AHS states:

Variable	**Matched** *n=607,227*	**Not matched** *n=421,318*
Male (%)	50.7	48.4
Age (mean ± SD)	40.8±15.9	38.9±17.0
Diabetes (%)	7.0	6.3
Plasma glucose in mg/dl (mean ± SD)	108.4±21.7	108.0±21.3
Hypertension (%)	22.3	21.0
Systolic BP (mean ± SD)	123.4±18.9	122.6±19.1
Diastolic BP (mean ± SD)	77.9±12.5	77.3±12.3
Urban (%)	19.4	18.0

Abbreviations: BP=blood pressure; SD=standard deviation; mg=milligram; dl= deciliter.

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Assam:

Variable	**Matched** *n=62,882*	**Not matched** *n=23,626*
Male (%)	51.3	44.5
Age (mean ± SD)	40.3±14.9	37.1±16.1
Diabetes (%)	7.5	7.3
Plasma glucose in mg/dl (mean ± SD)	109.4±21.5	108.5±21.3
Hypertension (%)	24.2	19.7
Systolic BP (mean ± SD)	125.7±17.6	123.3±17.5
Diastolic BP (mean ± SD)	79.5±11.8	77.9±11.5
Urban (%)	16.8	19.8

Abbreviations: BP=blood pressure; SD=standard deviation; mg=milligram; dl= deciliter.

Bihar:

Variable	**Matched** *n=71,861*	**Not matched** *n=80,049*
Male (%)	49.6	53.5
Age (mean ± SD)	40.8±15.9	38.3±16.9
Diabetes (%)	6.9	5.3
Plasma glucose in mg/dl (mean ± SD)	106.7±19.8	104.5±18.6
Hypertension (%)	22.7	18.8
Systolic BP (mean ± SD)	123.7±18.6	120.9±17.5
Diastolic BP (mean ± SD)	77.9±12.8	77.2±11.6
Urban (%)	9.6	8.3

Abbreviations: BP=blood pressure; SD=standard deviation; mg=milligram; dl= deciliter.

Chhattisgarh:

Variable	**Matched** *n=37,579*	**Not matched** *n=19,997*
Male (%)	52.6	48.4
Age (mean ± SD)	39.9±14.9	38.8±16.1
Diabetes (%)	8.8	9.2
Plasma glucose in mg/dl (mean ± SD)	110.0±19.2	110.1±21.0
Hypertension (%)	18.1	18.7
Systolic BP (mean ± SD)	123.1±16.5	123.2±17.2
Diastolic BP (mean ± SD)	77.7±11.9	77.5±12.2
Urban (%)	19.1	22.2

Abbreviations: BP=blood pressure; SD=standard deviation; mg=milligram; dl= deciliter.

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Jharkhand:

Variable	**Matched** *n=35,721*	**Not matched** *n=18,875*
Male (%)	44.8	43.6
Age (mean ± SD)	40.6±15.5	39.1±16.8
Diabetes (%)	6.8	5.4
Plasma glucose in mg/dl (mean ± SD)	105.4±24.8	103.9±21.7
Hypertension (%)	25.0	24.3
Systolic BP (mean ± SD)	123.0±20.0	122.7±19.9
Diastolic BP (mean ± SD)	77.8±13.3	77.5±13.2
Urban (%)	17.6	22.2

Abbreviations: BP=blood pressure; SD=standard deviation; mg=milligram; dl= deciliter.

Madhya Pradesh:

Variable	**Matched** *n=101,896*	**Not matched** *n=63,056*
Male (%)	54.4	51.1
Age (mean ± SD)	40.0±15.8	38.9±16.8
Diabetes (%)	6.2	5.4
Plasma glucose in mg/dl (mean ± SD	107.3±20.0	107.3±19.0
Hypertension (%)	21.7	21.2
Systolic BP (mean ± SD)	124.6±18.1	124.3±17.8
Diastolic BP (mean ± SD)	79.8±11.4	79.6±11.1
Urban (%)	32.4	28.9

Abbreviations: BP=blood pressure; SD=standard deviation; mg=milligram; dl= deciliter.

Odisha:

Variable	**Matched** *n=92,000*	**Not matched** *n=21,570*
Male (%)	49.2	43.8
Age (mean ± SD)	42.2±16.0	39.2±17.5
Diabetes (%)	7.0	6.4
Plasma glucose in mg/dl (mean ± SD)	107.6±24.0	106.3±23.2
Hypertension (%)	20.2	18.6
Systolic BP (mean ± SD)	120.7±19.8	119.6±19.8
Diastolic BP (mean ± SD)	75.4±13.2	74.8±13.1
Urban (%)	14.3	13.2

Abbreviations: BP=blood pressure; SD=standard deviation; mg=milligram; dl= deciliter.

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Rajasthan:

Variable	**Matched** *n=81,931*	**Not matched** *n=25,974*
Male (%)	49.6	44.6
Age (mean ± SD)	41.0±16.1	37.9±17.5
Diabetes (%)	6.9	6.2
Plasma glucose in mg/dl (mean ± SD)	109.7±20.4	109.0±19.7
Hypertension (%)	22.8	20.9
Systolic BP (mean ± SD)	122.9±18.5	121.9±18.3
Diastolic BP (mean ± SD)	78.7±11.9	78.2±11.8
Urban (%)	17.7	17.1

Abbreviations: BP=blood pressure; SD=standard deviation; mg=milligram; dl= deciliter.

Uttar Pradesh:

Variable	**Matched** *n=103,384*	**Not matched** *n=148,213*
Male (%)	51.6	47.9
Age (mean ± SD)	40.4±16.3	39.4±17.2
Diabetes (%)	6.9	6.2
Plasma glucose in mg/dl (mean ± SD)	110.4±22.0	110.2±22.3
Hypertension (%)	21.8	22.0
Systolic BP (mean ± SD)	123.1±20.0	122.9±20.6
Diastolic BP (mean ± SD)	76.2±13.0	76.1±13.0
Urban (%)	21.3	17.5

Abbreviations: BP=blood pressure; SD=standard deviation; mg=milligram; dl= deciliter.

Uttarakhand:

Variable	**Matched** *n=19,973*	**Not matched** *n=19,958*
Male (%)	47.0	42.6
Age (mean ± SD)	42.7±16.6	40.1±17.3
Diabetes (%)	8.0	7.3
Plasma glucose in mg/dl (mean ± SD)	109.6±25.2	111.3±25.9
Hypertension (%)	32.1	25.9
Systolic BP (mean ± SD)	127.2±19.6	124.0±20.1
Diastolic BP (mean ± SD)	81.5±11.8	79.2±12.3
Urban (%)	22.0	21.3

Abbreviations: BP=blood pressure; SD=standard deviation; mg=milligram; dl= deciliter.

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eMethods 3. Computation of the household wealth index

While neither the AHS nor the DLHS-4 contained information on household income or expenditure, they both asked about household characteristics and ownership of durable assets, which allows for the creation of a household wealth index. We created a household wealth index through a Principal Component Analysis (PCA) using the methodology developed by Filmer and Pritchett.[4] The advantage of a PCA is that the weights attributed to each asset or housing characteristic (henceforth assets) are not determined arbitrarily by the authors but instead are data-driven.

As a first step, a binary indicator was generated for each asset. Data on the following assets were available in both surveys and coded as being equal to one if the household head reported owning or having access to the asset: improved water supply (private or public access to piped water, hand pump, tube well, borehole or protected dug well); improved sanitation facility (not shared (pour) flush toilet, Ventilated Improved Pit or pit latrine with slab), modern cooking fuel (liquefied petroleum gas, electricity, biogas), house structure (pucca), clean source of lighting (electricity, solar), house ownership, and land ownership. Furthermore, indicators for each of the following assets were set to one if the household head reported owning at least one item of the following durable goods: radio, television, phone, fridge, bike, scooter, car, computer, washing machine, and sewing machine.

As a second step, the PCA was run separately for urban and rural areas on these binary indicator variables and the first (unrotated) principal component was extracted. The first principal component contains the largest part of the information on the variation in asset ownership and was used to predict the asset score of each household. The asset score has a mean of zero and standard deviation of one with lower asset scores indicating less wealth. To improve interpretability, the asset score was divided into quintiles (again, separately for rural and urban areas).

Variables used to calculate the household wealth index:

Asset	**Coded as 1**	**Coded as 0**
Improved water supply	Piped water into dwelling, yard or plot; public tap or standpipe; hand pump; tube well or borehole; protected dug well	Tanker, truck or cart with small tank; surface water;
Improved sanitation facility	If not shared: (Pour) flush connected to piped sewer system, septic tank or pit latrine; Ventilated Improved Pit; pit latrine with slab	Any shared facility; pit latrine without slab; service latrine; open defecation
Cooking fuel	LPG; electricity; biogas	Firewood; crop residue; cow dung

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		cake; coal, lignite or charcoal; kerosene
House structure	Pucca	Semi-Pucca, Kuccha
Source of lighting	Electricity; solar	Kerosene, other oils, none
Ownership of house	Owned	Rented
land	Ownership of any land	No land owned
Radio	Household owns at least one of this asset	Household does not own this asset
TV		
Phone		
Fridge		
Bike		
Scooter		
Car		
Computer		
Washing machine		
Sewing machine		

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eMethods 4. Computation of sampling weights

The AHS is self-weighting at the district level. For AHS respondents, we therefore computed weights that consisted of the proportion that is obtained when dividing the relative population size of a district (i.e., population size of the district divided by the population size across all nine AHS states) by the relative sample size of a district (i.e., sample size of the district divided by total AHS sample size across all nine states). For DLHS-4 respondents the same weight was computed as above for the AHS, which was then multiplied by the weights given in the DLHS-4 dataset that adjust for the complex survey design (the DLHS-4 is not self-weighting). Lastly, the weights were adjusted for the fact that the AHS sample size is smaller relative to the population it represents than the DLHS-4 sample size. These weights were used to calculate all crude prevalence estimates provided in the manuscript.

To obtain age-standardized prevalence estimates, the weights for the crude prevalence estimates were multiplied by the proportion of adults in the respondent's five-year age group in the WHO reference population.[5] Code for the computation of these sampling weights can be obtained from the corresponding author.

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eTable 1. Sample characteristics stratified by whether the blood glucose or blood pressure measurement was missing[a]

	Not missing	Missing
n	1,320,555	297,804
Male, no. (%)	619,147 (46.9)	227,186 (76.3)
Age group, no. (%)		
18-25 years	253,154 (19.2)	76,191 (25.6)
26-35 years	320,018 (24.2)	70,311 (23.6)
36-45 years	281,706 (21.3)	56,158 (18.9)
46-55 years	212,465 (16.1)	42,385 (14.2)
56-65 years	150,940 (11.4)	30,635 (10.3)
>65 years	102,253 (7.7)	22,105 (7.4)
Education, no. (%)		
<Primary School	504,829 (38.4)	91,186 (30.8)
Primary School	163,953 (12.5)	34,474 (11.6)
Middle School	203,128 (15.4)	46,764 (15.8)
Secondary School	182,391 (13.9)	47,396 (16.0)
High School	128,270 (9.8)	36,654 (12.4)
>High School	132,544 (10.1)	39,459 (13.3)
Household wealth quintile, no. (%)		
1 (poorest)	254,652 (20.2)	51,072 (17.8)
2	248,101 (19.7)	55,014 (19.2)
3	245,748 (19.5)	57,270 (20.0)
4	253,905 (20.1)	60,619 (21.2)
5 (richest)	259,491 (20.6)	62,408 (21.8)
Currently married, no. (%)	988,456 (75.0)	198,873 (67.0)
Urban area, no. (%)	429,330 (32.5)	106,233 (35.7)

Abbreviations: no.=number; %=Percentage.

[a] These numbers were not weighted using sampling weights.

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eTable 2. National diabetes and hypertension prevalence by age group and sex[a,b]

	Diabetes		Hypertension	
	Female, % (95% CI)	*Male, % (95% CI)*	*Female, % (95% CI)*	*Male, % (95% CI)*
Age group				
18-25 years	2.6 (2.4 - 2.7)	2.4 (2.2 - 2.5)	9.2 (8.9 - 9.6)	14.6 (14.2 - 15.0)
26-35 years	4.0 (3.8 - 4.2)	4.6 (4.4 - 4.8)	14.2 (13.8 - 14.6)	21.0 (20.6 - 21.4)
36-45 years	7.0 (6.8 - 7.3)	7.5 (7.3 - 7.8)	23.0 (22.6 - 23.4)	27.7 (27.2 - 28.2)
46-55 years	11.2 (10.9 - 11.5)	11.3 (10.9 - 11.6)	32.7 (32.2 - 33.2)	33.7 (33.1 - 34.3)
56-65 years	13.2 (12.8 - 13.6)	13.5 (13.1 - 14.0)	41.2 (40.6 - 41.9)	39.0 (38.3 - 39.6)
>65 years	13.9 (13.4 - 14.4)	14.0 (13.5 - 14.5)	48.6 (47.9 - 49.3)	43.4 (42.7 - 44.2)
Total population				
Crude	7.3 (7.1 - 7.4)	7.8 (7.6 - 8.0)	23.6 (23.3 - 23.8)	27.4 (27.0 - 27.7)
Age-standardized[2]	6.1 (6.0 - 6.3)	6.5 (6.4 - 6.7)	20.0 (19.7 - 20.3)	24.5 (24.2 - 24.9)

[a] The diabetes prevalence shown in this table assumes all AHS participants were fasted at the time of the blood glucose measurement. eTable3 shows national diabetes prevalence assuming all AHS participants were unfasted.
[b] Age-standardization was to the World Health Organization's reference population.[5]

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eTable 3. National diabetes prevalence assuming all AHS respondents were unfasted[a]

	Diabetes	
Age group	**Female** *Percent (95% CI)*	**Male** *Percent (95% CI)*
18-25 years	2.1 (2.0 - 2.3)	1.8 (1.7 - 1.9)
26-35 years	3.4 (3.2 - 3.5)	3.7 (3.5 - 3.8)
36-45 years	5.8 (5.5 – 6.0)	6.0 (5.8 - 6.2)
46-55 years	9.1 (8.8 - 9.5)	8.9 (8.6 - 9.2)
56-65 years	10.5 (10.2 - 10.9)	10.6 (10.2 - 10.9)
>65 years	10.6 (10.2 - 11.1)	10.3 (9.8 - 10.7)
Total (crude)	*5.9 (5.7 - 6.1)*	*6.1 (5.9 - 6.2)*
Total (age-standardized[1])	*5.0 (4.8 - 5.1)*	*5.1 (5.0 - 5.3)*

[a] Age-standardization was to the World Health Organization's reference population.[5]

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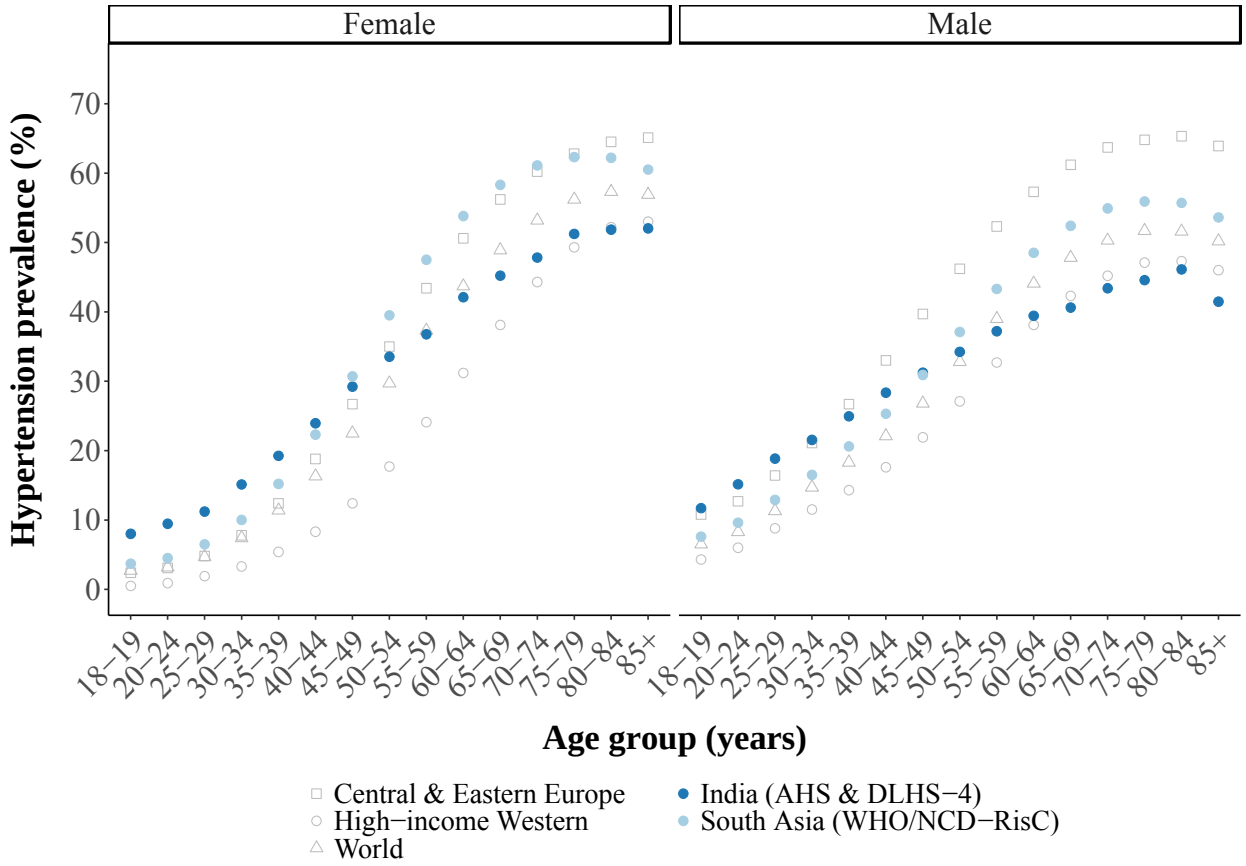
eFigure 2. Hypertension prevalence by five-year age group for India and WHO/NCD-RisC regions[a,b,c]



[a] Data for 'South Asia', 'Central & Eastern Europe', 'High-income Western', and 'World' were extracted from Zhou et al.[6]
[b] WHO/NCD-RisC estimates are for 2015.
[c] The countries included in each world region are listed below.

South Asia: Afghanistan, Bangladesh, Bhutan, India, Nepal, Pakistan

Central and Eastern Europe
Central Europe: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Hungary, Macedonia (TFYR), Montenegro, Poland, Romania, Serbia, Slovakia, Slovenia
Eastern Europe: Belarus, Estonia, Latvia, Lithuania, Moldova, Russian Federation, Ukraine

High-income Western countries
High-income English-speaking countries: Australia, Canada, Ireland, New Zealand, United Kingdom, United States of America
North-Western Europe: Austria, Belgium, Denmark, Finland, Germany, Greenland, Iceland, Luxembourg, Netherlands, Norway, Sweden, Switzerland
South-Western Europe: Andorra, Cyprus, France, Greece, Israel, Italy, Malta, Portugal, Spain

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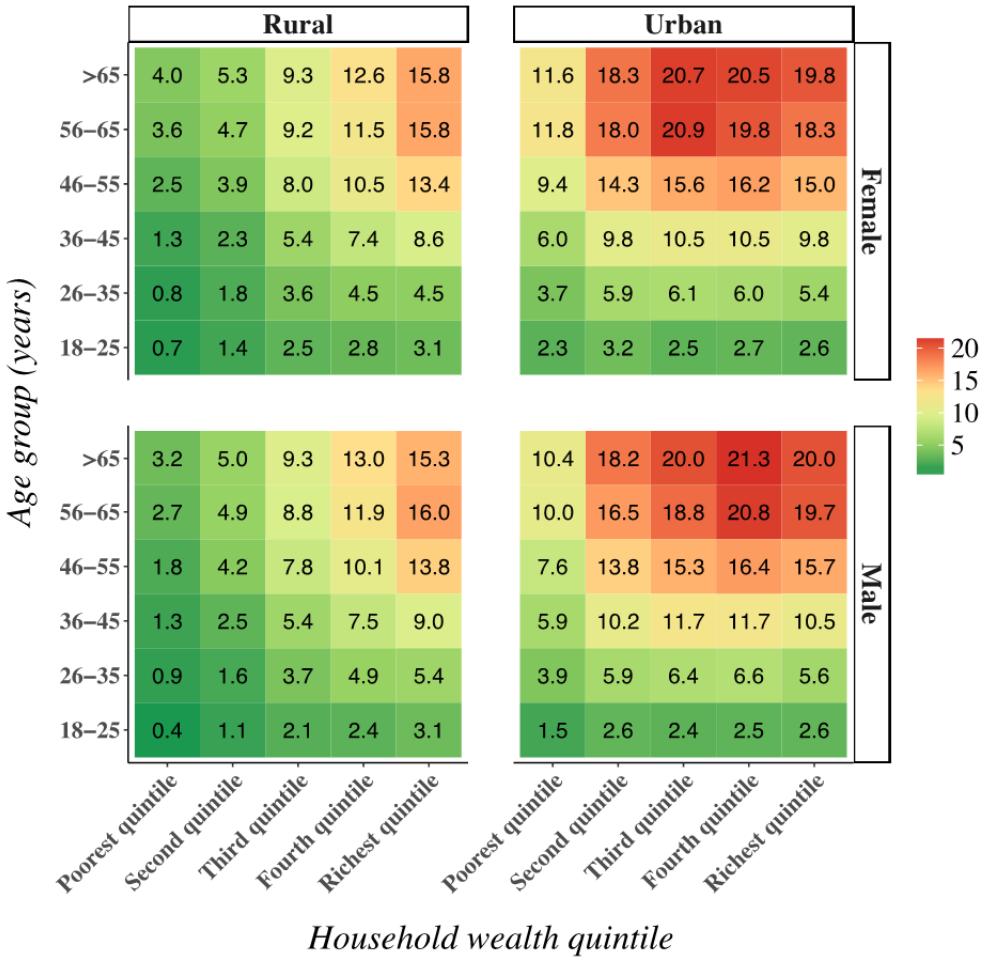
eFigure 3. Prevalence of diabetes by rural versus urban residence, sex, and household wealth quintile assuming all AHS respondents were unfasted



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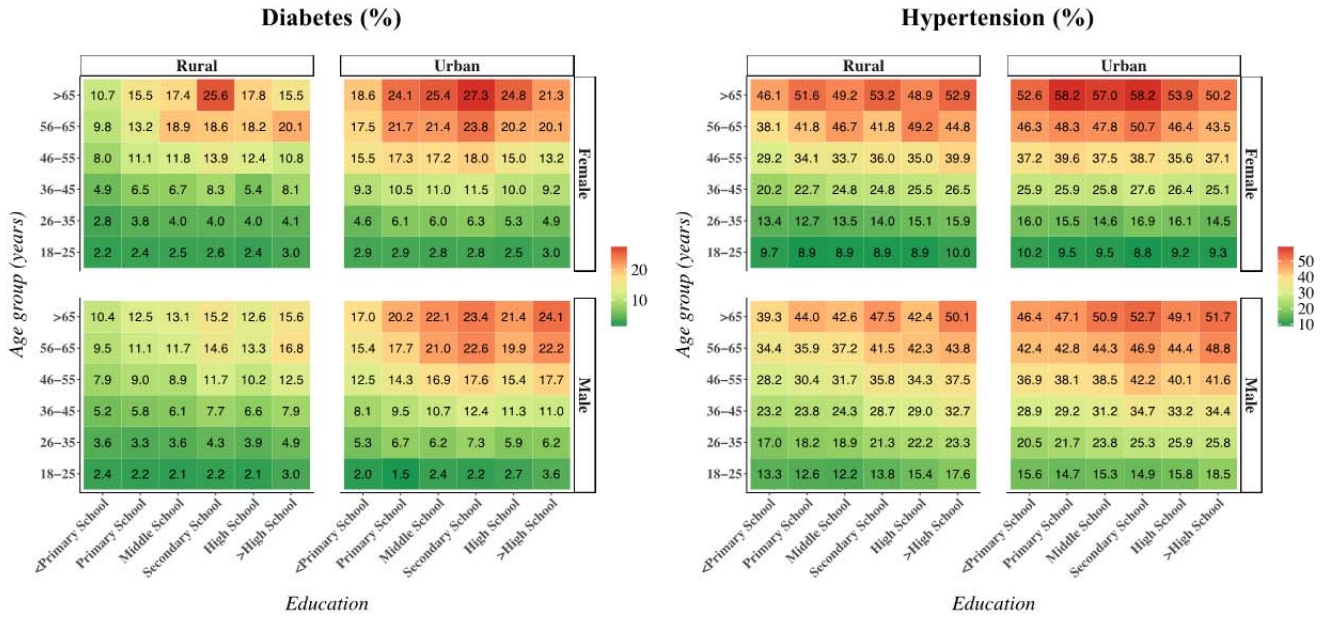
eFigure 4. Prevalence of diabetes and hypertension by rural versus urban residence, sex, and education



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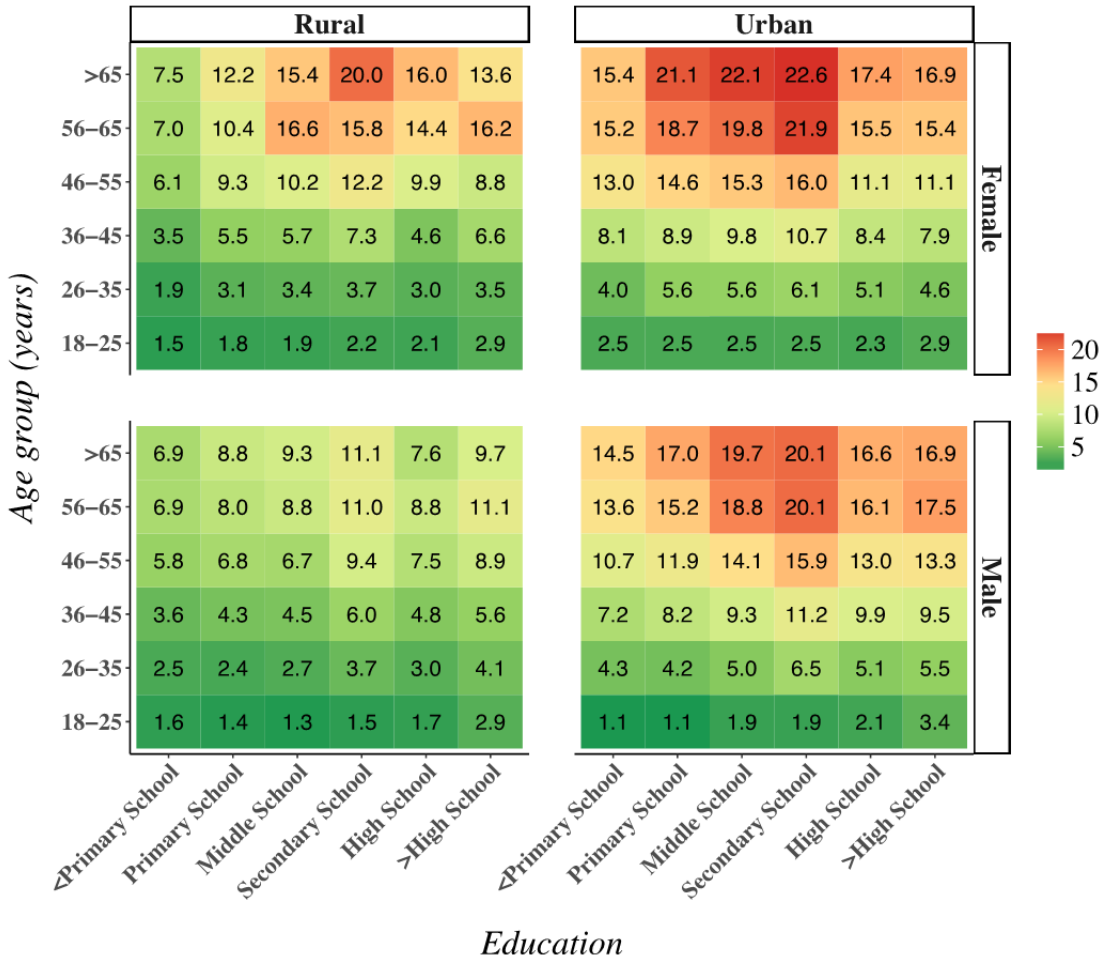
eFigure 5. Prevalence of diabetes by rural versus urban residence, sex, and education assuming all AHS respondents were unfasted



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eTable 4. Regression results for diabetes assuming all AHS participants were unfasted[a,b]

	Diabetes			
Characteristic	**Rural**		**Urban**	
	Difference in probability[b] (95% CI)	***P***	***Difference in probability[b] (95% CI)***	***P***
Age group				
18-25 years	Ref.		Ref.	
26-35 years	1.28 (1.15 - 1.42)	<0.001	2.54 (2.30 - 2.77)	<0.001
36-45 years	3.14 (2.97 - 3.31)	<0.001	6.66 (6.34 - 6.98)	<0.001
46-55 years	5.35 (5.13 - 5.58)	<0.001	11.12 (10.71 - 11.53)	<0.001
56-65 years	6.81 (6.55 - 7.08)	<0.001	14.45 (13.95 - 14.95)	<0.001
>65 years	7.50 (7.19 - 7.81)	<0.001	15.17 (14.58 - 15.75)	<0.001
Wealth quintile				
1 (poorest)	Ref.		Ref.	
2	0.11 (-0.01 - 0.23)	<0.067	0.84 (0.54 - 1.14)	<0.001
3	0.24 (0.08 - 0.40)	<0.003	1.88 (1.53 - 2.22)	<0.001
4	0.72 (0.53 - 0.90)	<0.001	2.67 (2.29 - 3.04)	<0.001
5 (richest)	2.32 (2.08 - 2.56)	<0.001	3.32 (2.90 - 3.74)	<0.001
Education				
<Primary School	Ref.		Ref.	
Primary School	0.49 (0.34 - 0.65)	<0.001	0.67 (0.31 - 1.03)	<0.001
Middle School	0.37 (0.22 - 0.52)	<0.001	0.54 (0.21 - 0.87)	0.001
Secondary School	0.18 (0.00 - 0.37)	0.050	0.41 (0.08 - 0.75)	0.016
High School	-0.76 (-0.96 - -0.56)	0.001	-0.49 (-0.84 - -0.14)	0.006
>High School	-1.11 (-1.36 - -0.85)	0.001	-1.38 (-1.74 - -1.02)	<0.001
Currently married	-0.26 (-0.40 - -0.13)	<0.001	0.21 (-0.04 - 0.46)	0.197
Male	0.25 (0.16 - 0.35)	<0.001	0.56 (0.37 - 0.74)	<0.001

Abbreviations: Coeff.=Coefficient; CI=Confidence Interval; Ref.=Reference category.

[a] These linear probability models included all socio-demographic variables listed in the table (age group, wealth quintile, education, marital status, and sex) and a binary indicator for each PSU (PSU-level fixed effects). Standard errors were adjusted for clustering at the PSU level.

[b] These regressions coefficients should be interpreted as the average absolute difference (in percentage points) in the probability of having diabetes (compared to the reference category).

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eTable 5. Regression results for diabetes among those in whom fasting status could be ascertained (i.e., DLHS-4 participants only)[a,b]

	Diabetes			
Characteristic	**Rural**		**Urban**	
	Difference in probability[b] (95% CI)	***P***	***Difference in probability[b] (95% CI)***	***P***
Age group				
18-25 years	Ref.		Ref.	
26-35 years	1.88 (1.69 - 2.06)	<0.001	3.19 (2.93 - 3.45)	<0.001
36-45 years	5.22 (4.96 - 5.48)	<0.001	8.53 (8.21 - 8.86)	<0.001
46-55 years	8.97 (8.62 - 9.31)	<0.001	14.13 (13.65 - 14.61)	<0.001
56-65 years	11.55 (11.16 - 11.94)	<0.001	18.32 (17.81 - 18.83)	<0.001
>65 years	13.08 (12.58 - 13.57)	<0.001	19.84 (19.00 - 20.68)	<0.001
Wealth quintile				
1 (poorest)	Ref.		Ref.	
2	0.76 (0.34 - 1.18)	<0.001	1.61 (1.19 - 2.04)	<0.001
3	1.46 (1.02 - 1.91)	<0.001	2.63 (2.16 - 3.09)	<0.001
4	2.68 (2.23 - 3.14)	<0.001	2.60 (2.13 - 3.06)	<0.001
5 (richest)	3.44 (2.93 - 3.96)	<0.001	1.74 (1.26 - 2.22)	<0.001
Education				
<Primary School	Ref.		Ref.	
Primary School	0.86 (0.57 - 1.16)	<0.001	1.06 (0.53 - 1.58)	<0.001
Middle School	0.86 (0.62 - 1.10)	<0.001	1.13 (0.68 - 1.58)	<0.001
Secondary School	1.17 (0.86 - 1.49)	<0.001	1.35 (0.88 - 1.83)	<0.001
High School	0.06 (-0.24 - 0.36)	0.694	0.22 (-0.33 - 0.77)	0.430
>High School	1.04 (0.71 - 1.36)	<0.001	0.50 (-0.10 - 1.10)	0.102
Currently married	0.32 (0.11 - 0.53)	0.003	0.64 (0.32 - 0.96)	<0.001
Male	-0.06 (-0.22 - 0.10)	0.435	0.12 (-0.06 - 0.30)	0.183

Abbreviations: Coeff.=Coefficient; CI=Confidence Interval; Ref.=Reference category.

[a] These linear probability models included all socio-demographic variables listed in the table (age group, wealth quintile, education, marital status, and sex) and a binary indicator for each PSU (PSU-level fixed effects). Standard errors were adjusted for clustering at the PSU level.

[b] These regressions coefficients should be interpreted as the average absolute difference (in percentage points) in the probability of having diabetes (compared to the reference category).

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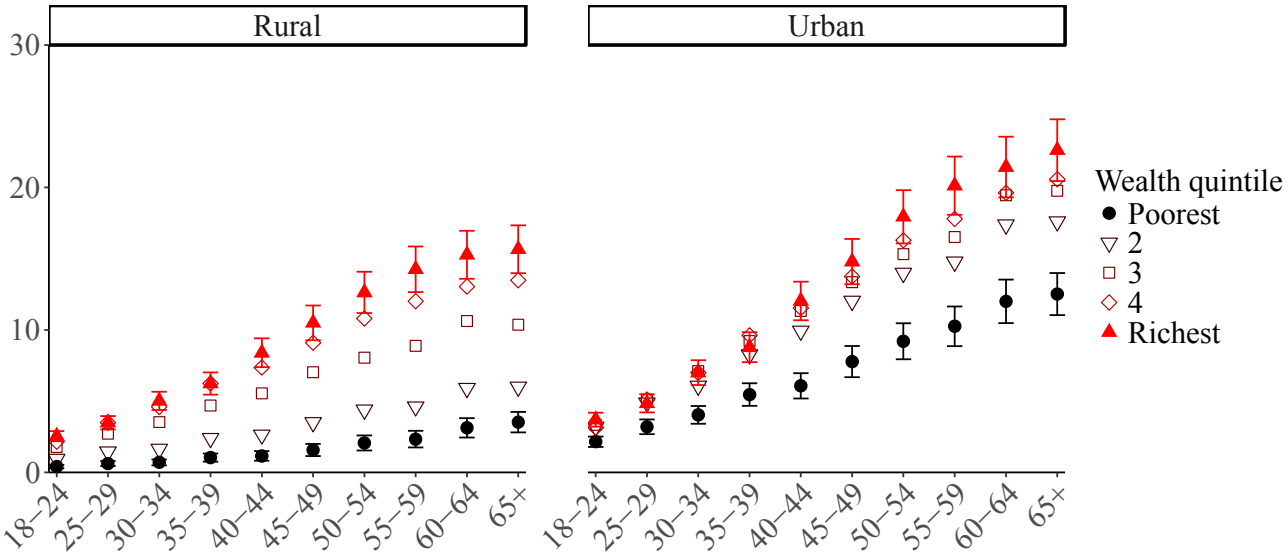
eFigure 6. The predicted probability of diabetes by age group, rural-urban location, and household wealth quintile assuming AHS participants were unfasted[a]



[a] Predicted probabilities were obtained from multivariable logistic regressions of diabetes on individuals' socio-demographic characteristics (age group, household wealth quintile, education, marital status, sex, and rural-urban location), district-level fixed effects (i.e., a binary indicator for each district), and an interaction term between age group and household wealth quintile.

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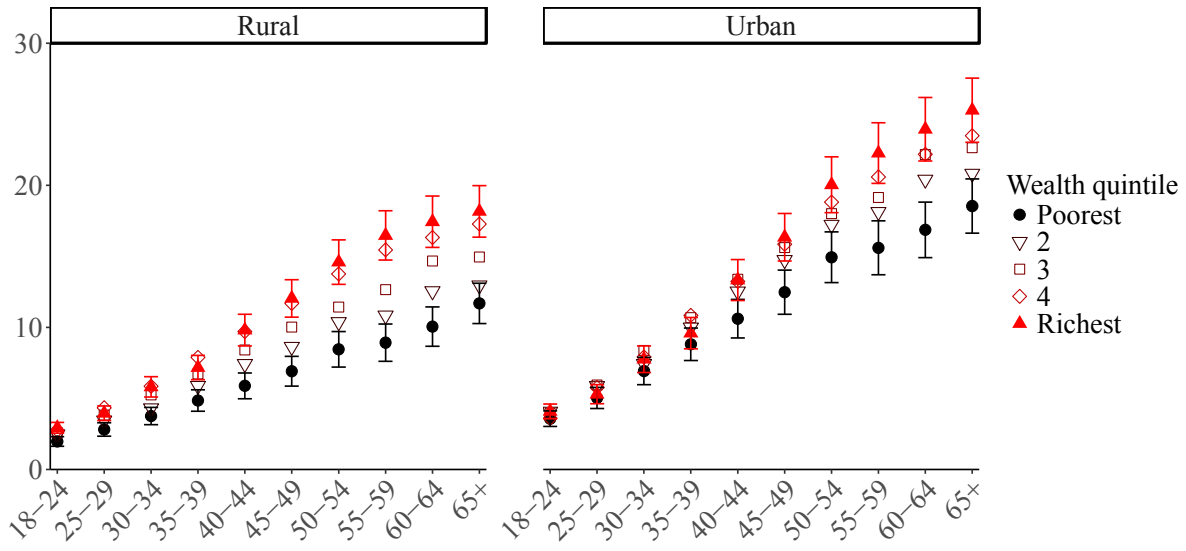
eFigure 7. The predicted probability of diabetes by age group, rural-urban location, and household wealth quintile among those in whom fasting status could be ascertained (i.e., DLHS-4 participants only)[a]



[a] Predicted probabilities were obtained from multivariable logistic regressions of diabetes on individuals' socio-demographic characteristics (age group, household wealth quintile, education, marital status, sex, and rural-urban location), district-level fixed effects (i.e., a binary indicator for each district), and an interaction term between age group and household wealth quintile.

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eTable 6. State-level age-standardized diabetes and hypertension prevalence estimates by sex

State	Sex	Diabetes			Hypertension		
		Estimate	Lower 95% CI	Upper 95% CI	Estimate	Lower 95% CI	Upper 95% CI
Andaman and Nicobar	Female	7.96	6.49	9.72	26.34	23.35	29.57
Andaman and Nicobar	Male	8.57	6.69	10.92	37.16	34.18	40.25
Andhra Pradesh	Female	8.90	8.36	9.48	20.69	20.01	21.40
Andhra Pradesh	Male	9.43	8.86	10.03	28.26	27.34	29.20
Arunachal Pradesh	Female	4.50	3.47	5.81	21.42	19.84	23.10
Arunachal Pradesh	Male	4.33	3.33	5.61	27.69	26.39	29.04
Assam	Female	3.36	2.93	3.85	16.82	15.17	18.62
Assam	Male	3.92	3.38	4.55	21.26	19.47	23.16
Bihar	Female	2.39	2.02	2.82	20.82	19.37	22.34
Bihar	Male	3.06	2.64	3.53	20.24	19.00	21.53
Chandigarh	Female	9.75	7.79	12.14	31.30	28.14	34.65
Chandigarh	Male	10.56	8.75	12.69	41.75	38.21	45.37
Chhattisgarh	Female	3.62	3.08	4.25	13.50	12.19	14.93
Chhattisgarh	Male	5.30	4.49	6.24	17.12	15.69	18.64
Daman and Diu	Female	9.71	7.22	12.95	36.28	31.77	41.04
Daman and Diu	Male	6.72	4.32	10.32	43.53	38.33	48.87
Goa	Female	16.37	14.20	18.79	26.37	22.99	30.04
Goa	Male	17.90	15.37	20.74	32.90	29.09	36.95
Haryana	Female	5.52	5.20	5.85	20.33	19.74	20.93
Haryana	Male	5.53	5.20	5.87	28.10	27.38	28.82
Himachal Pradesh	Female	3.31	2.91	3.76	30.79	29.60	32.00
Himachal Pradesh	Male	3.26	2.83	3.76	38.53	37.07	40.02
Jharkhand	Female	3.08	2.59	3.66	18.81	17.48	20.23
Jharkhand	Male	3.85	3.28	4.52	24.72	22.80	26.75
Karnataka	Female	9.38	8.99	9.77	21.01	20.60	21.42
Karnataka	Male	10.17	9.74	10.61	25.45	24.89	26.02
Kerala	Female	11.76	10.79	12.82	32.98	31.28	34.72
Kerala	Male	14.43	13.15	15.81	41.35	39.25	43.47
Madhya Pradesh	Female	2.33	1.98	2.75	16.67	15.65	17.74
Madhya Pradesh	Male	2.75	2.25	3.34	19.87	18.64	21.15
Maharashtra	Female	5.13	4.83	5.44	21.76	21.18	22.35
Maharashtra	Male	5.58	5.26	5.93	28.17	27.42	28.92
Manipur	Female	7.39	6.72	8.14	17.59	16.52	18.72
Manipur	Male	7.94	7.23	8.70	25.69	24.27	27.16

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Meghalaya	Female	2.87	2.28	3.60	18.27	16.77	19.89
Meghalaya	Male	2.97	2.33	3.77	22.91	20.91	25.03
Mizoram	Female	3.45	3.01	3.95	14.82	13.97	15.72
Mizoram	Male	3.59	3.17	4.07	24.54	23.33	25.78
Nagaland	Female	5.58	5.03	6.18	31.78	30.15	33.44
Nagaland	Male	6.43	5.80	7.13	39.59	37.84	41.37
NCT of Delhi	Female	9.41	8.69	10.18	22.41	20.96	23.94
NCT of Delhi	Male	9.47	8.78	10.21	27.94	26.36	29.59
Odisha	Female	2.87	2.63	3.13	15.56	14.47	16.72
Odisha	Male	3.65	3.35	3.97	17.24	15.93	18.63
Puducherry	Female	15.50	14.38	16.68	17.62	16.58	18.71
Puducherry	Male	16.33	14.96	17.80	27.33	25.66	29.06
Punjab	Female	7.23	6.89	7.59	29.43	28.82	30.04
Punjab	Male	6.79	6.44	7.16	41.38	40.61	42.16
Rajasthan	Female	2.76	2.41	3.16	16.47	15.42	17.58
Rajasthan	Male	3.04	2.67	3.47	23.68	22.11	25.33
Sikkim	Female	5.21	4.42	6.14	30.44	28.71	32.23
Sikkim	Male	4.99	4.29	5.79	36.18	34.09	38.32
Tamil Nadu	Female	14.89	14.44	15.36	18.84	18.44	19.24
Tamil Nadu	Male	15.88	15.40	16.38	27.69	27.13	28.25
Telangana	Female	7.57	6.86	8.35	19.62	18.68	20.59
Telangana	Male	8.47	7.66	9.35	26.52	25.36	27.72
Tripura	Female	8.99	7.81	10.33	18.81	17.18	20.56
Tripura	Male	9.89	8.62	11.33	22.41	20.41	24.55
Uttar Pradesh	Female	3.16	2.84	3.52	18.17	17.11	19.28
Uttar Pradesh	Male	3.41	3.01	3.86	20.53	19.14	21.98
Uttarakhand	Female	3.86	2.78	5.34	22.28	19.92	24.83
Uttarakhand	Male	4.07	3.26	5.07	32.24	29.44	35.17
West Bengal	Female	9.33	8.74	9.96	21.03	20.29	21.78
West Bengal	Male	9.98	9.36	10.64	22.62	21.77	23.49

Abbreviation: CI=Confidence interval.

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eTable 7. State-level age-standardized diabetes and hypertension prevalence estimates by rural versus urban location

State	Rural or urban	Diabetes			Hypertension		
		Estimate	Lower 95% CI	Upper 95% CI	Estimate	Lower 95% CI	Upper 95% CI
Andaman and Nicobar	Rural	8.45	6.46	10.99	33.21	30.15	36.42
Andaman and Nicobar	Urban	7.88	5.86	10.51	28.17	23.53	33.32
Andhra Pradesh	Rural	7.97	7.40	8.58	23.04	22.26	23.85
Andhra Pradesh	Urban	12.12	11.29	13.01	26.86	25.70	28.05
Arunachal Pradesh	Rural	3.28	2.85	3.78	24.76	23.66	25.89
Arunachal Pradesh	Urban	6.43	4.38	9.34	23.61	20.91	26.55
Assam	Rural	3.42	2.94	3.96	18.31	16.83	19.89
Assam	Urban	4.86	3.56	6.59	22.47	19.01	26.35
Bihar	Rural	2.50	2.13	2.94	20.17	18.90	21.50
Bihar	Urban	4.16	3.05	5.65	23.99	21.26	26.96
Chandigarh	Rural	11.08	7.08	16.94	37.09	34.20	40.07
Chandigarh	Urban	9.86	8.14	11.91	36.30	32.80	39.95
Chhattisgarh	Rural	3.74	3.16	4.43	14.66	13.21	16.24
Chhattisgarh	Urban	6.87	5.32	8.84	17.72	15.39	20.31
Daman and Diu	Rural	9.40	6.73	12.97	36.04	32.24	40.02
Daman and Diu	Urban	2.25	1.17	4.29	62.71	54.71	70.07
Goa	Rural	17.39	15.11	19.93	31.68	28.56	34.98
Goa	Urban	16.83	13.81	20.35	27.76	22.81	33.33
Haryana	Rural	5.21	4.86	5.58	22.66	21.97	23.36
Haryana	Urban	6.08	5.63	6.56	26.32	25.40	27.27
Himachal Pradesh	Rural	3.28	2.91	3.70	33.75	32.68	34.84
Himachal Pradesh	Urban	3.35	2.49	4.50	35.52	31.06	40.25
Jharkhand	Rural	2.80	2.30	3.40	19.95	18.22	21.80
Jharkhand	Urban	5.55	4.56	6.74	26.18	24.50	27.93
Karnataka	Rural	8.46	8.03	8.92	20.73	20.27	21.19
Karnataka	Urban	11.68	11.08	12.31	26.46	25.83	27.09
Kerala	Rural	11.81	10.28	13.52	38.81	36.11	41.58
Kerala	Urban	14.21	12.86	15.69	34.04	31.77	36.39
Madhya Pradesh	Rural	2.02	1.70	2.41	17.39	16.30	18.54
Madhya Pradesh	Urban	3.54	2.62	4.77	20.19	18.16	22.39
Maharashtra	Rural	4.68	4.33	5.07	23.51	22.75	24.28
Maharashtra	Urban	6.17	5.73	6.64	26.14	25.20	27.11
Manipur	Rural	7.45	6.74	8.23	20.42	19.15	21.74
Manipur	Urban	8.01	6.94	9.23	22.99	20.94	25.18

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Meghalaya	Rural	2.75	2.14	3.52	19.25	17.56	21.08
Meghalaya	Urban	3.48	2.29	5.24	22.87	19.75	26.32
Mizoram	Rural	3.01	2.54	3.58	18.21	17.00	19.47
Mizoram	Urban	3.94	3.39	4.56	20.63	19.44	21.88
Nagaland	Rural	5.86	5.25	6.54	35.90	34.14	37.70
Nagaland	Urban	6.29	5.37	7.36	34.78	31.78	37.91
NCT of Delhi	Rural	9.86	8.51	11.40	23.62	20.34	27.26
NCT of Delhi	Urban	9.35	8.67	10.07	25.64	24.08	27.28
Odisha	Rural	2.94	2.71	3.18	15.70	14.46	17.02
Odisha	Urban	4.98	4.26	5.81	20.16	17.67	22.91
Puducherry	Rural	15.81	13.62	18.27	18.45	16.40	20.69
Puducherry	Urban	15.87	14.70	17.12	23.09	22.01	24.21
Punjab	Rural	6.75	6.36	7.17	35.46	34.71	36.23
Punjab	Urban	7.49	7.00	8.01	34.38	33.44	35.34
Rajasthan	Rural	2.43	2.09	2.83	18.32	17.31	19.37
Rajasthan	Urban	4.78	3.96	5.76	26.05	22.34	30.13
Sikkim	Rural	5.12	4.37	5.99	32.26	30.52	34.05
Sikkim	Urban	5.07	3.96	6.48	35.44	31.98	39.06
Tamil Nadu	Rural	13.28	12.75	13.83	21.26	20.74	21.78
Tamil Nadu	Urban	17.50	16.91	18.10	24.28	23.71	24.85
Telangana	Rural	7.41	6.47	8.48	21.43	20.28	22.61
Telangana	Urban	9.01	8.09	10.01	25.50	24.01	27.04
Tripura	Rural	9.20	7.90	10.68	18.35	16.64	20.19
Tripura	Urban	10.00	7.83	12.70	26.33	23.02	29.93
Uttar Pradesh	Rural	2.85	2.48	3.28	18.93	17.56	20.37
Uttar Pradesh	Urban	4.59	3.98	5.30	20.34	18.44	22.40
Uttarakhand	Rural	3.06	2.14	4.37	25.11	21.83	28.70
Uttarakhand	Urban	6.13	4.50	8.28	30.34	27.68	33.13
West Bengal	Rural	8.97	8.28	9.71	19.79	18.92	20.68
West Bengal	Urban	11.16	10.46	11.90	26.37	25.45	27.31

Abbreviation: CI=Confidence interval.

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eTable 8. State-level crude diabetes and hypertension prevalence estimates by age group

State	Age (years)	Diabetes			Hypertension		
		Estimate	Lower 95% CI	Upper 95% CI	Estimate	Lower 95% CI	Upper 95% CI
Andaman and Nicobar	18-25	3.72	2.27	6.03	16.36	12.67	20.88
Andaman and Nicobar	26-35	5.87	4.15	8.23	25.19	22.16	28.48
Andaman and Nicobar	36-45	10.58	8.11	13.69	36.40	32.03	41.00
Andaman and Nicobar	46-55	11.80	9.60	14.42	44.79	39.85	49.83
Andaman and Nicobar	56-65	14.75	11.26	19.08	52.56	47.60	57.46
Andaman and Nicobar	>65	19.13	14.24	25.21	65.62	58.86	71.80
Andhra Pradesh	18-25	2.80	2.37	3.32	10.43	9.71	11.20
Andhra Pradesh	26-35	5.84	5.28	6.46	18.43	17.47	19.42
Andhra Pradesh	36-45	11.81	10.95	12.72	27.73	26.59	28.89
Andhra Pradesh	46-55	16.01	14.89	17.19	38.40	36.98	39.85
Andhra Pradesh	56-65	19.55	18.25	20.92	47.28	45.65	48.91
Andhra Pradesh	>65	20.20	18.61	21.90	52.70	50.59	54.79
Arunachal Pradesh	18-25	1.82	1.13	2.93	14.90	13.56	16.36
Arunachal Pradesh	26-35	4.30	3.21	5.75	21.01	19.37	22.74
Arunachal Pradesh	36-45	4.76	3.81	5.94	29.07	26.71	31.56
Arunachal Pradesh	46-55	7.26	5.63	9.32	38.95	35.63	42.38
Arunachal Pradesh	56-65	10.82	5.94	18.91	40.96	37.59	44.41
Arunachal Pradesh	>65	8.83	5.39	14.13	43.78	39.98	47.65
Assam	18-25	1.05	0.70	1.57	7.63	6.70	8.67
Assam	26-35	1.98	1.55	2.52	13.00	10.73	15.67
Assam	36-45	4.31	3.58	5.19	20.95	19.32	22.68
Assam	46-55	6.45	5.44	7.63	33.18	29.48	37.10
Assam	56-65	9.18	7.85	10.70	39.04	35.45	42.75
Assam	>65	12.54	10.99	14.28	49.18	46.40	51.97
Bihar	18-25	1.14	0.89	1.45	11.27	9.95	12.75
Bihar	26-35	1.44	1.15	1.79	16.75	15.40	18.19
Bihar	36-45	2.98	2.43	3.64	24.38	22.56	26.30
Bihar	46-55	4.63	3.85	5.55	27.56	25.75	29.44
Bihar	56-65	6.58	5.50	7.86	33.67	31.55	35.86
Bihar	>65	7.06	5.87	8.48	39.01	36.72	41.35
Chandigarh	18-25	4.14	2.58	6.58	20.29	17.11	23.89
Chandigarh	26-35	6.09	3.92	9.35	31.52	27.70	35.60
Chandigarh	36-45	13.32	10.67	16.51	44.52	40.17	48.97
Chandigarh	46-55	17.76	14.38	21.72	52.03	47.20	56.83
Chandigarh	56-65	21.72	16.78	27.63	57.18	50.32	63.78

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Chandigarh	>65	21.91	15.28	30.40	61.94	51.86	71.09
Chhattisgarh	18-25	2.07	1.60	2.68	7.77	6.67	9.03
Chhattisgarh	26-35	2.84	2.27	3.53	10.34	9.28	11.52
Chhattisgarh	36-45	4.90	4.02	5.95	17.65	15.99	19.44
Chhattisgarh	46-55	7.81	6.48	9.37	24.83	22.42	27.41
Chhattisgarh	56-65	11.53	9.43	14.03	33.10	29.80	36.57
Chhattisgarh	>65	10.95	8.96	13.33	38.20	35.10	41.40
Daman and Diu	18-25	3.79	2.30	6.16	30.46	25.19	36.30
Daman and Diu	26-35	7.33	3.64	14.23	33.10	28.49	38.06
Daman and Diu	36-45	10.63	7.14	15.53	45.11	39.12	51.24
Daman and Diu	46-55	16.59	11.39	23.53	51.61	44.41	58.74
Daman and Diu	56-65	18.18	11.80	26.98	64.50	56.47	71.78
Daman and Diu	>65	17.26	9.49	29.35	57.15	47.62	66.17
Goa	18-25	8.17	5.60	11.78	15.31	11.29	20.43
Goa	26-35	12.77	10.35	15.65	22.68	18.75	27.16
Goa	36-45	17.38	14.19	21.10	32.08	27.12	37.47
Goa	46-55	25.10	21.31	29.30	40.33	36.01	44.81
Goa	56-65	26.21	22.35	30.48	45.74	40.96	50.59
Goa	>65	41.02	35.72	46.53	51.06	45.42	56.66
Haryana	18-25	2.84	2.55	3.16	15.49	14.75	16.25
Haryana	26-35	4.40	4.02	4.80	20.43	19.67	21.20
Haryana	36-45	6.37	5.92	6.86	27.97	27.08	28.88
Haryana	46-55	9.32	8.67	10.01	34.50	33.44	35.58
Haryana	56-65	11.15	10.41	11.93	40.44	39.23	41.67
Haryana	>65	11.78	10.83	12.79	47.68	46.22	49.15
Himachal Pradesh	18-25	0.90	0.58	1.41	23.13	21.33	25.04
Himachal Pradesh	26-35	1.74	1.32	2.28	27.59	26.04	29.19
Himachal Pradesh	36-45	3.11	2.57	3.76	35.65	33.91	37.44
Himachal Pradesh	46-55	5.71	4.87	6.67	42.40	40.41	44.41
Himachal Pradesh	56-65	6.85	5.87	7.99	49.15	46.64	51.67
Himachal Pradesh	>65	8.45	7.10	10.04	52.81	49.92	55.68
Jharkhand	18-25	0.55	0.33	0.90	10.82	9.27	12.58
Jharkhand	26-35	1.63	1.21	2.19	15.33	13.72	17.09
Jharkhand	36-45	4.14	3.43	4.99	24.34	22.62	26.15
Jharkhand	46-55	7.47	6.33	8.80	34.43	32.20	36.73
Jharkhand	56-65	9.82	8.09	11.86	43.79	40.98	46.63
Jharkhand	>65	9.82	8.15	11.80	49.53	46.59	52.49
Karnataka	18-25	4.09	3.76	4.44	9.61	9.17	10.07
Karnataka	26-35	6.50	6.12	6.90	16.94	16.39	17.51

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Karnataka	36-45	11.93	11.36	12.53	27.87	27.18	28.58
Karnataka	46-55	17.12	16.35	17.92	38.15	37.26	39.05
Karnataka	56-65	19.76	18.83	20.73	46.10	45.05	47.15
Karnataka	>65	21.40	20.32	22.52	52.63	51.44	53.83
Kerala	18-25	5.71	4.55	7.14	21.79	19.48	24.29
Kerala	26-35	8.83	7.53	10.33	30.68	28.17	33.31
Kerala	36-45	12.95	11.69	14.33	39.18	36.56	41.87
Kerala	46-55	18.73	17.36	20.19	46.27	44.21	48.34
Kerala	56-65	24.51	22.82	26.28	51.87	50.11	53.62
Kerala	>65	24.51	22.77	26.34	57.68	55.84	59.49
Madhya Pradesh	18-25	0.92	0.69	1.22	11.01	9.74	12.42
Madhya Pradesh	26-35	1.68	1.10	2.55	14.79	13.51	16.17
Madhya Pradesh	36-45	2.67	2.31	3.08	19.54	18.30	20.84
Madhya Pradesh	46-55	4.79	3.73	6.14	27.78	26.07	29.56
Madhya Pradesh	56-65	6.59	5.59	7.76	35.28	33.44	37.17
Madhya Pradesh	>65	7.87	6.76	9.16	40.99	38.68	43.35
Maharashtra	18-25	2.20	1.96	2.47	15.14	14.36	15.96
Maharashtra	26-35	3.84	3.52	4.18	20.29	19.56	21.05
Maharashtra	36-45	5.84	5.43	6.27	27.61	26.81	28.43
Maharashtra	46-55	9.13	8.55	9.74	34.86	33.90	35.83
Maharashtra	56-65	11.32	10.65	12.03	40.40	39.41	41.41
Maharashtra	>65	11.49	10.73	12.31	45.08	43.94	46.22
Manipur	18-25	2.92	2.32	3.67	10.40	9.21	11.73
Manipur	26-35	5.10	4.43	5.87	14.88	13.77	16.05
Manipur	36-45	8.61	7.64	9.69	24.98	23.12	26.93
Manipur	46-55	11.93	10.61	13.38	33.08	30.77	35.47
Manipur	56-65	15.95	14.32	17.73	36.81	34.34	39.35
Manipur	>65	20.04	17.91	22.37	42.52	39.55	45.56
Meghalaya	18-25	1.65	1.15	2.35	12.91	11.36	14.64
Meghalaya	26-35	1.86	1.32	2.61	16.21	14.50	18.08
Meghalaya	36-45	3.01	2.22	4.07	24.12	21.49	26.96
Meghalaya	46-55	6.68	5.24	8.49	31.28	28.67	34.01
Meghalaya	56-65	6.82	5.22	8.87	38.30	34.00	42.79
Meghalaya	>65	7.49	5.27	10.55	49.94	44.70	55.18
Mizoram	18-25	1.41	1.07	1.85	12.68	11.51	13.95
Mizoram	26-35	2.39	1.98	2.87	17.94	16.74	19.21
Mizoram	36-45	4.24	3.52	5.11	21.32	19.83	22.88
Mizoram	46-55	6.32	5.38	7.41	27.15	25.37	29.01
Mizoram	56-65	7.33	6.08	8.80	30.37	28.05	32.79

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Mizoram	>65	12.51	10.58	14.74	38.19	35.55	40.90
Nagaland	18-25	2.78	2.15	3.59	16.04	14.39	17.83
Nagaland	26-35	4.33	3.63	5.16	26.54	24.74	28.41
Nagaland	36-45	6.63	5.79	7.59	39.93	37.78	42.12
Nagaland	46-55	8.37	7.37	9.48	48.43	46.24	50.63
Nagaland	56-65	9.63	8.40	11.02	56.45	53.98	58.89
Nagaland	>65	11.48	9.99	13.16	62.25	59.73	64.71
NCT of Delhi	18-25	3.81	3.26	4.45	17.15	15.36	19.11
NCT of Delhi	26-35	7.33	6.54	8.21	22.35	20.66	24.12
NCT of Delhi	36-45	13.23	12.06	14.50	29.59	27.76	31.48
NCT of Delhi	46-55	16.32	14.86	17.89	35.87	33.76	38.04
NCT of Delhi	56-65	19.44	17.40	21.67	42.00	39.49	44.56
NCT of Delhi	>65	23.70	20.26	27.52	47.32	43.37	51.31
Odisha	18-25	0.54	0.39	0.76	6.51	5.60	7.55
Odisha	26-35	1.36	1.16	1.61	10.46	9.34	11.69
Odisha	36-45	3.25	2.91	3.63	17.16	15.74	18.67
Odisha	46-55	6.70	6.04	7.42	25.67	23.94	27.49
Odisha	56-65	8.40	7.58	9.30	34.47	32.63	36.36
Odisha	>65	8.83	8.00	9.73	42.25	40.44	44.09
Puducherry	18-25	4.17	3.33	5.20	8.38	7.11	9.86
Puducherry	26-35	10.98	9.66	12.45	13.41	11.98	14.98
Puducherry	36-45	19.03	17.25	20.94	24.94	23.06	26.92
Puducherry	46-55	25.62	23.49	27.86	33.26	31.28	35.31
Puducherry	56-65	32.05	29.35	34.88	45.76	43.05	48.50
Puducherry	>65	32.87	29.65	36.25	53.32	49.78	56.82
Punjab	18-25	2.62	2.36	2.90	19.80	19.04	20.57
Punjab	26-35	4.73	4.36	5.13	29.13	28.32	29.96
Punjab	36-45	8.18	7.68	8.71	42.00	41.06	42.95
Punjab	46-55	13.01	12.30	13.75	52.64	51.61	53.66
Punjab	56-65	16.40	15.55	17.29	59.68	58.57	60.77
Punjab	>65	17.80	16.73	18.93	64.64	63.34	65.91
Rajasthan	18-25	1.19	0.93	1.53	10.15	9.02	11.39
Rajasthan	26-35	1.66	1.33	2.07	14.83	13.78	15.94
Rajasthan	36-45	3.09	2.63	3.63	21.96	20.36	23.64
Rajasthan	46-55	5.17	4.51	5.92	30.52	28.78	32.33
Rajasthan	56-65	7.36	6.41	8.42	40.32	37.90	42.80
Rajasthan	>65	8.55	7.45	9.80	47.25	44.91	49.60
Sikkim	18-25	2.62	1.87	3.65	17.13	15.17	19.28
Sikkim	26-35	3.10	2.47	3.89	29.13	26.70	31.69

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Sikkim	36-45	6.43	5.20	7.94	39.39	36.73	42.12
Sikkim	46-55	9.11	7.51	11.01	54.28	50.54	57.98
Sikkim	56-65	12.76	10.52	15.40	52.34	48.15	56.50
Sikkim	>65	10.83	8.44	13.79	56.32	52.01	60.54
Tamil Nadu	18-25	5.20	4.78	5.65	9.58	9.09	10.10
Tamil Nadu	26-35	10.59	10.09	11.12	16.53	15.97	17.10
Tamil Nadu	36-45	18.14	17.49	18.79	25.19	24.53	25.88
Tamil Nadu	46-55	25.41	24.59	26.25	35.22	34.40	36.05
Tamil Nadu	56-65	29.48	28.50	30.48	43.89	42.89	44.89
Tamil Nadu	>65	29.60	28.43	30.80	49.64	48.40	50.87
Telangana	18-25	3.83	2.97	4.92	12.87	11.67	14.17
Telangana	26-35	5.91	5.12	6.80	19.31	18.22	20.45
Telangana	36-45	9.64	8.69	10.67	28.15	26.62	29.72
Telangana	46-55	14.39	13.02	15.88	33.76	31.88	35.70
Telangana	56-65	15.22	13.76	16.80	39.58	37.50	41.71
Telangana	>65	17.55	15.56	19.73	44.65	41.60	47.74
Tripura	18-25	4.24	3.27	5.48	11.57	9.89	13.49
Tripura	26-35	6.69	5.42	8.25	17.42	15.43	19.62
Tripura	36-45	11.52	9.71	13.60	23.38	21.09	25.84
Tripura	46-55	16.46	14.15	19.07	30.23	27.24	33.40
Tripura	56-65	19.27	16.46	22.43	36.11	31.94	40.50
Tripura	>65	24.51	20.70	28.77	46.95	43.11	50.83
Uttar Pradesh	18-25	1.21	0.94	1.56	11.88	10.63	13.25
Uttar Pradesh	26-35	1.91	1.60	2.27	15.11	13.79	16.53
Uttar Pradesh	36-45	3.55	3.09	4.07	22.20	20.79	23.69
Uttar Pradesh	46-55	6.73	5.97	7.58	27.53	25.91	29.21
Uttar Pradesh	56-65	7.26	6.43	8.20	32.38	30.50	34.32
Uttar Pradesh	>65	7.84	6.97	8.81	37.63	35.57	39.73
Uttarakhand	18-25	1.11	0.44	2.78	13.01	10.42	16.14
Uttarakhand	26-35	1.47	0.84	2.56	20.60	17.84	23.67
Uttarakhand	36-45	4.72	3.51	6.30	29.24	26.30	32.36
Uttarakhand	46-55	6.43	4.93	8.35	40.29	36.21	44.51
Uttarakhand	56-65	12.19	9.76	15.13	48.48	43.98	53.01
Uttarakhand	>65	10.91	8.37	14.10	54.20	49.81	58.52
West Bengal	18-25	4.70	4.17	5.29	9.58	8.87	10.33
West Bengal	26-35	7.58	6.92	8.30	16.24	15.34	17.17
West Bengal	36-45	11.11	10.35	11.91	25.54	24.43	26.68
West Bengal	46-55	15.47	14.36	16.65	34.76	33.45	36.10
West Bengal	56-65	17.06	15.87	18.31	42.98	41.35	44.62

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West Bengal	>65	20.26	18.72	21.88	51.22	49.23	53.20

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eTable 9. State-level age-standardized diabetes prevalence estimates by sex assuming all AHS respondents were unfasted

State	Sex	Diabetes		
		Estimate	Lower 95% CI	Upper 95% CI
Assam	Female	0.47	0.35	0.63
Assam	Male	0.50	0.36	0.68
Bihar	Female	0.25	0.19	0.34
Bihar	Male	0.38	0.28	0.50
Chhattisgarh	Female	0.21	0.14	0.31
Chhattisgarh	Male	0.47	0.33	0.65
Jharkhand	Female	0.82	0.62	1.07
Jharkhand	Male	1.16	0.90	1.50
Madhya Pradesh	Female	0.34	0.28	0.42
Madhya Pradesh	Male	0.47	0.36	0.63
Odisha	Female	0.70	0.61	0.80
Odisha	Male	0.87	0.74	1.01
Rajasthan	Female	0.40	0.33	0.48
Rajasthan	Male	0.37	0.30	0.45
Uttar Pradesh	Female	0.69	0.59	0.80
Uttar Pradesh	Male	0.65	0.54	0.78
Uttarakhand	Female	1.03	0.74	1.43
Uttarakhand	Male	0.96	0.68	1.35

Abbreviation: CI=Confidence interval.

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eTable 10. State-level age-standardized diabetes prevalence estimates by rural versus urban location assuming all AHS respondents were unfasted

State	Rural or urban	Diabetes		
		Estimate	Lower 95% CI	Upper 95% CI
Assam	Rural	0.42	0.31	0.57
Assam	Urban	0.86	0.52	1.44
Bihar	Rural	0.27	0.21	0.36
Bihar	Urban	0.58	0.35	0.96
Chhattisgarh	Rural	0.26	0.17	0.40
Chhattisgarh	Urban	0.62	0.45	0.86
Jharkhand	Rural	0.67	0.52	0.87
Jharkhand	Urban	1.99	1.40	2.84
Madhya Pradesh	Rural	0.26	0.21	0.33
Madhya Pradesh	Urban	0.69	0.51	0.92
Odisha	Rural	0.65	0.57	0.73
Odisha	Urban	1.57	1.24	1.98
Rajasthan	Rural	0.28	0.23	0.34
Rajasthan	Urban	0.80	0.63	1.00
Uttar Pradesh	Rural	0.48	0.41	0.57
Uttar Pradesh	Urban	1.24	1.02	1.50
Uttarakhand	Rural	0.76	0.53	1.09
Uttarakhand	Urban	1.57	1.02	2.43

Abbreviation: CI=Confidence interval

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eTable 11. State-level crude diabetes prevalence estimates by age group assuming all AHS respondents were unfasted

State	Age (years)	Diabetes		
		Estimate	Lower 95% CI	Upper 95% CI
Assam	18-25	0.05	0.02	0.12
Assam	26-35	0.17	0.07	0.40
Assam	36-45	0.61	0.42	0.88
Assam	46-55	0.87	0.62	1.22
Assam	56-65	1.67	1.27	2.20
Assam	>65	1.73	1.20	2.48
Bihar	18-25	0.03	0.01	0.13
Bihar	26-35	0.08	0.04	0.15
Bihar	36-45	0.35	0.25	0.51
Bihar	46-55	0.69	0.48	0.99
Bihar	56-65	1.02	0.74	1.41
Bihar	>65	1.04	0.73	1.50
Chhattisgarh	18-25	0.09	0.03	0.26
Chhattisgarh	26-35	0.13	0.07	0.26
Chhattisgarh	36-45	0.23	0.13	0.40
Chhattisgarh	46-55	0.95	0.61	1.47
Chhattisgarh	56-65	1.28	0.77	2.12
Chhattisgarh	>65	0.94	0.54	1.64
Jharkhand	18-25	0.06	0.02	0.25
Jharkhand	26-35	0.40	0.21	0.74
Jharkhand	36-45	1.06	0.75	1.50
Jharkhand	46-55	2.44	1.80	3.31
Jharkhand	56-65	3.18	2.34	4.30
Jharkhand	>65	2.44	1.73	3.45
Madhya Pradesh	18-25	0.12	0.07	0.21
Madhya Pradesh	26-35	0.16	0.11	0.23
Madhya Pradesh	36-45	0.46	0.35	0.62
Madhya Pradesh	46-55	0.78	0.60	1.03
Madhya Pradesh	56-65	1.59	0.91	2.75
Madhya Pradesh	>65	0.89	0.65	1.22
Odisha	18-25	0.09	0.04	0.19
Odisha	26-35	0.25	0.18	0.35
Odisha	36-45	0.94	0.77	1.17
Odisha	46-55	1.82	1.53	2.16

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Odisha	56-65	1.82	1.52	2.17
Odisha	>65	1.38	1.09	1.74
Rajasthan	18-25	0.03	0.01	0.09
Rajasthan	26-35	0.14	0.08	0.24
Rajasthan	36-45	0.36	0.26	0.50
Rajasthan	46-55	1.05	0.80	1.37
Rajasthan	56-65	1.17	0.91	1.50
Rajasthan	>65	1.53	1.09	2.14
Uttar Pradesh	18-25	0.08	0.04	0.14
Uttar Pradesh	26-35	0.18	0.12	0.26
Uttar Pradesh	36-45	0.82	0.64	1.04
Uttar Pradesh	46-55	1.75	1.43	2.14
Uttar Pradesh	56-65	1.96	1.57	2.43
Uttar Pradesh	>65	1.29	1.00	1.67
Uttarakhand	18-25	0.25	0.04	1.38
Uttarakhand	26-35	0.16	0.05	0.52
Uttarakhand	36-45	1.09	0.65	1.82
Uttarakhand	46-55	1.70	1.08	2.66
Uttarakhand	56-65	3.98	2.78	5.69
Uttarakhand	>65	2.91	1.99	4.25

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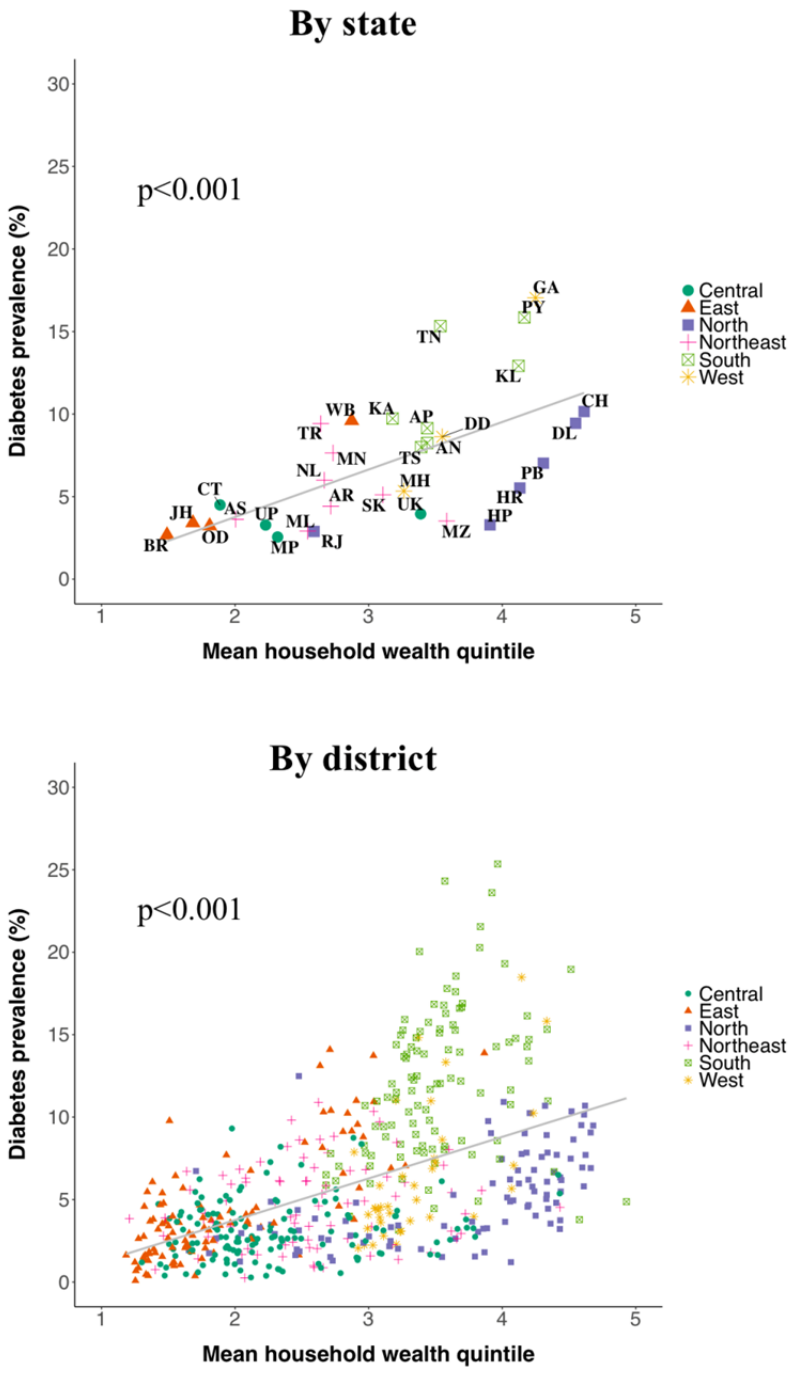
eFigure 8. Association of the state- and district-level age-standardized prevalence of diabetes with mean household wealth quintile[a,b]



[a] p-values refer to the statistical significance of the linear (ordinary least squares) regression line (shown in grey).
[b] States and districts were divided into regions as per their allocation to Zonal Councils by the Government of India.[7]
Abbreviations: AP, Andhra Pradesh; AR, Arunachal Pradesh; AS, Assam; BR, Bihar; CH, Chandigarh; CT, Chhattisgarh; DD, Daman and Diu; DL, Delhi; GA, Goa; GJ, Gujarat; HR, Haryana; HP, Himachal Pradesh; JK, Jammu & Kashmir; JH, Jharkhand; KA, Karnataka; KL, Kerala; MP, Madhya Pradesh; MH, Maharashtra; MN, Manipur; ML, Meghalaya; MZ, Mizoram; NL, Nagaland; OD, Odisha (Orissa); PB, Punjab; PY, Puducherry; RJ,

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Rajasthan; SK, Sikkim; TN, Tamil Nadu; TS, Telangana State; TR, Tripura; UP, Uttar Pradesh; UK, Uttarakhand (Uttaranchal); WB, West Bengal.

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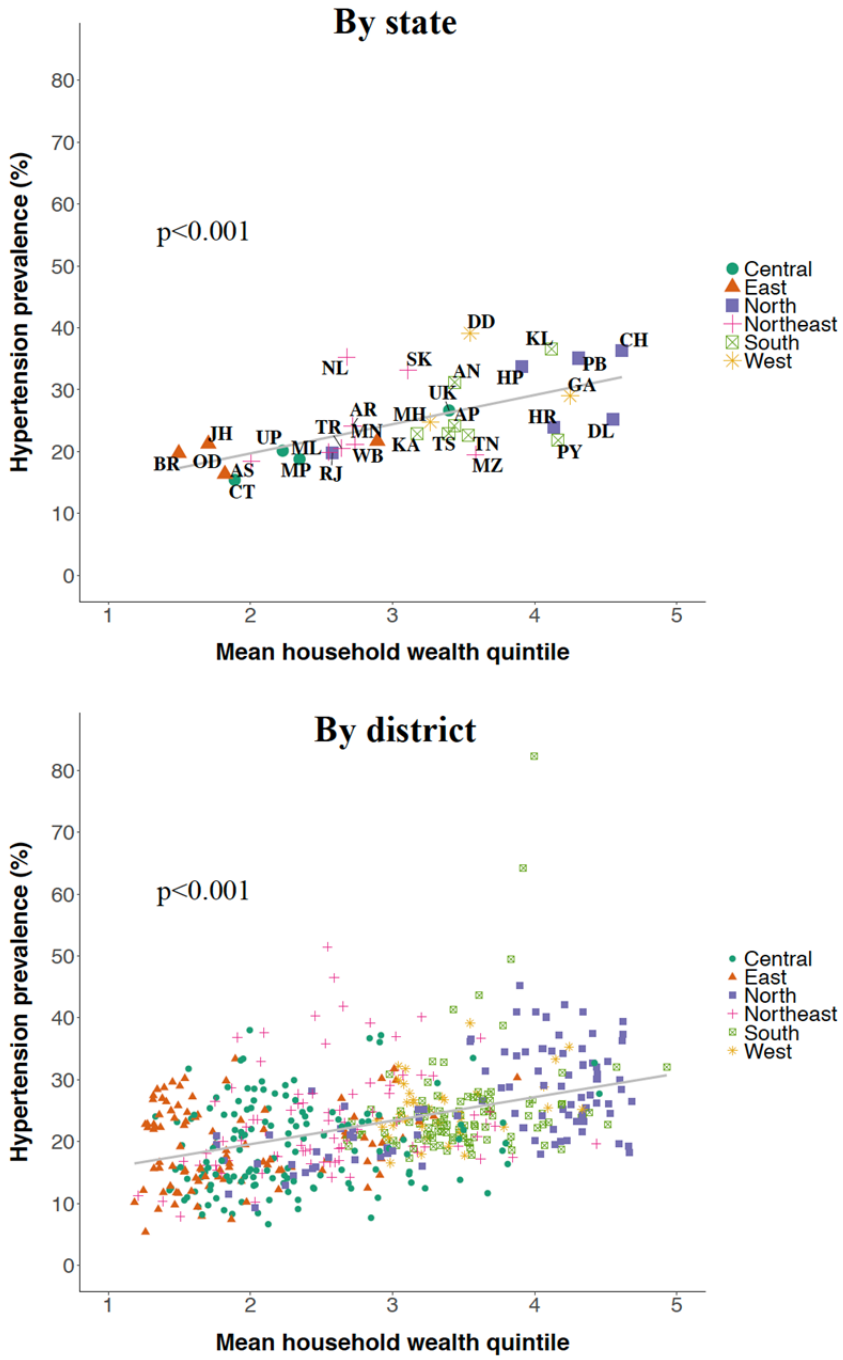
eFigure 9. Association of the state- and district-level age-standardized prevalence of hypertension with mean household wealth quintile[a,b]



[a] p-values refer to the statistical significance of the linear (ordinary least squares) regression line (shown in grey).
[b] States and districts were divided into regions as per their allocation to Zonal Councils by the Government of India.[7]
Abbreviations: AP, Andhra Pradesh; AR, Arunachal Pradesh; AS, Assam; BR, Bihar; CH, Chandigarh; CT, Chhattisgarh; DD, Daman and Diu; DL, Delhi; GA, Goa; GJ, Gujarat; HR, Haryana; HP, Himachal Pradesh; JK, Jammu & Kashmir; JH, Jharkhand; KA, Karnataka; KL, Kerala; MP, Madhya Pradesh; MH, Maharashtra; MN, Manipur; ML, Meghalaya; MZ, Mizoram; NL, Nagaland; OD, Odisha (Orissa); PB, Punjab; PY, Puducherry; RJ, Rajasthan; SK, Sikkim; TN, Tamil Nadu; TS, Telangana State; TR, Tripura; UP, Uttar Pradesh; UK, Uttarakhand (Uttaranchal); WB, West Bengal.

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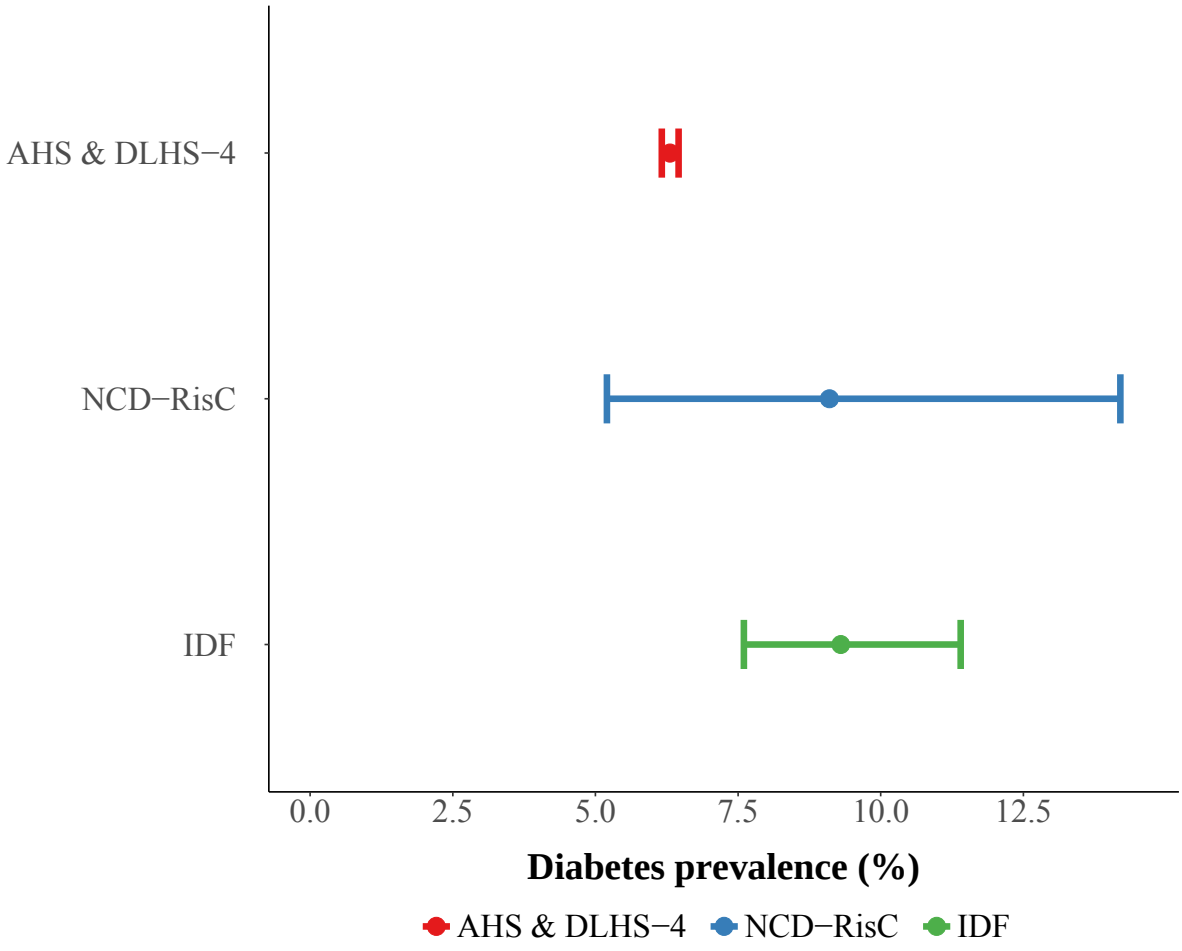
eFigure 10. Comparison of age-standardized national diabetes prevalence reported in different studies[a,b]



Abbreviations: NCD-RisC = NCD Risk Factor Collaboration; IDF = International Diabetes Federation

[a] The NCD-RisC estimate is for 2014 and the IDF estimate for 2015.[8,9]

[b] The horizontal bar is a 95% confidence interval (AHS & DLHS-4) or a 95% uncertainty interval (NCD-RisC and IDF).

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