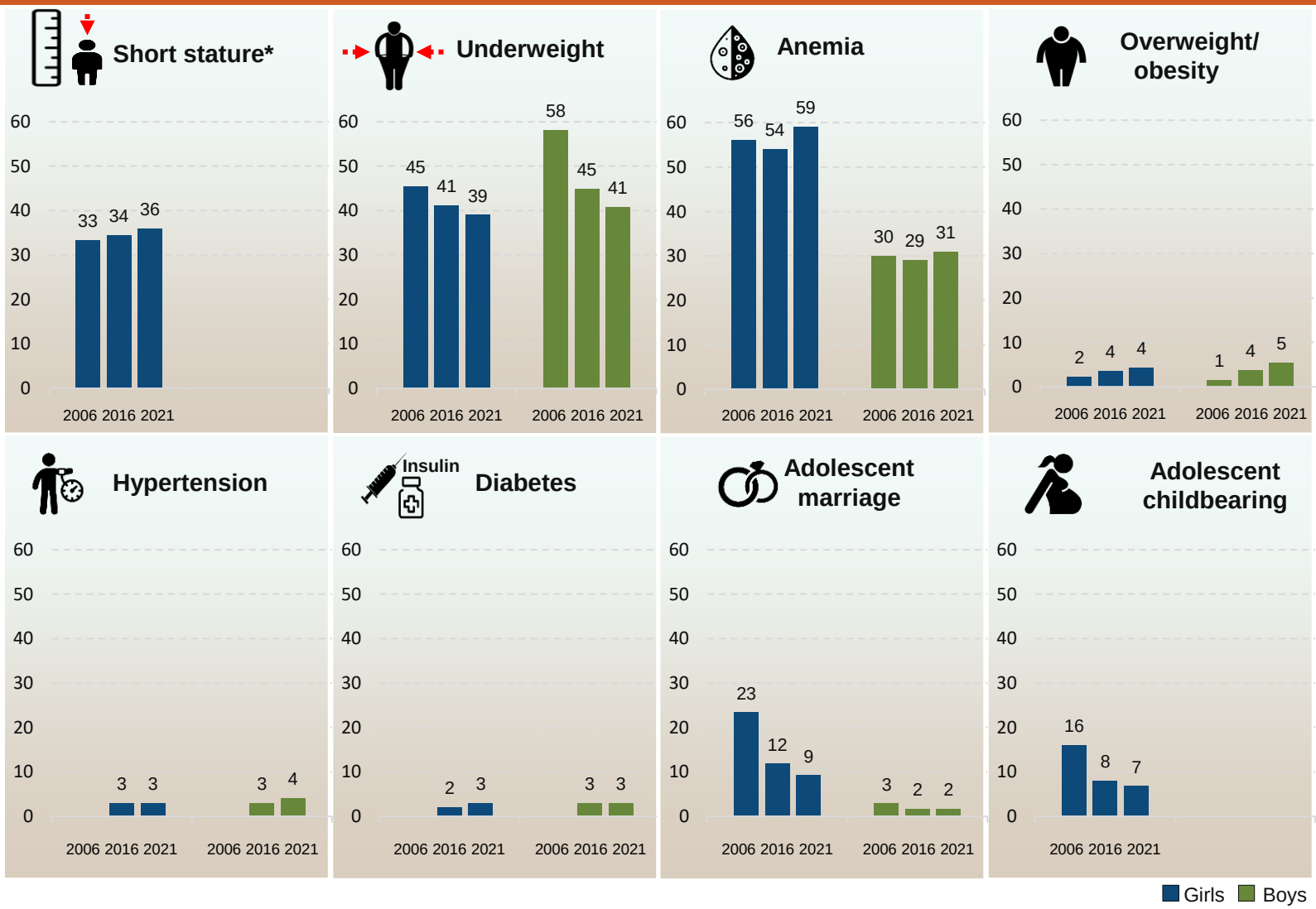
POSHAN
Led by IFPRI
Partnerships and Opportunities to Strengthen and Harmonize Actions for Nutrition in India
Data Note
No. 95 | JULY 2023

Adolescents' health and wellbeing: Trends and insights from the National Family Health Surveys, 2006, 2016, and 2021

ABOUT THIS DATA NOTE

South Asia is home to more adolescents than any global region, and one in five adolescents globally live in India. Among the many issues that adolescents face, poor nutrition, non-communicable diseases (NCDs), marriage, and childbearing are of key importance as they have far-ranging and intergenerational consequences. This *Data Note* examines the national-level trends and spatial variability at state and district levels for a set of key nutrition outcomes, NCDs, marriage, and childbearing status among Indian adolescents (15-19 years; girls and boys). The findings are based on data from the three rounds of India's National Family Health Surveys (NFHS) – NFHS 2006, 2016, and 2021. The *Data Note* concludes with key takeaways for adolescents' wellbeing and identifies areas for improvement. This *Data Note* can be used for further inquiry by stakeholders including researchers, policymakers, and program staff at multiple levels.

FIGURE 1: Trends in undernutrition, overweight/obesity, NCDs, marriage, and childbearing status at national level (in %): 2006, 2016, 2021



Source: NFHS-3 (2006), NFHS-4 (2016), and NFHS-5 (2021) unit-level data [IFPRI estimates]

**Note: Male short stature statistics are not presented in this data note due to a potential difference in the sampling process of males across NFHS rounds. According to the IFPRI estimates, the nationally representative male birth cohorts did not have the same mean height across the NFHS rounds, indicating a bias due to opportunistic sampling. Furthermore, the significantly smaller sample size of males compared to females suggests a potential selection bias in the sampling strategy. The results for other male indicators should be interpreted with caution for the reasons stated above.*

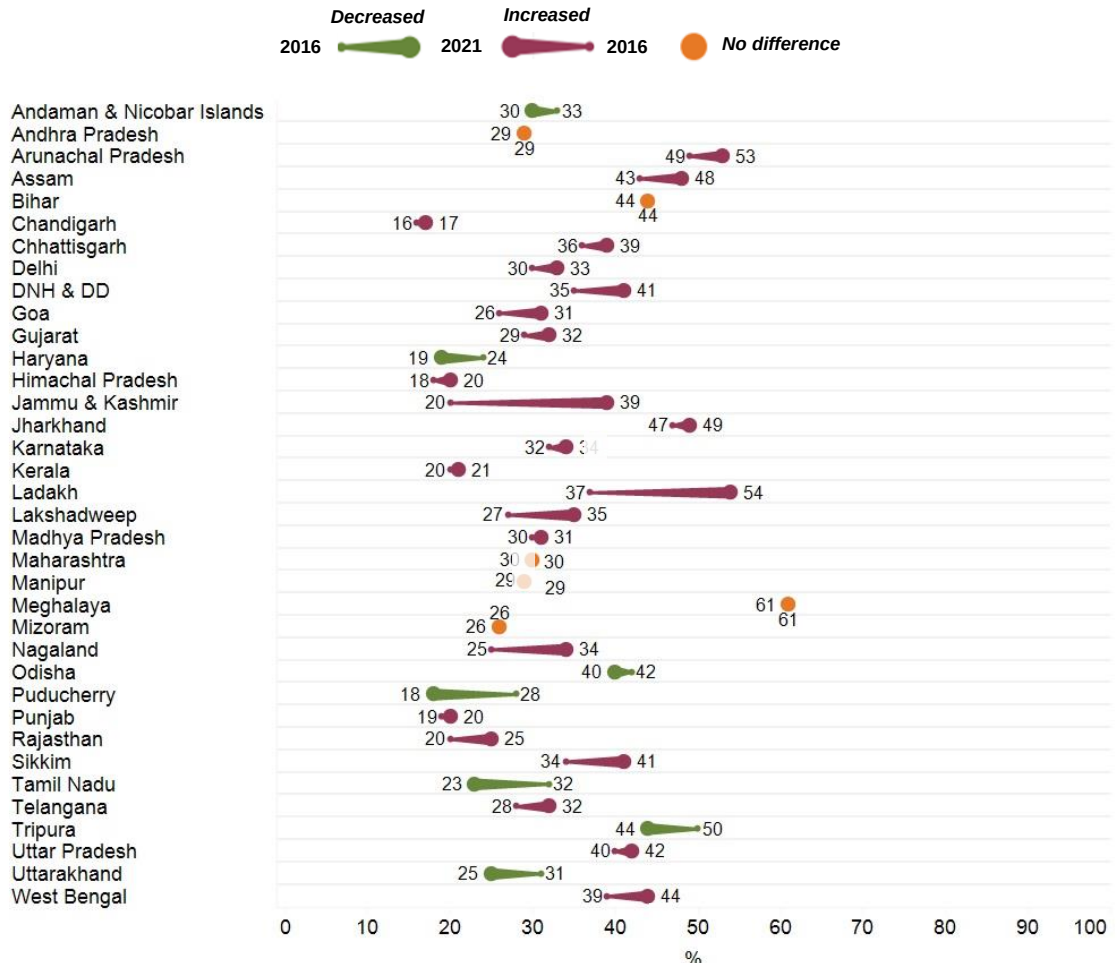
FIGURE 2: Short stature among girls 15-19y at the state level: 2016 and 2021

States/UTs that decreased the most from 2016 to 2021

State/UT	*pp change*
Puducherry	-10
Tamil Nadu	-9
Tripura	-6
Uttarakhand	-6
Haryana	-5

States/UTs that increased the most from 2016 to 2021

State/UT	*pp change*
Jammu & Kashmir	+19
Ladakh	+17
Nagaland	+9
Lakshadweep	+8
Sikkim	+7



% of girls aged 15-19y who have a short stature, 2016 and 2021

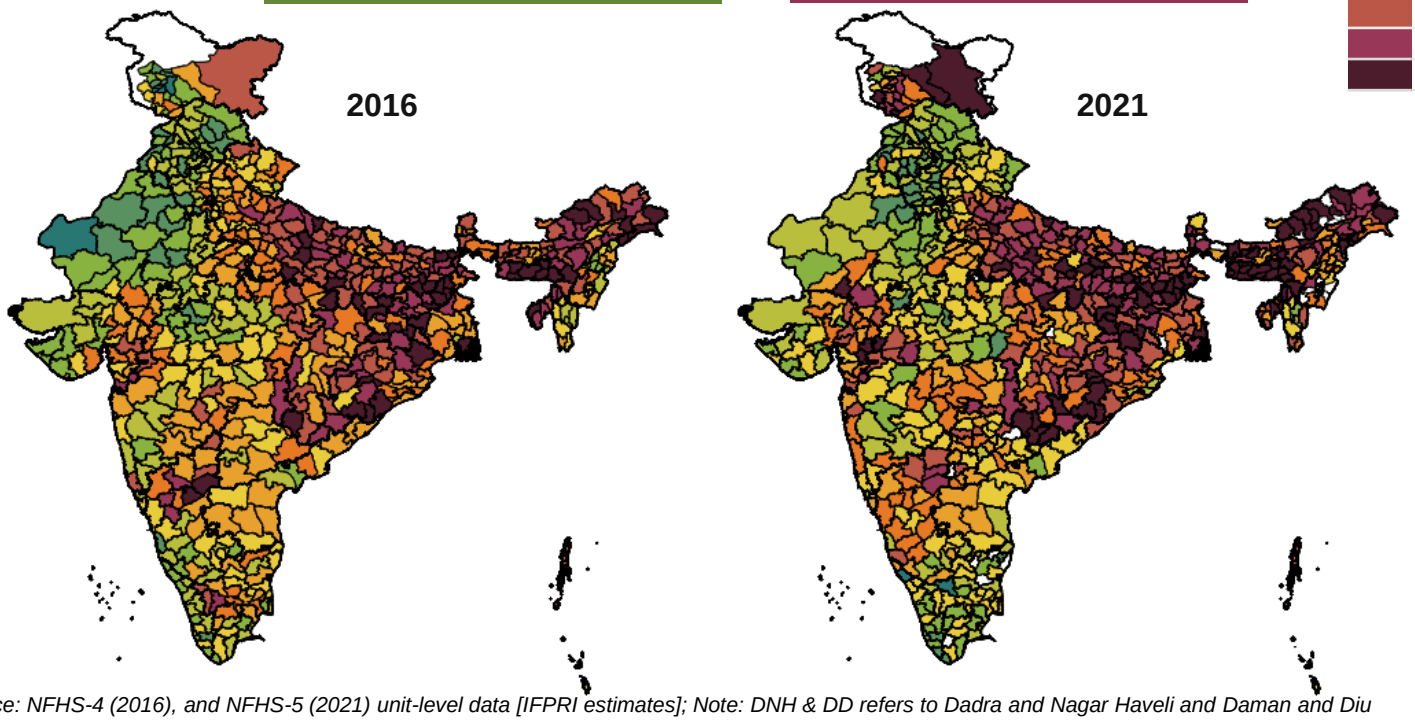
MAP 1: Short stature among girls 15-19y at the district level: 2016 and 2021

***Districts that decreased the most from 2016 to 2021**

District (state)	*pp change*
Erode (TN)	-23
Gandhinagar (GJ)	-22
West Godavari (AP)	-21
Parbhani (MH)	-21
Tiruppur (TN)	-21

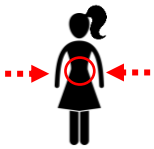
***Districts that increased the most from 2016 to 2021**

District (state)	*pp change*
Samba (JK)	+42
Anantnag (JK)	+40
Shupiyan (JK)	+34
Mon (NL)	+34
Pulwama (JK)	+31



Source: NFHS-4 (2016), and NFHS-5 (2021) unit-level data [IFPRI estimates]; Note: DNH & DD refers to Dadra and Nagar Haveli and Daman and Diu

FIGURE 3: Underweight among girls 15-19y at the state level: 2016 and 2021

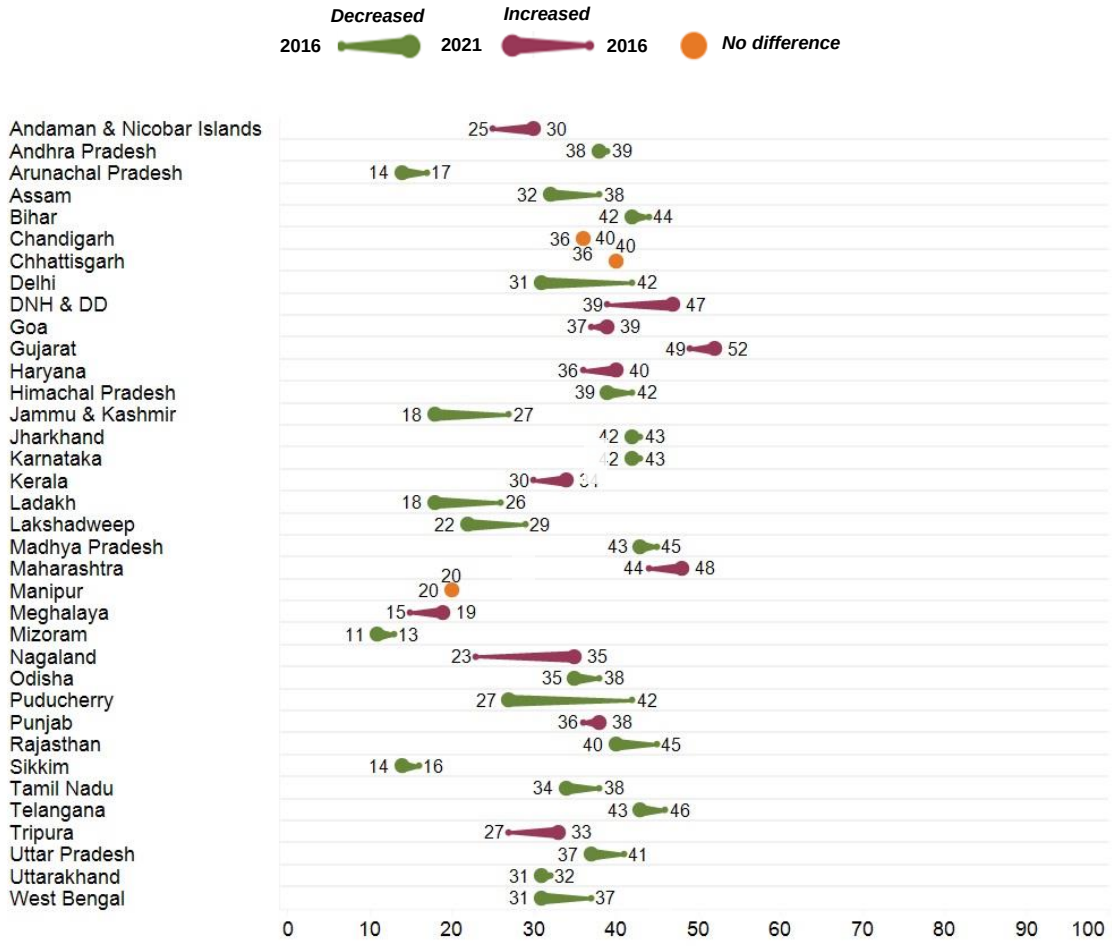


States/UTs that decreased the most from 2016 to 2021

State/UT	*pp change*
Puducherry	-15
Delhi	-11
Jammu & Kashmir	-9
Ladakh	-8
Lakshadweep	-7

States/UTs that increased the most from 2016 to 2021

State/UT	*pp change*
Nagaland	+12
DNH & DD	+8
Tripura	+6
Andaman & Nicobar Islands	+5
4 States & UTs[1]	+4



% of girls aged 15-19y who are underweight, 2016 and 2021

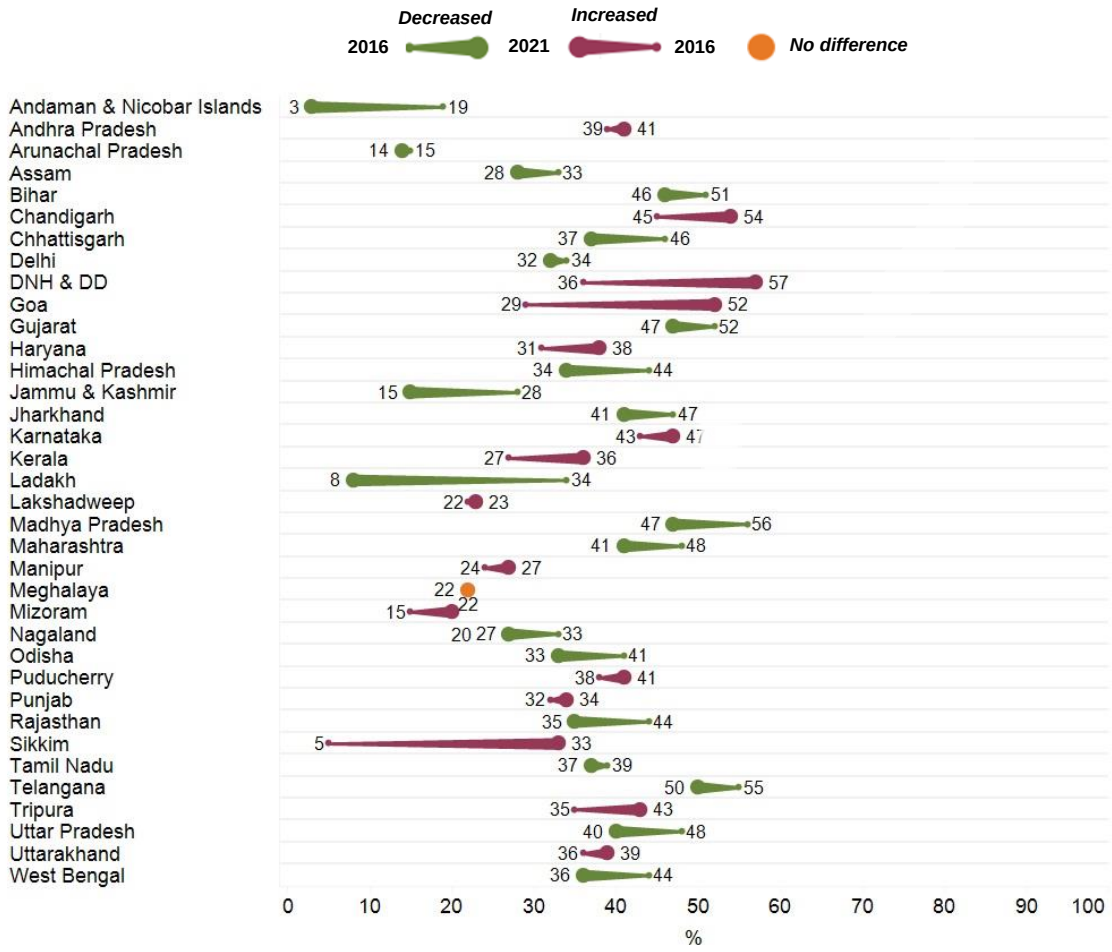
FIGURE 4: Underweight among boys 15-19y at the state level: 2016 and 2021

States/UTs that decreased the most from 2016 to 2021

State/UT	*pp change*
Ladakh	-26
Andaman & Nicobar Islands	-16
Jammu & Kashmir	-13
Himachal Pradesh	-10
3 States[2]	-9

States/UTs that increased the most from 2016 to 2021

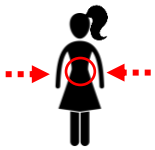
State/UT	*pp change*
Sikkim	+28
Goa	+23
DNH & DD	+21
Kerala	+9
Chandigarh	+9



% of boys aged 15-19y who are underweight, 2016 and 2021

Source: NFHS-4 (2016), and NFHS-5 (2021) unit-level data [IFPRI estimates]; Note: DNH & DD refers to Dadra and Nagar Haveli and Daman and Diu
[1]4 States & UTs: Meghalaya, Maharashtra, Haryana, & Kerala; [2]3 States: Chhattisgarh, Rajasthan, & Madhya Pradesh

MAP 2: Underweight among girls 15-19y at the district level: 2016 and 2021



***Districts that decreased the most from 2016 to 2021**

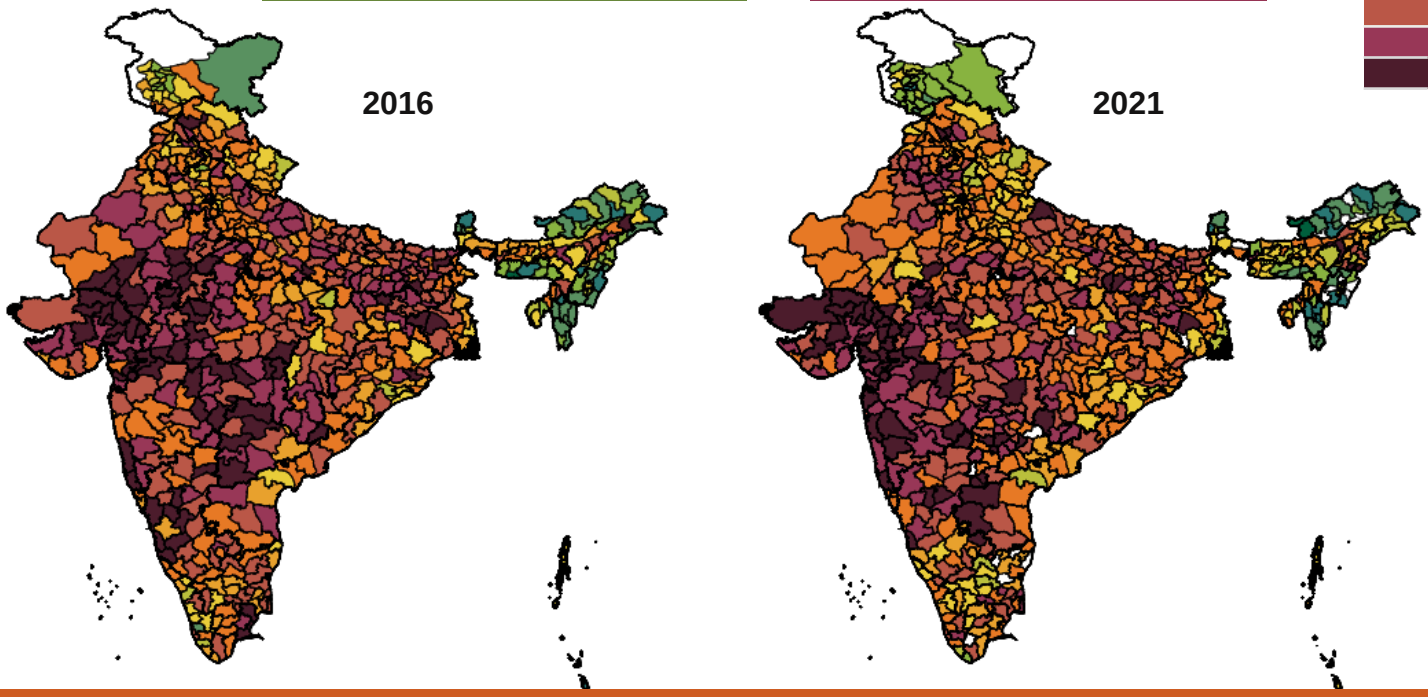
District (state)	*pp change*
Samba (JK)	-30
Uttara Kannada (KA)	-28
Pali (RJ)	-26
West Nimar (MP)	-26
Tinsukia (AS)	-24

***Districts that increased the most from 2016 to 2021**

District (state)	*pp change*
Phek (NL)	+36
Tuensang (NL)	+25
Singrauli (MP)	+24
South Garo Hills (ML)	+24
Kottayam (KL)	+24

Prevalence (%)

No data
0-4.9
5-9.9
10-14.9
15-19.9
20-24.9
25-29.9
30-34.9
35-39.9
40-44.9
45-49.9
50+



MAP 3: Underweight among boys 15-19y at the district level: 2016 and 2021

***Districts that decreased the most from 2016 to 2021**

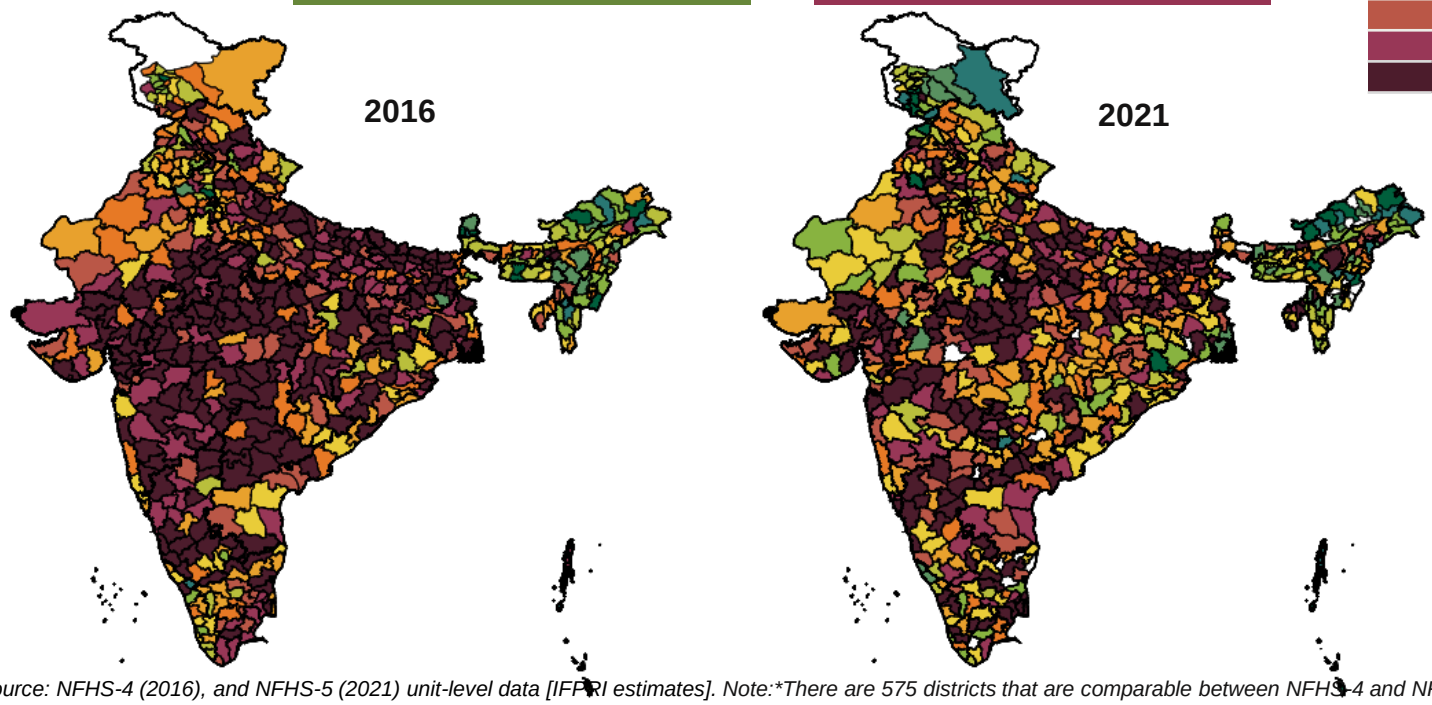
District (state)	*pp change*
Navsari (GJ)	-58
Barwani (MP)	-54
Virudhunagar (TN)	-54
Dhar (MP)	-52
Kinnaur (HP)	-52

***Districts that increased the most from 2016 to 2021**

District (state)	*pp change*
Raichur (KA)	+57
Mumbai Suburban (MH)	+50
Kottayam (KL)	+49
Jabalpur (MP)	+44
Tiruvannamalai (TN)	+43

Prevalence (%)

No data
0-4.9
5-9.9
10-14.9
15-19.9
20-24.9
25-29.9
30-34.9
35-39.9
40-44.9
45-49.9
50+

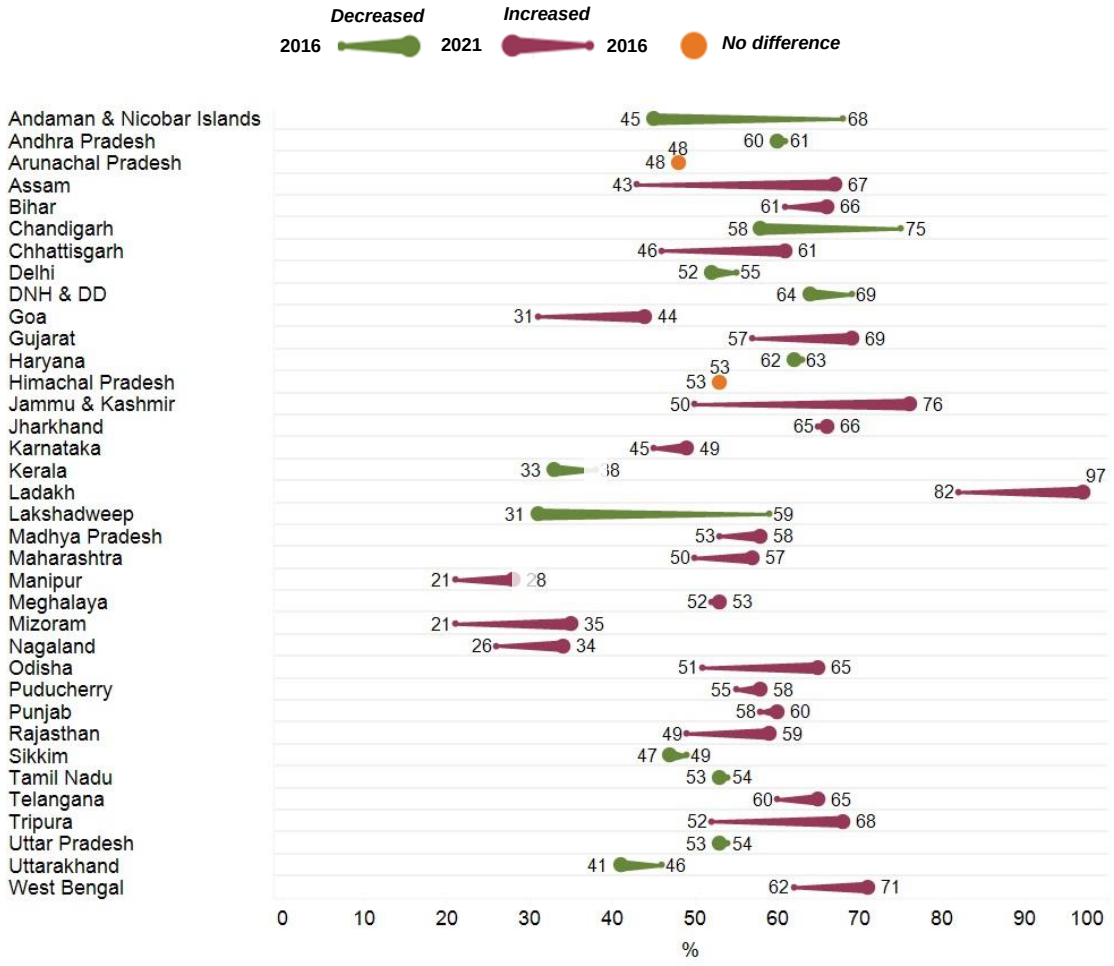


*Source: NFHS-4 (2016), and NFHS-5 (2021) unit-level data [IFPRI estimates]. Note:*There are 575 districts that are comparable between NFHS-4 and NFHS-5.*

FIGURE 5: Anemia among girls 15-19y at the state level: 2016 and 2021

States/UTs that decreased the most from 2016 to 2021	
State/UT	*pp change*
Lakshadweep	-28
Andaman & Nicobar Islands	-23
Chandigarh	-17
DNH & DD	-5
2 States[1]	-5

States/UTs that increased the most from 2016 to 2021	
State/UT	*pp change*
Jammu & Kashmir	+26
Assam	+24
Tripura	+16
Chhattisgarh	+15
Ladakh	+15

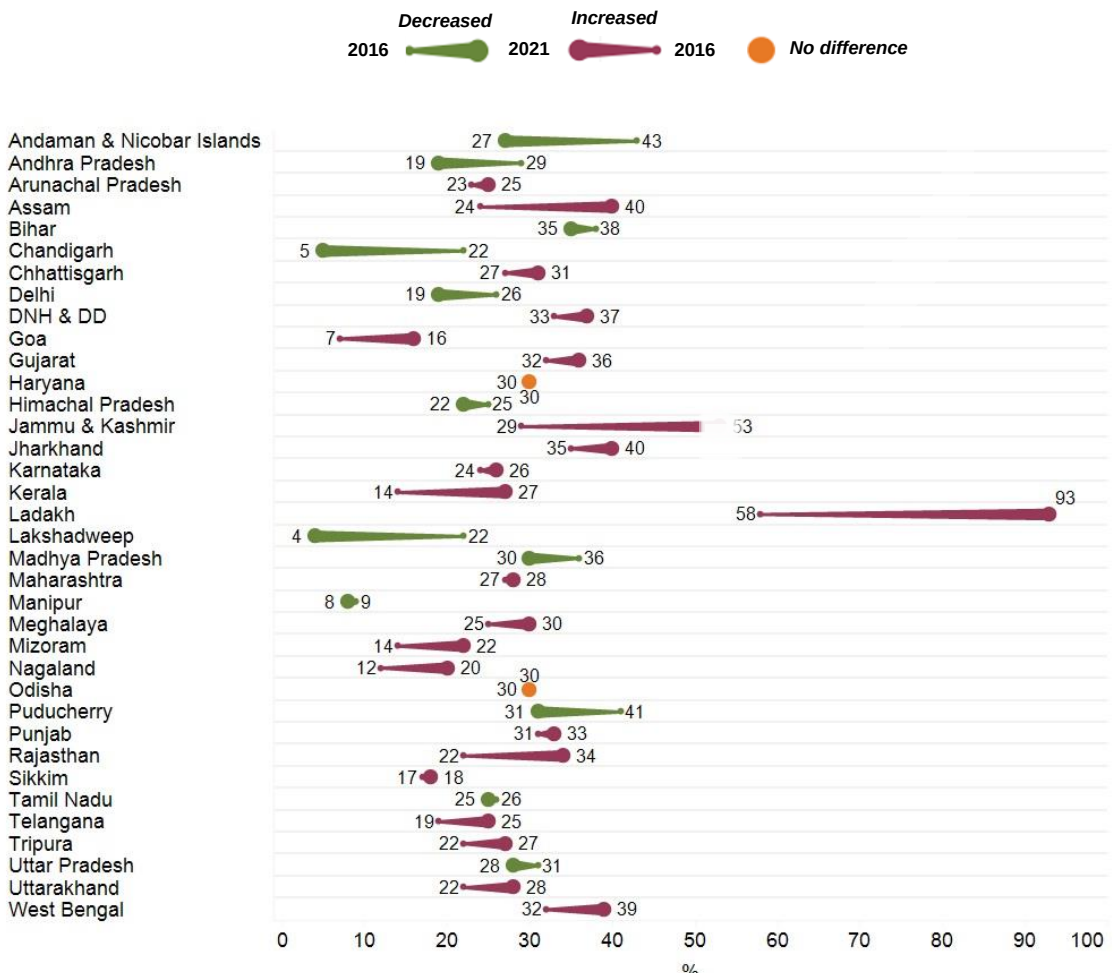


% of girls aged 15-19y who are anemic, 2016 and 2021

FIGURE 6: Anemia among boys 15-19y at the state level: 2016 and 2021

States/UTs that decreased the most from 2016 to 2021	
State/UT	*pp change*
Lakshadweep	-18
Chandigarh	-17
Andaman & Nicobar Islands	-16
Andhra Pradesh	-10
Puducherry	-10

States/UTs that increased the most from 2016 to 2021	
State/UT	*pp change*
Ladakh	+35
Jammu & Kashmir	+24
Assam	+16
Kerala	+13
Rajasthan	+12



% of boys aged 15-19y who are anemic, 2016 and 2021

Source: NFHS-4 (2016), and NFHS-5 (2021) unit-level data [IFPRI estimates]

[1]2 States: Kerala and Uttarakhand; Note: DNH & DD refers to Dadra and Nagar Haveli and Daman and Diu

MAP 4: Anemia among girls 15-19y at the district level: 2016 and 2021

***Districts that decreased the most from 2016 to 2021**

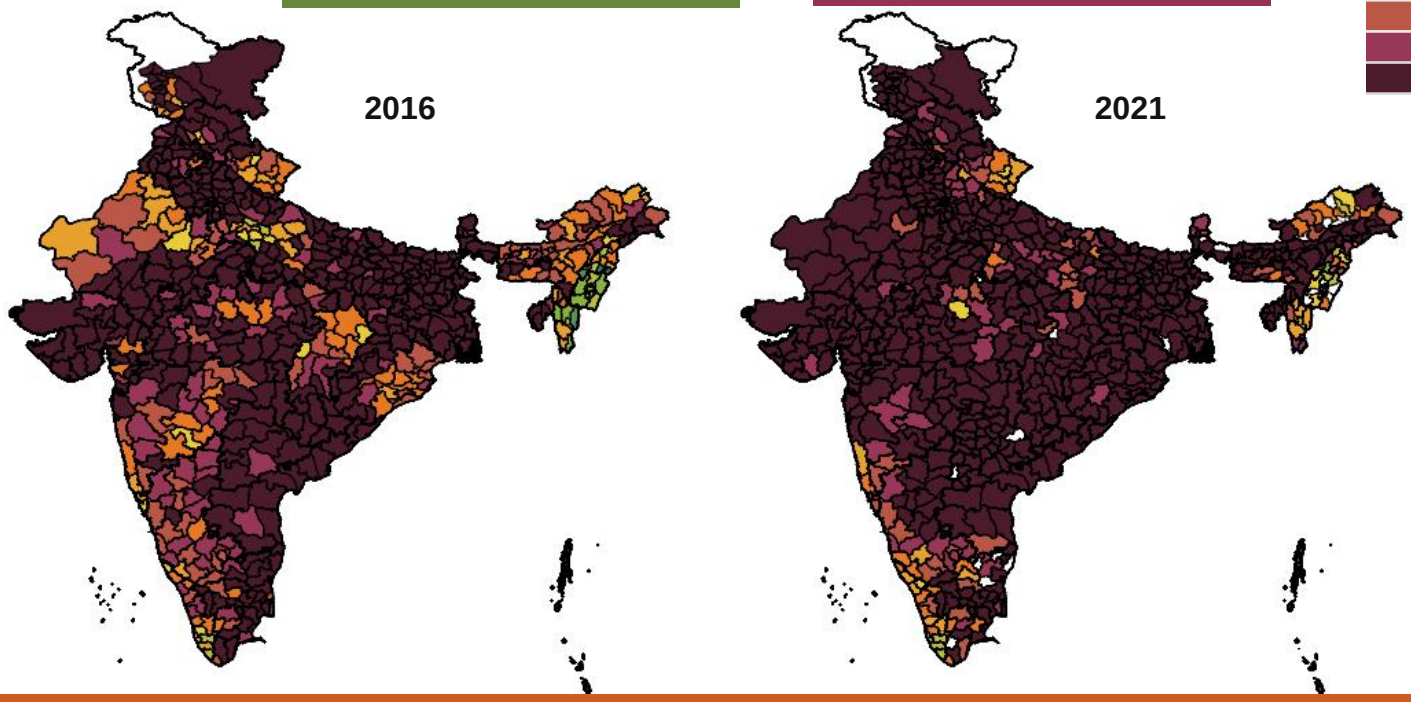
District (state)	*pp change*
Kinnaur (HP)	-29
Auraiya (UP)	-28
Jalaun (UP)	-28
Lakshadweep (LD)	-28
Dharmapuri (TN)	-27

***Districts that increased the most from 2016 to 2021**

District (state)	*pp change*
Anantnag (JK)	+52
Anugul (OR)	+49
Kannauj (UP)	+42
Doda (JK)	+42
Etawah (UP)	+41

Prevalence (%)

No data
0-4.9
5-9.9
10-14.9
15-19.9
20-24.9
25-29.9
30-34.9
35-39.9
40-44.9
45-49.9
50+



MAP 5: Anemia among boys 15-19y at the district level: 2016 and 2021

***Districts that decreased the most from 2016 to 2021**

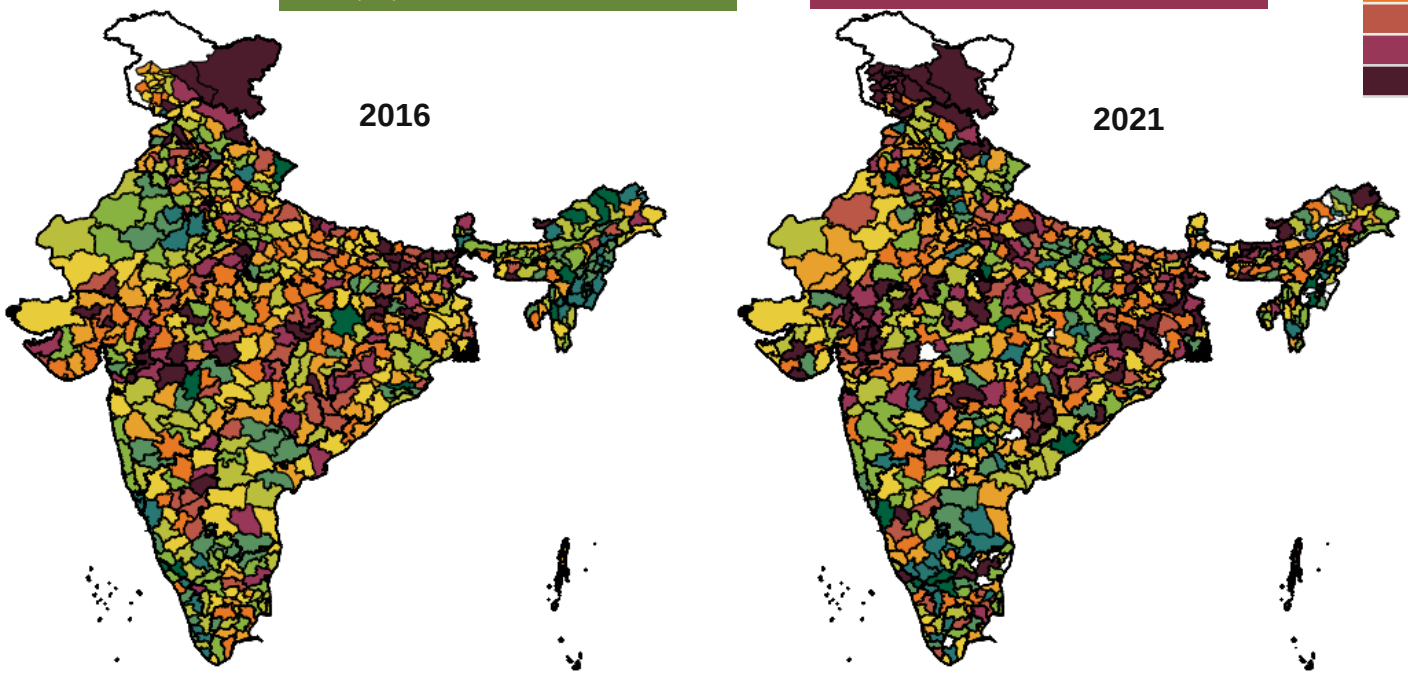
District (state)	*pp change*
Dindori (MP)	-48
Y.S.R. (AP)	-43
Hoshiarpur (PB)	-43
Mumbai (MH)	-42
Betul (MP)	-41

***Districts that increased the most from 2016 to 2021**

District (state)	*pp change*
Samba (JK)	+65
Buldana (MH)	+62
Dibang Valley (AR)	+58
Anantnag (JK)	+53
Kannur (KL)	+50

Prevalence (%)

No data
0-4.9
5-9.9
10-14.9
15-19.9
20-24.9
25-29.9
30-34.9
35-39.9
40-44.9
45-49.9
50+



*Source: NFHS-4 (2016), and NFHS-5 (2021) unit-level data [IFPRI estimates]. Note:*There are 575 districts that are comparable between NFHS-4 and NFHS-5.*

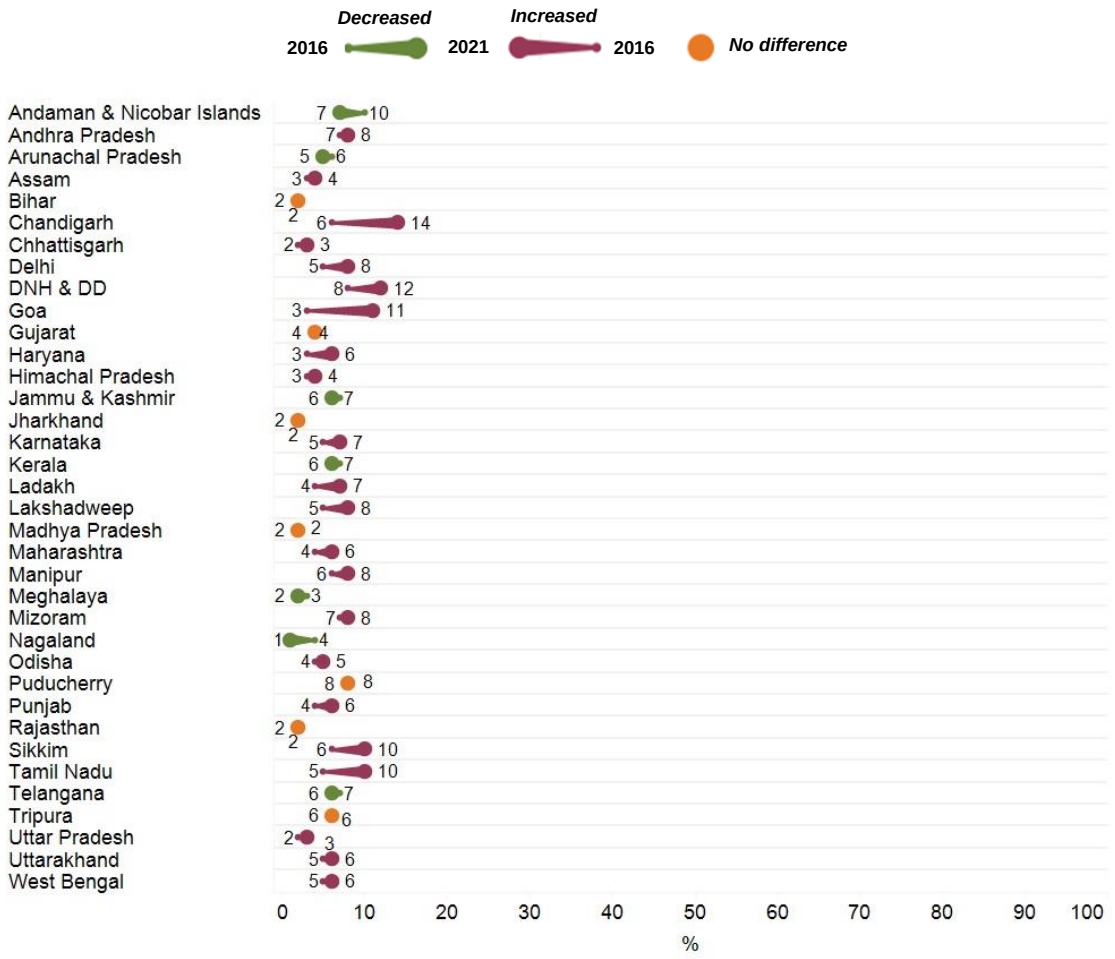
FIGURE 7: Overweight/obesity among girls 15-19y at the state level: 2016 and 2021

States/UTs that decreased the most from 2016 to 2021

State/UT	*pp change*
Andaman & Nicobar Islands	-3
Nagaland	-3
Meghalaya	-1
Kerala	-1
3 other States & UTs[1]	-1

States/UTs that increased the most from 2016 to 2021

State/UT	*pp change*
Goa	+8
Chandigarh	+8
Tamil Nadu	+5
DNH & DD	+4
Sikkim	+4



% of girls aged 15-19y who are overweight/obese, 2016 and 2021

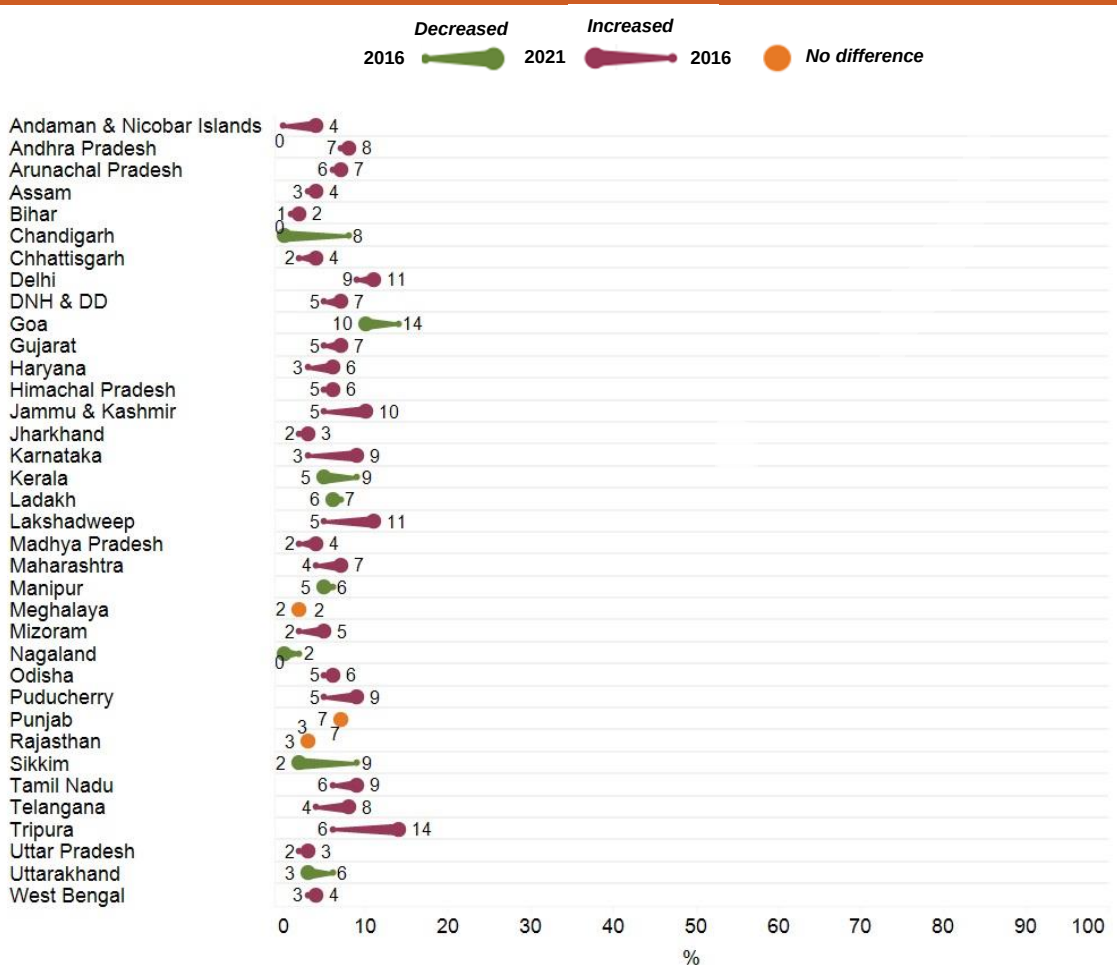
FIGURE 8: Overweight/obesity among boys 15-19y at the state level: 2016 and 2021

States/UTs that decreased the most from 2016 to 2021

State/UT	*pp change*
Chandigarh	-8
Sikkim	-7
Goa	-4
Kerala	-4
Uttarakhand	-3

States/UTs that increased the most from 2016 to 2021

State/UT	*pp change*
Tripura	+8
Lakshadweep	+6
Karnataka	+6
Jammu & Kashmir	+5
3 States & UTs[1]	+4



% of boys aged 15-19y who are overweight/obese, 2016 and 2021

Source: NFHS-4 (2016), and NFHS-5 (2021) unit-level data [IFPRI estimates]; [1]3 States and UTs: Arunachal Pradesh, Telangana, & Jammu & Kashmir; [1]3 other States and UTs: Puducherry, Andaman & Nicobar Islands and Telangana; Note: DNH & DD refers to Dadra and Nagar Haveli and Daman and Diu

MAP 6: Overweight/obesity among girls 15-19y at the district level: 2016 and 2021

***Districts that decreased the most from 2016 to 2021**

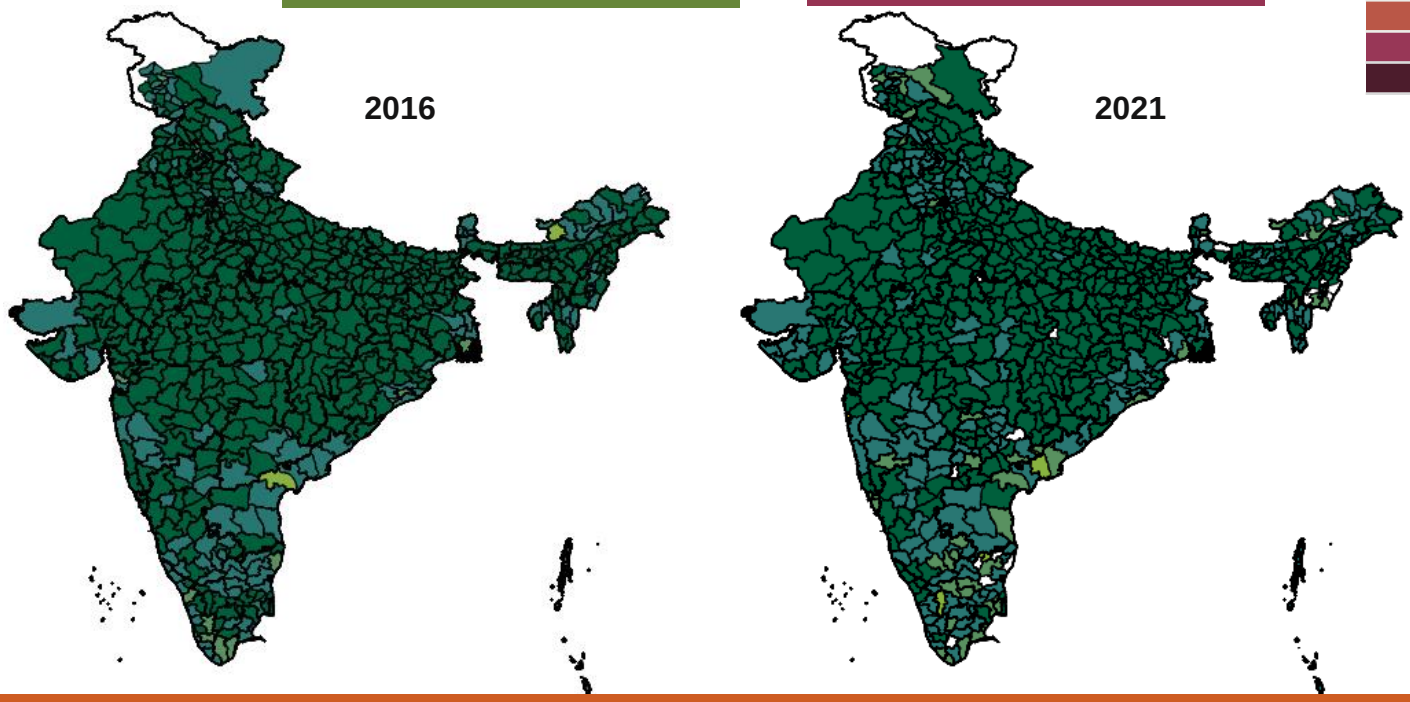
District (state)	*pp change*
West Kameng (AR)	-15
Srinagar (JK)	-12
Pathanamthitta (KL)	-8
Navsari (GJ)	-7
Lower Subansiri (AR)	-7

***Districts that increased the most from 2016 to 2021**

District (state)	*pp change*
Mumbai Suburban (MH)	+20
Coimbatore (TN)	+13
Chennai (TN)	+12
Kargil (LK)	+9
Vellore (TN)	+9

Prevalence (%)

No data
0-4.9
5-9.9
10-14.9
15-19.9
20-24.9
25-29.9
30-34.9
35-39.9
40-44.9
45-49.9
50+



MAP 7: Overweight/obesity among boys 15-19y at the district level: 2016 and 2021

***Districts that decreased the most from 2016 to 2021**

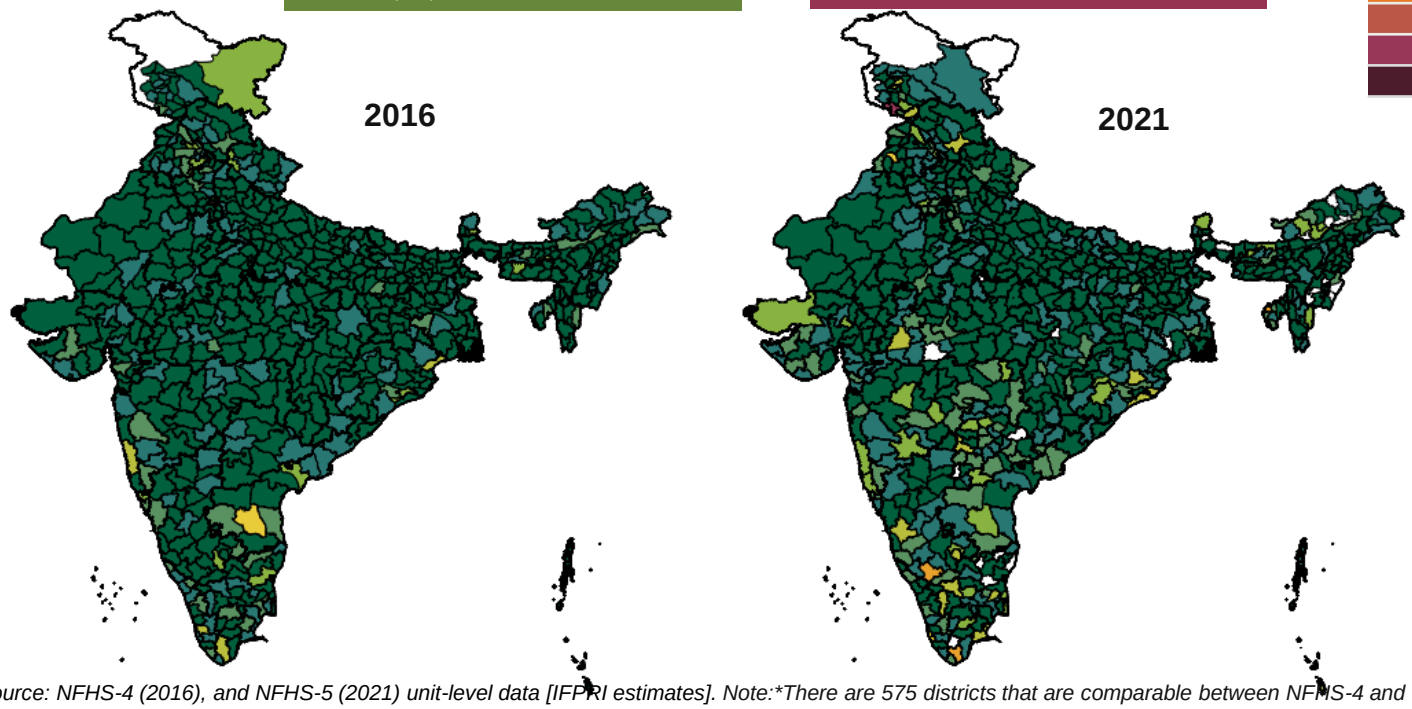
District (state)	*pp change*
Kottayam (KL)	-22
Baleshwar (OR)	-21
Ramanagara (KA)	-19
Dehradun (UT)	-18
Khordha (OR)	-16

***Districts that increased the most from 2016 to 2021**

District (state)	*pp change*
Jammu (JK)	+37
Mysore (KA)	+31
Faridkot (PB)	+26
Jagatsinghapur (OR)	+25
Shupiyan (JK)	+24

Prevalence (%)

No data
0-4.9
5-9.9
10-14.9
15-19.9
20-24.9
25-29.9
30-34.9
35-39.9
40-44.9
45-49.9
50+



*Source: NFHS-4 (2016), and NFHS-5 (2021) unit-level data [IFPRI estimates]. Note:*There are 575 districts that are comparable between NFHS-4 and NFHS-5.*

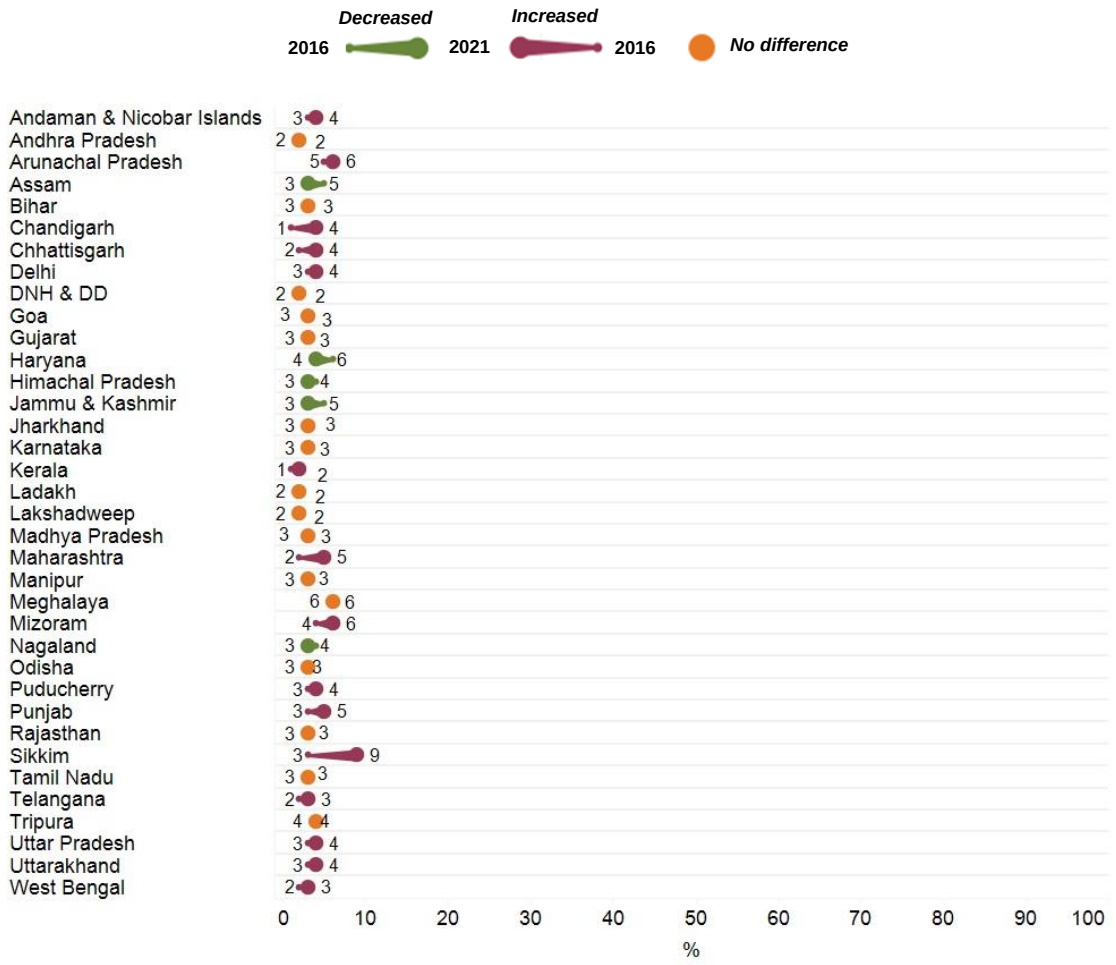
FIGURE 9: Hypertension among girls 15-19y at the state level: 2016 and 2021

States/UTs that decreased the most from 2016 to 2021

State/UT	*pp change*
Jammu & Kashmir	-2
Haryana	-2
Assam	-2
Himachal Pradesh	-1
Nagaland	-1

States/UTs that increased the most from 2016 to 2021

State/UT	*pp change*
Sikkim	+6
Chandigarh	+3
Maharashtra	+3
Chhattisgarh	+2
Punjab & Mizoram	+2



% of girls aged 15-19y who have hypertension, 2016 and 2021

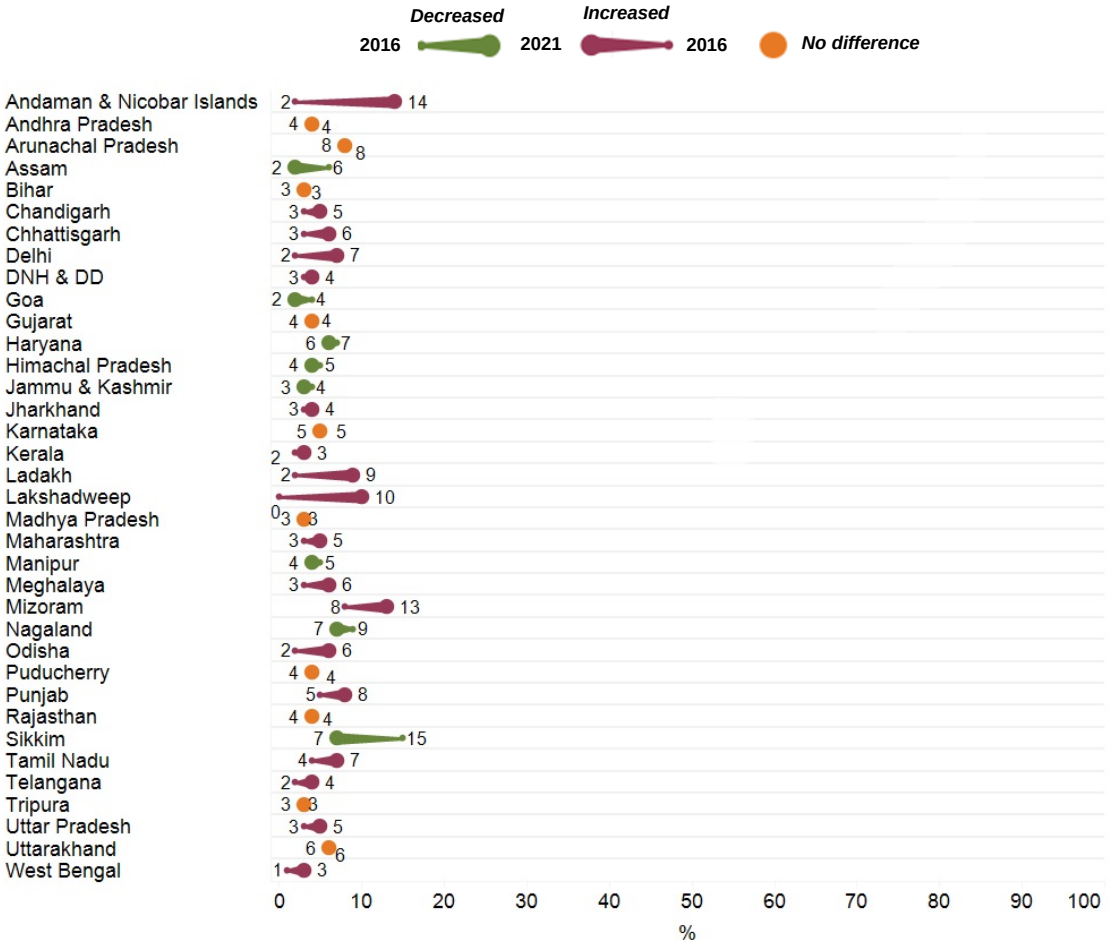
FIGURE 10: Hypertension among boys 15-19y at the state level: 2016 and 2021

States/UTs that decreased the most from 2016 to 2021

State/UT	*pp change*
Sikkim	-8
Assam	-4
Nagaland	-2
Goa	-2
4 States & UTs[1]	-1

States/UTs that increased the most from 2016 to 2021

State/UT	*pp change*
Andaman & Nicobar Islands	+12
Lakshadweep	+10
Ladakh	+7
Delhi	+5
Mizoram	+5



% of boys aged 15-19y who have hypertension, 2016 and 2021

Source: NFHS-4 (2016), and NFHS-5 (2021) unit-level data [IFPRI estimates]; Note: DNH & DD refers to Dadra and Nagar Haveli and Daman and Diu

[1]4 States & UTs: Jammu & Kashmir, Manipur, Himachal Pradesh, & Haryana

MAP 8: Hypertension among girls 15-19y at the district level: 2016 and 2021

***Districts that decreased the most from 2016 to 2021**

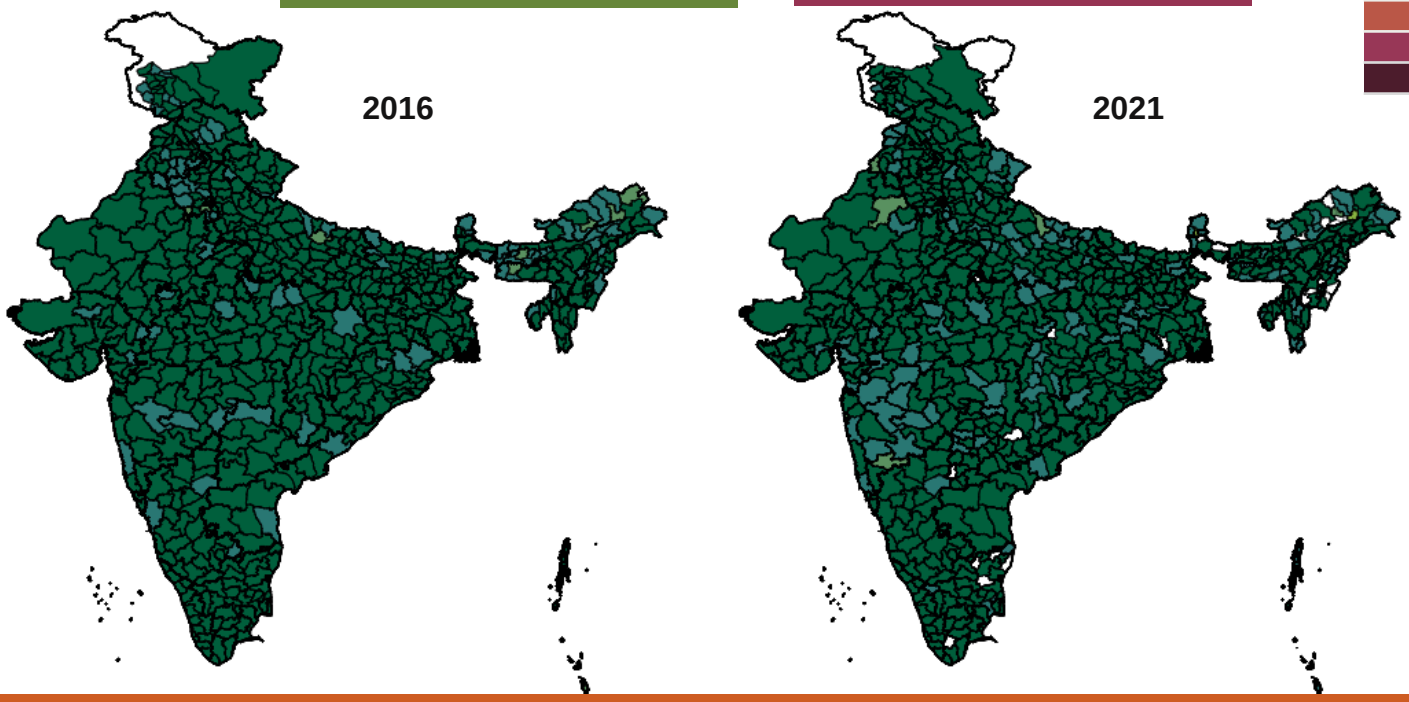
District (state)	*pp change*
Gurgaon (HR)	-10
Fatehabad (HR)	-9
Mahendragarh (HR)	-8
Dibang Valley (AR)	-8
Chirang (AS)	-7

***Districts that increased the most from 2016 to 2021**

District (state)	*pp change*
South District (SK)	+17
Mumbai Suburban (MH)	+12
Bharuch (GJ)	+9
Sangli (MH)	+8
Bathinda (PB)	+8

Prevalence (%)

No data
0-4.9
5-9.9
10-14.9
15-19.9
20-24.9
25-29.9
30-34.9
35-39.9
40-44.9
45-49.9
50+



MAP 9: Hypertension among boys 15-19y at the district level: 2016 and 2021

***Districts that decreased the most from 2016 to 2021**

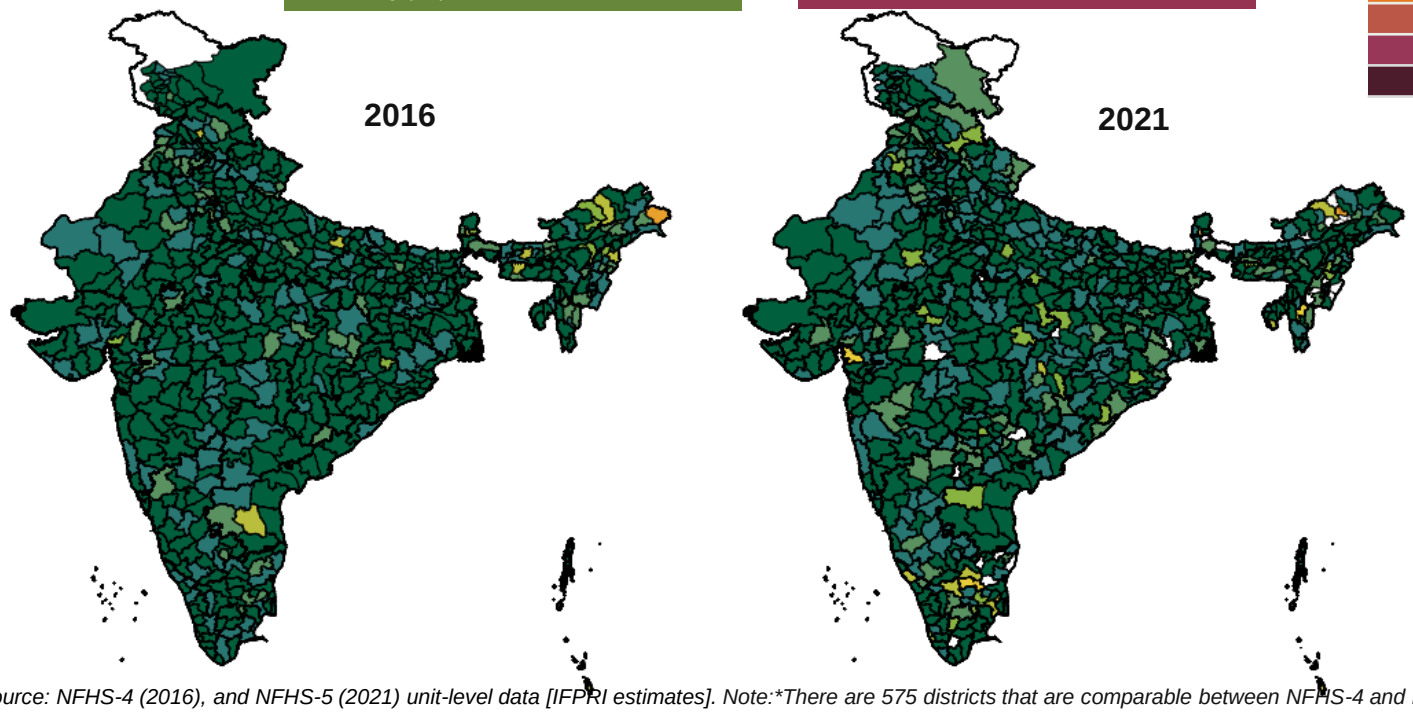
District (state)	*pp change*
Anjaw (AR)	-33
Karaikal (PY)	-24
Barpeta (AS)	-23
Y.S.R. (AP)	-22
Tuensang (NL)	-18

***Districts that increased the most from 2016 to 2021**

District (state)	*pp change*
Mumbai Suburban (MH)	+41
Bharuch (GJ)	+26
Salem (TN)	+24
Erode (TN)	+21
Dharmapuri (TN)	+21

Prevalence (%)

No data
0-4.9
5-9.9
10-14.9
15-19.9
20-24.9
25-29.9
30-34.9
35-39.9
40-44.9
45-49.9
50+



*Source: NFHS-4 (2016), and NFHS-5 (2021) unit-level data [IFPRI estimates]. Note:*There are 575 districts that are comparable between NFHS-4 and NFHS-5.*

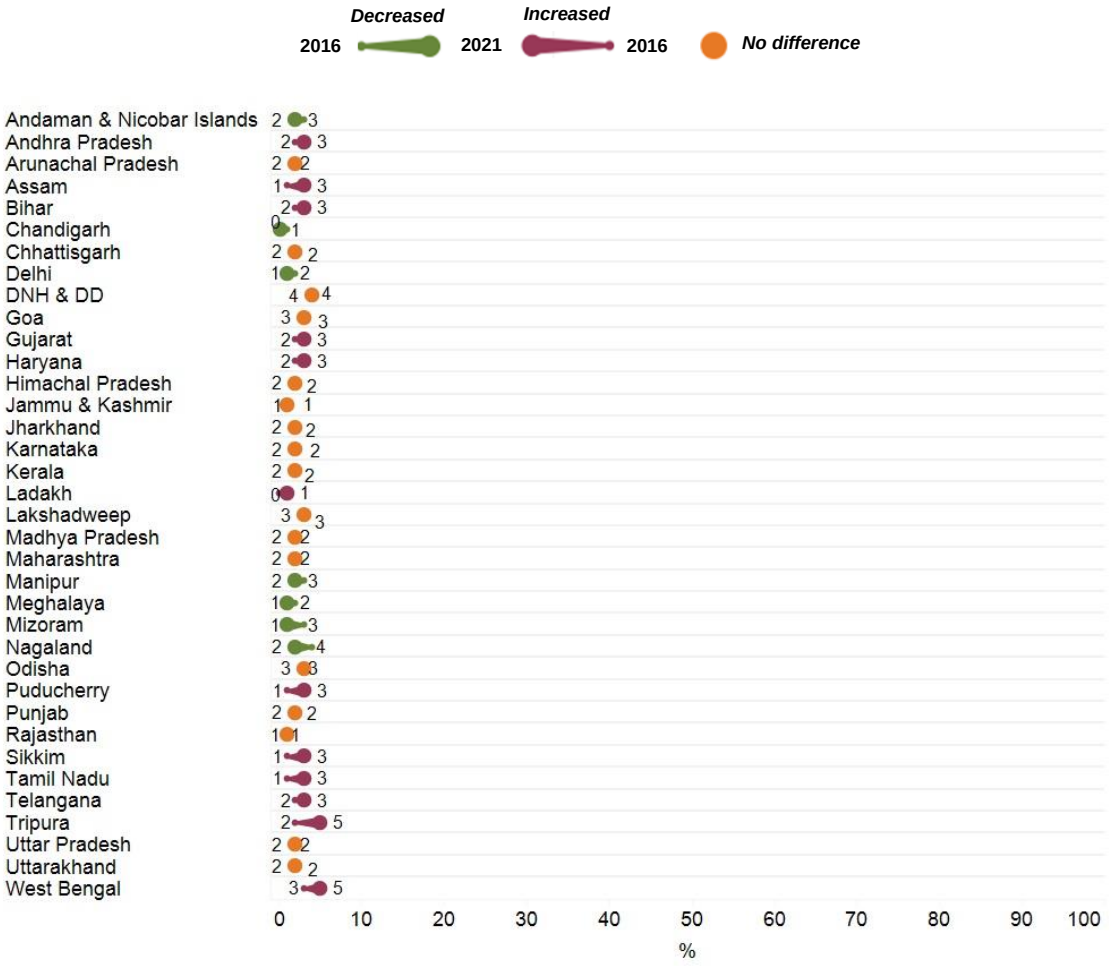
FIGURE 11: Diabetes among girls 15-19y at the state level: 2016 and 2021

States/UTs that decreased the most from 2016 to 2021

State/UT	*pp change*
Nagaland	-2
Mizoram	-2
Manipur	-1
Andaman & Nicobar Islands	-1
3 other States[1]	-1

States/UTs that increased the most from 2016 to 2021

State/UT	*pp change*
Tripura	+3
West Bengal	+2
Puducherry	+2
Sikkim	+2
Tamil Nadu & Assam	+2



% of girls aged 15-19y who are diabetic, 2016 and 2021

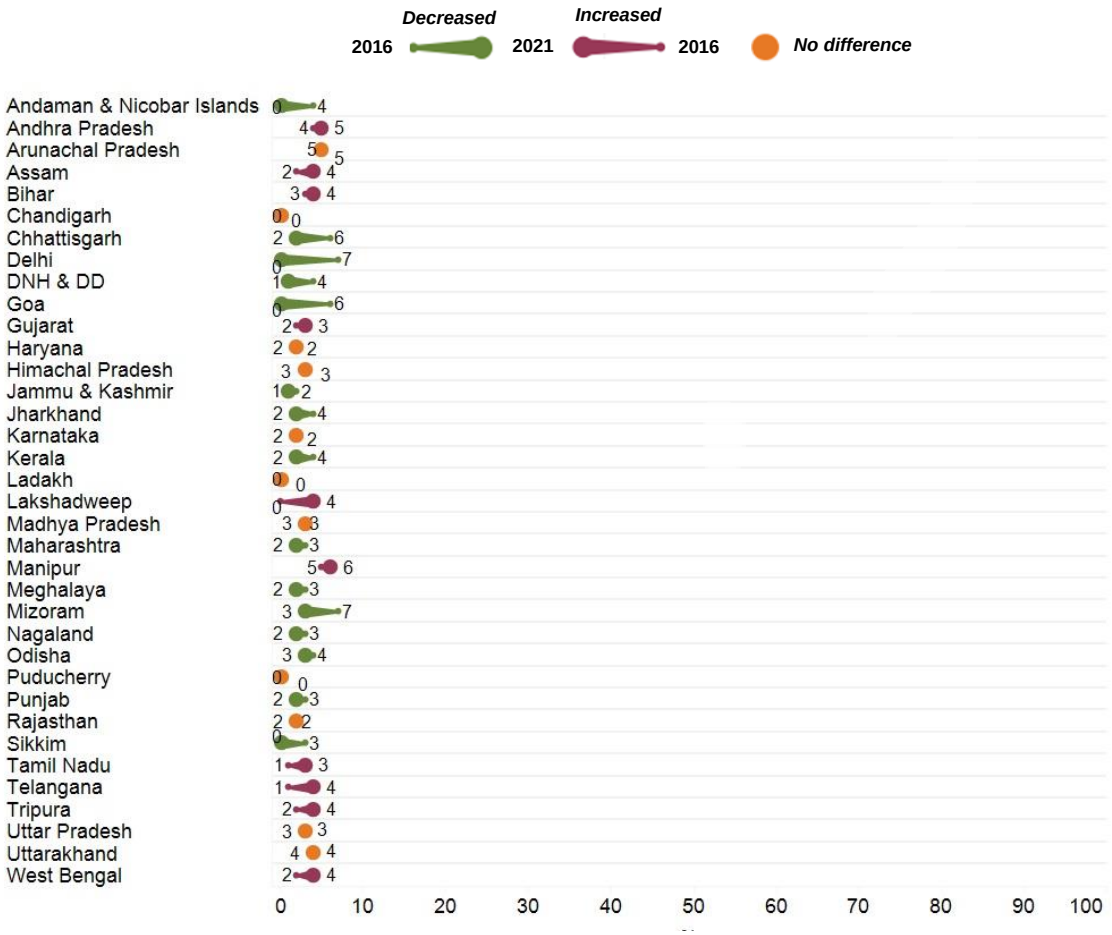
FIGURE 12: Diabetes among boys 15-19y at the state level: 2016 and 2021

States/UTs that decreased the most from 2016 to 2021

State/UT	*pp change*
Delhi	-7
Goa	-6
Andaman & Nicobar Islands	-4
Mizoram	-4
Chhattisgarh	-4

States/UTs that increased the most from 2016 to 2021

State/UT	*pp change*
Lakshadweep	+4
Telangana	+3
West Bengal	+2
Tamil Nadu	+2
Tripura & Assam	+2



% of boys aged 15-19y who are diabetic, 2016 and 2021

Source: NFHS-4 (2016), and NFHS-5 (2021) unit-level data [IFPRI estimates]; Note: DNH & DD refers to Dadra and Nagar Haveli and Daman and Diu

[1]3 other states: Chandigarh, Delhi, & Meghalaya

MAP 10: Diabetes among girls 15-19y at the district level: 2016 and 2021

Insulin

***Districts that decreased the most from 2016 to 2021**

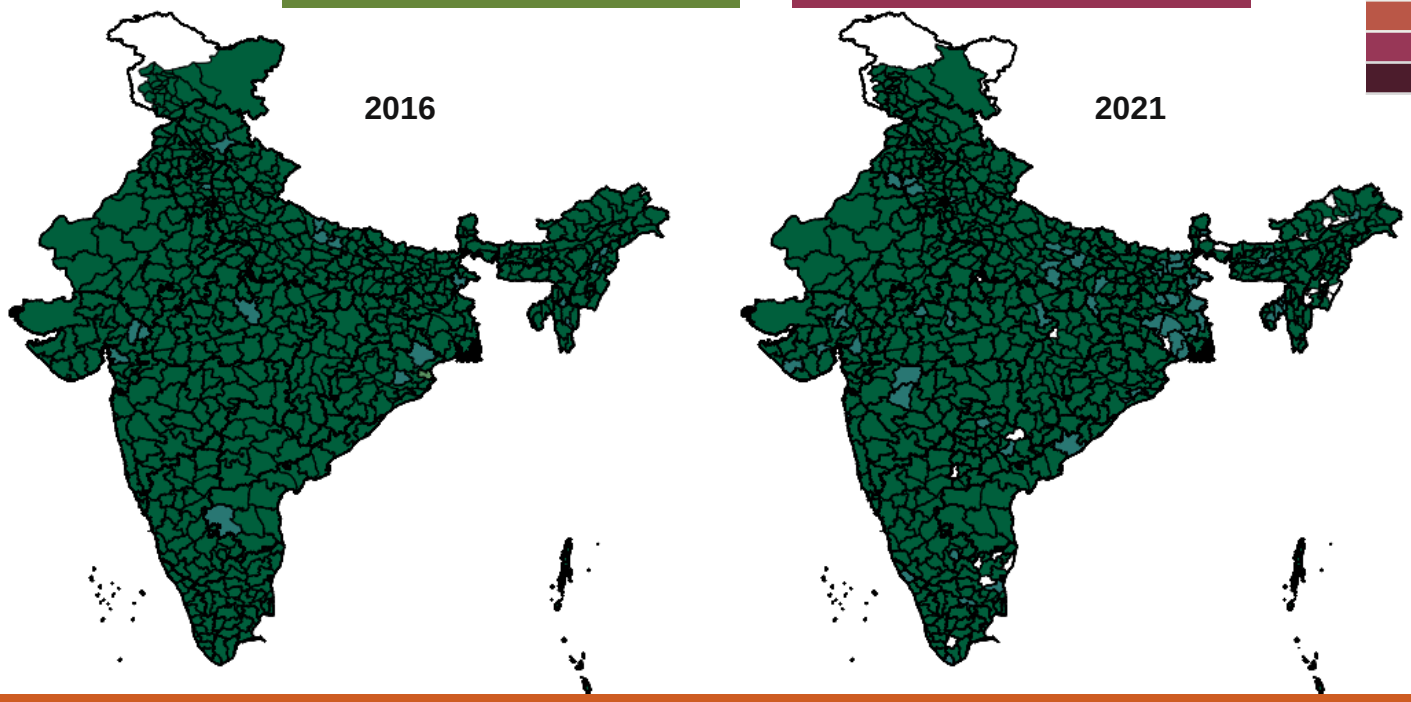
District (state)	*pp change*
Bhadrak (OR)	-7
Mayurbhanj (OR)	-6
Gonda (UP)	-6
Shrawasti (UP)	-6
Sagar (MP)	-5

***Districts that increased the most from 2016 to 2021**

District (state)	*pp change*
Dhalai (TR)	+10
Allahabad (UP)	+8
Nadia (WB)	+8
Fatehabad (HR)	+7
[1]2 Districts	+6

Prevalence (%)

No data
0-4.9
5-9.9
10-14.9
15-19.9
20-24.9
25-29.9
30-34.9
35-39.9
40-44.9
45-49.9
50+



MAP 11: Diabetes among boys 15-19y at the district level: 2016 and 2021

Insulin

***Districts that decreased the most from 2016 to 2021**

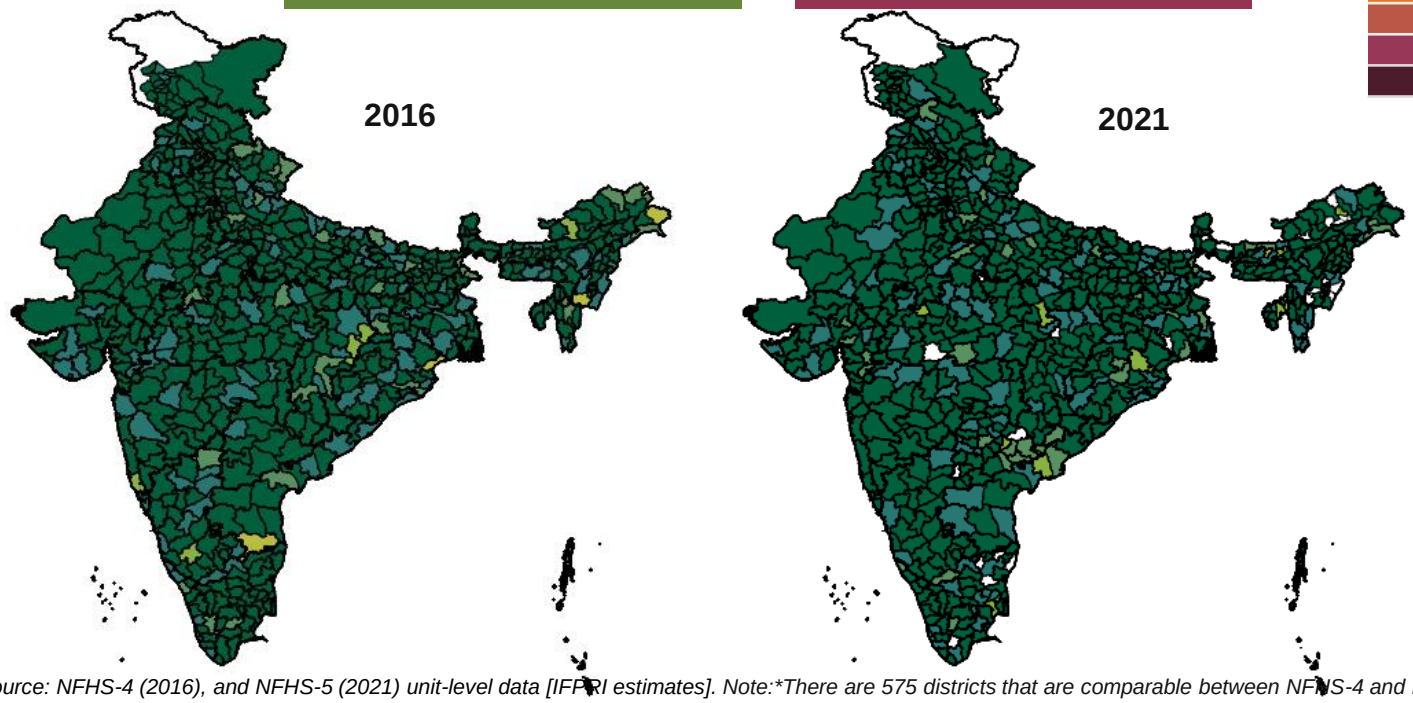
District (state)	*pp change*
Churachandpur (MN)	-24
Anjaw (AR)	-24
Baleshwar (OR)	-20
Chittoor (AP)	-20
Raigarh (CT)	-19

***Districts that increased the most from 2016 to 2021**

District (state)	*pp change*
Nalbari (AS)	+21
Thanjavur (TN)	+19
Shahdol (MP)	+17
Longleng (NL)	+16
Darrang (AS)	+15

Prevalence (%)

No data
0-4.9
5-9.9
10-14.9
15-19.9
20-24.9
25-29.9
30-34.9
35-39.9
40-44.9
45-49.9
50+



*Source: NFHS-4 (2016), and NFHS-5 (2021) unit-level data [IFPRI estimates]. Note:*There are 575 districts that are comparable between NFHS-4 and NFHS-5.*
[1]2 Districts: Bhopal (MP), Murshidabad (WB)

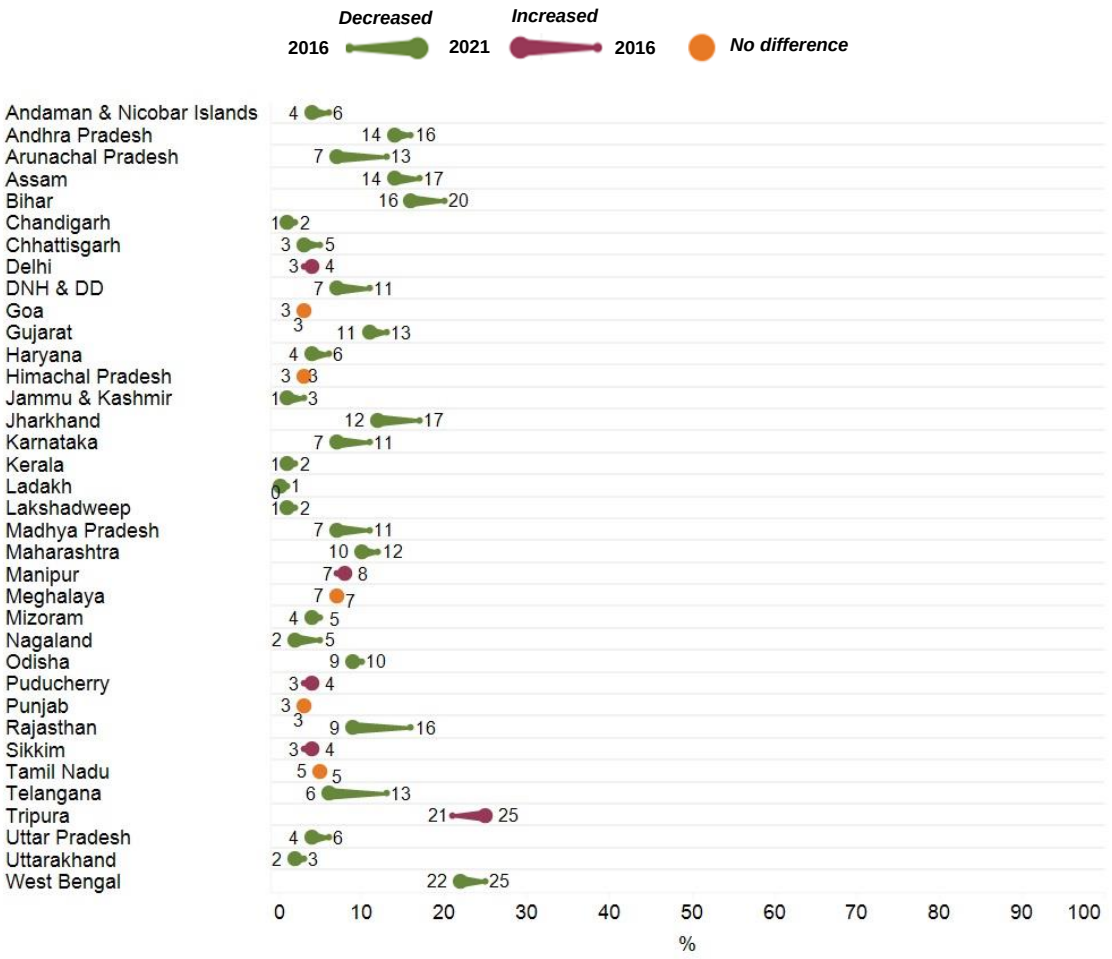
FIGURE 13: Adolescent marriage among girls 15-19y at the state level: 2016 and 2021

States/UTs that decreased the most from 2016 to 2021

State/UT	*pp change*
Telangana	-7
Rajasthan	-7
Arunachal Pradesh	-6
Jharkhand	-5
4 States & UTs[1]	-4

States/UTs that increased the most from 2016 to 2021

State/UT	*pp change*
Tripura	4
Puducherry	1
Delhi	1
Manipur	1
Sikkim	1



% of girls aged 15-19y who got married when <18y, 2016 and 2021

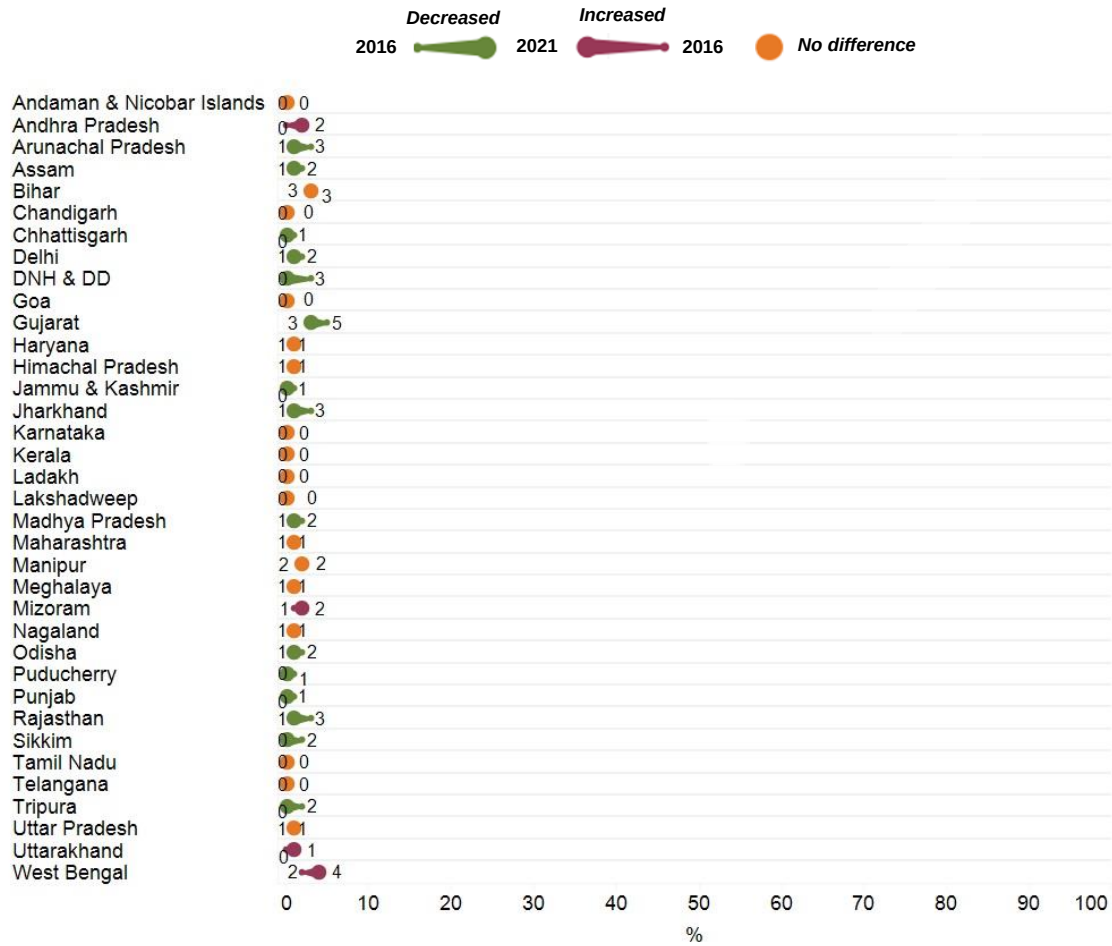
FIGURE 14: Adolescent marriage among boys 15-19y at the state level: 2016 and 2021

States/UTs that decreased the most from 2016 to 2021

State/UT	*pp change*
DNH & DD	-3
Jharkhand	-2
Rajasthan	-2
Sikkim	-2
3 other States & UTs[2]	-2

States/UTs that increased the most from 2016 to 2021

State/UT	*pp change*
Andhra Pradesh	+2
West Bengal	+2
Mizoram & Uttarakhand	+1



% of boys aged 15-19y who are married, 2016 and 2021

Source: NFHS-4 (2016), and NFHS-5 (2021) unit-level data [IFPRI estimates]; [1]4 States: Karnataka, Madhya Pradesh, Bihar, & DNH & DD (Dadra and Nagar Haveli and Daman and Diu); [2]3 other States and UTs: Arunachal Pradesh, Tripura and Gujarat.

MAP 12: Adolescent marriage among girls 15-19y at the district level: 2016 and 2021

***Districts that decreased the most from 2016 to 2021**

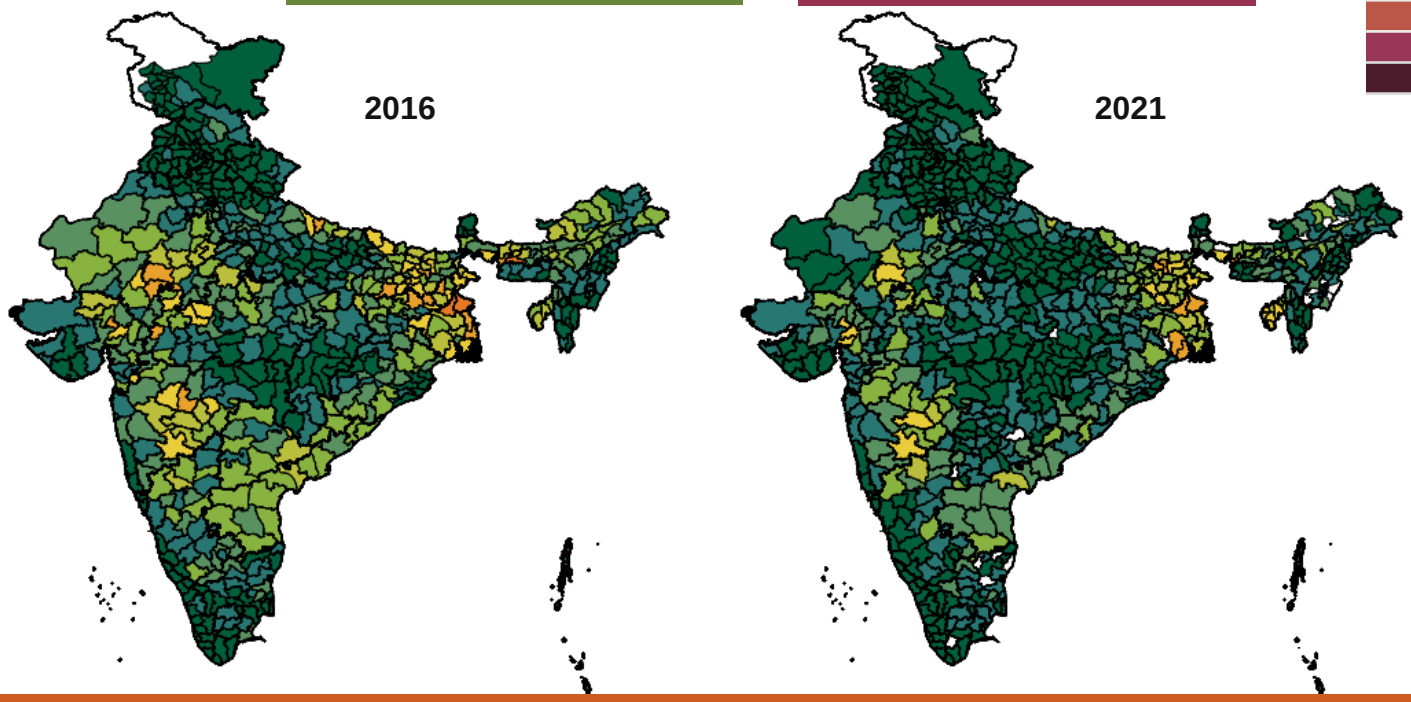
District (state)	*pp change*
Jhabua (MP)	-24
Goalpara (AS)	-23
West Kameng (AR)	-20
Sheohar (BR)	-18
Tikamgarh (MP)	-17

***Districts that increased the most from 2016 to 2021**

District (state)	*pp change*
Purnia (BR)	+12
Washim (MH)	+9
Paschim Medinipur (WB)	+9
Bhagalpur (BR)	+8
Saharsa (BR)	+8

Prevalence (%)

No data
0-4.9
5-9.9
10-14.9
15-19.9
20-24.9
25-29.9
30-34.9
35-39.9
40-44.9
45-49.9
50+



MAP 13: Adolescent marriage among boys 15-19y at the district level: 2016 and 2021

***Districts that decreased the most from 2016 to 2021**

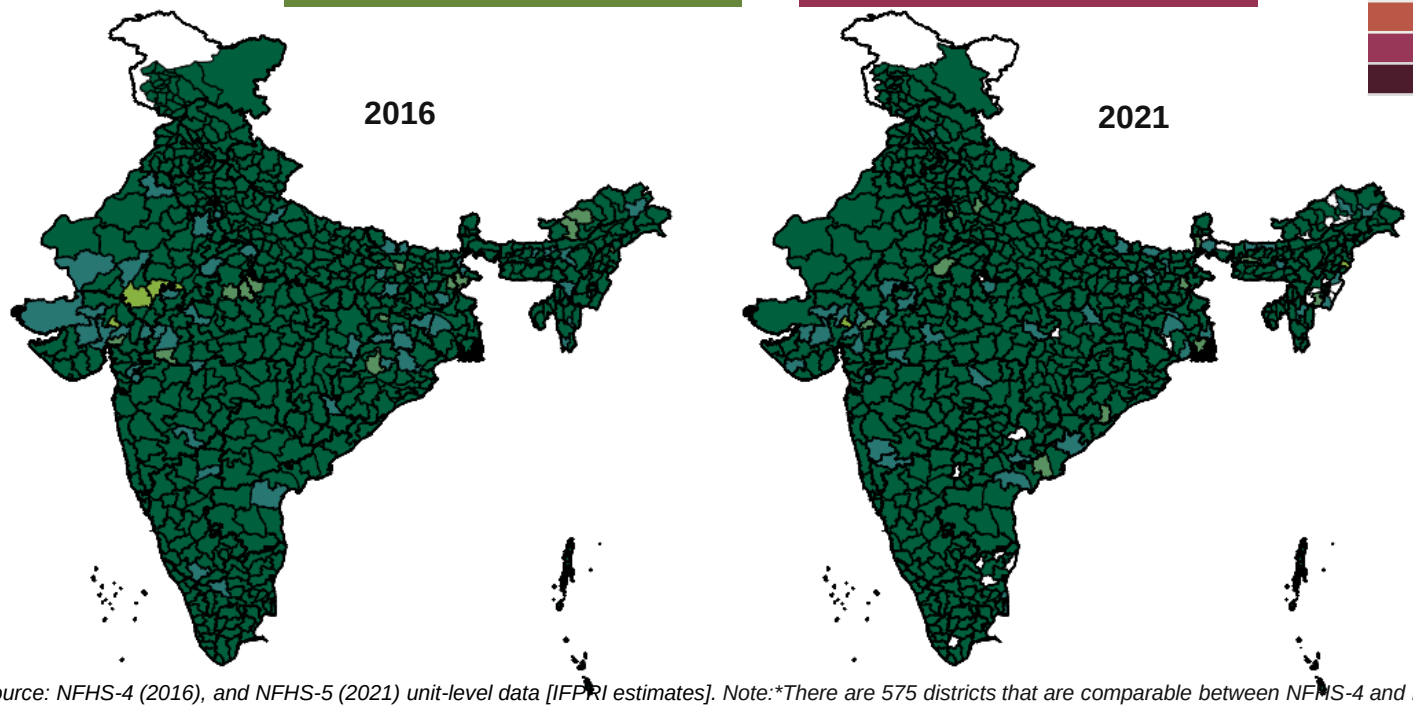
District (state)	*pp change*
Sambalpur (OR)	-14
Anand (GJ)	-14
Udaipur (RJ)	-13
Longleng (NL)	-13
Maldah (WB)	-12

***Districts that increased the most from 2016 to 2021**

District (state)	*pp change*
Kiphire (NL)	+20
South 24 Parganas (WB)	+14
West Godavari (AP)	+13
Churachandpur (MN)	+11
Darjiling (WB)	+11

Prevalence (%)

No data
0-4.9
5-9.9
10-14.9
15-19.9
20-24.9
25-29.9
30-34.9
35-39.9
40-44.9
45-49.9
50+



*Source: NFHS-4 (2016), and NFHS-5 (2021) unit-level data [IFPRI estimates]. Note:*There are 575 districts that are comparable between NFHS-4 and NFHS-5.*

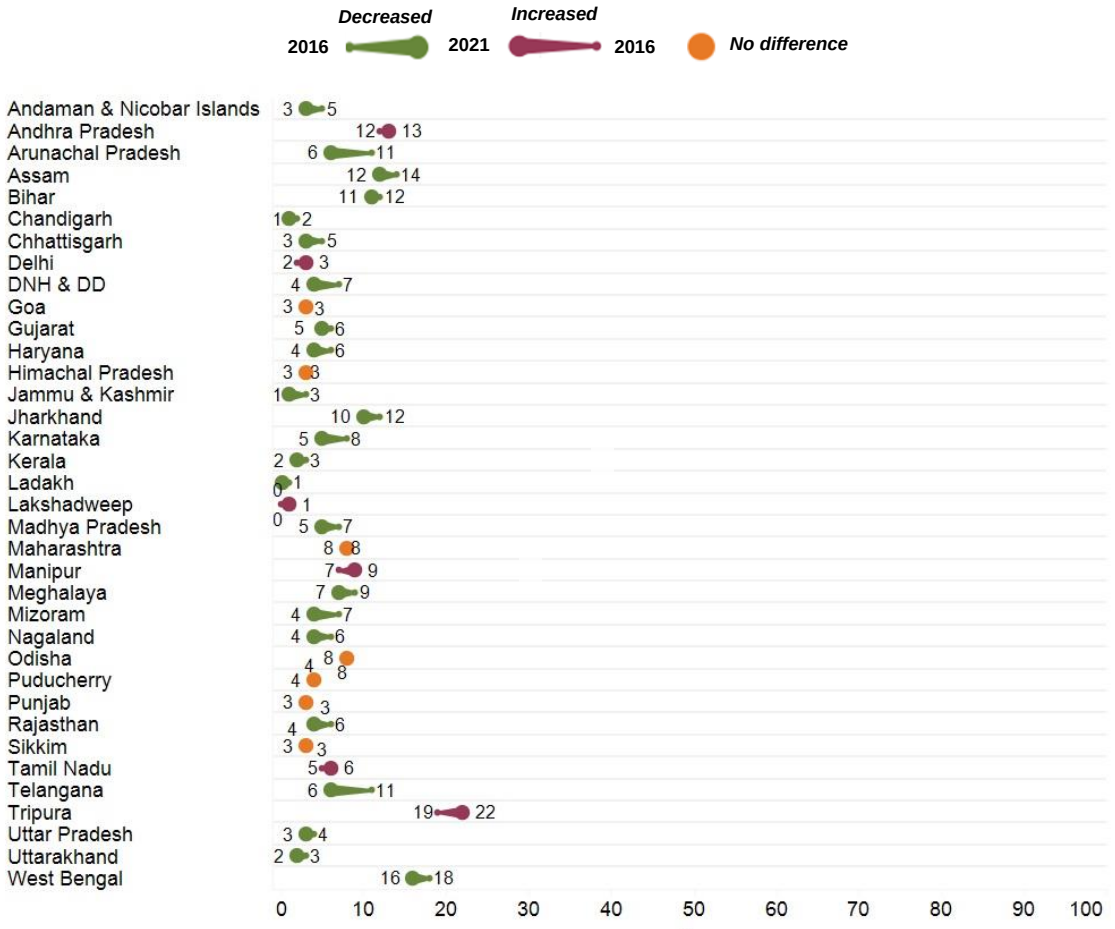
FIGURE 15: Early child-bearing status among girls 15-19y at the state level: 2016 and 2021

States/UTs that decreased the most from 2016 to 2021

State/UT	*pp change*
Telangana	-5
Arunachal Pradesh	-5
DNH & DD	-3
Mizoram	-3
Karnataka	-3

States/UTs that increased the most from 2016 to 2021

State/UT	*pp change*
Tripura	+3
Manipur	+2
Lakshadweep	+1
Andhra Pradesh	+1
Delhi & Tamil Nadu	+1



% of married girls aged 15-19y with a child, 2016 and 2021

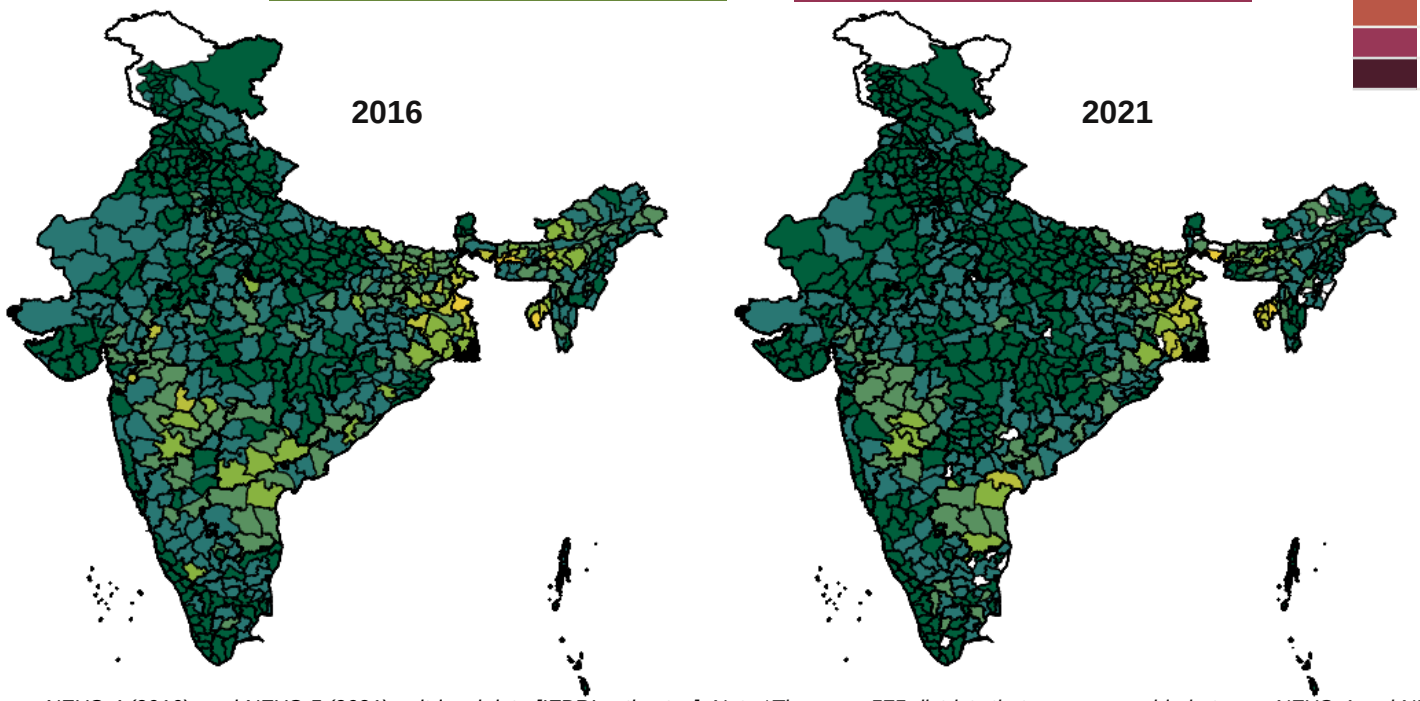
MAP 14: Childbearing among girls 15-19y at the district level: 2016 and 2021

***Districts that decreased the most from 2016 to 2021**

District (state)	*pp change*
West Kameng (AR)	-18
Jhabua (MP)	-17
Goalpara (AS)	-14
Tikamgarh (MP)	-12
Jalna (MH)	-12

***Districts that increased the most from 2016 to 2021**

District (state)	*pp change*
Saharsa (BR)	+12
Jabalpur (MP)	+10
Paschim Medinipur (WB)	+9
Purnia (BR)	+9
Erode (TN)	+9



*Source: NFHS-4 (2016), and NFHS-5 (2021) unit-level data [IFPRI estimates]. Note:*There are 575 districts that are comparable between NFHS-4 and NFHS-5. Note: DNH & DD refers to Dadra and Nagar Haveli and Daman and Diu*

FIGURE 16: Prevalence of undernutrition outcomes, overweight/obesity, non-communicable diseases, and early marriage and childbearing among adolescents,15-19y, state dashboard: 2021

0-10%	10-<20%	20-<30%	30-<40%	40-<50%	>=50%

State Name	Girls								Boys					
	Short stature	Underweight	Anemia	Overweight/ obesity	Hypertension	Diabetes	Adolescent marriage	Adolescent childbearing	Underweight	Anemia	Overweight/ obesity	Hypertension	Diabetes	Adolescent marriage
Andaman And Nicobar Islands	30	30	45	7	4	2	4	3	3	27	4	14	0	0
Andhra Pradesh	29	38	60	8	2	3	14	13	41	19	8	4	5	2
Arunachal Pradesh	53	14	48	5	6	2	7	6	14	25	7	8	5	1
Assam	48	32	67	4	3	3	14	12	28	40	4	2	4	1
Bihar	44	42	66	2	3	3	16	11	46	35	2	3	4	3
Chandigarh	17	36	58	14	4	0	1	1	54	5	0	5	0	0
Chhattisgarh	39	40	61	3	4	2	3	3	37	31	4	6	2	0
Dadra & Nagar Haveli and Daman & Diu	41	47	64	12	2	4	7	4	57	37	7	4	1	0
Delhi	33	31	52	8	4	1	4	3	32	19	11	7	0	1
Goa	31	39	44	11	3	3	3	3	52	16	10	2	0	0
Gujarat	32	52	69	4	3	3	11	5	47	36	7	4	3	3
Haryana	19	40	62	6	4	3	4	4	38	30	6	6	2	1
Himachal Pradesh	20	39	53	4	3	2	3	3	34	22	6	4	3	1
Jammu And Kashmir	39	18	76	6	3	1	1	1	15	53	10	3	1	0
Jharkhand	49	42	66	2	3	2	12	10	41	40	3	4	2	1
Karnataka	34	42	49	7	3	2	7	5	47	26	9	5	2	0
Kerala	21	34	33	6	2	2	1	2	36	27	5	3	2	0
Ladakh	54	18	97	7	2	1	0	0	8	93	6	9	0	0
Lakshadweep	35	22	31	8	2	3	1	1	23	4	11	10	4	0
Madhya Pradesh	31	43	58	2	3	2	7	5	47	30	4	3	3	1
Maharashtra	30	48	57	6	5	2	10	8	41	28	7	5	2	1
Manipur	29	20	28	8	3	2	8	9	27	8	5	4	6	2
Meghalaya	61	19	53	2	6	1	7	7	22	30	2	6	2	1
Mizoram	26	11	35	8	6	1	4	4	20	22	5	13	3	2
Nagaland	34	35	34	1	3	2	2	4	27	20	0	7	2	1
Odisha	40	35	65	5	3	3	9	8	33	30	6	6	3	1
Puducherry	18	27	58	8	4	3	4	4	41	31	9	4	0	0
Punjab	20	38	60	6	5	2	3	3	34	33	7	8	2	0
Rajasthan	25	40	59	2	3	1	9	4	35	34	3	4	2	1
Sikkim	41	14	47	10	9	3	4	3	33	18	2	7	0	0
Tamil Nadu	23	34	53	10	3	3	5	6	37	25	9	7	3	0
Telangana	32	43	65	6	3	3	6	6	50	25	8	4	4	0
Tripura	44	33	68	6	4	5	25	22	43	27	14	3	4	0
Uttar Pradesh	42	37	53	3	4	2	4	3	40	28	3	5	3	1
Uttarakhand	25	31	41	6	4	2	2	2	39	28	3	6	4	1
West Bengal	44	31	71	6	3	5	22	16	36	39	4	3	4	4

Source: NFHS-5 (2021) unit-level data [IFPRI estimates]

Note: Male short stature statistics are not presented in this data note due to a potential difference in the sampling process of males across NFHS rounds. According to the IFPRI estimates, the nationally representative male birth cohorts did not have the same mean height across the NFHS rounds, indicating a bias due to opportunistic sampling. Furthermore, the significantly smaller sample size of males compared to females suggests a potential selection bias in the sampling strategy. The results for other male indicators should be interpreted with caution for the reasons stated above.

Summary of findings

Overall findings

In India, at the national level, the prevalence of underweight, adolescent marriage, and adolescent childbearing has declined from 2006 to 2021. However, the prevalence of short stature and overweight/obesity has increased for adolescents. The prevalence of anemia reduced between 2006 and 2016; however, it increased between 2016 and 2021, and the increase was more pronounced in the case of girls.

The prevalence of hypertension has remained unchanged for girls but has slightly increased for boys from 2016 to 2021. On the other hand, the prevalence of diabetes has remained unchanged for boys but has slightly increased for girls from 2016 to 2021.

National and sub-national trends

Short Stature

- Increased among girls from 33% in 2006 to 34% in 2016; it further increased by 2 percentage points (pp) in 2021
- Increased in most states & UTs between 2016-2021 among girls; most increase in Jammu & Kashmir (+19pp)

Underweight

- Decreased among girls from 45% in 2006 to 41% in 2016; it further decreased by 2pp in 2021
- Decreased among boys from 58% in 2006 to 45% in 2016; it further decreased by 4pp in 2021
- Decreased in several states & UTs between 2016-2021; maximum decline in Puducherry for girls (-15pp) and Ladakh for boys (-26pp)

Anemia

- Decreased among girls from 56% in 2006 to 54% in 2016; it increased by 5pp in 2021
- Decreased among boys from 30% in 2006 to 29% in 2016; it increased by 2pp in 2021
- Increased in most states & UTs between 2016-2021; most increase in Jammu & Kashmir for girls (+26pp) & Ladakh for boys (+35pp)

Overweight/obesity

- Increased among girls from 2% in 2006 to 4% in 2016; it remained stable in 2021
- Increased among boys from 1% in 2006 to 4% in 2016; it further increased by 1pp in 2021
- Increased in most states & UTs between 2016-2021; maximum increase in Goa & Chandigarh for girls (+8pp) and Tripura for boys (+8pp)

Hypertension

- Remained constant among girls at 3% across 2016 and 2021
- Increased among boys from 3% in 2016 to 4% in 2021
- Increased/was stable in many states & UTs between 2016-2021; most increase in Sikkim for girls (+6pp) & Andaman & Nicobar Islands for boys (+12pp)

Diabetes

- Increased among girls from 2% to 3% between 2016 and 2021
- Remained constant among boys at 3% across 2016 and 2021
- Decreased/was stable in many states & UTs between 2016-2021; maximum decrease in Nagaland & Mizoram for girls (-2pp) & Delhi for boys (-7pp)

Adolescent marriage

- Decreased among girls from 23% to 12% between 2006 and 2016; it further decreased to 9% in 2021
- Decreased among boys from 3% to 2% between 2006 and 2016; it remained stable thereafter
- Decreased/was stable in most states & UTs between 2016-2021; most decline in Telangana & Rajasthan for girls (-7pp) and Dadra & Nagar Haveli and Daman & Diu for boys (-3pp)

Adolescent childbearing

- Decreased among girls from 16% to 8% between 2006 and 2016; it further decreased to 7% in 2021
- Decreased in most states & UTs between 2016-2021; maximum decline in Telangana and Arunachal Pradesh (-5pp)

Source: NFHS-4 (2016), and NFHS-5 (2021) unit-level data [IFPRI estimates];

Scope for improvement

- Undernutrition outcomes including short stature, underweight, and anemia among adolescents need immediate attention
  - Short stature prevalence among girls increased in the last 3 decades (36% in 2021)
  - Underweight prevalence while declined over time, was substantial at 39-41% in 2021
  - Anemia among girls is very high (59% in 2021) and has increased over time
- There is a scope to reduce overweight/obesity - while the prevalence has been low (≤5%), it has increased over time
- There is a scope to reduce early marriage and childbearing situation among girls: 9% girls in 2021 got married before 18 years and 7% girls gave birth during adolescence

Discussion for users

"It is time that adolescent health comes of age. Adolescent health is a smart investment; not only will it improve health and survival in the short term, it will bring benefits for future generations."

Valentina Baltag
Adolescent Health, WHO
Coming of age: adolescent health (who.int)

"Young people are the world's greatest untapped resource. Adolescents can be key driving forces in building a future of dignity for all."

General Ban Ki-Moon
Former UN Secretary
Our future (thelancet.com)

Undernutrition outcomes

1. How has the undernutrition outcomes including short stature, underweight, and anemia among adolescents changed in your state/UT or district?
2. Has the trend been similar for girls and boys?
3. Which undernutrition outcome/s in your state/UT or district need attention?

Overweight/obesity and non-communicable diseases (NCDs)

1. How has the overweight/obesity and non-communicable diseases including hypertension and diabetes among adolescents changed in your state/UT or district?
2. Has the trend been similar for girls and boys?
3. Which of these outcome/s in your state/UT or district need attention?

Adolescent marriage and childbearing

1. How has the early marriage and childbearing situation among adolescents changed in your state/UT or district?
2. Has the trend for adolescent marriage been similar for girls and boys?
3. Which of these outcome/s in your state/UT or district need attention?

Source: NFHS-3 (2006), NFHS-4 (2016), and NFHS-5 (2021) unit-level data [IFPRI estimates]
Note: Adolescents picture is taken from the following WHO website - Adolescent health (who.int)

Annexure 1: Definition of indicators used in the analyses

Indicator	Definition
Nutrition outcomes	
Short stature	Percentage of adolescents 15-19 years whose height-for-age z-score < -2 standard deviations (SD), based on the WHO standard.
Underweight	Percentage of adolescents 15-19 years whose body mass index z score < -2SD, based on the WHO standard.
Anemia	Percentage girls 15-19 years with altitude-adjusted hemoglobin (Hb) <120 g/L (for non-pregnant girls) or Hb<110 g/L (for pregnant girls); percentage boys 15-19 years with altitude <130 g/L for boys as per the WHO guidelines.
Obesity /overweight	Percentage of adolescents 15-19 years whose body mass index z score > 2SD, based on the WHO standard.
Non-communicable diseases	
Hypertension	Percentage of adolescents aged 15-19 years who have elevated blood pressure (Systolic ≥140 mm of Hg and/or Diastolic ≥90 mm of Hg) or taking medicine to control blood pressure.
Diabetes	Percentage of adolescents 15-19 years who have high or very high blood sugar level (random blood sugar>140 mg/dl).
Other indicators	
Adolescent marriage	Percentage of adolescent girls 15-19 years who got married at the age <18 years; percentage of adolescent boys 15-19 years who are married.
Adolescent childbearing	Percentage married girls 15-19 years who have a child.

Annexure 2: State abbreviations

State ID	State/UT Name
AP	Andhra Pradesh
AN	Andaman & Nicobar Islands
AR	Arunachal Pradesh
AS	Assam
BR	Bihar
CH	Chandigarh
CT	Chhattisgarh
DNH & DD	Dadra & Nagar Haveli and Daman & Diu
DL	Delhi
GA	Goa
GJ	Gujarat
HR	Haryana

State ID	State/UT Name
HP	Himachal Pradesh
JK	Jammu & Kashmir
JH	Jharkhand
LK	Ladakh
LD	Lakshadweep
KA	Karnataka
KL	Kerala
MP	Madhya Pradesh
MH	Maharashtra
MN	Manipur
ML	Meghalaya
MZ	Mizoram

State ID	State/UT Name
NL	Nagaland
OR	Odisha
PY	Puducherry
PB	Punjab
RJ	Rajasthan
SK	Sikkim
TN	Tamil Nadu
TG	Telangana
TR	Tripura
UP	Uttar Pradesh
UT	Uttarakhand
WB	West Bengal

Source: NFHS-3 (2006), NFHS-4 (2016), and NFHS-5 (2021) unit-level data [IFPRI estimates]

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ABOUT POSHAN

Partnerships and Opportunities to Strengthen and Harmonize Actions for Nutrition in India (POSHAN) is a multi-year initiative that aims to support the use of data and evidence in decision-making for nutrition in India. To strengthen these efforts, POSHAN works with several partners including government, academia, civil society, development partners and the media. It is supported by the Bill & Melinda Gates Foundation and led by IFPRI in India.

ABOUT DATA NOTES

POSHAN Data Notes focus on data visualization to highlight geographic and/or thematic issues related to nutrition in India. They draw on multiple sources of publically available data.

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