Supplementary Online Content

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eReferences

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

eAppendix

Method

1. Data sources

Supported by the US Agency for International Development (USAID), the DHS program routinely collected (about 3 to 5 year intervals) health, behavior and sociodemographic data in more than 90 low- and middle-income countries (LMICs), covering a series of topics such as maternal and child health, malaria, domestic violence, environmental health.[1] The surveys utilized a stratified two-stage cluster sampling design. In the first stage, a stratified sample of cluster was selected with probability proportional to size. In each stratum, a sample of a predetermined number in clusters was selected independently with probability proportional to the cluster's measure of size. The listing procedure was performed in each selected cluster, in which all dwellings/households were listed. In the second stage, a fixed (or variable) number of households was selected from the selected clusters using equal probability systematic sampling. In each selected household, all ever-married women of reproductive age 15–49 were interviewed by trained fieldwork staff. In general, clusters were randomly selected from the areas stratified by geographic region and urban/rural area within each region, while the households were randomly selected from each cluster.[2] The proportions of various characteristics in original database and the samples included were similar, indicating that the included data are representative without potential sampling bias (eTable 2 in Supplement 1)

We included the following characteristics of women and their household from the DHS database: age, education, residence type, partners' age, partners' education, marital status, roof materials, and floor materials. Using linear principal component analysis, household wealth index scores were calculated from a range of household's assets.[3] Based on the household wealth index, households were classified into five groups from poorest to richest, including the poorest, poorer, middle, richer, and richest.

2. Outcome measurements

The main outcome variables in this analysis were past year experience of intimate partner violence (IPV), including physical, emotional and sexual violence. The primary outcomes were all self-reported. The specific questions used to assess the violence variables (physical, emotional and sexual) include:

- Physical violence: the respondents were asked whether they ever experience the following 7 behaviors from her husband or partner: push you, shake you or throw something to you; slap you; punch you with fist or hit you with something harmful; kick or drag you; strangle or burn you; threaten you with a knife, gun or other weapons; and twist your arm or pull your hair.
- Sexual violence: the respondents were asked whether they ever experience the following 3 behaviors from her husband or partner: physically force you into unwanted sex; forced you into other unwanted sexual acts; and physically force you to perform sexual acts you did not want to.
- Emotional violence: the respondents were asked whether she ever experiences the following 3 behaviors from her husband or partner: humiliate you; threaten to harm you; and insulted or made you feel bad.

According to the Guide to DHS Statistics,[4] the response options of the questions about IPV experience were 'never', 'often', 'sometimes' and 'yes, but not in the last 12 months'. "IPV experience in the past year" were included in the analysis as a binary variable (1 represents "experience IPV in the past 12 months", including the options of 'often' and 'sometimes'; 0 represents "did not experience IPV in the past 12 months", including the options of 'never' and the options 'yes, but not in the last 12 months').

3. Covariate

The associations were adjusted for the following personal or household factors on individual level: age (15-20 years, 21-30 years, 31-40 years and 41-49 years), educational level (no education, primary, secondary and higher), residence type (urban

and rural), partner's age (15-20 years, 21-30 years, 31-40 years, 41-50 years and >50 years), partner's educational level (no education, primary, secondary and higher), marital status (married, living with partner, widowed, divorced and separated), floor material (natural, rudimentary, finished and others), roof material (natural, rudimentary, finished and others), and household wealth status poorest, poorer, middle, richer and richest. We matched each woman's household to the population and GDP per capita data of the corresponding grid, and controlled for the local population density and GDP per capita. To account enough for location-specific factors and better isolate the temperature effect, we further included random effects for cluster in the main model. Finally, the model was adjusted for annual cumulative precipitation at the individual cluster for the past 12 months.

4. Scenarios of future climate change

Future time series data of daily mean temperature for various climate change scenarios were derived from the latest internationally-coordinated Coupled Model Intercomparison Project sixth phase (CMIP6).[5] The projections of global climate change were assessed combining the Representative Concentration Pathway (RCP) and the Shared Socioeconomic Pathways (SSPs). RCPs are the trajectories of greenhouse gas concentrations used for climate modelling, while SSPs are the scenarios of projected socioeconomic global changes up to 2100.[5] The combined trajectories include five common scenarios (i.e., SSP1-1.9, SSP1-2.6, SSP2-4.5, SSP3-7.0, and SSP5-8.5) correspond to the increasing trajectories of atmospheric greenhouse gas concentration, and characterize a range of warming in global climate, from mild (SSP1-1.9) to extreme (SSP5-8.5). We selected 3 most common scenarios and the baseline period (1985–2014) in accordance with previous projection studies.[6,7] Compared to the baseline period, global surface air temperature is likely to increase by 2.4°C–4.8°C in the high-emission scenario (SSP5-8.5) over the period 2081–2100, 0.5°C to 1.5°C for the low emission scenario (SSP1-2.6), and 1.2°C to 2.6°C for the moderate emission scenario (SSP2-

4.5).[5] Finally, we extracted daily temperature data from 10 global climate models (GCMs) datasets during the baseline period and the projection period (2015–2099) for historical and future temperature simulation across various climate change scenarios.

We performed a bilinear interpolation on each GCM output to statistically estimate the temperature data for a geographical grid of $1.0° \times 1.0°$ resolution. The gridded database was converted into the city level by aggregating the data from all grid cells within the boundary of cities. We defined cities and their boundaries based on based on the administrative boundaries at Level 2 in Database of Global Administrative Areas Version 4.1 (https://gadm.org/).[8] The projected temperature data obtained from various climate models may cause non-negligible bias when used to fit the exposure-response (E-R) association quantified by ERA-5 temperature data. Therefore, the gridded temperature data for each climate model in 1985-2099 were bias-corrected by the historical data of corresponding grids over the DHS study period from the ERA-5 database with an additive scaling method.[9]

5. Future population data

We obtained predicted grided population size data under the SSP1 (Sustainability), SSP2 (Middle of the Road) and SSP5 (Fossil-fueled development) scenarios from National Aeronautics and Space Administration (NASA) Socioeconomic Data and Applications Center (SEDAC).[10] The database provides global urban, rural, and total population base year and projection grids at a resolution of 1-km (about 30 arc-seconds) based on the SSPs.

We further obtained projected total population and population for women aged 15–49 years at the country level, using the SSP Database - Version 2.0 (https://tntcat.iiasa.ac.at/SspDb/), under the same scenarios above.[11] Due to the unavailability of population age structure projections for all countries, we applied country-level projections to each location in 10-year intervals from 2020 to 2100.

We then calculated the proportion of women aged 15–49 years in a future year during 2020 to 2100 by dividing the projected age group-specific population for that year by the total population projected for the same year. Finally, we utilized the proportion of women aged 15–49 at the country level and applied it to the predicted population grid for the corresponding year and SSP, in order to acquire the population grid of women aged 15-49 for the future.

6. Effect estimation

The temperature-IPV association was estimated by calculating the odds ratios (ORs) and 95 percent confidence interval (95% CI) of IPV prevalence per a 1℃ increment for annual average temperature. Then, we transformed the ORs and 95% CI as percentage changes of IPV prevalence. To better facilitate interpretations for health effect, ORs and their 95% CIs were transferred into percent change in IPV prevalence associated with a 1℃ increase in temperature [12], using the equation as follow:

$$Percent\ change = \left(e^{\beta} - 1\right) \times 100\% \quad (2)$$

$$Lower 95\%\ CI = \left(e^{\beta - 1.96 \times SE} - 1\right) \times 100\% \quad (3)$$

$$Upper 95\%\ CI = \left(e^{\beta + 1.96 \times SE} - 1\right) \times 100\% \quad (4)$$

where β is the regression coefficient (log odds ratio) and SE is the standard error of the β.

7. Linear assumption test

We flexibly depicted the exposure-response curves using a generalized additive model to examine the shape of temperature-IPV relationships and test non-linearity of the curve. In this model, we incorporated a natural cubic spline of time with 3 degrees of freedom (df) for temperature. The linearity of the curves was examined by comparing the mean square of the residuals between the nonlinear models and the corresponding logistic models using an *F*-test.[13] A P value greater than 0.05 indicates no statistically

significant difference between the two models, thus confirming the linearity of the curves.

8. Stratified analysis

We conducted several stratified analyses to explore how the impact of annual temperatures on IPV prevalence differed by region (urban and rural), wealth level (lower than middle wealth level, and middle wealth level or higher), floor material (finished and not finished [natural, rudimentary or others]), roof material (finished and not finished (natural, rudimentary or others)), marital status (married and not married [living with partner, widowed, divorced, separated]), women's and their partners' age (under and over the average age), as well as educational level (primary education or lower and secondary education or higher).

9. Sensitivity analyses

We conducted two separate sensitivity analyses to verify the robustness of results. First, we fitted 3 separate models based on the main model: 1) leaving out the country-level covariates; 2) excluding precipitation from the main model; and 3) removing household wealth level from the main model. Third, we calculated mean temperature of the hottest 3 consecutive months in the year prior to the interview date, and examined the association of IPV prevalence with this exposure index to explore the effect of temperatures on IPV at different times of the year. Finally, to examine the robustness of our results under future population changes, we incorporated the projected gridded population of females aged 15-49 years from 2020 to 2100, under the corresponding socioeconomic scenario, when estimating future IPV prevalence.

Result

Linear assumption test

As depicted in eFigure 2 in Supplement 1, the shape of E-R relationship curve between annual temperatures and the prevalence of total IPV and 3 subtypes was approximately linear in 3 South Asian countries, without any observed plateau phenomenon in the range of high temperatures. Although a plateau seemed to exist for a specific type of IPV (emotional violence, physical violence, sexual violence) in certain countries at high temperatures, the overall shape of the curve can still be considered approximately linear based on statistical testing (eTable 6 in Supplement 1).

Sensitivity analysis

Compared to the result in the main model, the estimated effects of annual temperature on IPV prevalence were robust in the model using different covariates. The effect of temperature on IPV were slightly stronger in the hottest 3 months, with 5.6% higher in IPV prevalence per 1°C temperature increase (OR=1.056, 95% CI: 1.053, 1.059) (eTable 7 in Supplement 1). However, the model fit was slightly worse than the main analysis, except for emotional violence, due to possible limitations in capturing effects of all high temperature exposures (eTable 8 in Supplement 1). In addition, IPV was evaluated during the 12 months before the interview days, we thereby retained the main analysis using the annual mean temperature over the past year (moving average) to better match the exposure and health.

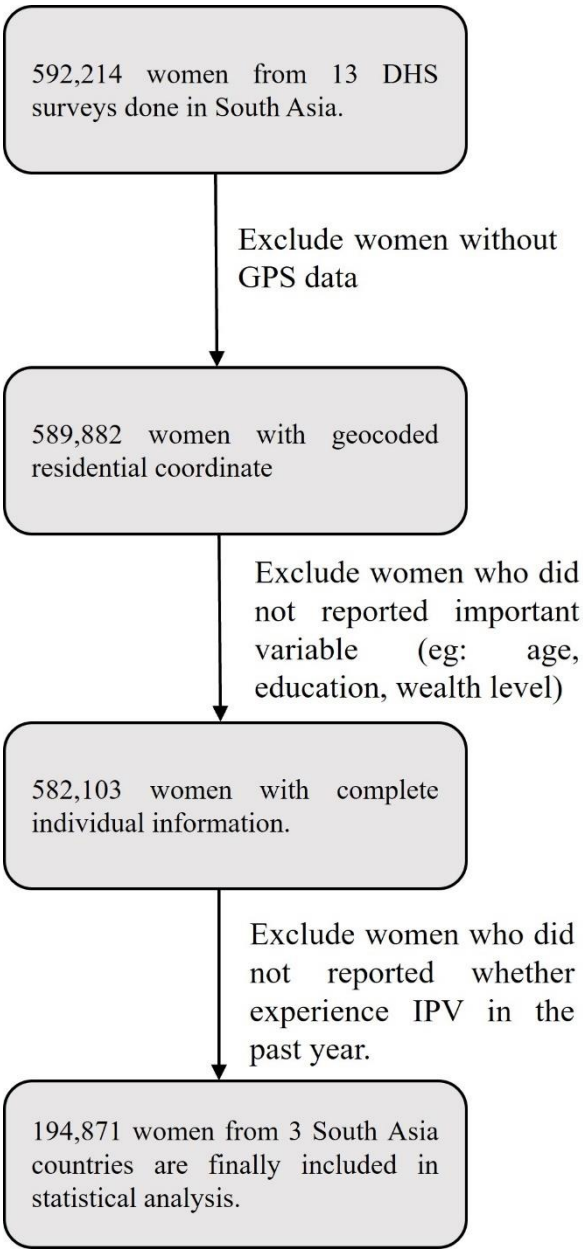
We further included gridded future population of women aged 15-49 years in the projection of IPV prevalence. The results indicated that compared to the projection under the assumption of no population change, the percentage increase in IPV prevalence related to climate change did not differ significantly (see eFigure 4 and eFigure 6 in Supplement 1), though the trend of excess IPV cases differed (see eFigure 5 and eFigure 7 in Supplement 1). Specifically, while the projected excess cases would

consistently rise throughout the century without accounting for the effect of projected population changes under 3 warming scenarios, they would steadily rise until the mid-century and then stabilize under SSP5-8.5 and SSP2-4.5 after accounting for population changes based on the corresponding SSP assumption. The varied trend of excess IPV cases could be caused by future population changes, which may override the impact of future climate warming.

Discussion

Potential sources of bias

First, despite our implementation of various measures to improve questionnaire quality and protect privacy, there may still be a degree of recall bias associated with the reported IPV data. However, this bias is unlikely to be related to environmental temperatures and thus would not substantially bias our results. Second, similar to most previous epidemiological studies, temperature was measured at the ambient level rather than the individual level; thus, exposure misclassification is inevitable. This misclassification might not change the mean estimates but only lead to an inflation of confidence intervals.[16]



eFigure 1. Diagram of data preparations.

eTable 1. List of DHS survey included in the analysis.

Country code	Country	Time of survey	Number (N)	Proportion (%)
IA	India	2015-2016	161,366	82.81
NP	Nepal	2010-2011	9,267	4.76
NP	Nepal	2016	9,656	4.96
PK	Pakistan	2017-2018	14,582	7.48
	Total		194,871	100.00

eTable 2. Summary characteristics for the study population and those suffering from intimate partner violence (IPV) in different types.

Variables	Intimate partner violence (N=52,567)	Physical violence (N=44,820)	Sexual violence (N=18,430)	Emotion violence (N=24,289)	No intimate partner violence (N=142,304)	p-value[2]
Region						
Urban	13,350 (25.40%)	11,014 (24.57%)	4,364 (23.68%)	6,952 (28.62%)	43,191 (30.35%)	<0.05
Rural	39,217 (74.60%)	33,806 (75.43%)	14,066 (76.32%)	17,337 (71.38%)	99,113 (69.65%)	
Age (y)						
15-20	293 (0.56%)	256 (0.57%)	109 (0.59%)	163 (0.67%)	688 (0.48%)	<0.05
21-30	13,405 (25.50%)	11,666 (26.03%)	4,679 (25.39%)	5,884 (24.22%)	33,396 (23.47%)	
31-40	22,627 (43.04%)	19,316 (43.10%)	8,160 (44.28%)	10,658 (43.88%)	59,669 (41.93%)	
41-49	16,242 (30.90%)	13,582 (30.30%)	5,482 (29.74%)	7,584 (31.22%)	48,551 (34.12%)	
Education						
No education	28,949 (55.07%)	24,913 (55.58%)	11,080 (60.12%)	13,675 (56.30%)	62,327 (43.80%)	<0.05
Primary	8,502 (16.17%)	7,263 (16.20%)	2,897 (15.72%)	3,728 (15.35%)	22,168 (15.58%)	
Secondary	13,580 (25.83%)	11,498 (25.65%)	4,122 (22.37%)	6,111 (25.16%)	48,388 (34.00%)	
Higher	1,536 (2.92%)	1,146 (2.56%)	331 (1.80%)	775 (3.19%)	9,421 (6.62%)	
Partners' age (y)						
15-20	54 (0.10%)	50 (0.11%)	15 (0.08%)	29 (0.12%)	118 (0.08%)	<0.05
21-30	5,847 (11.12%)	5,126 (11.44%)	2,041 (11.07%)	2,521 (10.38%)	14,161 (9.95%)	
31-40	19,577 (37.24%)	16,978 (37.88%)	6,909 (37.49%)	8,738 (35.98%)	50,300 (35.35%)	
41-50	17,563 (33.41%)	14,742 (32.89%)	6,159 (33.42%)	8,379 (34.50%)	48,257 (33.91%)	
>50	7,616 (14.49%)	5,265 (11.75%)	2,536 (13.76%)	3,626 (14.93%)	22,463 (15.79%)	
Partners' education						

No education	16,993 (32.33%)	14,793 (33.01%)	6,561 (35.60%)	8,025 (33.04%)	32,593 (22.90%)	<0.05
Primary	10,255 (19.51%)	8,842 (19.73%)	3,859 (20.94%)	4,742 (19.52%)	24,196 (17.00%)	
Secondary	21,910 (41.68%)	18,577 (41.45%)	7,145 (38.77%)	9,834 (40.49%)	67,930 (47.74%)	
Higher	3,227 (6.14%)	2,465 (5.50%)	792 (4.30%)	1,573 (6.48%)	17,585 (12.36%)	
Marital status						
Married	50,653 (96.36%)	23,287(95.87%)	43,147 (96.26%)	17,654 (96.27%)	135,299 (96.47%)	<0.05
Living with partner	6 (0.01%)	6 (0.02%)	6 (0.01%)	6 (0.03%)	0 (0.00%)	
Widowed	1,252 (2.38%)	530 (2.18%)	1,122 (2.50%)	459 (2.49%)	6,104 (2.38%)	
Divorced	189 (0.36%)	147 (0.61%)	150 (0.33%)	83 (0.45%)	321 (0.36%)	
Separated	467 (0.89%)	319 (1.31%)	395 (0.88%)	228 (1.24%)	580 (0.89%)	
Floor material						
Natural	27,697 (52.69%)	24,211 (54.02%)	10,710 (58.11%)	12,441 (51.22%)	60,082 (52.75%)	<0.05
Rudimentary	2,998 (5.70%)	2,623 (5.85%)	964 (5.23%)	1,338 (5.51%)	9,128 (5.71%)	
Finished	21,832 (41.53%)	17,956 (40.06%)	6,747 (36.61%)	10,492 (43.20%)	72,998 (41.58%)	
Others	40 (0.08%)	30 (0.07%)	9 (0.05%)	18 (0.07%)	96 (0.08%)	
Roof material						
Natural	5,108 (9.72%)	4,556 (10.17%)	2,039 (11.06%)	2,326 (9.58%)	10,719 (9.73%)	<0.05
Rudimentary	3,841 (7.31%)	3,043 (6.79%)	1,239 (6.72%)	2,215 (9.12%)	7,789 (7.32%)	
Finished	41,830 (79.57%)	35,675 (79.60%)	14,447 (78.39%)	19,021 (78.31%)	119,634 (79.67%)	
Others	1,788 (3.40%)	1,546 (3.45%)	705 (3.83%)	727 (2.99%)	4,162 (3.41%)	
Wealth level						
Poorest	17,088 (32.51%)	15,195 (33.90%)	7,168 (38.89%)	7,589 (31.24%)	30,918 (32.54%)	<0.05
Poorer	13,451 (25.59%)	11,427 (25.50%)	4,620 (25.07%)	6,278 (25.85%)	31,778 (25.62%)	
Middle	10,144 (19.30%)	8,546 (19.07%)	3,208 (17.41%)	4,785 (19.70%)	29,088 (19.32%)	
Richer	7,585 (14.43%)	6,252 (13.95%)	2,250 (12.21%)	3,599 (14.82%)	26,367 (14.45%)	

Richest	4,299 (8.18%)	3,400 (7.59%)	1,184 (6.42%)	2,038 (8.39%)	24,153 (8.19%)	
Annual temperature (℃) [1]	19.3±7.2	19.9±6.6	19.9±6.6	17.7±8.3	18.9±7.5	<0.05
Annual precipitation (mm) [1]	2007.5±775.6	2053.1±730.0	2071.375±711.8	1898.0±876.0	1961.9±812.1	<0.05

[1] Data are listed as mean±SD, SD: standard deviation.

[2] p-value is the result of chi-squared test and t test to examine the differential distribution of characteristics between samples experience IPV and those without IPV experience in the past year.

eTable 3. Summary characteristics for the samples in original database and the samples included in final analysis.

Variables	Samples in original database (N=592,214)	Samples included in final analysis (N=194,871)
Region		
Urban	175,849 (29.69%)	56,541 (29.01%)
Rural	416,365 (70.31%)	138,330 (70.99%)
Age (y)		
15-20	22,774 (3.85%)	981 (0.5%)
21-30	214,700 (36.25%)	46,801 (24.02%)
31-40	211,213 (35.66%)	82,296 (42.23%)
41-49	143,527 (24.24%)	64,793 (33.25%)
Education		
No education	222,715 (37.61%)	91,276 (46.84%)
Primary	99,408 (16.79%)	30,670 (15.74%)
Secondary	223,496 (37.74%)	61,968 (31.8%)
Higher	46,595 (7.87%)	10,957 (5.62%)
Partners' age (y)		
15-20	711 (0.12%)	172 (0.09%)
21-30	78,409 (13.24%)	20,008 (10.27%)
31-40	193,950 (32.75%)	69,877 (35.86%)
41-50	203,011 (34.28%)	65,820 (33.78%)
>50	116,133 (19.61%)	30,079 (15.44%)
Partners' education		
No education	145,437 (24.56%)	49,586 (25.45%)
Primary	123,220 (20.81%)	34,451 (17.68%)
Secondary	240,236 (40.57%)	89,840 (46.1%)
Higher	83,323 (14.07%)	20,238 (10.39%)
Marital status		
Married	560,572 (94.66%)	185,952 (95.42%)
Living with partner	6 (0.01%)	6 (0.01%)
Widowed	23,360 (3.94%)	7,356 (3.77%)
Divorced	2,738 (0.46%)	510 (0.26%)
Separated	4,849 (0.82%)	1,047 (0.54%)
Floor material		
Natural	257,524 (43.48%)	87,779 (45.04%)
Rudimentary	36,811 (6.22%)	12,126 (6.22%)
Finished	297,275 (50.20%)	94,830 (48.66%)
Others	604 (0.10%)	136 (0.07%)
Roof material		

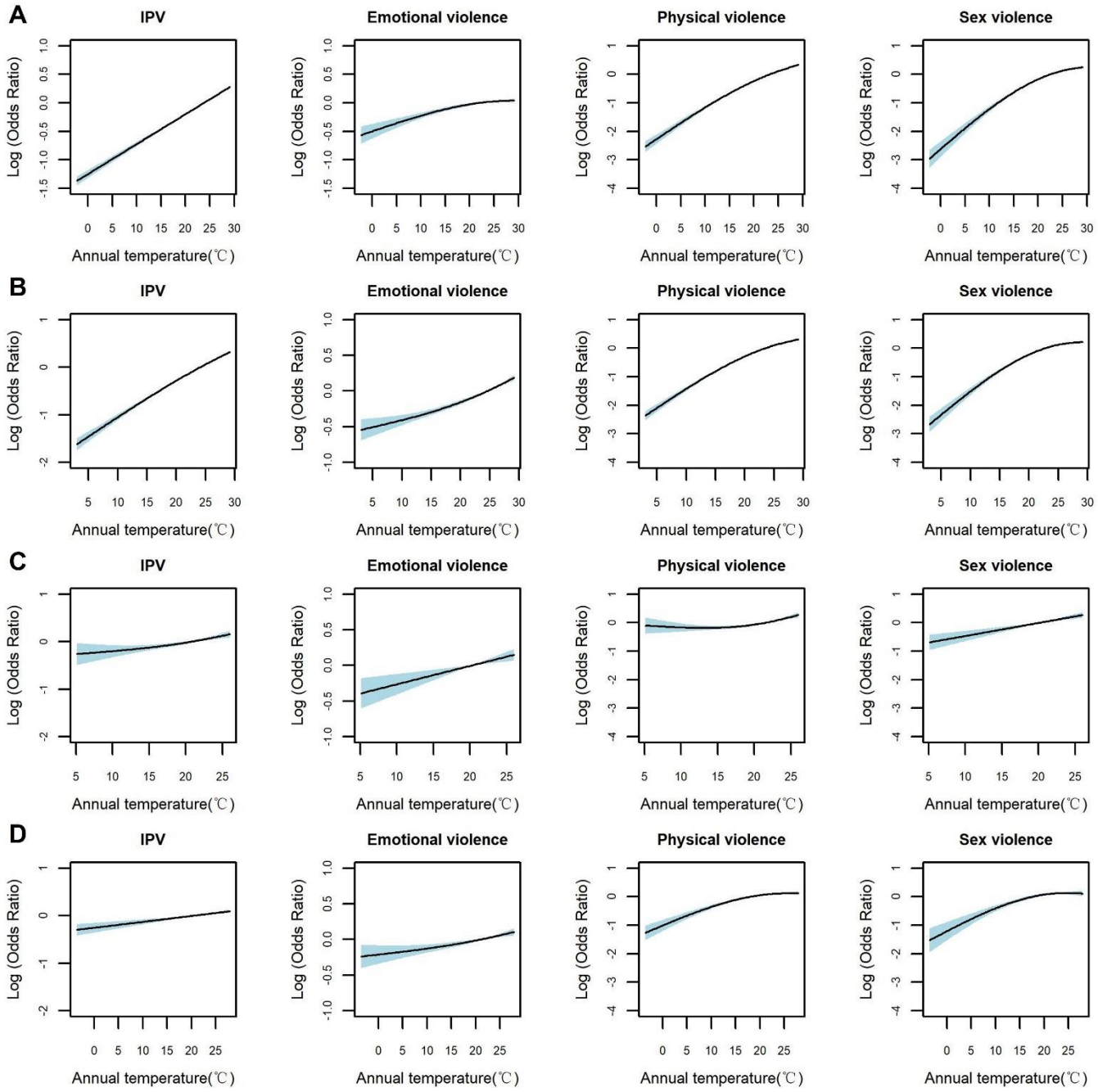
Natural	50,320 (8.50%)	15,827 (8.12%)
Rudimentary	26,138 (4.41%)	11,630 (5.97%)
Finished	499,265 (84.30%)	161,464 (82.86%)
Others	16,491 (2.78%)	5,950 (3.05%)

eTable 4. Summary statistics for annual-mean temperatures and IPV prevalence in different types during 2010-2018 in 3 South Asian countries.

Exposure/Prevalence	3 South Asian countries	India	Nepal	Pakistan
Temperature (℃)	21.6±8.8	23.7±6.2	9.7±11.8	14.2±11.9
IPV	52,567 (27.0%)	44,574 (27.6%)	3,342 (17.7%)	4,651 (31.9%)
Physical violence	44,820 (23.0%)	39,405 (24.4%)	2,766 (14.6%)	2,649 (18.2%)
Sexual violence	18,430 (9.5%)	16,121 (10.0%)	1,254 (6.6%)	1,055 (7.2%)
Emotional violence	24,289 (12.5%)	18,442 (11.4%)	1,966 (10.4%)	3,881 (26.6%)

eTable 5. Spearman correlation coefficient of individual and household variables.

Variables	Residence type	Woman's age	Woman's education level	Partner's age	Partner's education level	Marital status	Floor material	Roof material	Wealth level
Residence type	1.000	-0.025	-0.230	-0.034	-0.175	-0.009	-0.355	-0.097	-0.454
Woman's age	-	1.000	-0.202	0.775	-0.108	0.005	0.037	0.006	0.055
Woman's education level	-	-	1.000	-0.170	0.515	-0.006	0.356	0.134	0.411
Partner's age	-	-	-	1.000	-0.112	0.003	0.052	0.003	0.061
Partner's education level	-	-	-	-	1.000	-0.001	0.295	0.121	0.435
Marital status	-	-	-	-	-	1.000	-0.006	-0.011	0
Floor material	-	-	-	-	-	-	1.000	0.204	0.405
Roof material	-	-	-	-	-	-	-	1.000	0.247
Wealth level	-	-	-	-	-	-	-	-	1



eFigure 2. Exposure−response curves for the associations between annual temperature and prevalence of IPV in South Asia, classified by IPV types and countries. A: 3 South Asian countries; **B:** India; **C:** Nepal; **D:** Pakistan. The solid line is the log-transformed odds ratio of IPV; the shaded areas are the 95% confidence intervals.

eTable 6. Summary of p-value for *F*-test to examine linearity of the exposure-response curves.

IPV type	South Asia	India	Nepal	Pakistan
Total IPV	0.383	0.371	0.192	0.265
Emotional violence	0.265	0.228	0.330	0.256
Physical violence	0.234	0.124	0.163	0.126
Sexual violence	0.186	0.176	0.252	0.112

eTable 7. Odds ratios (95% confidence intervals) of IPV prevalence per 1℃ increment in annual temperature in models of sensitivity analyses

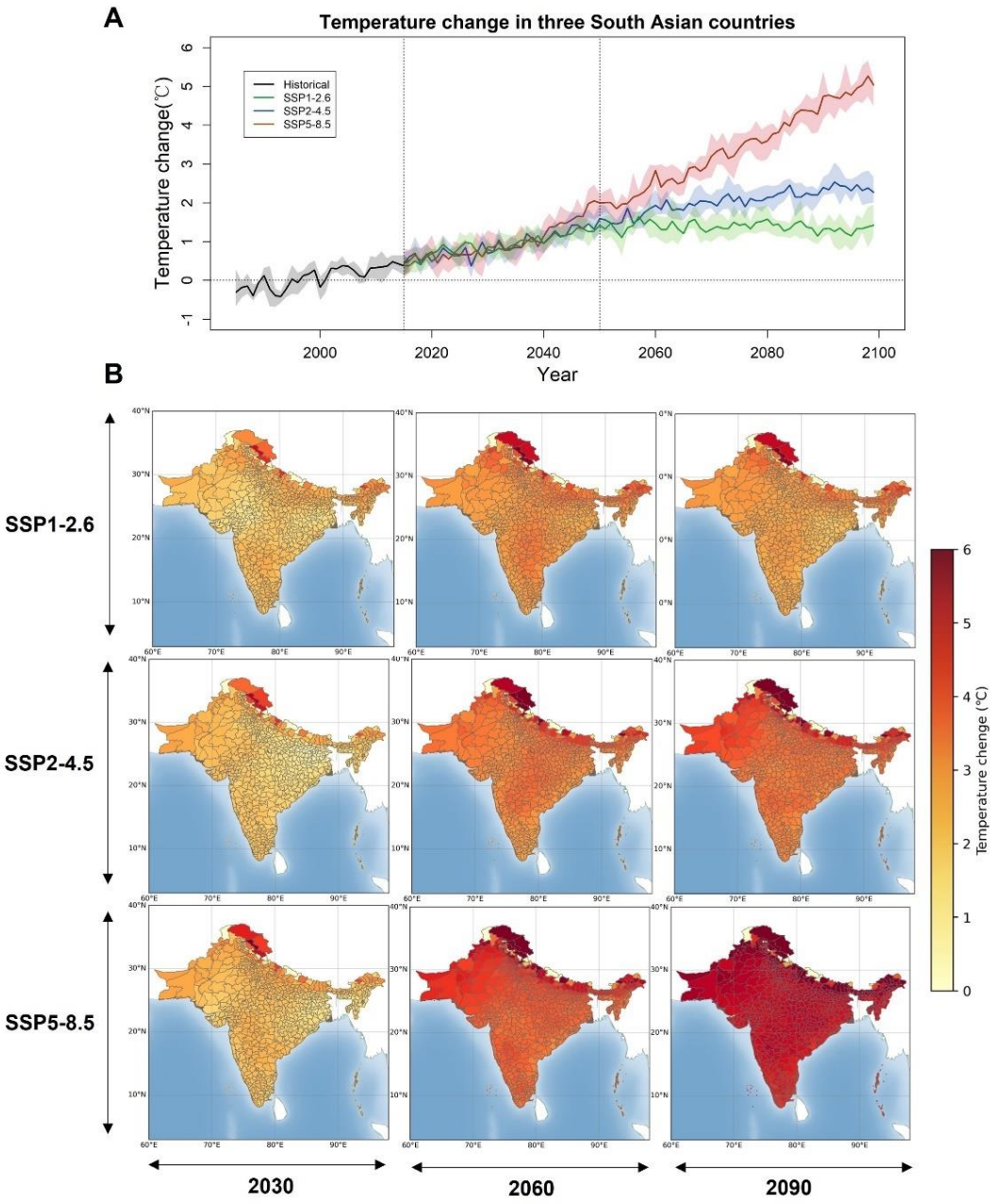
Model	IPV	Physical violence	Sexual violence	Emotional violence
Main model	1.045 (1.042, 1.048)	1.014 (1.010, 1.017)	1.066 (1.062, 1.069)	1.062 (1.057, 1.067)
Model 1	1.047 (1.044, 1.050)	1.015 (1.012, 1.018)	1.067 (1.064, 1.071)	1.065 (1.059, 1.070)
Model 2	1.042 (1.039, 1.046)	1.014 (1.010, 1.017)	1.064 (1.060, 1.067)	1.051 (1.046, 1.057)
Model 3	1.053 (1.050, 1.056)	1.008 (1.005, 1.011)	1.079 (1.076, 1.083)	1.074 (1.069, 1.079)
Model 4				
South Asia	1.056 (1.053, 1.059)	1.076 (1.072, 1.079)	1.090 (1.085, 1.095)	1.023 (1.019, 1.026)
India	1.064 (1.060, 1.067)	1.080 (1.076, 1.084)	1.085 (1.079, 1.091)	1.027 (1.022, 1.031)
Nepal	1.042 (1.031, 1.053)	1.048 (1.036, 1.060)	1.054 (1.036, 1.071)	1.037 (1.024, 1.051)
Pakistan	1.035 (1.031, 1.040)	1.044 (1.038, 1.050)	1.036 (1.028, 1.044)	1.037 (1.032, 1.042)

*Note: the covariates of *Main model* included women's socioeconomic factors, country-level covariates and annual cumulative precipitation. The covariates of *Model 1* included the covariates in the *Main model* with the exception of the country-level factors. The covariates of *Model 2* included the covariates in the *Main model* with the exception of the annual cumulative precipitation. The covariates of *Model 3* included the covariates in the *Main model* with the exception of the household wealth level. *Model 4* applied average temperature of the hottest 3 consecutive months in the past year to replace the annual temperature in the *Main model*.

eTable 8. R^2 of models using annual temperature and average temperature of the hottest 3 consecutive months in the past year in sensitivity analyses

Region/country	Model*	IPV	Physical violence	Sexual violence	Emotional violence
South Asia	Main model	0.042	0.035	0.050	0.049
	Model 4	0.041	0.035	0.049	0.047
	Change of R^2	2.38%	0.00%	2.00%	4.08%
India	Main model	0.044	0.021	0.050	0.052
	Model 4	0.042	0.021	0.048	0.048
	Change of R^2	4.55%	0.00%	4.00%	7.69%
Nepal	Main model	0.030	0.029	0.034	0.038
	Model 4	0.028	0.021	0.032	0.041
	Change of R^2	6.67%	27.59%	5.88%	-7.89%
Pakistan	Main model	0.028	0.032	0.033	0.030
	Model 4	0.023	0.024	0.031	0.030
	Change of R^2	17.86%	25.00%	6.06%	0.00%

*Note: the covariates of *Main model* included women's socioeconomic factors, country-level covariates and annual cumulative precipitation. *Model 4* applied average temperature of the hottest 3 consecutive months in the past year to replace the annual temperature in the *Main model*.



eFigure 3. Projected changes in annual mean temperature from the baseline period (1985-2014) under different climate scenarios in 3 South Asian countries. **A**: Temporal trends of annual temperature change from the baseline period under 3 climate scenarios from 1985 to 2100. The shaded areas are the interquartile ranges of predicted temperatures from ten general circulation models. **B**: Spatial differentiation of temperature change from the baseline period in city in 2030 (2021-2040), 2060 (2051-2070), 2090 (2081-2100). SSP=Shared Socioeconomic Pathway.

eTable 9. Summary statistics of the projected annual temperature under the SSP1-2.6, SSP2-4.5 and SSP5-8.5 scenarios in the 2010s, 2030s, 2050s, 2070s and 2090s.

Region/ Countries	Years	Projected temperature (℃)					
		SSP1-2.6		SSP2-4.5		SSP5-8.5	
		Temperature (℃)	Temperature change (℃) [a]	Temperature (℃)	Temperature change (℃) [a]	Temperature (℃)	Temperature change (℃) [a]
Total [b]	2010s	20.2 (19.9, 20.5)	0.3 (0, 0.6)	20.2 (19.9, 20.5)	0.3 (0, 0.6)	20.2 (19.9, 20.5)	0.3 (0, 0.6)
	2030s	20.7 (20.6, 21.0)	0.8 (0.7, 1.1)	20.6 (20.3, 20.9)	0.7 (0.4, 1.0)	20.8 (20.6, 21.2)	0.9 (0.7, 1.3)
	2050s	21.3 (21.1, 21.5)	1.4 (1.2, 1.6)	21.5 (21.1, 21.9)	1.6 (1.2, 2.0)	21.9 (21.6, 22.1)	2.0 (1.7, 2.2)
	2070s	21.2 (20.9, 21.6)	1.3 (1.0, 1.7)	21.9 (21.8, 22.1)	2.0 (1.9, 2.2)	23.1 (22.6, 23.7)	3.2 (2.6, 3.8)
	2090s	21.2 (21.0, 21.4)	1.3 (1.1, 1.5)	22.3 (22.1, 22.6)	2.4 (2.2, 2.7)	24.7 (24.1, 25.3)	4.7 (4.2, 5.4)
India	2010s	24.1 (23.8, 24.4)	0.2 (0, 0.5)	24.1 (23.8, 24.4)	0.2 (0, 0.5)	24.1 (23.8, 24.4)	0.2 (0, 0.5)
	2030s	24.5 (24.5, 24.6)	0.7 (0.6, 0.8)	24.3 (24.0, 24.5)	0.5 (0.2, 0.6)	24.5 (24.1, 24.9)	0.7 (0.3, 1.1)
	2050s	25.2 (25.0, 25.1)	1.3 (1.2, 1.3)	25.1 (25.0, 25.3)	1.2 (1.1, 1.5)	25.5 (25.1, 25.8)	1.7 (1.3, 2.0)
	2070s	25.0 (24.8, 25.5)	1.2 (0.9, 1.6)	25.5 (25.2, 25.7)	1.7 (1.4, 1.8)	26.7 (26.3, 27.2)	2.8 (2.5, 3.3)
	2090s	25.0 (24.9, 25.1)	1.2 (1.0, 1.2)	25.8 (25.6, 26.0)	2.0 (1.8, 2.2)	28.0 (27.3, 28.6)	4.2 (3.5, 4.8)
Nepal	2010s	14.8 (14.5, 15.1)	0.3 (0, 0.6)	14.8 (14.5, 15.1)	0.3 (0, 0.6)	14.8 (14.5, 15.1)	0.3 (0, 0.6)
	2030s	15.3 (15.0, 15.5)	0.8 (0.5, 1.1)	15.2 (14.9, 15.6)	0.7 (0.4, 1.1)	15.4 (15.2, 15.8)	1.0 (0.7, 1.3)
	2050s	16.0 (15.8, 16.1)	1.5 (1.4, 1.7)	16.4 (15.9, 16.5)	1.9 (1.5, 2.0)	16.7 (16.2, 17.1)	2.2 (1.7, 2.6)
	2070s	15.7 (15.4, 16.0)	1.2 (1.0, 1.5)	16.7 (16.5, 16.9)	2.2 (2.1, 2.4)	17.9 (17.4, 18.6)	3.5 (2.9, 4.1)
	2090s	15.8 (15.7, 16.1)	1.3 (1.2, 1.6)	17.0 (16.5, 17.5)	2.6 (2.3, 2.7)	19.5 (19.2, 19.7)	5.0 (4.5, 5.4)
Pakistan	2010s	21.2 (20.2, 22.4)	0.4 (0, 0.8)	21.8 (21.4, 22.2)	0.4 (0, 0.8)	21.8 (21.4, 22.2)	0.4 (0, 0.8)
	2030s	21.2 (20.1, 22.6)	0.9 (0.3, 1.2)	22.2 (22.3, 22.5)	0.8 (0.9, 1.1)	22.4 (21.9, 22.9)	1.0 (0.5, 1.5)
	2050s	21.9 (20.8, 23.1)	1.4 (1.0, 1.8)	23.1 (22.6, 23.5)	1.7 (1.2, 2.1)	23.5 (23.4, 23.7)	2.1 (2.0, 2.3)
	2070s	21.9 (20.3, 23.3)	1.5 (0.9, 1.8)	23.6 (23.5, 23.9)	2.2 (2.1, 2.5)	24.7 (24.2, 25.1)	3.3 (2.8, 3.7)

	2090s	22.0 (20.8, 23.4)	1.5 (1.1, 1.8)	24.0 (23.7, 24.4)	2.6 (2.3, 3.0)	26.4 (25.8, 27.0)	5.0 (4.4, 5.6)

Note:

[a] Temperature change means projected increase in the mean temperature for the specified decade versus the baseline period (1985-2014).

[b] Total means is for the 3 South Asian countries together.

Abbreviation: SSP=Shared Socioeconomic Pathway.

eTable 10. Projected percentage change of IPV prevalence attributable to climate warming comparing specific decades to the baseline period (1985-2014) in 3 South Asian countries, by country, period, and climate change scenario, under the assumption of no change in population size and structure.

Region/ countries	Years	Percentage change of IPV prevalence (%)		
		SSP1-2.6	SSP2-4.5	SSP5-8.5
Total [a]	2010s	0.2 (0.1, 0.4)	0.2 (0.1, 0.4)	0.2 (0.1, 0.4)
	2030s	3.2 (2.9, 3.5)	2.2 (1.9, 2.4)	3.2 (2.9, 3.6)
	2050s	6.8 (6.3, 7.3)	5.8 (5.3, 6.2)	8.0 (7.3, 8.6)
	2070s	6.0 (5.6, 6.5)	8.0 (7.4, 8.6)	14.2 (13.1, 15.3)
	2090s	5.8 (5.3, 6.2)	9.8 (9.0, 10.5)	21.0 (19.4, 22.6)
India	2010s	0.2 (0.1, 0.3)	0.2 (0.1, 0.3)	0.2 (0.1, 0.3)
	2030s	3.6 (3.3, 3.9)	2.4 (2.2, 2.6)	3.6 (3.3, 3.9)
	2050s	7.6 (7.2, 8.1)	6.4 (6.0, 6.8)	8.9 (8.3, 9.4)
	2070s	6.8 (6.3, 7.2)	8.9 (8.4, 9.4)	15.9 (14.9, 16.8)
	2090s	6.4 (6.0, 6.8)	10.9 (10.2, 11.5)	23.5 (22.0, 24.9)
Nepal	2010s	0.4 (-0.1, 0.9)	0.4 (-0.1, 0.9)	0.4 (-0.1, 0.9)
	2030s	2.4 (1.3, 3.5)	2.0 (1.1, 2.8)	2.6 (1.5, 3.7)
	2050s	4.3 (2.5, 6.1)	5.4 (3.1, 7.6)	6.3 (3.7, 8.8)
	2070s	3.6 (2.1, 5.1)	6.4 (3.7, 9.0)	10.0 (5.9, 14.1)
	2090s	3.7 (2.2, 5.3)	7.5 (4.3, 10.5)	14.8 (8.7, 20.8)
Pakistan	2010s	0.3 (0.1, 0.6)	0.3 (0.1, 0.6)	0.3 (0.1, 0.6)
	2030s	1.0 (0.5, 1.4)	0.8 (0.5, 1.2)	1.0 (0.5, 1.5)
	2050s	1.7 (1.0, 2.4)	1.8 (1.1, 2.6)	2.4 (1.4, 3.4)
	2070s	1.8 (1.1, 2.5)	2.5 (1.4, 3.5)	3.8 (2.3, 5.4)
	2090s	1.8 (1.1, 2.5)	3.0 (1.8, 4.2)	5.9 (3.5, 8.2)

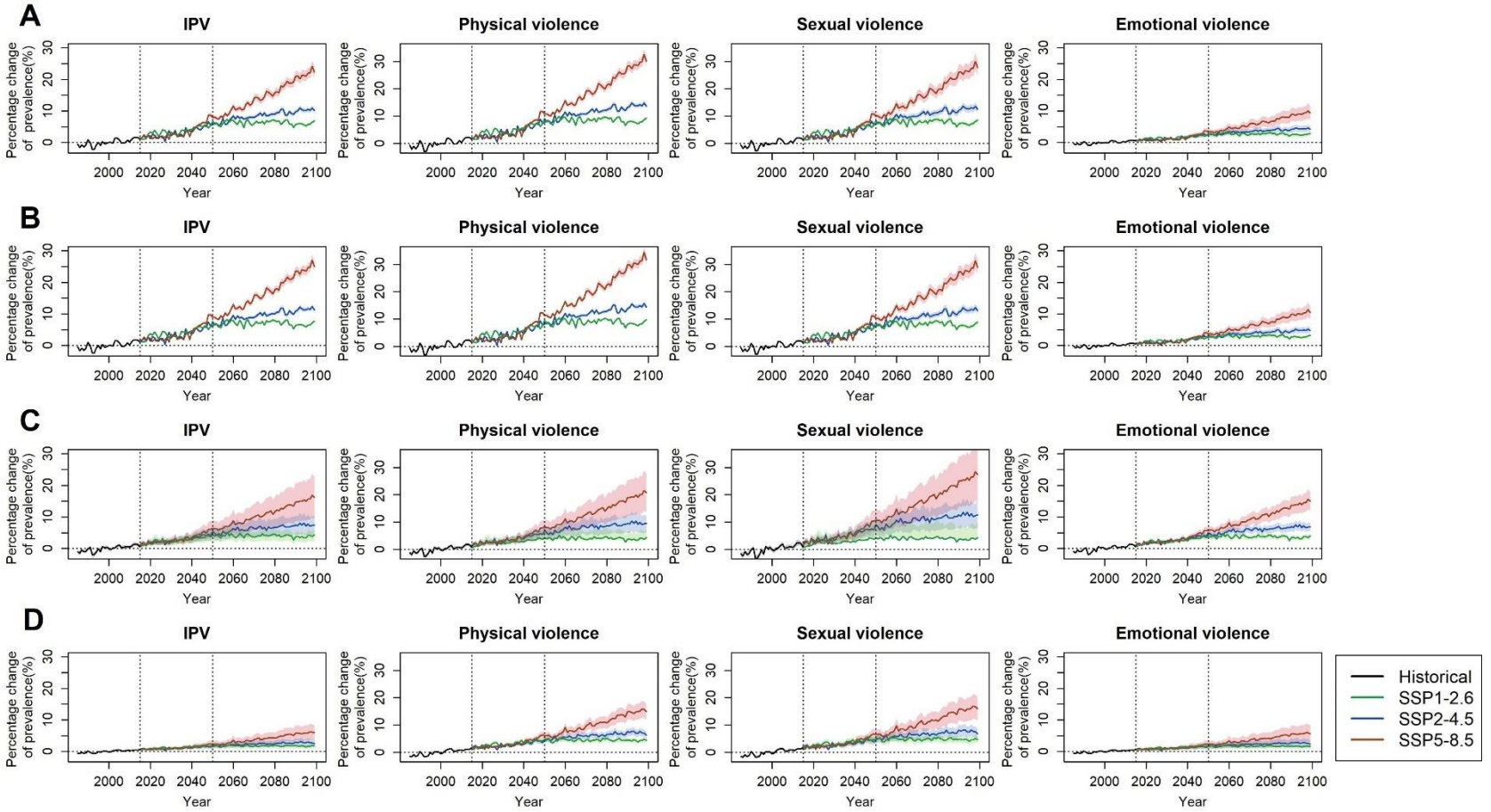
Note: [a] Total is for the 3 South Asian countries together.
Abbreviation: SSP=Shared Socioeconomic Pathway.

eTable 11. Projected percentage change of physical violence, sexual violence and emotional violence prevalence in 3 South Asian countries from the baseline period (1985-2014) under the SSP1-2.6, SSP2-4.5 and SSP5-8.5 scenarios in the 2010s, 2030s, 2050s, 2070s and 2090s, under the assumption of no change in population.

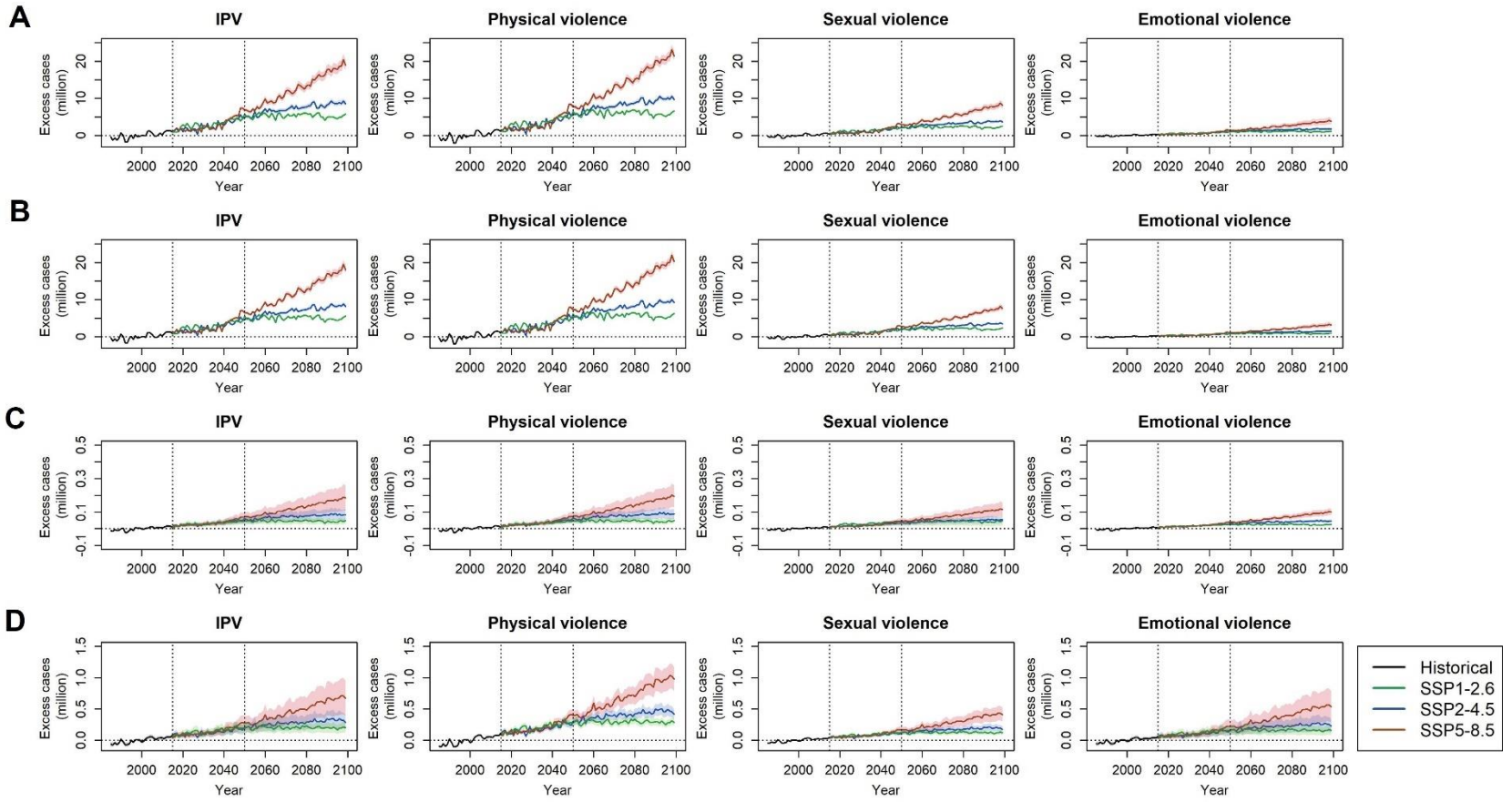
IPV	Region/ countries	Years	Percentage change of prevalence (%)		
			SSP1-2.6	SSP2-4.5	SSP5-8.5
Physical violence	Total [a]	2010s	0.3 (0.2, 0.5)	0.3 (0.2, 0.5)	0.3 (0.2, 0.5)
		2030s	4.3 (4.0, 4.7)	2.9 (2.7, 3.2)	4.4 (4.0, 4.7)
		2050s	9.1 (8.6, 9.7)	7.8 (7.3, 8.3)	10.8 (10.1, 11.5)
		2070s	8.2 (7.6, 8.7)	10.8 (10.1, 11.5)	19.1 (18.0, 20.3)
		2090s	7.8 (7.3, 8.3)	13.2 (12.4, 14.0)	28.3 (26.6, 30.1)
	India	2010s	0.3 (0.1, 0.4)	0.3 (0.1, 0.4)	0.3 (0.1, 0.4)
		2030s	4.6 (4.2, 4.9)	3.0 (2.8, 3.2)	4.6 (4.3, 4.9)
		2050s	9.7 (9.2, 10.2)	8.1 (7.7, 8.6)	11.3 (10.7, 11.9)
		2070s	8.6 (8.1, 9.0)	11.3 (10.7, 11.9)	20.2 (19.1, 21.3)
		2090s	8.2 (7.7, 8.6)	13.8 (13.1, 14.5)	29.8 (28.3, 31.4)
	Nepal	2010s	0.5 (0, 1.1)	0.5 (0, 1.1)	0.5 (0, 1.1)
		2030s	3.0 (1.8, 4.2)	2.5 (1.6, 3.5)	3.4 (2.2, 4.6)
		2050s	5.5 (3.5, 7.5)	6.9 (4.5, 9.3)	8.0 (5.2, 10.8)
		2070s	4.6 (3.0, 6.2)	8.2 (5.3, 11.0)	12.8 (8.4, 17.2)
		2090s	4.8 (3.1, 6.4)	9.6 (6.2, 12.8)	18.9 (12.4, 25.4)
	Pakistan	2010s	0.8 (0.5, 1.1)	0.8 (0.5, 1.1)	0.8 (0.5, 1.1)
		2030s	2.5 (1.9, 3.0)	2.2 (1.7, 2.6)	2.5 (1.9, 3.1)
		2050s	4.3 (3.5, 5.2)	4.6 (3.7, 5.6)	6.1 (4.9, 7.3)
		2070s	4.6 (3.7, 5.4)	6.2 (5.0, 7.5)	9.7 (7.9, 11.6)
		2090s	4.5 (3.7, 5.4)	7.6 (6.2, 9.1)	14.9 (12.0, 17.7)
Sexual violence	Total [a]	2010s	0.3 (0.1, 0.5)	0.3 (0.1, 0.5)	0.3 (0.1, 0.5)
		2030s	4.0 (3.5, 4.6)	2.7 (2.3, 3.1)	4.0 (3.5, 4.6)
		2050s	8.4 (7.6, 9.3)	7.2 (6.4, 8.0)	10.0 (8.9, 11.0)
		2070s	7.5 (6.7, 8.3)	10.0 (8.9, 11.0)	17.7 (15.9, 19.5)
		2090s	7.2 (6.4, 7.9)	12.2 (10.9, 13.4)	26.1 (23.4, 28.8)
	India	2010s	0.2 (0, 0.4)	0.2 (0, 0.4)	0.2 (0, 0.4)
		2030s	4.2 (3.7, 4.6)	2.7 (2.4, 3.1)	4.2 (3.7, 4.6)
		2050s	8.8 (8.0, 9.6)	7.4 (6.7, 8.1)	10.3 (9.4, 11.2)
		2070s	7.8 (7.1, 8.5)	10.3 (9.4, 11.2)	18.4 (16.8, 20.0)
		2090s	7.4 (6.7, 8.1)	12.6 (11.5, 13.7)	27.2 (24.7, 29.6)
	Nepal	2010s	0.7 (-0.1, 1.5)	0.7 (-0.1, 1.5)	0.7 (-0.1, 1.5)
		2030s	4.0 (2.3, 5.7)	3.4 (2.0, 4.7)	4.5 (2.8, 6.1)
		2050s	7.3 (4.5, 10.0)	9.1 (5.7, 12.5)	10.6 (6.6, 14.5)
		2070s	6.1 (3.8, 8.3)	10.8 (6.8, 14.8)	17.0 (10.6, 23.1)
		2090s	6.3 (3.9, 8.6)	12.6 (7.9, 17.3)	25.0 (15.6, 34.1)

	Pakistan	2010s	0.9 (0.4, 1.3)	0.9 (0.4, 1.3)	0.9 (0.4, 1.3)
		2030s	2.6 (1.8, 3.5)	2.3 (1.6, 3.0)	2.7 (1.8, 3.6)
		2050s	4.6 (3.4, 5.8)	5.0 (3.6, 6.3)	6.5 (4.8, 8.3)
		2070s	4.9 (3.6, 6.1)	6.7 (4.8, 8.4)	10.4 (7.6, 13.1)
		2090s	4.8 (3.6, 6.1)	8.1 (6.0, 10.3)	15.9 (11.6, 20.1)
Emotional violence	Total [a]	2010s	0.1 (0, 0.3)	0.1 (0, 0.3)	0.1 (0, 0.3)
		2030s	1.4 (1.0, 1.8)	1.0 (0.6, 1.3)	1.4 (1.0, 1.8)
		2050s	2.8 (2.2, 3.5)	2.5 (1.9, 3.1)	3.4 (2.6, 4.3)
		2070s	2.6 (2.0, 3.2)	3.4 (2.6, 4.3)	6.0 (4.6, 7.4)
		2090s	2.5 (1.9, 3.1)	4.2 (3.2, 5.2)	8.9 (6.8, 11.0)
	India	2010s	0.1 (-0.1, 0.3)	0.1 (-0.1, 0.3)	0.1 (-0.1, 0.3)
		2030s	1.5 (1.1, 1.9)	1.0 (0.7, 1.3)	1.5 (1.1, 1.9)
		2050s	3.2 (2.6, 3.8)	2.7 (2.1, 3.2)	3.7 (3.0, 4.5)
		2070s	2.8 (2.3, 3.4)	3.7 (3.0, 4.5)	6.7 (5.4, 8.0)
		2090s	2.7 (2.1, 3.2)	4.6 (3.7, 5.4)	9.9 (7.9, 11.8)
	Nepal	2010s	0.4 (0.2, 0.6)	0.4 (0.2, 0.6)	0.4 (0.2, 0.6)
		2030s	2.2 (1.7, 2.7)	1.8 (1.4, 2.2)	2.5 (2.0, 3.0)
		2050s	4.0 (3.2, 4.8)	5.0 (4.0, 6.0)	5.8 (4.6, 7.0)
		2070s	3.3 (2.7, 4.0)	5.9 (4.7, 7.1)	9.3 (7.4, 11.1)
		2090s	3.5 (2.8, 4.2)	6.9 (5.5, 8.3)	13.7 (11.0, 16.4)
	Pakistan	2010s	0.3 (0, 0.6)	0.3 (0, 0.6)	0.3 (0, 0.6)
		2030s	0.9 (0.4, 1.4)	0.8 (0.4, 1.2)	1.0 (0.4, 1.5)
		2050s	1.6 (0.9, 2.4)	1.8 (0.9, 2.6)	2.3 (1.2, 3.4)
		2070s	1.7 (0.9, 2.5)	2.4 (1.2, 3.5)	3.7 (2.0, 5.4)
		2090s	1.7 (0.9, 2.5)	2.9 (1.6, 4.2)	5.6 (3.0, 8.2)

Note: [a] Total is for the 3 South Asian countries together.
Abbreviation: SSP=Shared Socioeconomic Pathway.



eFigure 4. Projected percentage changes in IPV prevalence attributable to climate warming from the baseline period (1985-2014) in 3 South Asian countries under different climate scenarios, under the assumption of no change in population. A: 3 South Asian countries; **B:** India; **C:** Nepal; **D:** Pakistan. The solid line is the log-transformed odds ratio of IPV; the shaded areas are the 95% empirical confidence intervals.



eFigure 5. Excess IPV cases attributable to climate warming from the baseline period (1985-2014) in 3 South Asian countries under different climate scenarios, under the assumption of no change in population size and structure. A: 3 South Asian countries; **B:** India; **C:** Nepal; **D:** Pakistan. The solid line is the log-transformed odds ratio of IPV; the shaded areas are the 95% empirical confidence intervals.

eTable 12. Projected percentage change of IPV prevalence attributable to climate warming comparing specific decades to the baseline period (1985-2014) in 3 South Asian countries, by country, period, and climate change scenario, considering population changes based on the corresponding SSP assumption.

Region/ countries	Years	Percentage change of IPV prevalence (%)		
		SSP1-2.6	SSP2-4.5	SSP5-8.5
Total [a]	2010s	0.2 (0.1, 0.4)	0.2 (0.1, 0.4)	0.2 (0.1, 0.4)
	2030s	3.1 (2.8, 3.5)	2.1 (1.9, 2.4)	3.2 (2.8, 3.5)
	2050s	6.5 (6.0, 7.1)	5.6 (5.1, 6.0)	7.7 (7.1, 8.4)
	2070s	5.7 (5.2, 6.2)	7.5 (6.9, 8.2)	13.5 (12.4, 14.6)
	2090s	5.4 (4.9, 5.8)	9.0 (8.2, 9.8)	19.6 (18.0, 21.3)
India	2010s	0.2 (0.1, 0.3)	0.2 (0.1, 0.3)	0.2 (0.1, 0.3)
	2030s	3.6 (3.3, 3.9)	2.4 (2.1, 2.6)	3.6 (3.3, 3.9)
	2050s	7.6 (7.2, 8.1)	6.4 (6.0, 6.8)	8.9 (8.3, 9.4)
	2070s	6.8 (6.3, 7.2)	8.9 (8.4, 9.4)	15.9 (14.9, 16.8)
	2090s	6.4 (6.0, 6.8)	10.8 (10.2, 11.5)	23.4 (22.0, 24.8)
Nepal	2010s	0.4 (-0.1, 1.0)	0.4 (-0.1, 1.0)	0.4 (-0.1, 1.0)
	2030s	2.4 (1.3, 3.5)	2.0 (1.1, 2.9)	2.7 (1.6, 3.8)
	2050s	4.4 (2.5, 6.2)	5.5 (3.2, 7.7)	6.3 (3.7, 8.8)
	2070s	3.7 (2.2, 5.1)	6.5 (3.9, 9.1)	10.1 (6.0, 14.2)
	2090s	3.8 (2.3, 5.4)	7.6 (4.5, 10.6)	15.0 (8.9, 20.9)
Pakistan	2010s	0.3 (0.1, 0.6)	0.3 (0.1, 0.6)	0.3 (0.1, 0.6)
	2030s	1.0 (0.5, 1.4)	0.9 (0.5, 1.2)	1.0 (0.5, 1.5)
	2050s	1.7 (1.0, 2.4)	1.8 (1.1, 2.6)	2.4 (1.5, 3.4)
	2070s	1.8 (1.1, 2.5)	2.5 (1.5, 3.4)	3.8 (2.4, 5.3)
	2090s	1.8 (1.1, 2.5)	3.0 (1.8, 4.2)	5.9 (3.6, 8.2)

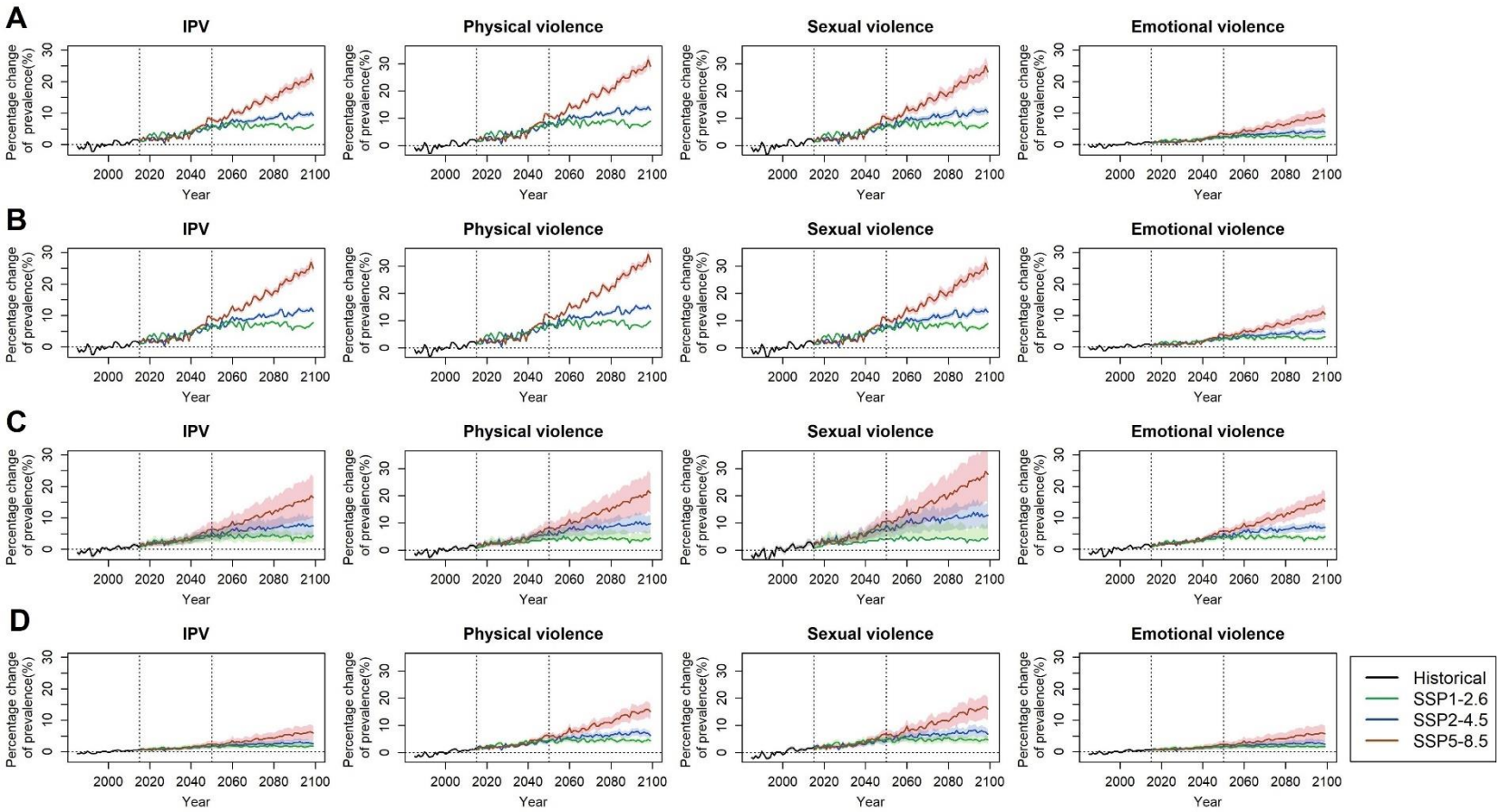
Note: [a] Total is for the 3 South Asian countries together.
Abbreviation: SSP=Shared Socioeconomic Pathway.

eTable 13. Projected percentage change of physical violence, sexual violence and emotional violence prevalence in 3 South Asian countries from the baseline period (1985-2014) under the SSP1-2.6, SSP2-4.5 and SSP5-8.5 scenarios in the 2010s, 2030s, 2050s, 2070s and 2090s, considering population changes based on the corresponding SSP assumption.

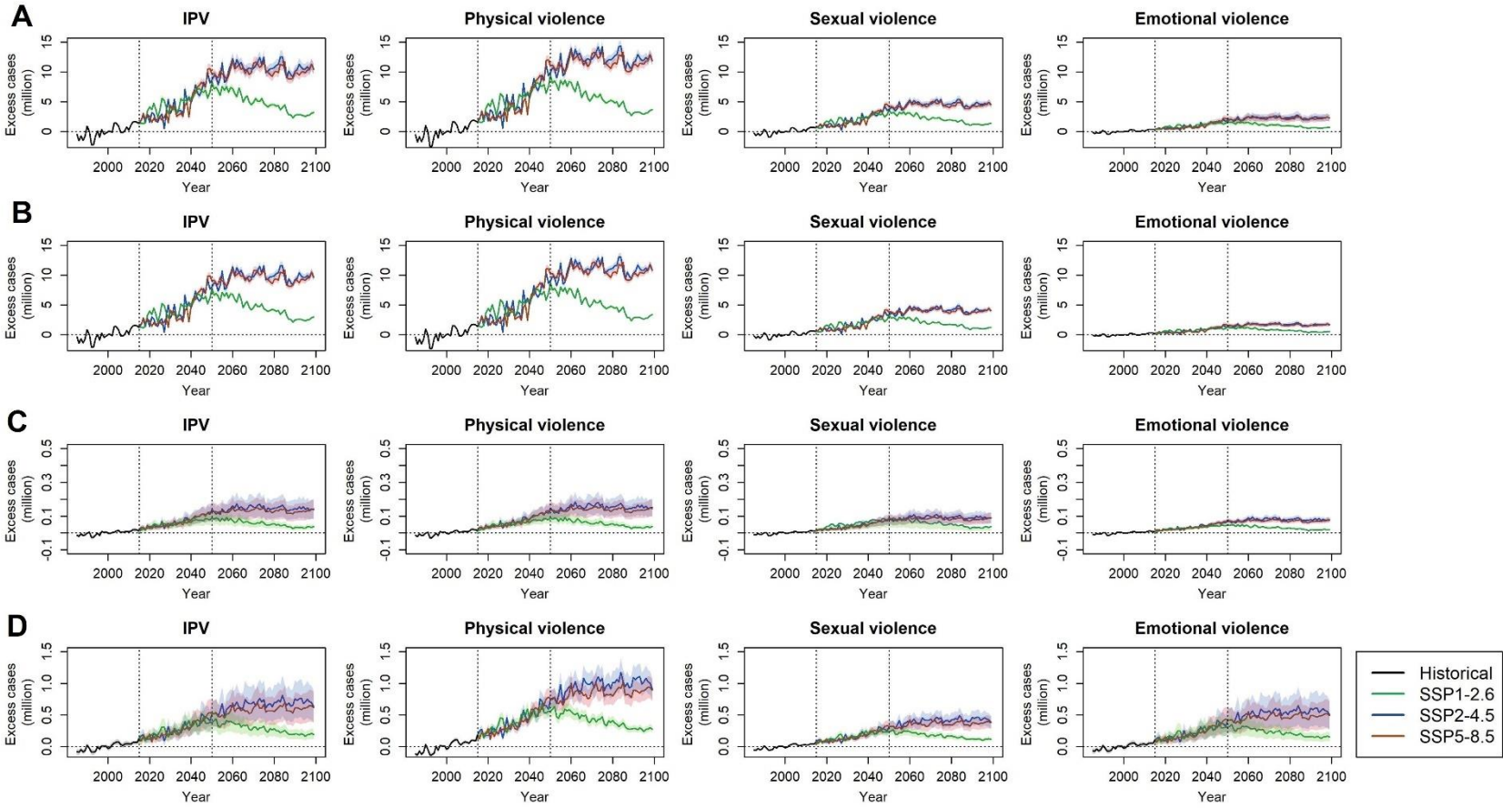
IPV	Region/ countries	Years	Percentage change of prevalence (%)		
			SSP1-2.6	SSP2-4.5	SSP5-8.5
Physical violence	Total [a]	2010s	0.3 (0.2, 0.5)	0.3 (0.2, 0.5)	0.3 (0.2, 0.5)
		2030s	4.3 (3.9, 4.6)	2.9 (2.6, 3.2)	4.3 (4.0, 4.7)
		2050s	9.0 (8.4, 9.6)	7.7 (7.2, 8.2)	10.6 (9.9, 11.3)
		2070s	8.0 (7.4, 8.5)	10.5 (9.8, 11.2)	18.7 (17.5, 19.9)
		2090s	7.5 (7.0, 8.1)	12.7 (11.9, 13.6)	27.4 (25.6, 29.2)
	India	2010s	0.3 (0.1, 0.4)	0.3 (0.1, 0.4)	0.3 (0.1, 0.4)
		2030s	4.6 (4.2, 4.9)	3.0 (2.8, 3.2)	4.6 (4.3, 4.9)
		2050s	9.7 (9.2, 10.2)	8.1 (7.7, 8.6)	11.3 (10.7, 11.9)
		2070s	8.6 (8.1, 9.0)	11.3 (10.7, 11.9)	20.2 (19.1, 21.2)
		2090s	8.1 (7.7, 8.6)	13.8 (13.1, 14.5)	29.7 (28.2, 31.3)
	Nepal	2010s	0.5 (0, 1.1)	0.5 (0, 1.1)	0.5 (0, 1.1)
		2030s	3.1 (1.9, 4.2)	2.6 (1.6, 3.5)	3.4 (2.2, 4.6)
		2050s	5.6 (3.6, 7.6)	7.0 (4.6, 9.4)	8.1 (5.3, 10.8)
		2070s	4.7 (3.1, 6.3)	8.4 (5.5, 11.2)	13.0 (8.6, 17.4)
		2090s	4.9 (3.2, 6.6)	9.8 (6.4, 13)	19.2 (12.7, 25.6)
	Pakistan	2010s	0.5 (0, 1.1)	0.5 (0, 1.1)	0.5 (0, 1.1)
		2030s	3.1 (1.9, 4.2)	2.6 (1.6, 3.5)	3.4 (2.2, 4.6)
		2050s	5.6 (3.6, 7.6)	7.0 (4.6, 9.4)	8.1 (5.3, 10.8)
		2070s	4.7 (3.1, 6.3)	8.4 (5.5, 11.2)	13.0 (8.6, 17.4)
		2090s	4.9 (3.2, 6.6)	9.8 (6.4, 13.0)	19.2 (12.7, 25.6)
Sexual violence	Total [a]	2010s	0.4 (0.1, 0.7)	0.4 (0.1, 0.7)	0.4 (0.1, 0.7)
		2030s	4.0 (3.4, 4.5)	2.7 (2.3, 3.1)	4.0 (3.5, 4.6)
		2050s	8.3 (7.4, 9.2)	7.1 (6.3, 7.9)	9.8 (8.8, 10.9)
		2070s	7.4 (6.6, 8.2)	9.8 (8.7, 10.9)	17.4 (15.5, 19.2)
		2090s	7.0 (6.2, 7.8)	11.9 (10.5, 13.2)	25.5 (22.7, 28.3)
	India	2010s	0.3 (0, 0.5)	0.3 (0, 0.5)	0.3 (0, 0.5)
		2030s	4.1 (3.7, 4.6)	2.7 (2.4, 3.1)	4.2 (3.7, 4.6)
		2050s	8.8 (8.0, 9.6)	7.4 (6.7, 8.1)	10.3 (9.3, 11.2)
		2070s	7.8 (7.1, 8.5)	10.3 (9.4, 11.2)	18.4 (16.7, 20)
		2090s	7.4 (6.7, 8.1)	12.5 (11.4, 13.7)	27.1 (24.7, 29.5)
	Nepal	2010s	0.9 (-0.1, 1.8)	0.9 (-0.1, 1.8)	0.9 (-0.1, 1.8)
		2030s	4.1 (2.3, 5.7)	3.4 (2.0, 4.7)	4.5 (2.8, 6.2)
		2050s	7.4 (4.5, 10.2)	9.3 (5.8, 12.6)	10.7 (6.7, 14.6)
		2070s	6.2 (3.9, 8.5)	11.0 (6.9, 15)	17.2 (10.8, 23.4)

		2090s	6.5 (4.0, 8.8)	12.9 (8.1, 17.5)	25.3 (16, 34.5)
	Pakistan	2010s	1.1 (0.5, 1.7)	1.1 (0.5, 1.7)	1.1 (0.5, 1.7)
		2030s	2.6 (1.7, 3.4)	2.3 (1.7, 3.0)	2.7 (1.8, 3.6)
		2050s	4.6 (3.4, 5.8)	4.9 (3.6, 6.2)	6.6 (4.8, 8.3)
		2070s	4.9 (3.6, 6.1)	6.7 (4.9, 8.4)	10.4 (7.7, 13.1)
		2090s	4.8 (3.6, 6.1)	8.2 (6.1, 10.3)	16 (11.9, 20.1)
Emotional violence	Total [a]	2010s	0.2 (-0.1, 0.4)	0.2 (-0.1, 0.4)	0.2 (-0.1, 0.4)
		2030s	1.4 (0.9, 1.8)	1.0 (0.6, 1.3)	1.4 (0.9, 1.8)
		2050s	2.8 (2.1, 3.4)	2.4 (1.8, 3.1)	3.4 (2.5, 4.2)
		2070s	2.5 (1.8, 3.1)	3.3 (2.5, 4.2)	5.8 (4.4, 7.2)
		2090s	2.4 (1.7, 3.0)	4.0 (2.9, 5.0)	8.5 (6.3, 10.6)
	India	2010s	0.1 (-0.1, 0.3)	0.1 (-0.1, 0.3)	0.1 (-0.1, 0.3)
		2030s	1.5 (1.1, 1.9)	1.0 (0.7, 1.3)	1.5 (1.1, 1.9)
		2050s	3.2 (2.6, 3.8)	2.7 (2.1, 3.2)	3.7 (3.0, 4.4)
		2070s	2.8 (2.3, 3.4)	3.7 (3.0, 4.5)	6.7 (5.4, 7.9)
		2090s	2.7 (2.1, 3.2)	4.5 (3.7, 5.4)	9.8 (7.9, 11.7)
	Nepal	2010s	0.5 (0.2, 0.8)	0.5 (0.2, 0.8)	0.5 (0.2, 0.8)
		2030s	2.2 (1.7, 2.7)	1.9 (1.5, 2.3)	2.5 (2, 3.0)
		2050s	4.1 (3.2, 4.9)	5.1 (4.1, 6.1)	5.9 (4.7, 7.0)
		2070s	3.4 (2.7, 4.1)	6.1 (4.9, 7.2)	9.4 (7.5, 11.3)
		2090s	3.6 (2.9, 4.3)	7.1 (5.7, 8.4)	13.9 (11.1, 16.6)
	Pakistan	2010s	0.4 (0, 0.7)	0.4 (0, 0.7)	0.4 (0, 0.7)
		2030s	0.9 (0.4, 1.4)	0.8 (0.4, 1.2)	0.9 (0.4, 1.5)
		2050s	1.6 (0.9, 2.4)	1.7 (0.9, 2.6)	2.3 (1.3, 3.4)
		2070s	1.7 (1.0, 2.5)	2.4 (1.3, 3.4)	3.7 (2.0, 5.3)
		2090s	1.7 (0.9, 2.5)	2.9 (1.6, 4.2)	5.7 (3.1, 8.2)

Note: [a] Total is for the 3 South Asian countries together.
Abbreviation: SSP=Shared Socioeconomic Pathway.



eFigure 6. Projected percentage changes in IPV prevalence attributable to climate warming from the baseline period (1985-2014) in 3 South Asian countries under different climate scenarios, considering population changes based on the corresponding SSP assumption. A: 3 South Asian countries; **B:** India; **C:** Nepal; **D:** Pakistan. The solid line is the log-transformed odds ratio of IPV; the shaded areas are the 95% empirical confidence intervals.



eFigure 7. Excess IPV cases attributable to climate warming from the baseline period (1985-2014) in 3 South Asian countries under different climate scenarios, considering population changes based on the corresponding SSP assumption. A: 3 South Asian countries; **B:** India; **C:** Nepal; **D:** Pakistan. The solid line is the log-transformed odds ratio of IPV; the shaded areas are the 95% empirical confidence intervals.

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