



Wittgenstein Centre

FOR DEMOGRAPHY AND
GLOBAL HUMAN CAPITAL



Climate impacts affect intimate partner violence in sub-Saharan Africa: An analysis and projection using DHS microdata

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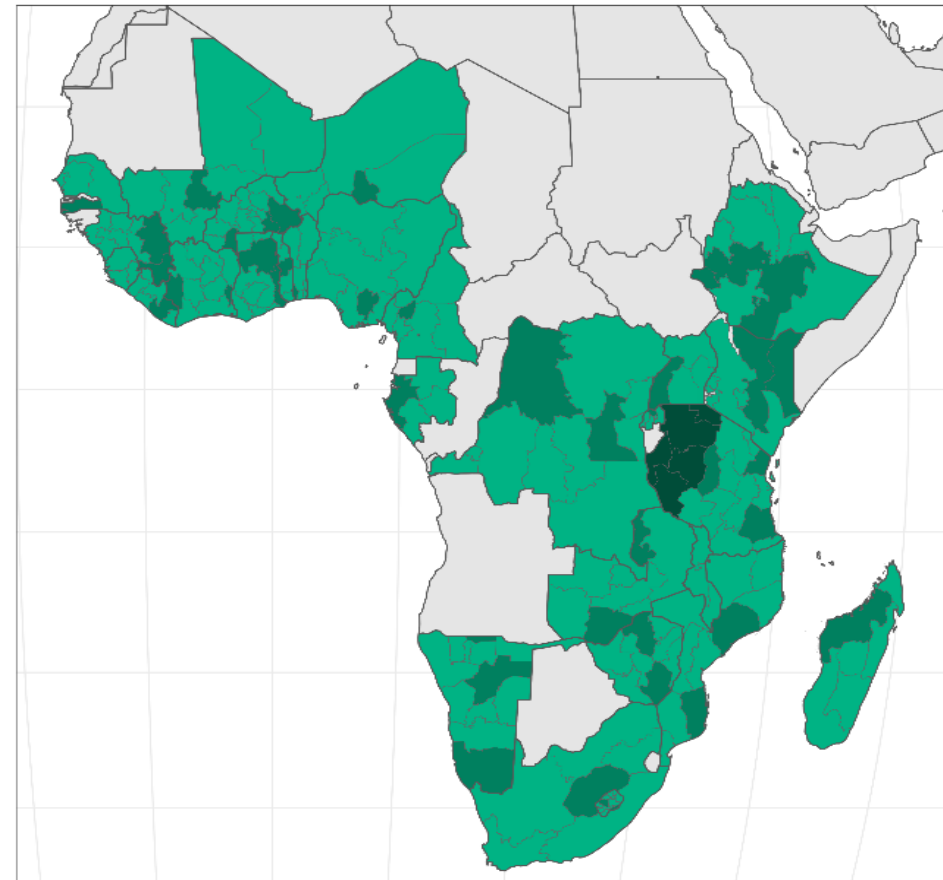
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Motivation

- An **estimated 245 million women** have experienced intimate partner violence in the last 12 months alone (WHO 2021)
- Climate change **can lead to increased violence** through its negative effects on human lives, ecosystems, and economies
- Impacts on mental health and **aggression**, food and water **stress**, livelihood **insecurity**, and **early marriage**

Map of prevalence estimates of IPV in past 12 months among women aged 15–49 years

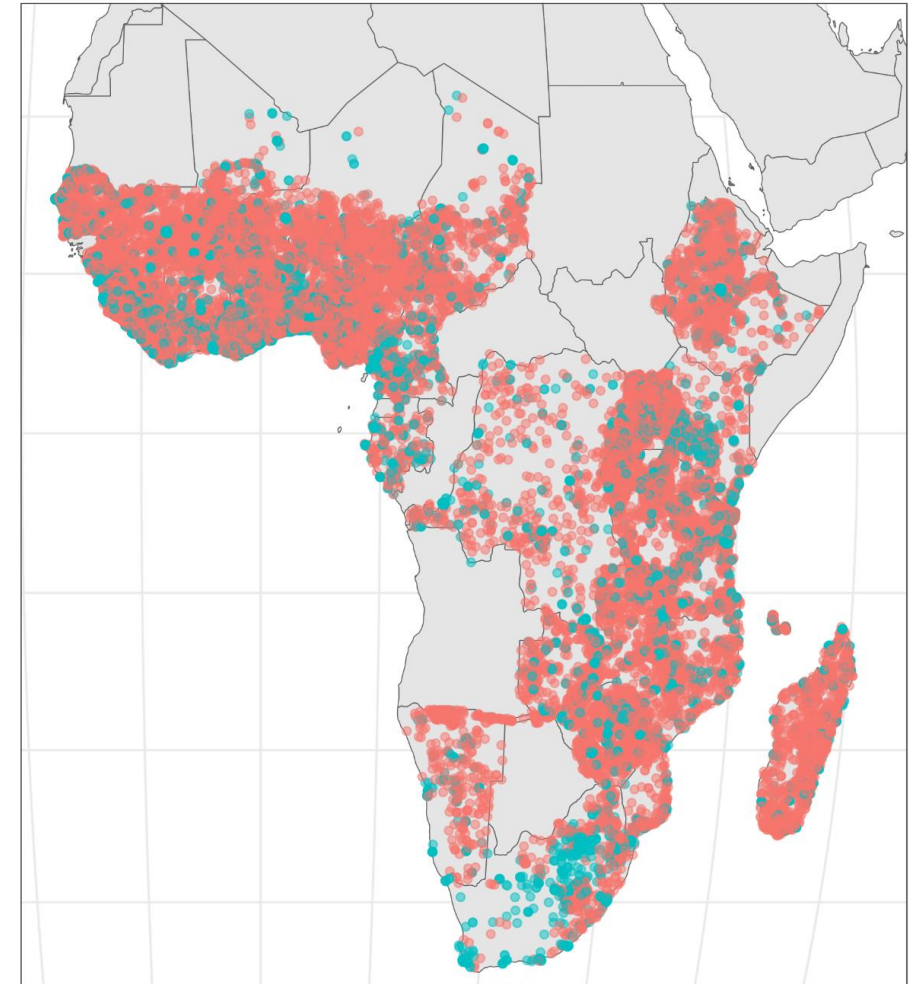


Share of women affected by any IPV (2010–2019) <15% 15–24% 25–34% >35%



Research aims

- ▶ Study the **impact of temperature anomalies on intimate partner violence (IPV)** in sub-Saharan Africa using DHS data
- ▶ Explore **differential demographic vulnerabilities** to climatic stress for different sub-groups in the population
- ▶ **Project future levels of IPV** considering different Shared Socioeconomic and Representative Concentration Pathways



Community • Rural • Urban



Estimating linear models with district FE

Regression models estimating climatic impacts on violence over time

Dependent variable: Affected by violence

	Any physical	Less severe	Severe	Sexual	Emotional
Temperature anomaly	0.0279*** (0.0060)	0.0185*** (0.0054)	0.0156*** (0.0037)	0.0155*** (0.0043)	0.0250*** (0.0060)
Observations	265,858	265,970	265,881	265,912	268,514
R2	0.05876	0.04811	0.05031	0.0492	0.0494
Within R2	0.00032	0.00017	0.00025	0.0002	0.00028

Note: Regression coefficients from linear fixed effects models with clustered standard errors in parentheses. Standard errors are clustered at the DHS cluster level. All models control for region and seasonal fixed effects as well as United Nations intermediate region-specific time trends. P-values: * p<0.1; ** p<0.05; *** p<0.01



Exploring heterogeneities in the effects

Regression models estimating climatic impacts on violence by different subgroups

	Dependent variable: Any physical violence					
	Overall	Age 15-24	Age 25-34	Age 35-49	Primary edu. (ISCED 0–1)	Secondary edu. (ISCED >1)
Temperature anomaly	0.0279*** (0.0060)	0.0282** (0.0107)	0.0284*** (0.0085)	0.0244** (0.0089)	0.0385*** (0.0081)	0.0111 (0.0087)
Observations	265858	66492	108862	90504	156540	109307
R2	0.05876	0.06124	0.06238	0.06339	0.06244	0.06148
Within R2	0.00032	0.00031	0.00032	0.00027	0.00053	0.0005

Note: Regression coefficients from linear fixed effects models with clustered standard errors in parentheses. Standard errors are clustered at the DHS cluster level. All models control for region and seasonal fixed effects as well as United Nations intermediate region-specific time trends. P-values: *p<0.1; **p<0.05; ***p<0.01

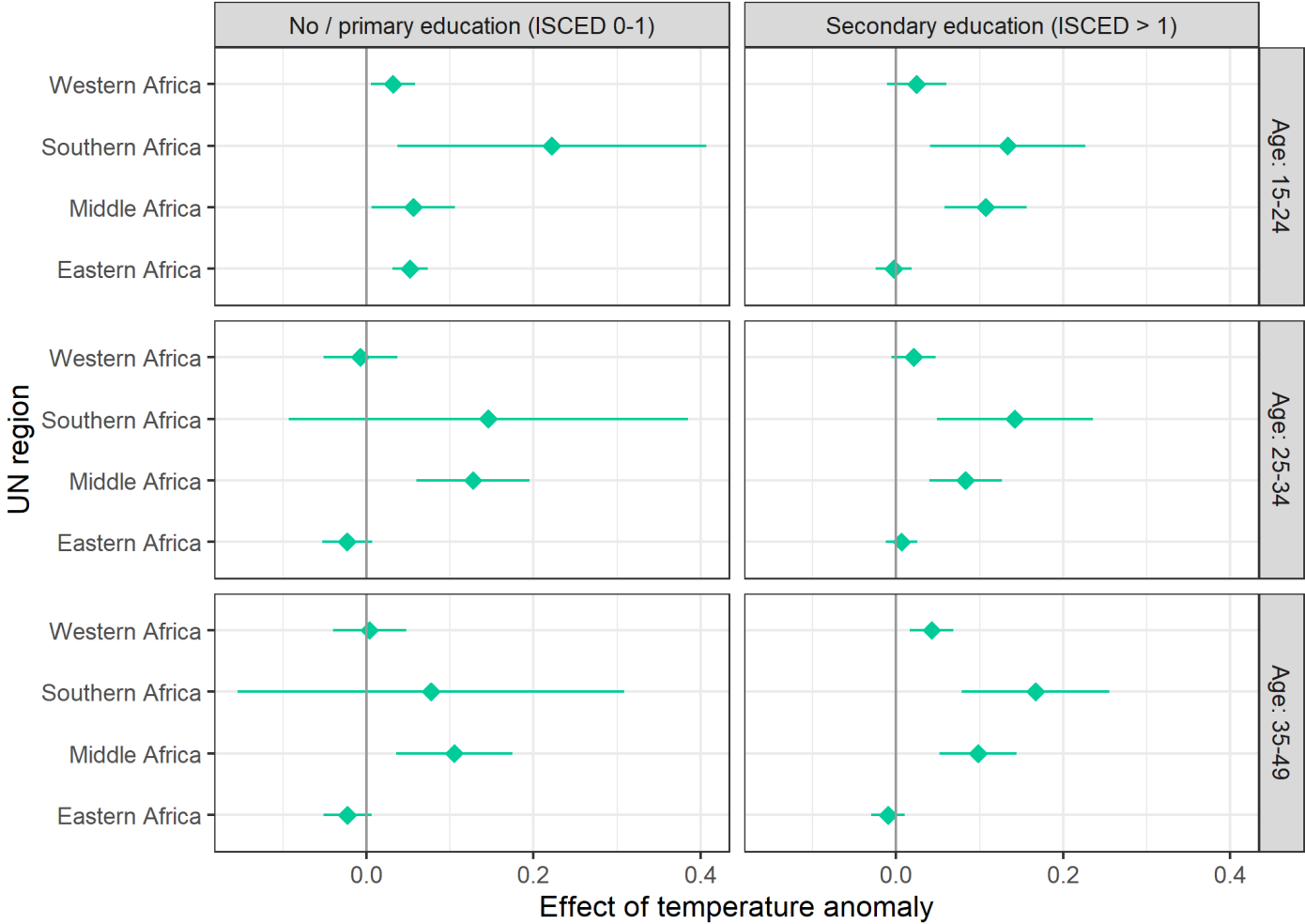


Differential vulnerabilities to climate risks

Population groups face different risks: Younger and less educated women are particularly affected by climatic impacts on violence

Temperature effects visible across all regions for youngest and less educated group

Impacts are strongest and most consistent in **Southern and Central Africa**



Scenarios as basis for future projections

Shared Socio-Economic Pathways (SSPs) are used in combination with plausible **Representative Concentration Pathways (RCPs)** to project future climate impacts

The SSPs are **scenarios of projected socioeconomic global changes** up to 2100. They are also used for greenhouse gas emission scenarios → RCPs

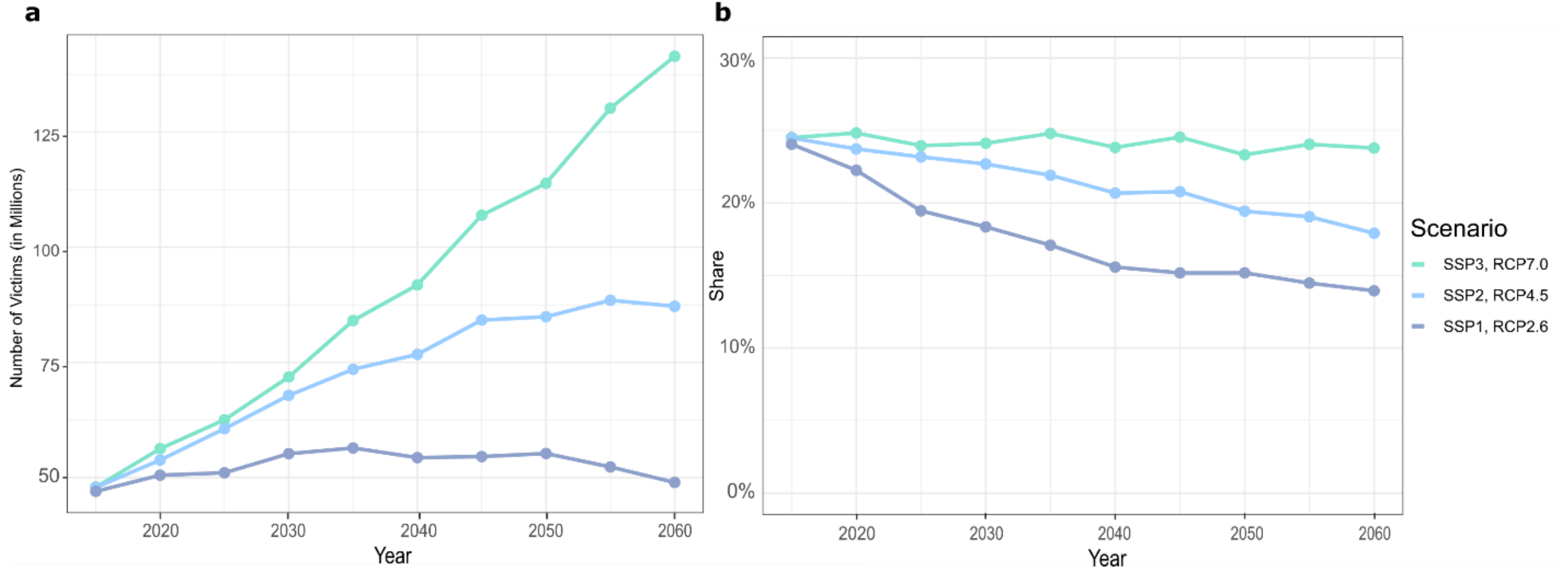
Considered SSP/RCP combinations:
SSP1/RCP2.6 & SSP2/RCP4.5 &
SSP3/RCP7.0 up to 2060 (~40 years)



Source: O'Neill et al (2017). Global Environmental Change



Projecting future levels of IPV in Africa



Key insights

- 1 **Temperature anomalies are found to have major impacts** on intimate partner violence against women and girls.
- 2 **Different population groups are differently affected.** Stronger impacts on younger and less educated women.
- 3 **Education as an important factor** creating direct and indirect benefits by strengthening women's position and increasing their resilience.
- 4 Different development and emission **pathways have major impacts on violence outcomes** in the future



Thank you very much for your attention!

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Violence measures

Different forms of intimate partner violence considered:

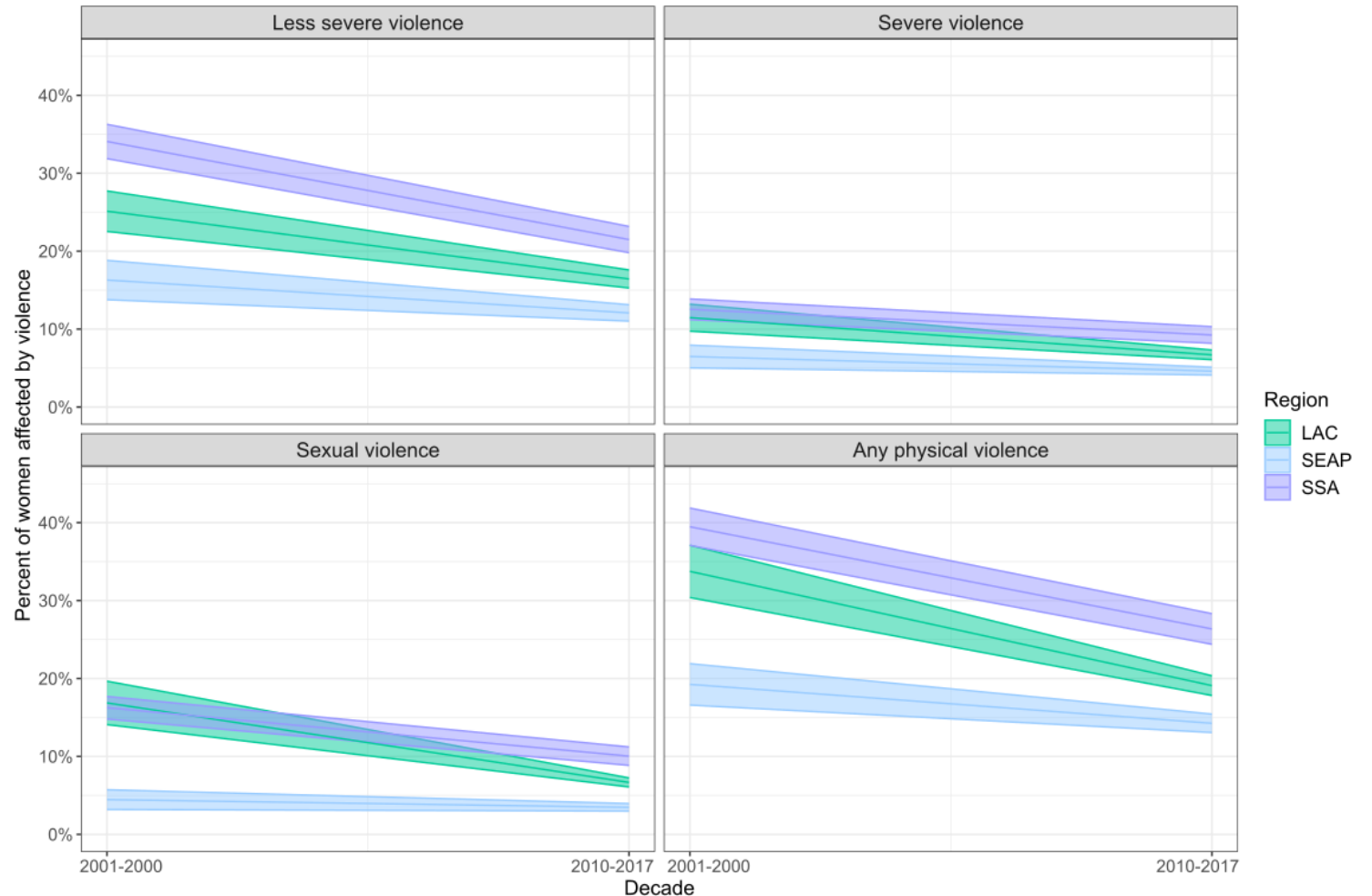
- **Less severe violence** includes being pushed or shook, been slapped, been punched with fist or hit by something harmful, been kicked or dragged by her husband or partner
- **Severe violence** includes having the arm twisted or hair pulled, been strangled or burnt, been threatened with knife, gun or another weapon, or been physically attacked
- **Sexual violence** captures whether a woman has been physically forced into unwanted sex or other unwanted sexual acts, or been physically forced to perform sexual acts
- **Emotional violence** includes having been humiliated, been threatened with harm, been insulted or made to feel bad by her partner



Temporal trends across world regions

Despite overall improvements, **high levels of violence** in all considered regions

The prevalence is **particularly high in sub-Saharan Africa** where we see the highest levels for all considered violence categories



Changes in climatic conditions and population

