

# The Effects of Social Protection on Diabetes and High Blood Pressure among the Poorest: a Quasi-Experimental Study in Latin America

Poster number:  
P1-R-11

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## *Social protection programs help reduce the risk of diabetes and hypertension in LMICs, highlighting their potential in managing chronic conditions and promoting health equity*

### BACKGROUND

Social protection programs (SPP) are critical tools for addressing health disparities, particularly in Low- and Middle-Income Countries (LMICs). This study evaluates the impact of these programs on the diagnosis and prevention of diabetes and high blood pressure in millions of individuals living in poverty in Latin America and Caribbean (LAC).

### METHODS

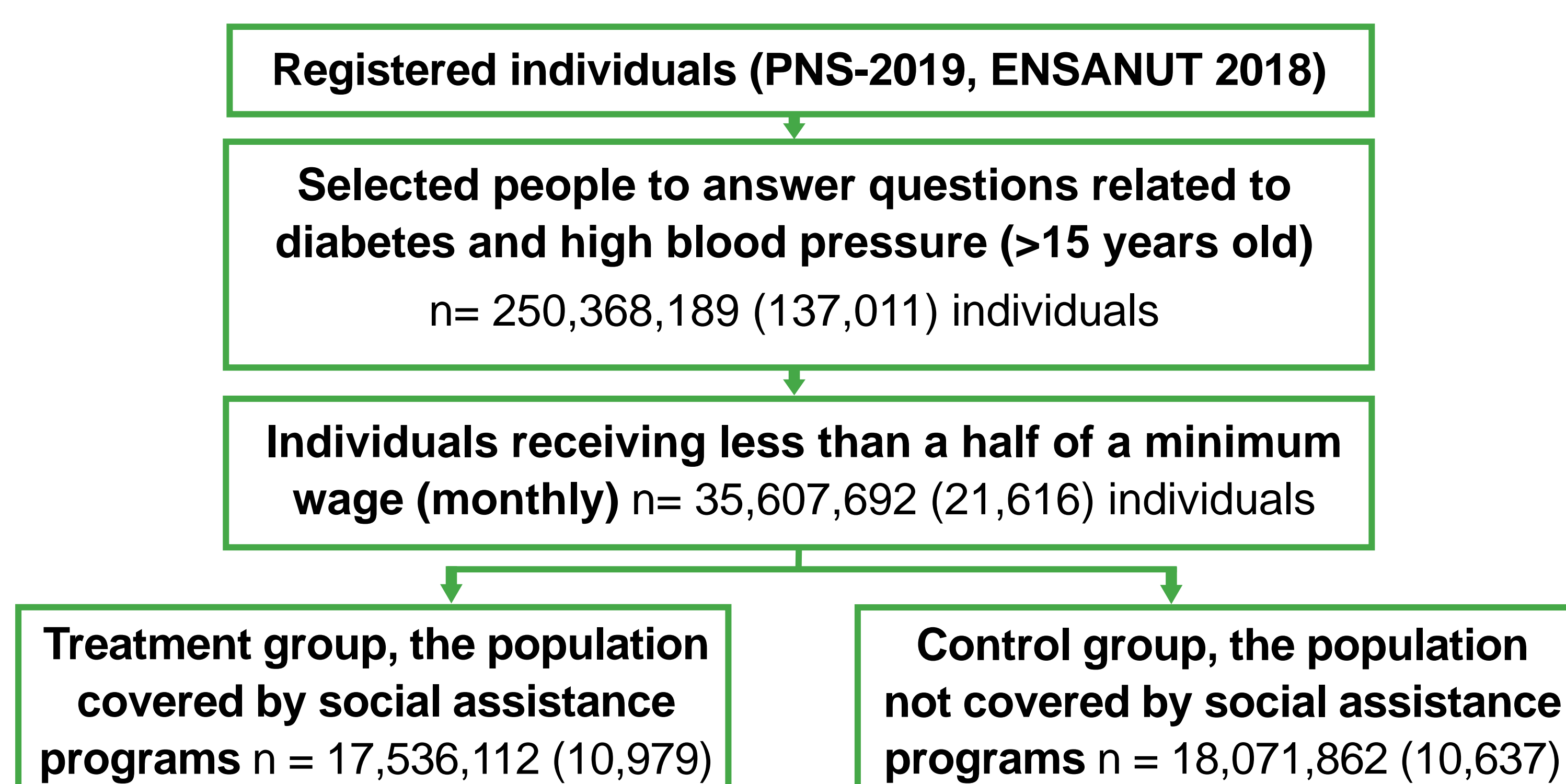
This **multi-country study** evaluates the effects of SPP on a **cohort of 35,607,692** (21,616) low-income **individuals in Brazil and Mexico** during 2018-2019. **Logistic regression** models were used to evaluate hypertension and diabetes outcomes among low-income individuals receiving social protection program benefits compared to those who do not. **Inverse Probability of Treatment Weighting (IPTW)** was employed to mitigate selection bias, considering various sociodemographic and health-related confounding factors. We perform several sensitivity analyses to verify and ensure the robustness of the results.

### DATA

- **Brazil:** National Health Survey (PNS, 2019).
- **Mexico:** National Health and Nutrition Survey (ENSANUT, 2018).

### RESULTS

Figure 1. Study flowchart



### RESULTS

SPP were associated with reductions in diagnosed cases of diabetes and hypertension, with odds ratios (OR) of 0.80 (95% CI: 0.73, 0.87) for diabetes and 0.81 (95% CI: 0.76, 0.85) for high blood pressure. Stratified analyses revealed a stronger effect among individuals with lower income, with an odds ratio of 0.74 (95% CI: 0.66, 0.84). Additionally, more pronounced effects were observed in Mexico across the overall population and in stratifications by sex and income.

**Table 1.** Estimated logistic IPTW models for people diagnosed with diabetes and high blood pressure

SPP Coverage	Diabetes		High blood pressure	
	Without controls	With controls	Without controls	With controls
No	1 (base)	1 (base)	1 (base)	1 (base)
Yes	0.879*** (0.811,0.953)	0.800*** (0.735,0.871)	0.838*** (0.796,0.883)	0.806*** (0.763,0.851)
SPP Coverage	Diabetes		High blood pressure	
	Upper-income	Lower-income	Upper-income	Lower-income
No	1 (base)	1 (base)	1 (base)	1 (base)
Yes	0.871*** (0.777,0.976)	0.743*** (0.655,0.842)	0.907*** (0.838,0.98)	0.750*** (0.694,0.81)

### CONCLUSIONS

Evidence suggests that SPP reduce the likelihood of being diagnosed with diabetes and hypertension. The study highlights the critical role of social assistance in managing chronic conditions in LMICs and underscores the need for further research to explore the full potential of these programs in addressing the Non-Communicable Diseases (NCDs) pandemic. By assessing outcomes in diverse settings, the study aims to provide insights into the potential of social assistance to combat NCDs and promote health equity.

### ADDITIONAL KEY INFORMATION

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#### Funding Source:

This study received funding from the Medical Research Council (MRC) UKRI, Grant Number: MC\_PC\_MR/T023678/1.

#### Conflicts of Interest:

We declare that we have no conflict of interest during the development of the study.

Project:



Funding:



Medical Research Council

Research Institutions:



Congress:

