



Functional Limitation Patterns and Determinants Across Mid- and Early-Late Life Among a High Fertility Cohort of Women

Zachary Zimmer (UCSF)

Luoman Bao (U. Maryland)

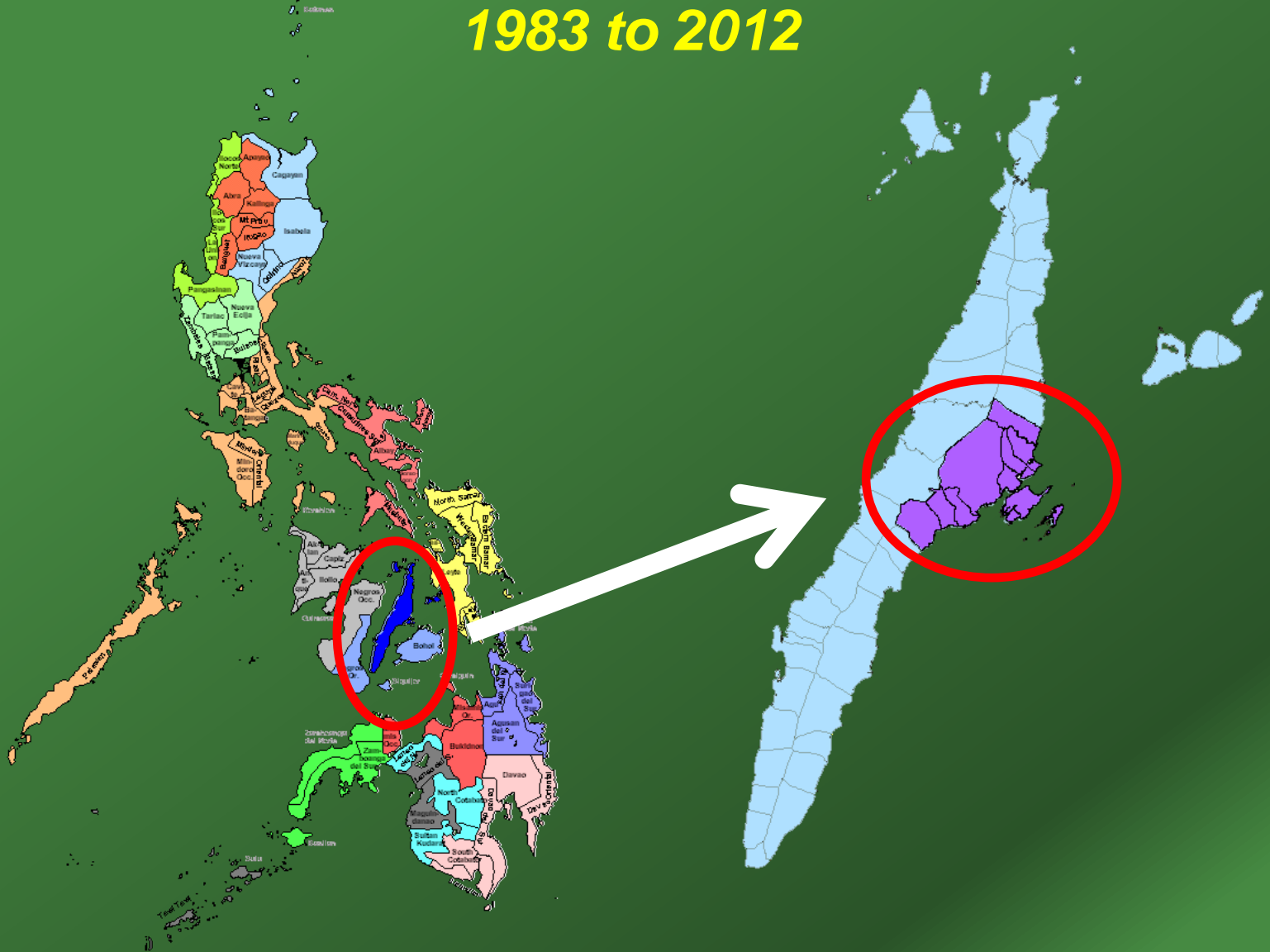
Tita Lorna Perez (U. San Carlos)

Feinian Chen (U. Maryland)

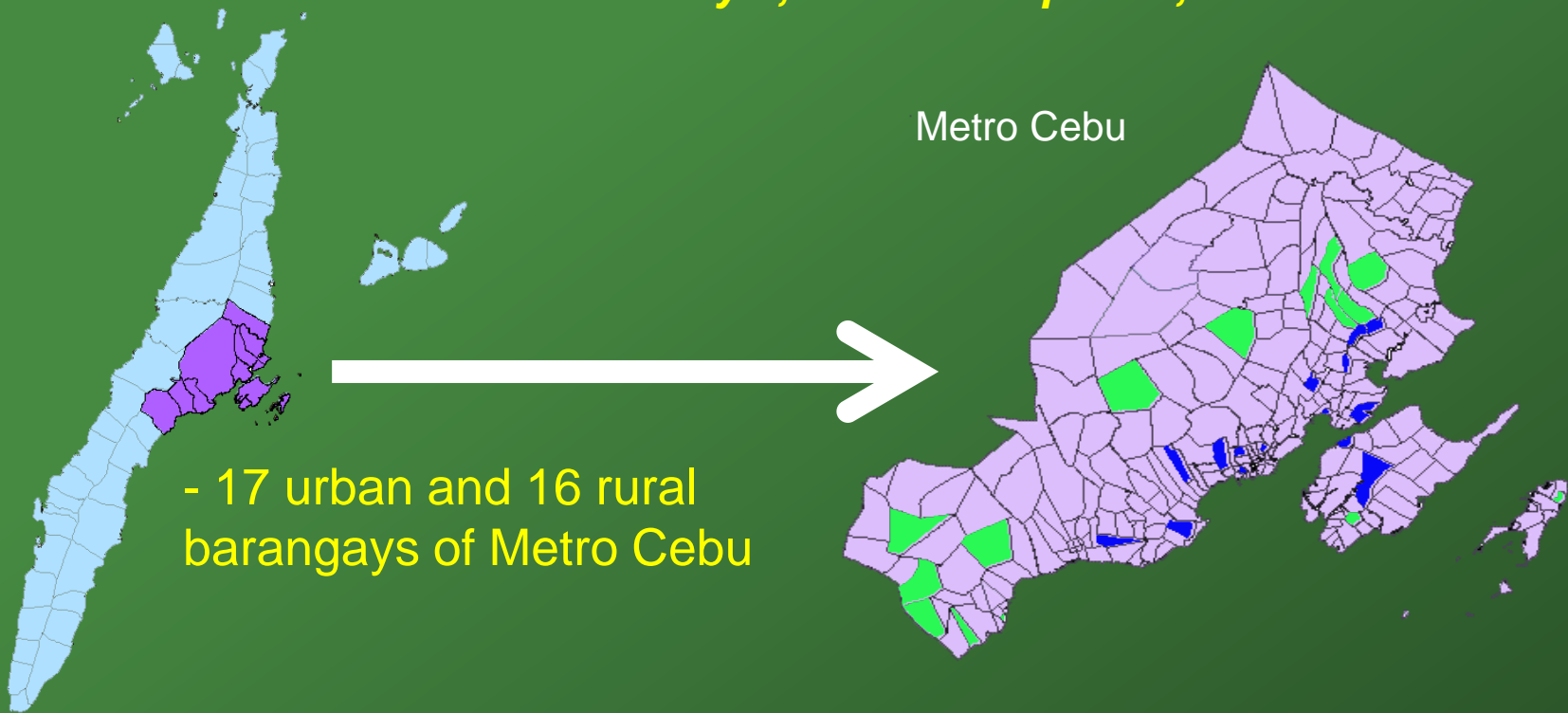
Nanette L. Mayol (U. San Carlos)

Paulia L. Duazo (U. San Carlos)

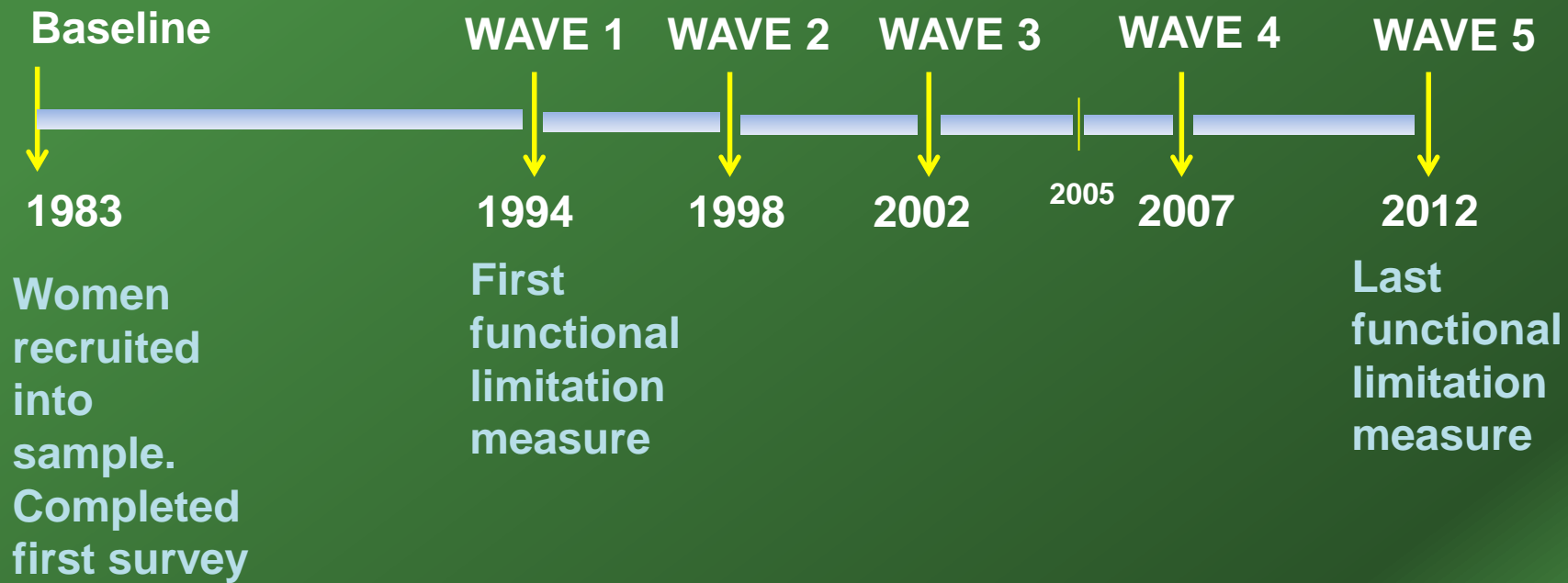
Cebu Longitudinal Health and Nutrition Study: 1983 to 2012



Sample consists of a cohort of women that were pregnant in 1983 and gave birth between May 1, 1983 and April 30, 1984



Data collection points used in current study



Age of birth cohorts at baseline, Wave 1 and 5, and sample sizes



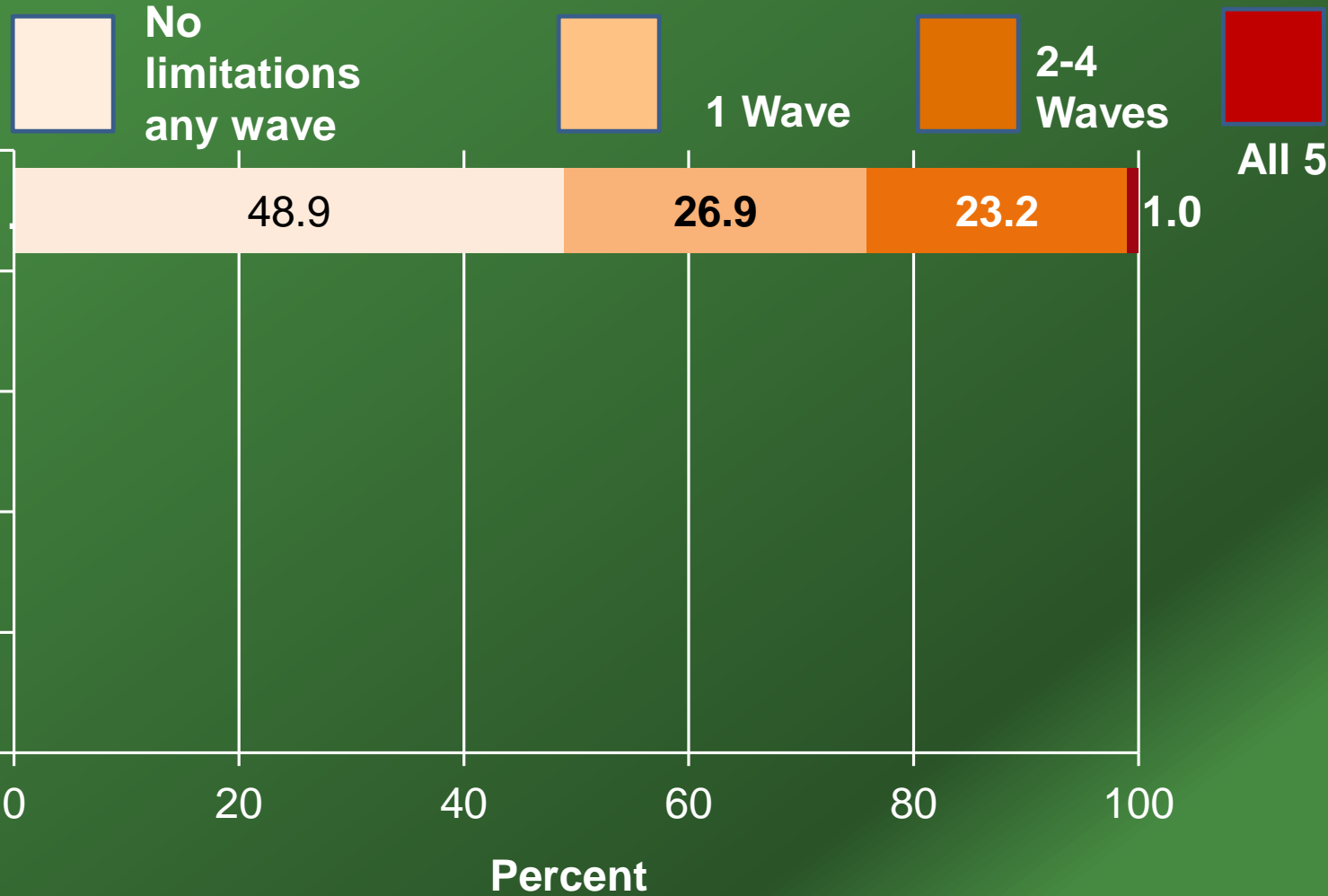


Functional limitation measure

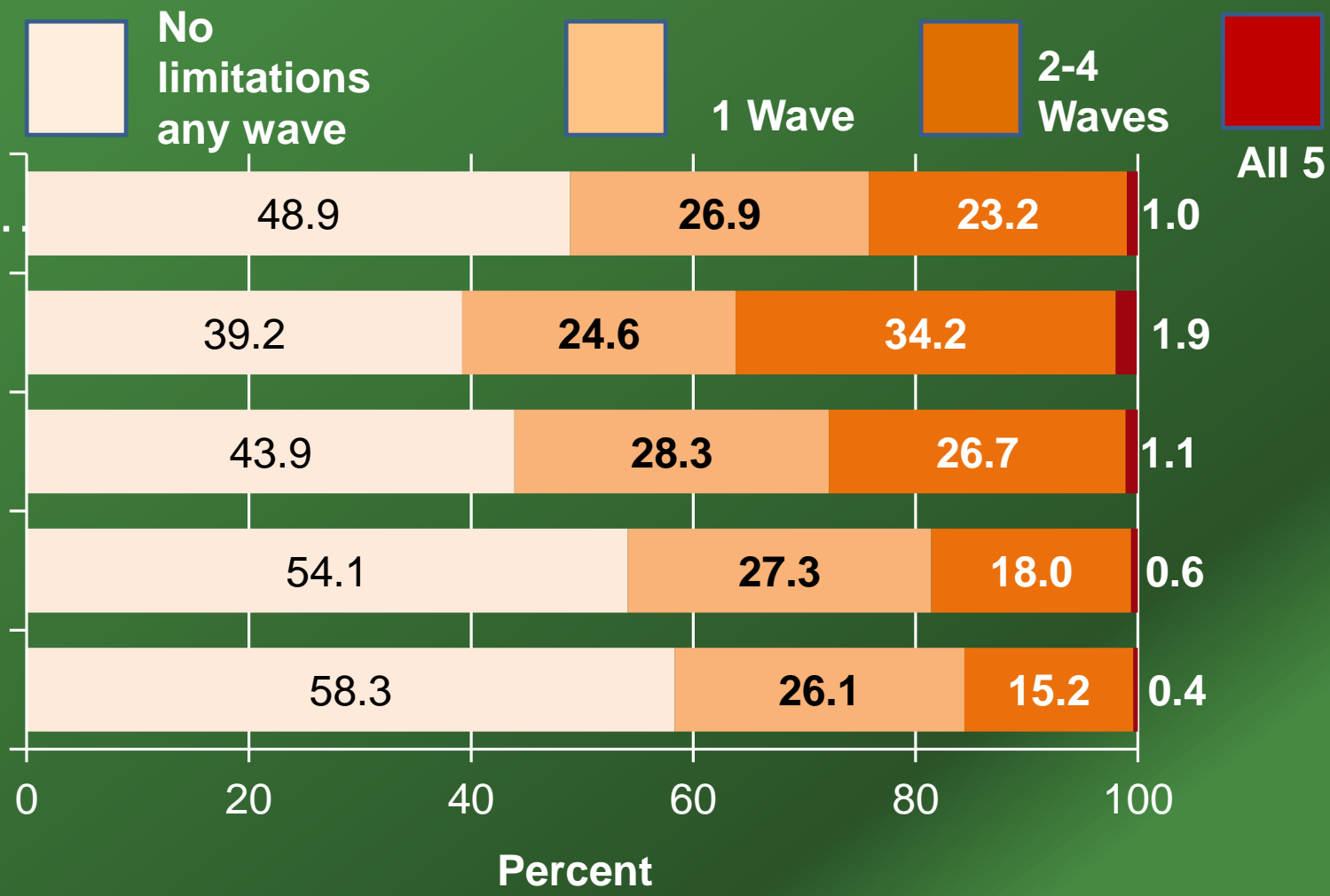
Have difficulty with one of:

- **Walking a distance of 1 km**
- **Climbing a flight of stairs or walking up a hill**
- **Carrying a weight of 5 kg for a short distance**

Distribution of the number of waves in which a functional limitation is reported, by birth cohort



Distribution of the number of waves in which a functional limitation is reported, by birth cohort



Distribution of patterns

Number of waves with a limitation	Wave					Percent
	1	2	3	4	5	
0						48.9
1					✓	4.0
				✓		9.9
			✓			3.4
		✓				5.1
	✓					4.5
2				✓	✓	2.7
			✓		✓	0.8
			✓	✓		1.3
		✓			✓	0.9
		✓		✓		2.9
		✓	✓			1.0
	✓				✓	0.4
	✓			✓		1.6
	✓		✓			1.0
	✓	✓				0.9
3			✓	✓	✓	1.0
		✓		✓	✓	1.0
		✓	✓		✓	0.6
		✓	✓	✓		0.8
	✓			✓	✓	0.9
	✓		✓		✓	0.1
	✓		✓	✓		0.1
	✓	✓			✓	0.6
	✓	✓		✓		0.8
	✓	✓	✓			0.8
4		✓	✓	✓	✓	0.8
	✓		✓	✓	✓	0.3
	✓	✓		✓	✓	0.3
	✓	✓	✓		✓	0.7
	✓	✓	✓	✓		0.8
5	✓	✓	✓	✓	✓	1.0
Total						100.0

Distribution of patterns for those reporting limitations in 2 waves

	Wave					
Number of waves with a limitation	1	2	3	4	5	Percent
2				✓	✓	20.0
			✓		✓	5.9
			✓	✓		9.6
		✓			✓	6.7
		✓		✓		21.5
		✓	✓			7.4
	✓				✓	3.0
	✓			✓		11.9
	✓		✓			7.4
	✓	✓				6.7
TOTAL						100.0

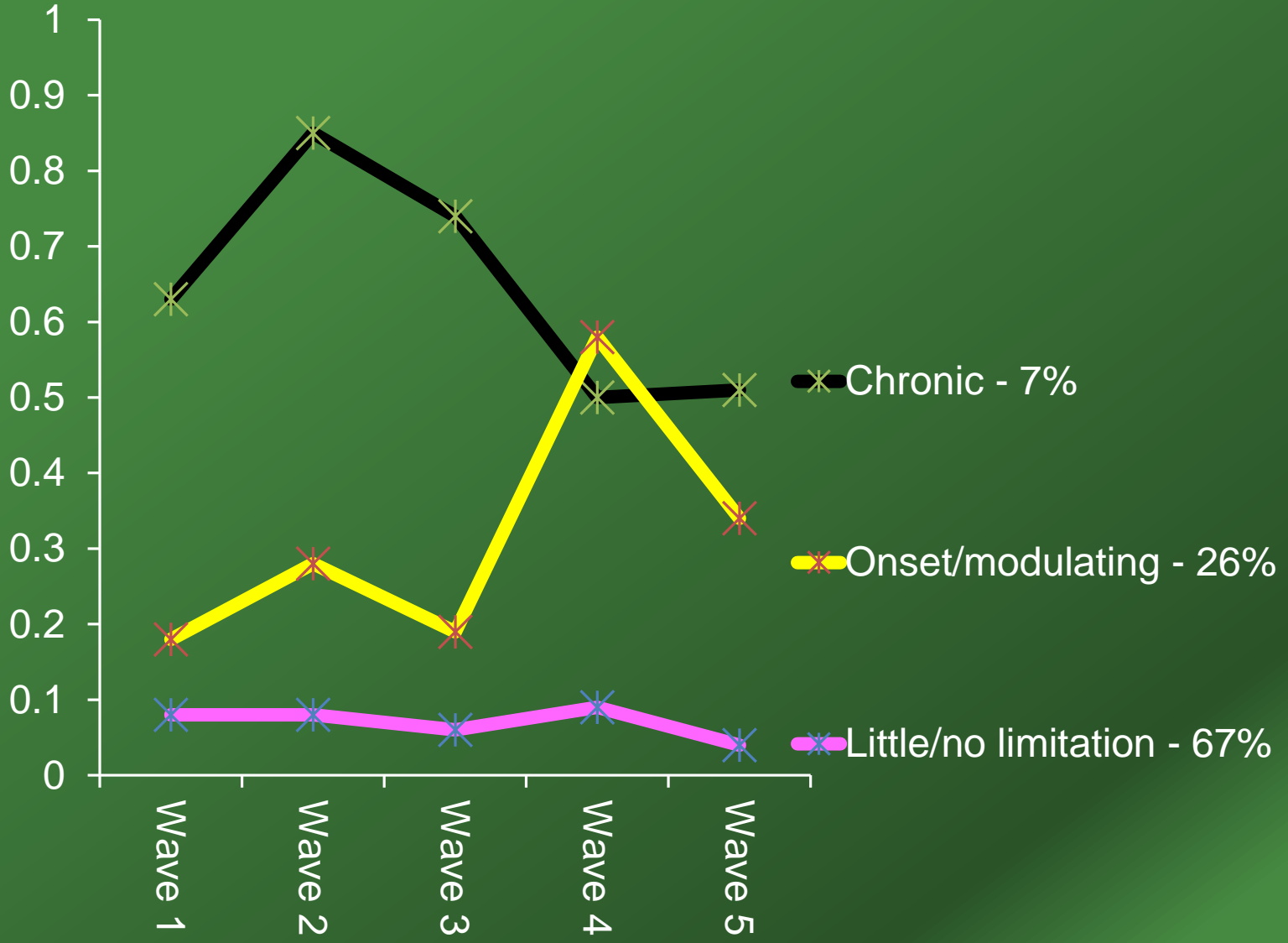
Latent Class Analysis

- LCA Stata Plugin (Lanza et al., 2015)
- Underlying latent structures determined by a maximum likelihood procedure
- Best fitting structure based on goodness of fit
- Estimate probability that a woman in a give class will have a limitation in a given wave
- Estimate percent of sample in a given class

Probability of limitation by class and wave and percent in each class



Probability



* Chronic - 7%

* Onset/modulating - 26%

* Little/no limitation - 67%

Determinants of class membership in four domains and when they are measured

A. Demographic

1. Birth cohort	Baseline
2. Marital status	Wave 5
3. Nuclear household	Baseline
4. Household size	Baseline

B. Childbirth

1. Total live births	Wave 5
2. Successful birth ratio	Wave 5
3. Age at first birth	Baseline

C. Socioeconomic status

1. Education	Wave 1
2. Household wealth	Baseline
3. Urbanicity score	Baseline

D. Health

1. BMI	Wave 1
2. Chronic conditions	Wave 1
3. Self-assessed health	Wave 1

What significantly predicts more favorable patterns?

Predictor	Direction of effect
Later birth cohort	+ve
Nuclear household at baseline	+ve
Smaller household size at baseline	+ve
Greater number of live births	+ve
Higher age at birth of first child	+ve
Higher education	+ve
Greater baseline wealth	-ve
Greater urbanicity at baseline	-ve
Higher Wave 1 BMI	-ve
Chronic condition at Wave 1	-ve

level random effect, using Gllamm Stata version 13.0 (Rabe-Hesketh & Skrondal, 2008)
+ve = positive association

-ve = negative association

Conclusion

- Recognizing patterns of functional problems and their determinants has implications for understanding the global burden of disability.
 - a) Prevalence of functional limitation appears to be fairly high
 - b) All patterns over time show up in the data
 - c) These can be classified into three underlying classes
 - d) A series of determinants predict membership in these classes

Thank you

Danke

Salamat

