

Swiss public health conference – Basel

23.11.2017

The contribution of lifestyle-related behaviors to socioeconomic inequalities in health: a systematic and critical review

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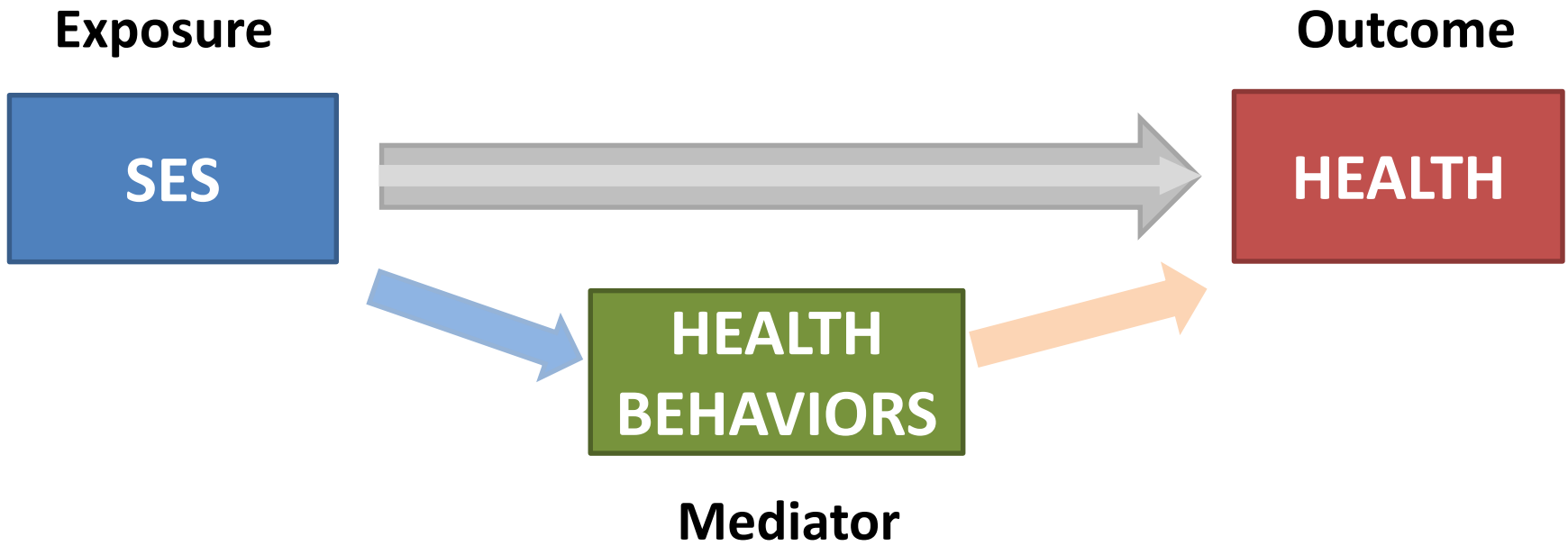
Background

- Lifestyle-related behaviors: **smoking, alcohol drinking, physical activity and diet** are socially patterned
- Lifestyle-related behaviors are also major determinants of health
- The overall contribution of lifestyle-related behaviors to the socioeconomic gradient in health varies between studies, ranging from (12% to 72%)

AIM

To systematically assess the contribution of smoking, alcohol drinking, physical activity and diet to the association between SES and all-cause mortality and cardiometabolic disorders (CMD)

Model



Methods

Methods

- Systematic review of all previously published papers assessing the contribution of lifestyle-related behaviors to the association between SES (various indicators) and all-cause mortality and cardiometabolic disorders

- Contribution of lifestyle-related behaviors - Difference method:

Model 1: **SES** → **Health outcomes**

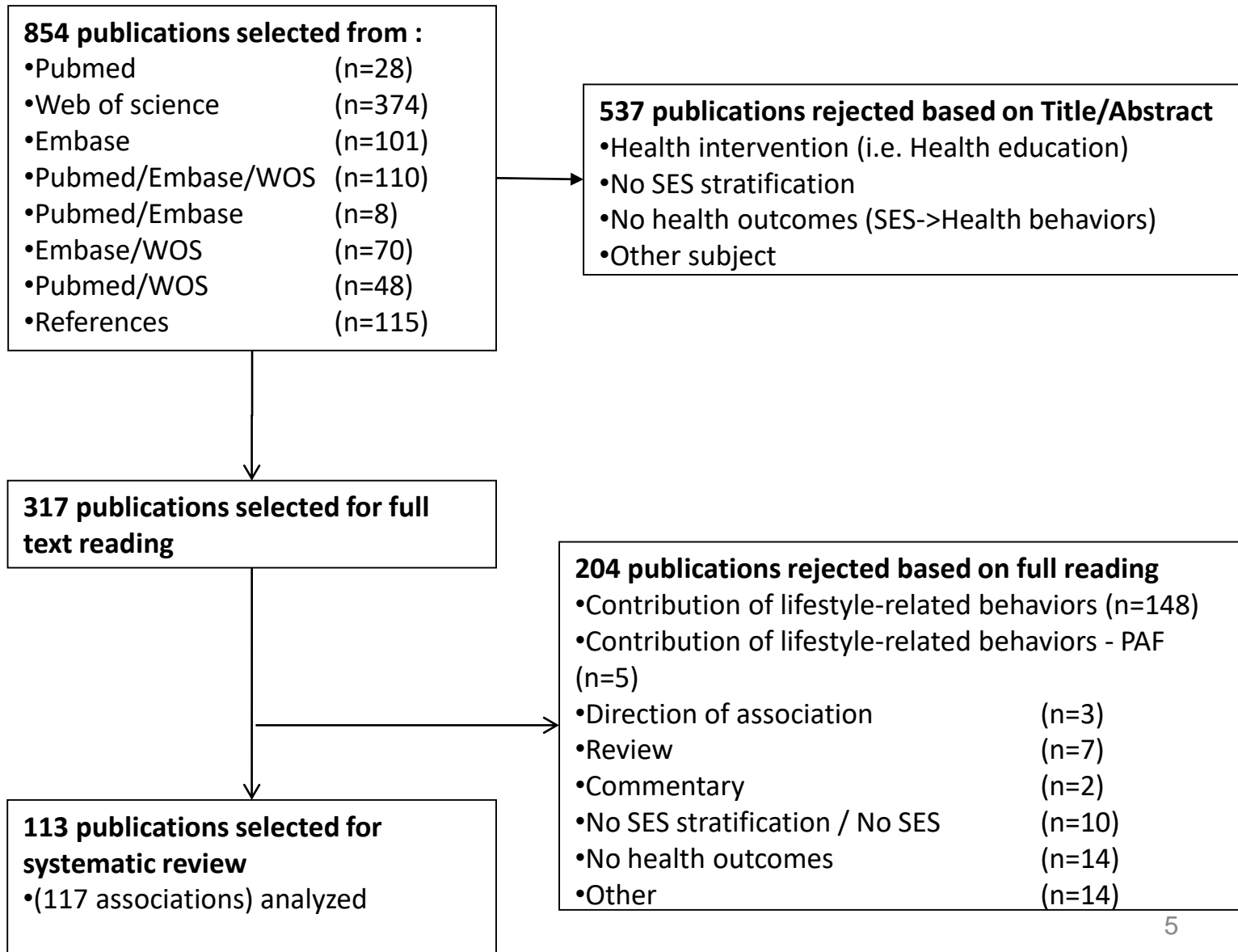
Model 2: **SES** + lifestyle-related behaviors → **Health outcomes**

Mediation = $100 \times (\beta \text{ Model 1} - \beta \text{ Model 2: Model 1 + lifestyle-related behavior(s)}) / \beta \text{ Model 1}$

Model 2



Results – Inclusion of articles



Results – Contribution of more than one health behavior

Results

- 113 research articles included (1985-2016) – MEDLINE, EMBASE, WOS, ref.
- SES negatively associated with all-cause mortality and CMD
- Contribution of lifestyle-related behaviors stratified according to different factors

Contribution by more than one lifestyle-related behavior (smoking, alcohol, diet, physical activity) - stratification by health outcomes, sex, region

Stratification factor		Contribution
Health outcomes	All-cause mortality	23% (20% ; 26%)
	CVD	25% (16% ; 33%)
	Metabolic disorders	22% (17% ; 29%)
Sex	Men	26% (9% ; 43%)
	Women	25% (18% ; 30%)
Geographic region	Northern Europe	29% (23% ; 36%)
	North America	19% (12% ; 25%)
	Central/Southern Europe	14% (10% ; 18%)
	Other regions	21% (16% ; 26%)

Results – Contribution of smoking, and alcohol

Contribution by smoking

Stratification factor		Contribution
Health outcomes	All-cause mortality	23% (19%; 32%)
	CVD	16% (15%; 17%)
	Metabolic disorders	17% (14%; 22%)
Sex	Men	19% (12%; 23%)
	Women	13% (6%; 19%)
Geographic region	Northern Europe	18% (17%; 19)
	North America	30% (2%; 57%)
	Central/Southern Europe	4%
	Other regions	13% (11%; 15%)

Contribution by alcohol

Stratification factor		Contribution
Health outcomes	All-cause mortality	9% (-2%; 17%)
	CVD	27% (6%; 64%)
	Metabolic disorders	2%
Sex	Men	9% (-4% ; 21%)
	Women	6% (5%; 8%)
Geographic region	Northern Europe	10% (5%; 15%)
	North America	10% (2%; 17%)
	Central/Southern Europe	7%
	Other regions	6% (5%; 7%)

Results – Contribution of physical activity, and diet

Contribution by physical activity

Stratification factor		Contribution
Health outcomes	All-cause mortality	16% (12%; 20%)
	CVD	12% (5%; 19%)
	Metabolic disorders	8% (6%; 9%)
Sex	Men	10% (4%; 15%)
	Women	6% (4%; 9%)
Geographic region	Northern Europe	10% (6%;13%)
	North America	12% (-2%; 26%)
	Central/Southern Europe	8%
	Other regions	9%

Contribution by diet

Stratification factor		Contribution
Health outcomes	All-cause mortality	19% (17%; 21%)
	CVD	16% (7%; 24%)
	Metabolic disorders	11% (10%; 11%)
Sex	Men	36%
	Women	11%
Geographic region	Northern Europe	20% (13%; 26%)
	North America	20% (11%; 29%)
	Central/Southern Europe	4%
	Other regions	2%

Conclusion

Contribution of lifestyle-related behaviors was generally higher:

- in North America and Northern Europe than in other regions
- in men than in women
- for all-cause mortality and cardiovascular disorders than for met. disorders
- in longitudinal studies compared to cross-sectional studies

Interpretation for differences in contribution

- Different social patterning of health behaviors in different regions
- Different social patterning of health behaviors by sex
- Physiological factors
- Methodological differences

Limitations

- Heterogeneity between included articles
- Difference method

Thank you for your attention!