

The effect of Kindergarten Union preschool attendance on behavioural risk factors for cardiovascular disease in adulthood



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**ETHICS APPROVAL: THE UNIVERSITY OF SOUTH AUSTRALIA HUMAN
RESEARCH ETHICS COMMITTEE**

Early childhood development interventions



- Enhance development: physical, social, behavioural or cognitive domains, school readiness
- Range of programs, intervention intensity, quality and duration
- ECDIs cover two main periods in development
 - antenatal to 1-2 years old – parenting skills, attachment, HV
 - 2-3 until 5 years old - centre based educational programs, parenting programs, health and social services

Possible pathways between ECDIs & health



- Enhancing adult SEP
 - Strong association between a low adult SEP and CVD and its risk factors
 - Social gradient in CVD begins early in life
 - Potential for interventions in childhood having positive effects into adulthood
- Enhanced cognitive and non-cognitive skills
- Parenting programs
- Health service provision

Galobardes B, et al. *Epidemiologic Reviews* , 2004.

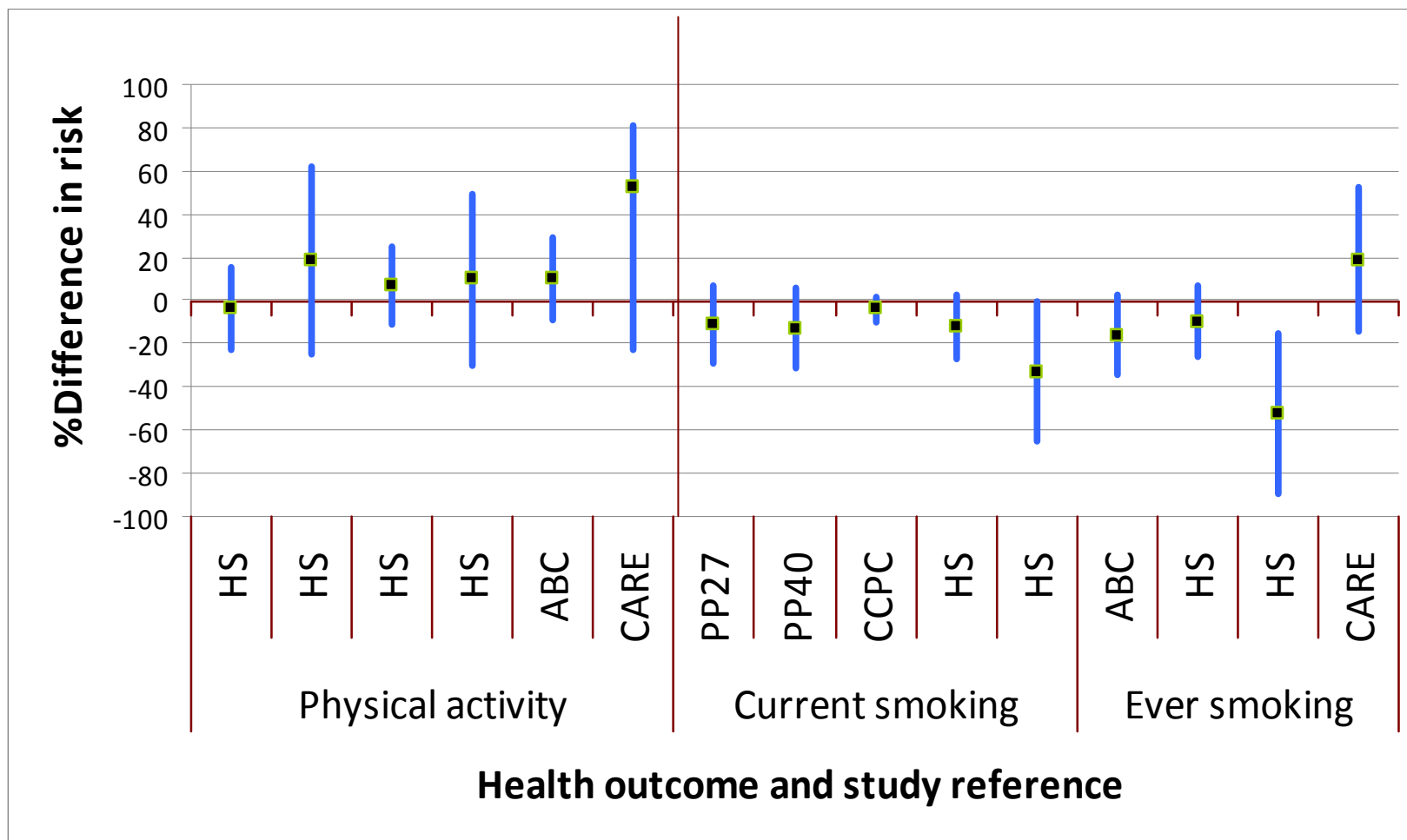
Blane D, et al . *British Medical Journal* 1996.

Effect of preschool on health behaviours



Study	Design	Sample size	
		Intervention	Control
Perry Preschool Study	RCT x2	54	58
Abecedarian Study	RCT	53	51
Project CARE	RCT	14	21
Chicago Child Parent Centres	Quasi Experimental Cohort	750	392
Head Start	Cohort	325	1542

Effect of preschool on health behaviours



Literature - gaps



- Effects on key smoking stages across the life course
 - Smoking uptake, quitting, age at quitting
- Study limitations
 - Small sample sizes
 - All interventions in USA
 - Latest age of follow up 40 years old
 - Dichotomous health outcome measures

SA Kindergarten Union 1906-1985



Lillian de Lissa

- Emphasis on enhancing development of children living in poverty
- Centre based services to children and their families (education, parenting , health, social services)
- Focus on quality

North West Adelaide Health Study



- Longitudinal representative cohort study of adults > 17 years
- 4060 participants recruited 1999 - 2003
- Questionnaire, CATI and clinic attendance in stage 1 (1999-2003) and stage 2 (2004), CATI telephone follow up (2007, n=2996)
- Study population: lived in SA as children, born during the years 1937-1969 (aged 34-67 years, n=1395)

Results: Effects of preschool on the life course of smoking



Timeline of smoking



Ever smoker
PR 0.87 (0.77-0.98)
ARD -7.7%

Current smoker
PR 0.77 (0.59-1.00)
ARD -4.3%

Did not quit smoking

Quit smoking
PR 1.05 (0.92-1.20)
ARD 3.2%

Never smoker

Not a current smoker

Age at starting
 β -0.29 (-1.05-0.46)
ARD 0.3 y

Age at quitting
 β 1.43 (-0.87-3.73)
ARD 1.4 y

Adjusting for: age, gender, birth cohort, parental occupation, 6m+ parental unemployment, sole parent, education, income, parental smoking

Results: effects of preschool on behavioural risk factors



	Effect estimate	95% CI
Low physical activity	1.24	0.89-1.74
Moderate physical activity	1.26	0.87-1.81
High physical activity	1.99	1.19-3.35
≥2 serves fruit a day	0.85	0.73-0.99
≥5 serves veg a day	1.41	0.90-2.19
Alcohol moderate risk	0.87	0.60-1.27
Alcohol high risk	1.01	0.58-1.77
Non-drinker	1.25	0.80-1.93

Adjusting for: age, gender, parental occupation, 6m+ parental unemployment, sole parent, education, income

Discussion



- Findings extend the evidence from studies
 - Large sample size, older cohort, outside of USA
- Greatest absolute reduction in ever smoking, but also current smoking, limited on quitting
 - Likely determinants of uptake are different from quitting smoking
- Indication of benefit across multiple behavioural risk factors
 - Consistent with improved social outcomes and results from previous studies

Limitations



- Potential for residual confounding by unmeasured and/or poorly measured background characteristics
 - Potential for selection bias
- Measurement error
 - Adult recall of preschool attendance
 - Self report risk factors – likely smoking measured with less error
- Wide confidence intervals

Conclusions



- High quality preschool programs have the potential to protect against tobacco smoking uptake and promote healthy behaviours
- Warrants further exploration in other cohort studies/populations
- Provides evidence for interventions outside of the health system having the potential to address social factors for lifestyle risk factors at a population level.

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