

Under the skin

Early-life stress exposure and the co-occurrence of mental and physical health problems

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PREFACE

“In the depth of winter, I found there was, within me, an invincible summer.” Albert Camus
– Summer (1954)

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Note

This is a work in progress. Stay tuned :)

Acknowledgements

TODO

INTRODUCTION

Dear reader,

oh my good why does this not update

This an that (Fraser et al., 2013; R Core Team, 2021)

See Chapter [1](#) for additional discussion.

References

Part I

PART 1: The role of ELS in the development of mental and physical health

1 ELS and adolescent psycho-physical health

Adapted from:

Differential effects of pre- and postnatal early-life stress on internalizing, adiposity and their comorbidity

Defina, S., Woofenden, T., Baltramonaityte, V., Pariante, C. M., Lekadir, K., Jaddoe, V. W., Serdarevic, F., Tiemeier, H., Walton, E., Felix, J. F., & Cecil, C. A. M., *on behalf of the EarlyCause Consortium*. (2023). JAACAP*. [DOI](#)

Abstract

Objective: Depression and obesity are two highly prevalent and often comorbid conditions. Exposure to early-life stress (ELS) has been associated with both depression and obesity in adulthood, as well as their preclinical manifestations during development. However, it remains unclear whether: *(i)* associations differ depending on the timing of stress exposure (prenatal vs postnatal) and *(ii)* ELS is a shared risk factor underlying the comorbidity between the two conditions.

Method: Leveraging data from two large population-based birth cohorts (ALSPAC: n=8428 (52% male participants); Generation R: n=4268 (48% male participants)), we constructed comprehensive cumulative measures of prenatal (in utero) and postnatal (from birth to 10 years) ELS. At age 13.5 years we assessed: a) internalizing symptoms (using maternal reports); b) fat mass percentage (using dual-energy X-ray absorptiometry); c) their comorbidity, defined as the co-occurrence of high internalizing and high adiposity.

Results: Both prenatal (*total effect* [95%CI] = 0.20 [0.16; 0.22]) and postnatal stress (β [95%CI] = 0.22 [0.17; 0.25]) were associated with higher internalizing symptoms, with evidence of a more prominent role of postnatal stress. A weaker association (primarily driven by prenatal stress) was observed between stress and adiposity (prenatal: 0.07 [0.05; 0.09]; postnatal: 0.04 [0.01; 0.07]). Both pre- (OR [95%CI] = 1.70 [1.47; 1.97]) and postnatal stress (1.87 [1.61; 2.17]) were associated with an increased risk of developing comorbidity.

Conclusion: We found evidence of *(i)* timing and *(ii)* shared causal effects of ELS on psycho-cardiometabolic health in adolescence, but future research is warranted to clarify how these associations may unfold over time.

1.1 Introduction

In summary, this book has no content whatsoever (Elsenburg et al., 2017; Wiklund et al., 2008). But I shall write it anyway cause. Cause I kind of do have no choice so, checking justification works

1.2 Methods

1.3 Results

1.4 Discussion

References

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References

Sample descriptives Generation R (GenR) and ALSPAC cohorts

	GenR (n = 4268)	ALSPAC (n = 8428)
Prenatal stress, median (range)		
Total score	0.42 (0–2.60)	0.48 (0–2.34)
Life events	0.13 (0–0.67)	0.07 (0–0.57)
Contextual risk	0.25 (0–1.00)	0.25 (0–0.88)
Parental risk	0.00 (0–0.71)	0.10 (0–0.83)
Interpersonal risk	0.06 (0–0.95)	0.00 (0–0.84)
Postnatal stress, median (range)		
Total score	0.64 (0–3.59)	2.69 (0.17–16.43)
Life events	0.23 (0–0.82)	1.07 (0–3.50)
Contextual risk	0.20 (0–1.00)	0.50 (0–2.90)
Parental risk	0.00 (0–0.79)	0.57 (0–3.62)
Interpersonal risk	0.00 (0–0.79)	0.29 (0–5.49)
Direct victimization	0.13 (0–0.86)	0.00 (0–3.10)
Internalizing score, median (range)		
	4.00 (0–41)	1.00 (0–10)
Fat mass percentage, median (range)		
	24.7 (8.5–54.6)	23.9 (4.9–56.3)
Outcome groups, n (%)		
Healthy	2791 (65)	5916 (70)
High internalizing	623 (15)	795 (9)
High adiposity	631 (15)	1476 (18)
Comorbid	223 (5)	241 (3)
Sex, n (%)		
Male participants	2087 (48)	4370 (52)
Female participants	2181 (52)	4058 (48)
Ethnic background, n (%)		
Africa and Middle East ^a	115 (2.7)	
Asia and Oceania	100 (2.3)	
Cape Verdean	100 (2.3)	
Dutch	2673 (62.6)	
Dutch Antillean	118 (2.8)	
Europe a	334 (7.8)	
Latin America ^a	1072 (1.7)	
Moroccan	176 (4.1)	
North America ^a	25 (0.6)	
Surinamese	296 (6.9)	
Turkish	247 (5.8)	
Age of the child, median (range), years		
	13.5 (12.6–16.6)	13.5 (12.8–15.0)

2 Lifestyle factors, ELS and adolescent psycho-physical health

Adapted from:

The role of lifestyle factors in the association between early-life stress and adolescent psycho-physical health: Moderation analysis in two European birth cohorts

Defina, S., Woofenden, T., Baltramonaityte, V., Tiemeier, H., Fairchild, G., Felix, J. F., Cecil, C.A.M., & Walton, E. (2024). *Preventive Medicine*. DOI

Abstract

2.1 Introduction

In summary, this book has no content whatsoever (Boyd et al., 2012; Fraser et al., 2013). But I shall write it anyway cause. Cause I kind of do have no choice so, checking justification works

2.2 Methods

2.3 Discussion

References

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Boyd, A., Golding, J., Macleod, J., Lawlor, D. A., Fraser, A., Henderson, J., Molloy, L., Ness, A., Ring, S., & Davey Smith, G. (2012). Cohort profile: The 'children of the 90s'—the index offspring of the avon longitudinal study of parents and children [Journal Article]. *International Journal of Epidemiology*, 42(1), 111–127. <https://doi.org/10.1093/ije/dys064>

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3 ELS and intracortical myelination

Adapted from:

Early-life stress exposure and intracortical myelination in childhood: a population-based neuroimaging study

Defina, S., Manzoni, D., Tiemeier, H., Brouwer, R.M., Cecil, C.A.M., & Muetzel R.L. (*in preparation*)

Abstract

3.1 Introduction

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3.2 Methods

3.3 Discussion

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Boyd, A., Golding, J., Macleod, J., Lawlor, D. A., Fraser, A., Henderson, J., Molloy, L., Ness, A., Ring, S., & Davey Smith, G. (2012). Cohort profile: The 'children of the 90s'—the index offspring of the avon longitudinal study of parents and children [Journal Article]. *International Journal of Epidemiology*, 42(1), 111–127. <https://doi.org/10.1093/ije/dys064>

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4 ELS and cardiac morphology

Adapted from:

Early-life stress exposure and heart morphology in childhood: a prospective population-based study

Defina, S., Kamphuis, A., Gaillard, R., & Felix, J. F. (*in preparation*)

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4.1 Introduction

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4.2 Methods

4.3 Discussion

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Part II

PART 2: Reciprocal relationships between mental and physical health problems

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5 Longitudinal psycho-physical co-development

Adapted from:

Longitudinal co-development of depressive symptoms and cardio-metabolic risk factors from childhood to young adulthood

Defina, S., Cecil, C.A.M., Felix, J.F., Walton, E., & Tiemeier, H. (*under revision*)

Abstact

5.1 Introduction

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5.2 Methods

5.3 Discussion

References

DISCUSSION

See Chapter 1 for whatever whatever.

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