

E-Risk Study Concept Paper template

Provisional Paper Title: Protective factors for early-adult psychopathology among poly-victimized children
Proposing Author: Flora Blangis
Author's Email: flora.blangis @ inserm. fr
Academic supervisor: Click or tap here to enter text. (if the proposing author is a student)
E-Risk Sponsor: Helen Fisher (if the proposing author is not an E-Risk co-investigator)
Today's Date: 11/21/2023
Please indicate if you will require an E-Risk independent reproducibility check: <input checked="" type="checkbox"/>

Please describe your proposal in 2-3 pages with sufficient detail for helpful review.

Background & objective of the study:

Childhood victimization (including physical abuse, sexual abuse, emotional abuse, neglect, exposure to domestic violence, and bullying by peers) has lifelong adverse effects, with an elevated risk of early-adult psychopathology, especially when multiple forms of victimization (or poly-victimization) are experienced.^{1,2} The co-occurrence of early-adult psychopathologies is extensive, as nearly one-third of individuals with a single mental disorder (comprising internalizing, externalizing, and thought disorders) also experience at least one additional comorbid mental disorder, either concurrently or over the course of their lifespan.³⁻⁵ Furthermore, since victimization exposure has been associated with nonspecific effects on multiple mental disorders, its relationship with a general factor of psychopathology, also called “p”, is of interest.^{6,7}

Although childhood victimization significantly increases the risk for early-adult psychopathology, not all victimized children develop mental disorders in adulthood. Identifying protective factors for early-adult psychopathology during childhood may help in providing early targeted prevention interventions designed to reduce development of mental health issues following childhood victimization. Protective factors for psychopathology are likely to be identified at various system levels and dynamically interact with each other, which is why the most effective interventions often focus on targeting protective factors across these system levels.^{8,9} At the individual level in childhood, these factors may include cognitive abilities (e.g. relatively high IQ, strong executive functioning), self-regulation (e.g. internal locus of control, an easy-going child temperament, cognitive flexibility, ego-control, ego-resiliency, and self-esteem), adaptive coping skills, and prosocial behaviour.¹⁰⁻¹² Family-level characteristics that have been shown to be protective encompass warmth from the mother towards the child, parental monitoring, family cohesion, living

in a nurturing home environment, and the quality of siblings' relationships with one another.^{10, 11} Additionally, these factors relate to community-level characteristics, such as social cohesion within the surrounding neighbourhood.¹⁰ Lastly, access to socially supportive relationships across these levels have also been found exert a protective influence on victimised children.¹² However, our understanding of factors associated with lower levels of overall early-adult psychopathology is limited, primarily because previous studies have often focused on specific mental disorders.¹⁰ This narrow focus can reduce the ability to identify associations resulting from unaddressed similarities between interrelated disorders. It is also based on studies emphasizing psychopathologies that are present in childhood or early adolescence, whose results may not generalizable to psychopathology in early adulthood.¹³ Moreover, some research has focused on specific types of childhood victimization that can either strengthen or weaken associations.¹⁴ Others have investigated child poly-victimization through retrospective self-reports, often capturing different groups of victimized children compared to those identified with prospective measures.¹⁵

To address these knowledge gaps, the present study will utilize prospectively collected data from the Environmental Risk (E-Risk) Longitudinal Twin Study, a large, nationally representative cohort of same-sex twins born in the UK. Potential protective factors have been selected based on the existing literature, their ability to reflect the four system levels, as well as their availability within the E-Risk cohort, and their relevance for developing and targeting effective preventive interventions. Therefore, our aim is to investigate whether specific individual factors (IQ, executive functioning, approach temperament), family-related factors (maternal warmth, sibling warmth, parental monitoring, the overall atmosphere at home), community-related factors (neighbourhood cohesion), and cross-level factors (the presence of a supportive adult) are associated with lower levels of general psychopathology at age 18 among poly-victimized children (those exposed to 2 or more different types of victimization between birth and age 12), and whether these are specific to poly-victimized children or also associated with less mental health issues young adults more broadly.

Significance of the study (for theory, research methods or clinical practice):

This research aims to enhance our understanding of protective factors against early-adult psychopathology among poly-victimized children. By identifying these factors, we can better inform the content and targeting of preventive interventions, tailoring them to address the specific needs of this vulnerable population. For example, in cases where executive functioning and temperament are identified as protective factors, cognitive-behavioural therapy could be employed to assist poly-victimized children and their families in improving problem-solving and emotional regulation skills, thereby potentially providing a buffer against the development of later psychopathology.¹⁶

Data analysis methods:

We will conduct multiple linear regression analyses within Stata and account for the non-independence of our twin observations in all analyses using the Huber–White variance estimator.¹⁷ First, we will test associations between childhood poly-victimization and general psychopathology at age 18 in the whole sample to confirm that exposure to multiple forms of victimization by age 12 is associated with higher scores on general psychopathology. Second, we will investigate the associations between each individual, family, community, and cross-level putative protective factor and levels of general psychopathology at age 18 within the sub-sample of poly-victimized children. Any factors that are found to be associated with lower levels of general psychopathology within this subsample will be carried forward to the final main analysis. Third, in the whole sample we will explore interactions between childhood poly-victimization and putative protective factors identified in step 2 and their associations with general psychopathology at age 18. This will enable us to investigate whether these factors are only protective against general psychopathology among those who have been poly-victimized (evidence of an interaction is found) or whether they might also exert a promotive effect on mental health in the wider population (evidence of an interaction is not found; though this might also be due to lack of statistical power). All these analyses will be subsequently adjusted for biological sex, family socioeconomic status, and family psychiatric history to take into account these potentially confounding factors.

Additionally, we will conduct sensitivity analyses by repeating the three steps: (i) separately for each of the three domains of early-adult psychopathology (internalizing, externalizing, and thought disorder dimensions); (ii) for each individual type of childhood victimization (physical domestic violence, bullying by peers, physical maltreatment, sexual abuse, emotional abuse, and neglect, and physical neglect), where numbers permit; and (iii) using retrospective assessments of childhood maltreatment obtained at age 18 to define which children have experienced poly-victimization.

Variables needed and at which ages:

Age 5

FAMILYID	Unique family identifier
ATWINID	Twin A ID (ex chkdg)
BTWINID	Twin B ID (ex chkdg)
RORDERP5	Random Twin Order
RISKS	Sample Groups
COHORT	Cohort
SAMPSEX	Sex of Twins: In sample
ZYGOSITY	Zygoty
SESWQ35	Social Class Composite
APPE5	Approach - Elder Twin (intv rating)
IQE5	Pro-rated IQ score - Elder
EXFUNCE5	Executive function - mean of Mazes, DayNight and SWM - Elder
WARME5	Warmth towards elder twin

Age 7

SIBWRMM7 Sibling Warmth - Derived by Sara Jaffee
ATHOME7 Atmosphere at home - Phase 7

Age 10

WARME10 Warmth towards elder twin
SIBWRM10 Sibling warmth (same as Bowes et al 2010)
ATHOME10 Atmosphere at home - Phase 10
MONEM10 Parental Monitoring - Elder Twin

Age 12

eanseve12 Severity of Emotional abuse/neglect of Elder twin, thru age 12, 2014
pabsevtye12 Physical abuse by 12, severity, Elder
pnseveritye12 Physical neglect by 12, severity, Elder
sasevtye12 Sexual abuse by 12, severity, Elder
ExpV_DV510 Exposure to domestic violence, 5 to 10, 012 coding (from HonaLee)
bullseve12 Bullying victim to Age 12 – Elder
polyve512c Extent of Polyvictim (Truncated @3), 5-12, E-Twin
adultec12 Adult Involvement (social support) – Elder
MONEM12 Parental Monitoring (full scale) - P12 - Elder
s2cohe SCOPIC 2 neighbourhood social cohesion
FHANYPM12 Proportion of family members with valid data with any psychiatric disorder

Age 18

ph_e P-factor, hierarchical, age 18
intcf_e Internalizing, 3-factor, age 18
extcf_e Externalizing, 3-factor, age 18
thdcf_e Thought disorder, 3-factor, age 18
CTQPNCCE18 Physical Neglect CTQ +/- P18 - Elder
CTQPACCE18 Physical Abuse CTQ +/- P18 - Elder
CTQENCCE18 Emotional Neglect CTQ +/- P18 - Elder
CTQEACCE18 Emotional Abuse CTQ +/- P18 - Elder
CTQSACCE18 Sexual Abuse CTQ +/- P18 - Elder

References cited:

1. Kessler RC, McLaughlin KA, Green JG, *et al.* Childhood adversities and adult psychopathology in the WHO World Mental Health Surveys. *Br J Psychiatry* 2010; **197**: 378-85.
2. Murphy S, McElroy E, Elklit A, *et al.* Child maltreatment and psychiatric outcomes in early adulthood. *Child Abuse Rev* 2020; **29**: 365-78.
3. Kessler RC, Chiu WT, Demler O, *et al.* Prevalence, severity, and comorbidity of 12-month DSM-IV disorders in the National Comorbidity Survey Replication. *Arch Gen Psychiatry* 2005; **62**: 617-27.
4. Baumeister H, Härter M. Prevalence of mental disorders based on general population surveys. *Soc Psychiatry Psychiatr Epidemiol* 2007; **42**: 537-46.
5. Gustavson K, Knudsen AK, Nesvåg R, *et al.* Prevalence and stability of mental disorders among young adults: findings from a longitudinal study. *BMC Psychiatry* 2018; **18**: 65.
6. Caspi A, Houts RM, Belsky DW, *et al.* The p factor: one general psychopathology factor in the structure of psychiatric disorders? *Clin Psychol Sci* 2014; **2**: 119-37.
7. Schaefer JD, Moffitt TE, Arseneault L, *et al.* Adolescent victimization and early-adult psychopathology: approaching causal inference using a longitudinal twin study to rule out noncausal explanations. *Clin Psychol Sci* 2018; **6**: 352-71.
8. Corcoran J, Nichols-Casebolt A. Risk and resilience ecological framework for assessment and goal formulation. *Child Adolesc Soc Work J* 2004; **21**: 211-35.
9. Durlak JA. Common risk and protective factors in successful prevention programs. *Am J Orthopsychiatry* 1998; **68**: 512.

10. Yule K, Houston J, Grych J. Resilience in children exposed to violence: A meta-analysis of protective factors across ecological contexts. *Clin Child Fam Psychol Rev* 2019; **22**: 406-31.
11. Collishaw S, Pickles A, Messer J, *et al*. Resilience to adult psychopathology following childhood maltreatment: evidence from a community sample. *Child Abuse Negl* 2007; **31**: 211-29.
12. Jaffee SR. Child maltreatment and risk for psychopathology in childhood and adulthood. *Annu Rev Clin Psychol* 2017; **13**: 525-51.
13. Crush E, Arseneault L, Jaffee SR, *et al*. Protective factors for psychotic symptoms among poly-victimized children. *Schizophr Bull* 2018; **44**: 691-700.
14. Herrenkohl TI, Tajima EA, Whitney SD, *et al*. Protection against antisocial behavior in children exposed to physically abusive discipline. *J Adolesc Health* 2005; **36**: 457-65.
15. Baldwin JR, Reuben A, Newbury JB, *et al*. Agreement between prospective and retrospective measures of childhood maltreatment: a systematic review and meta-analysis. *JAMA Psychiatry* 2019; **76**: 584-93.
16. McLaughlin KA, Lambert HK. Child trauma exposure and psychopathology: mechanisms of risk and resilience. *Curr Opin Psychol* 2017; **14**: 29-34.
17. Rogers W. Regression standard errors in clustered samples. *Stata Tech Bull* 1993; **13**: 19.

DATA SECURITY AGREEMENT

Provisional Paper Title: Protective factors for early-adult psychopathology among poly-victimized children
Proposing Author: Flora Blangis
Today's Date: 11/21/2023

<input checked="" type="checkbox"/>	I am current on Human Subjects Training (CITI (www.citiprogram.org) or equivalent)
<input checked="" type="checkbox"/>	My project is covered by the Duke or King's ethics committee OR I have /will obtain ethical approval from my home institution.
<input checked="" type="checkbox"/>	I will treat all data as "restricted" and store in a secure fashion. My computer or laptop is: a) encrypted (recommended programs are FileVault2 for Macs, and Bitlocker for Windows machines) b) password-protected c) configured to lock-out after 15 minutes of inactivity AND d) has an antivirus client installed as well as being patched regularly.
<input checked="" type="checkbox"/>	I will not "sync" the data to a mobile device.
<input checked="" type="checkbox"/>	In the event that my laptop with data on it is lost, stolen or hacked, I will immediately contact Prof Helen Fisher (helen.2.fisher@kcl.ac.uk).
<input checked="" type="checkbox"/>	I will not share the data with anyone, including my students or other collaborators not specifically listed on this concept paper.
<input checked="" type="checkbox"/>	I will not post data online or submit the data file to a journal for them to post. <i>Some journals are now requesting the data file as part of the manuscript submission process. Study participants have not given informed consent for unrestricted open access, so we have a managed-access process. Speak to Prof Helen Fisher (helen.2.fisher@kcl.ac.uk) for strategies for achieving compliance with data-sharing policies of journals.</i>
<input checked="" type="checkbox"/>	I will delete all data files from my computer after the project is complete. Collaborators and trainees may not take a data file away from the office. This data remains the property of the Study and cannot be used for further analyses without an approved concept paper for new analyses.
<input checked="" type="checkbox"/>	I have read the Data Use Guidelines and agree to follow the instructions.

Signature: Flora Blangis