E-Risk Study Concept Paper Form

Response was completed on 28-07-2025 15:14.

Record ID	52

1. Collaborating researchers

Please note:

Once approved, a formal data use agreement will be required between King's College London and the university or research organisation that employs any collaborator having access to the data if they are not a member of staff, a student or affiliate of King's College London. This needs to be signed by both universities/organisations before data access can be granted.

For projects carried out by a student (e.g., MSc/MA, MPhil/PhD, clinical doctorate), the lead applicant should be the student's supervisor at the same university, and the student should be named as the student collaborator requiring access to the data.

If you have additional collaborators, please name them below and indicate whether they need to have access to the data. It would be common, for instance, for other researchers to see summary results of analyses and act as co-authors on your paper without having access to the data. You will not be permitted to share the dataset except with those indicated in the table as requiring access.

Applicable?	**Category**	**Name**	**Email address**	**University/organisation**	**Needs access to data for analysis?**
	Applicant **(lead researcher)**	Flora Blangis	flora.blangis@inserm.fr	INSERM, France	(•) Yes ( ) No
( ) Applicable ( ) Not applicable	**Student collaborator** ***(if data is for their dissertation/thesis)***	To be recruited	TBC	INSERM, France	(•) Yes ( ) No
( ) Applicable ( ) Not applicable	**E-Risk Sponsor** ***(if applicant is not an E-Risk investigator)***	Helen Fisher	helen.2.fisher@kcl.ac.uk	KCL	( ) Yes (•) No

Are there additional collaborators to add?	( ) Yes (•) No

Applicants: If you would like to continue your application later, please press the "Save and return later" button below. Please copy or write down the Return code provided.

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2. The project proposal

Note: *Please provide sufficient detail to enable the committee to review your proposal. Please be as specific as possible about the project aims and analysis methods as once approved this concept paper will be posted publicly and thus will act as a form of pre-registration of your project. Expand boxes as required.*

Title of project	Protective factors for early-adult psychopathology among poly-victimised adolescents
Background and rationale for project ***(approx. 300 - 1000 words)***	Individuals who experience victimisation during adolescence (including physical maltreatment, crime victimisation, sexual victimisation, peer/sibling bullying, family violence, neglect, and cyber-victimisation) have repeatedly been shown to be at high risk for developing a wide range of mental health issues, especially when multiple forms of victimisation (or poly-victimisation) are experienced.[1,2] Among individuals with a single mental disorder (comprising internalising, externalising, and thought disorders), nearly half experience two or more mental disorders concurrently in early adulthood, rising to about 85% by midlife.[3,4] It is therefore essential to investigate the impact of victimisation in adolescence on general psychopathology.[2, 5] However, not all victimised adolescents develop mental health difficulties, and it is important to understand what protects them in order to inform preventive interventions. Protective factors are likely to be identified at various system levels (individual-, family-, and community-level).[6-8] Previous research suggests that having higher cognitive functioning, growing up in a happier and more stimulating family environment, living in a cohesive community, engaging in physical activity, and the presence of a supportive adult can protect vulnerable adolescents from developing psychotic symptoms.[9,10] Notably, the effects of social support on psychotic symptoms have been found to differ by gender.[11] Yet, it remains unclear whether these same factors, or others, are also protective against other mental health issues and more broadly against general psychopathology.[5] To address these knowledge gaps, the present study will use 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 to explore whether individual (higher IQ, positive coping strategies, higher levels of physical activity, high conscientiousness, high extroversion), family (positive home atmosphere, high maternal monitoring), community (social cohesion within the neighbourhood), and family and community level (greater perceived social support from family, friends or significant others) factors are associated with a reduced likelihood of developing general psychopathology in early adulthood among poly-victimised adolescents. Potential protective factors have been selected based on the existing literature, their ability to reflect the three system levels, as well as their availability within the E-Risk cohort, and their relevance for developing and targeting effective preventive interventions.
Project aims / objectives	This project aims to investigate whether individual-, family-, and/or community-level factors are associated with lower levels of general psychopathology at age 18, among adolescents exposed to poly-victimisation and whether these factors exert a promotive effect on mental health in the wider population.
Brief statement of your hypothesis	We hypothesise that: (i) exposure to poly-victimisation in adolescence will be associated with higher levels of general psychopathology in early adulthood compared to individuals who have not experienced victimisation; (ii) certain factors will protect against the development of general psychopathology in early adulthood among poly-victimised adolescents and some of these might also exert a promotive effect on mental health in the wider population. We further hypothesise that the protective factors identified in the main analyses will also

	be protective across the three domains of early-adulthood psychopathology (internalising, externalising and thought disorder symptom dimensions) and for each specific type of victimisation in adolescence (physical maltreatment, crime victimisation, sexual victimisation, peer/sibling bullying, family violence, neglect, and cyber-victimisation). Finally, we hypothesise that the protective effect of social support on general psychopathology may vary depending on whether the support comes from family, friends or significant others. We also hypothesise that there may be gender differences in protective effects of certain protective factors.
Data analysis methods to be used ***(approx. 100 - 500 words)***	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.[12] First, we will test the associations between poly-victimisation during adolescence and general psychopathology at age 18 in the whole sample, to confirm that exposure to multiple forms of victimisation from 12 to 18 years old is associated with higher scores on general psychopathology in early adulthood. Second, we will explore the associations between each individual-, family-, and community-level putative protective factor and levels of general psychopathology at age 18 within the sub-sample of poly-victimised adolescents. Any factors that are found to be significantly associated with lower levels of general psychopathology (at $p<0.05$) within this subsample will be carried forward to the final main analysis. Third, in the whole sample, we will explore interactions between poly-victimisation in adolescence 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-victimised (evidence of an interaction is found) or whether they might also exert a promotive effect on mental health in the wider population (no evidence of an interaction is found but there is a main association; though this might also be due to lack of statistical power). All these analyses will be subsequently adjusted for biological sex, family socioeconomic status, family psychiatric history, and prior mental health problems at age 12 (i.e., diagnosis of conduct disorder, diagnosis of ADHD, depression and anxiety symptoms, and the presence of psychotic symptoms) to take into account these potentially confounding factors. Additionally, we will conduct sensitivity analyses by repeating the analyses using the following steps: (i) separately for each of the three domains of early-adult psychopathology (internalising, externalising, and thought disorder dimensions); and (ii) for each specific type of victimisation in adolescence (physical maltreatment, crime victimisation, sexual victimisation, peer/sibling bullying, family violence, neglect, and cyber-victimisation), where numbers permit. If social support is found to be a significant protective factor for general psychopathology, we will test the potentially protective effect of three subscales: support from family, friends, or significant others, where numbers permit. Finally, for all factors identified as significantly protective in Step 2, we will test for gender differences in their association with general psychopathology by including a 'gender × protective factor' interaction term in the regression analysis, where numbers permit.
Significance for theory, research methods, or clinical practice	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, if social support is identified as a protective factor, interventions could focus on strengthening relationships between adolescents and their parents or peers. Such efforts may help buffer poly-victimised adolescents against the development of later psychopathology.
References cited	1 Kelleher I, Keeley H, Corcoran P, et al. Childhood trauma and psychosis in a prospective cohort study: cause, effect, and directionality. Am J Psychiatry 2013; 170: 734-41. 2 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. 3 Newman DL, Moffitt TE, Caspi A, et al. Psychiatric disorder in a birth cohort of young adults: prevalence, comorbidity, clinical significance, and new case incidence from ages 11

to 21. J Consult Clin Psychol 1996; 64: 552-62.
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10 Crush E, Arseneault L, Moffitt TE, et al. Protective factors for psychotic experiences amongst adolescents exposed to multiple forms of victimization. J Psychiatr Res 2018b; 104: 32-8.
11 Crush E, Arseneault L, Fisher HL. Girls get by with a little help from their friends: gender differences in protective effects of social support for psychotic phenomena amongst poly-victimised adolescents. Soc Psychiatry Psychiatr Epidemiol 2018; 53: 1413-7.
12 Rogers W. Regression standard errors in clustered samples. Stata Tech Bull 1993; 13: 19.

Are there any files you would like to upload to support your concept paper?	◉ Yes ○ No
If yes, how many files would you like to upload?	1
File 1 - Please upload your file	Table 1. Description of t...tudy.docx (0.02 MB)

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3. Expected project outcomes

Please note:

The stated end date must be within 24 months of the date when this form is submitted. This end date will form part of the formal data use agreement and on this date you should delete the dataset. Therefore, it must be a realistic date for completion of the project including all analysis, writing a manuscript, review of the manuscript by all collaborators, submission, revisions, and acceptance of a paper for publication.

If you require an extension to the end date of the project, then you should contact Prof Fisher (helen.2.fisher@kcl.ac.uk) to discuss this. If you have signed a formal data use agreement, you will need to complete a form to request a licence extension. In some cases, we may also ask you to complete a new concept paper form if there have been substantial changes to the project or a long period of time has elapsed (e.g., greater than a year since the end date of the original project).

If the objective of the project is not a journal publication, please suggest an end date within 12 months instead of 24 months, and state a measurable, concrete outcome. If the objective of the project is a student dissertation, then the

expected end date should be the deadline for submission of the dissertation; dissertation projects will only be accepted on agreement that they are strictly not for publication.

Date form submitted	25-07-2025 *DD-MM-YYYY*
End date for the project	25-01-2027 D-M-Y *DD-MM-YYYY*

Do you expect to publish your results in a journal?	○ Yes ◉ No

If no, please state the expected outcome if the project is successful *(e.g., dissertation, thesis chapter, report)*	**Master's dissertation**

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4. List of variables required

Please note:

When specifying variables, please be unambiguous. For each variable, specify the name of the measure, twin age, informant, and if you want specific subscales/derived categories (e.g., Depression from interview with twin at age 18; both number of symptoms and DSM-IV diagnosis). Alternatively, for maximum clarity, give actual variable names (e.g., MDESXE18 - MDE Symptom scale - P18 - Elder; DXMDEE18 - Major depressive episode, dsm4 - P18 - Elder).

By default, the dataset will usually include twin and family IDs, the "random" and "true" twin order variables, the cohort the twin is from (1994 or 1995), twin sex, ethnicity and zygosity variables, and family socioeconomic status at age 5. These routine background variables are listed in the table below. If you require further background variables, please specify them in your list.

Access to some parts of the dataset are restricted, namely identifiable data (e.g., postcodes, video recordings, individual-level genotypic and epigenetic data) which will not be shared outside King's College London, and linked administrative data which is only accessible via the UK Longitudinal Linkage Collaboration's Trusted Research Environment (this requires a separate formal data access agreement).

Background variables that will be included by default:

Variable name	Description
FAMILYID	**Unique family identifier**
ATWINID	**Twin A ID (ex chkdg)**
BTWINID	**Twin B ID (ex chkdg)**
RORDERP5	**Random Twin Order**
TORDER	**True Twin Order**
RISKS	**Sample Groups**
COHORT	**Cohort**

SAMPSEX	**Sex of Twins**
ZYGOSITY	**Zygosity**
SETHNIC	**Ethnicity of Twins**
SESWQ35	**Social Class Composite**

Please select the variables that will be requested	☐ Age 5 variables ☐ Age 7 variables ☐ Age 10 variables ☑ Age 12 variables ☑ Age 18 variables ☐ Age 26 variables ☐ Age 30* variables

Age 12 variables	**FSIQ12E_STD Standardised values of fsiq12e, m(100) sd(15) - Elder** **ATHOME12 Atmosphere at home - Phase 12 (derived for Crush et al 2018 J Psychiatr Res. paper)** **MONEM12 Parental Monitoring (full scale) - P12 - Elder** **s2cohe SCOPIC 2 neighbourhood social cohesion** **BFICE12 Conscientiousness Subscale (BFI) - Elder Twin** **BFIEE12 Extroversion Subscale (BFI) - Elder Twin** **FHANYPM12 Proportion of family members with valid data with any psychiatric disorder** **DXCD_EMT12 CD dx @12, 5+ crit, mum or teacher, Elder, 2015** **ADHDD3XE12 ADHD diagnosis - New Criteria [incl meds] - P12 - Elder** **CDIE12 Depression Scale - CDI - Elder** **MASCE12 Anxiety Scale - MASC - Elder** **PSYSYMP01E12 Psychosis Symptom Count - Verified Coding - 0, 1+ - Elder**

Age 18 variables	**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** **VCTZCONCE18 Conventional victimisation severity (3 cat) - P18 - Elder** **VCTZMALCE18 Maltreatment victimisation severity (3 cat) - P18 - Elder** **VCTZPERCE18 Peer victimisation severity (3 cat) - P18 - Elder** **VCTZSEXCE18 Sexual victimisation severity (3 cat) - P18 - Elder** **VCTZFAMCE18 Family victimisation severity (3 cat) - P18 - Elder**

	VCTZINTCE18 Internet victimisation severity (3 cat) - P18 - Elder **VCTZNEGCE18 Neglect victimisation severity (3 cat) - P18 - Elder** **SSUPPORTE18 Social Support scale - P18 - Elder** **SSFAME18 Social Support Family Subscale - P18 - Elder** **SSFRNE18 Social Support Friends Subscale - P18 - Elder** **SSOTHE18 Social Support Significant Other Subscale - P18 - Elder** **cop1e18 Talk with other people about it** **cop2e18 Talk with a therapist/counsellor** **cop4e18 Exercise** **cop13e18 Take steps right away to solve the problem** **PHYACTE18 Physical activity (overall) - P18 - Elder**

Are you requesting access to identifiable or linked data?	○ Yes ◉ No

Which format(s) do you require the data in?	☐ CSV ☐ Excel ☐ SPSS ☑ STATA ☐ Other

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5. Data security agreement and signature

Please click in each box to indicate that you will adhere to each of the points listed below.

◉ I adhere	**I am current on Human Subjects Training (CITI (www.citiprogram.org) or equivalent)**
◉ I adhere	**My project is covered by the King's ethics committee OR I have /will obtain ethical approval from my home institution.**
◉ I adhere	**I will treat all data as "restricted" and store in a secure fashion.** **My computer or laptop is:** **a) encrypted (recommended programmes are FileVault2 for Macs, and Bitlocker for Windows machines)**