# ENVIRONMENTAL-RISK (E-RISK) LONGITUDINAL TWIN STUDY
# CONCEPT PAPER FORM

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Provisional Paper Title: An individual participant data meta-analysis of the prevalence and risk of past year intimate partner violence perpetration among individuals with mental disorders.

Date: 18/11/19

Objective of the study and its significance:

Intimate partner violence (IPV) is estimated to affect a third of women worldwide (World Health Organisation, 2013). In the UK, IPV is defined by the Home Office as the use of controlling, coercive or threatening behaviours, or physical, psychological, or sexual abuse against a current/former intimate partner.

There appears to be an increased risk of perpetrating IPV in those with a mental disorder, as evidenced by results from a systematic review and meta-analysis conducted by Oram et al. (2014). There are, however, a number of other risk factors associated with IPV perpetration, such as unemployment (e.g. Stith, Smith, Penn, Ward & Tritt, 2004; Capaldi, Knoble, Shortt & Kim, 2012), alcohol and drug use (e.g. Abramsky et al. 2011; Smith, Homish, Leonard and Cornelius, 2012), childhood trauma, such as harsh parenting, (e.g. Fulu et al. 2017) and annual household income (e.g. Cunradi, Caetano and Schafer, 2002). Due to the aggregate nature of the data used in the Oram et al. (2014) meta-analysis, potential confounders of a relationship between mental disorders and IPV perpetration could not be investigated. In addition, mediation analyses that partition the total effect into a component that operates by changing an intermediate variable such as alcohol use, and a direct effect, were not carried out. It is of interest whether such effects vary between gender and/or mental disorder (moderated mediation). Therefore, we propose to undertake an individual participant data (IPD) meta-analysis, which utilizes the original data from each selected research study rather than extracting summary data from existing publications. This will allow an in-depth analysis of the putative association between mental disorders and IPV perpetration, accounting for other known risk factors. We are keen to include E-Risk data in this IPD meta-analysis.

Objectives of the meta-analysis:

1. To estimate the prevalence of past year IPV perpetration among individuals with mental disorders, disaggregated by diagnosis and gender.
2. To estimate the adjusted odds ratio of past year IPV perpetration, comparing individuals with mental disorders to those without, disaggregated by diagnosis and gender.
3. To conduct mediation analyses on potential mediators (e.g. alcohol use, drug use) on the pathway from mental disorder to IPV perpetration.

Primary research questions:

1. What is the prevalence of past year IPV perpetration (physical, psychological, sexual or controlling and coercive behaviours) among those with mental disorders, disaggregated by diagnosis and gender?

2. Is there an increased odds of past year IPV perpetration (physical, psychological and sexual) among those with mental disorders compared to individuals without mental disorders, disaggregated by diagnosis and gender?
3. Are alcohol use and drug use mediators of the relationship between mental disorder and past year IPV perpetration?

Statistical analyses:

Analyses will consider mental disorder as the exposure and past year IPV perpetration as the outcome. For this analysis mental disorder is treated as a binary variable (present/absent), as is IPV perpetration.

A two-stage procedure will be used to carry out IPD meta-analyses.

(1) In the first stage, relevant analysis models will be fitted to the IPD from each contributing dataset
(2) (including E-Risk) to generate the summary statistics of interest (prevalence estimates within exposure groups, total, direct and indirect effect estimates). We envisage using logistic regression to model the relationships between the intermediate or final outcome and the relevant explanatory variables (mental health, confounders, and mediator variable for the final outcome model). The same effect size measures (odds ratios) will be calculated for each contributing dataset.

Analyses will estimate unadjusted effects of having a mental disorder on past year IPV perpetration, as well as effect sizes that are adjusted for measured confounders. Since we expect effects to vary with sex and by mental disorder, total effect and mediation analyses will be conducted separately (i) by mental disorder, (ii) by gender.

(3)  In the second stage the study-level summary statistics that were estimated in the first stage will be combined using random-effects meta-analyses.

Mediation analysis of each study's dataset will be carried out using the Stata command <paramed>. The second pooling stage of the IPD meta-analyses will be carried out in Stata using the command <ipdmetan>.

Variables Needed at Which Ages (names and labels):

Study: E-Risk *mothers*

FamilyID

**Age 10:**

Exposures: Mental disorder
MDEPM10 - Depression (past year diagnosis)

Outcome: Past year IPV perpetration
- VIOMM10 - Mums physical violence perpetration last year (Sum of scales)
- VI2MM10 - Mums physical violence perpetration last year (count of codes 1 or 2)
- VIOGPM10 - Partner Perpetration of Violence (Last Year) – Grouped

- Potential confounders:
- MAGE10 - Mother's Age at P10 interview
- Ethnicity of mother (if available)
- SESWQ35 - Social class composite
- PARM10 - Current partnership status – mother (if available)
  *If above not available, then this one instead: RP31M10 - Has parent had partner in past 5 years*
- BP13M10 - Accommodation Type
- KidsinFamily10 - number of children in family, LHC siblings + 2

- Employment status – Tony do we have something derived for this from LHC at age 10 for the mother?
- HIEDGM57 - Highest Educational Qualification (grouped - mother) P5-P7 Combined – Tony: do we have this to age 10?
- APNCTQM12 - Physical neglect (PN) - Adjusted Item Coding
- AEACTQM12 - Emotional abuse (EA) - Adjusted Item Coding
- AENCTQM12 -  Emotional neglect (EN) - Adjusted Item Coding
- APACTQM12 - Physical abuse (PA) - Adjusted Item Coding
- ASACTQM12 -  Sexual abuse (SA) - Adjusted Item Coding
- ACTQM12 - Childhood Trauma (CTQ) - Adjusted Item Coding
- CTQPNCCM12 - Physical Neglect CTQ +/-
- CTQPACCM12  - Physical Abuse CTQ +/-
- CTQENCCM12 - Emotional Neglect CTQ +/-
- CTQEACCM12  - Emotional Abuse CTQ +/-
- CTQSACCM12  - Sexual Abuse CTQ +/-
- CTQCTOTM12  - CTQ combined - types of abuse or neglect at mod/severe level (0-5)

Intermediate variables (putative mediator) - Substance abuse:
- MH46M10 - Used drugs (not alcohol) for non-medical reasons
- ALCMM10 - Alcoholism Scale – Mother
- ALCDXMM10 - Mother Substance Problems - 4 or more symptoms

References cited:

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Capaldi, D. M., Knoble, N. B., Shortt, J. W., & Kim, H. K. (2012). A systematic review of risk factors for intimate partner violence. *Partner Abuse, 3* (2), 231-280.

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# Data Security Agreement

| Provisional Paper Title | An individual participant data meta-analysis of the prevalence and risk of past year intimate partner violence perpetration among individuals with mental disorders. |
|---|---|
| Proposing Author | Katherine Saunders |
| Today's Date | 28 / 10 / 19 |

*Please keep one copy for your records* (Please initial your agreement)

KS      I am familiar with the King's College London research ethics guidelines (https://www.kcl.ac.uk/innovation/research/support/ethics/about/index.aspx) and the MRC good research practice guidelines (https://www.mrc.ac.uk/research/policies-and-guidance-for-researchers/good-research-practice/).

KS      My project has ethical approval from my institution.

KS      I am familiar with the EU General Data Protection Regulation (https://mrc.ukri.org/documents/pdf/gdpr-guidance-note-3-consent-in-research-and-confidentiality/), and will use the data in a manner compliant with its requirements.

KS      My computer is (a) encrypted at the hard drive level, (b) password-protected, (c) configured to lock after 15 minutes of inactivity, AND (d) has an antivirus client which is updated regularly.

KS      I will treat all data as "restricted" and store in a secure fashion.

KS      I will not share the data with anyone, including students or other collaborators not specifically listed on this concept paper.

KS      I will not merge data from different files or sources, except where approval has been given by the PI.

KS      I will not post data online or submit the data file to a journal for them to post.
Some journals are now requesting the data file as part of the manuscript submission process. The E-Risk Study cannot be shared because the Study Members have not given informed consent for unrestricted open access. Speak to the study PI for strategies for dealing with data sharing requests from Journals.

KS      Before submitting my paper to a journal, I will submit my draft manuscript and scripts for data checking, and my draft manuscript for co-author mock review, allowing three weeks.

KS      I will submit analysis scripts and new variable documentation to project data manager after the manuscript gets accepted for publication.

KS      I will delete the data after the project is complete.

_____   **For projects using location data:** I will ensure geographical location information, including postcodes or geographical coordinates for the E-Risk study member's homes or schools, is <u>never</u> combined or stored with any other E-Risk data (family or twin-level data)

_____   **For projects using genomic data:** I will only use the SNP and/or 450K data in conjunction with the phenotypes that have been approved for use in this project at the concept paper stage.

**Signature:** ...........KSaunders...........................................