**SUPPLEMENTARY MATERIAL**

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**1. Supplementary Methods**

**a. Search Strategy**

The present analyses did not consider separation from parents, abandonment and parental loss given the heterogenous definitions used to describe such type of adversities across studies.

Titles and abstracts of articles were screened independently by three reviewers (LA and VR for psychological articles and LA and MA for biological articles, with 95% and 85% agreement; agreement was considered when equal quality assessment scores were). Discrepancies were resolved through discussion at a project group meeting.

Parallelly, a cross-reference search extracting title/abstract from identified reviews plus full-text check of potential additional eligible studies from these reviews was performed by two different authors (PM and GT).

**(EMBASE, Psyinfo and MEDLINE through Ovid provider, and Cochrane Libraries through Cochrane website)**

***Childhood adversity terms***

*108. sexual abuse.mp.*

*109. physical abuse.mp.*

*110. emotional abuse.mp.*

*114. psychological abuse.mp.*

*117. maltreat\*.mp.*

*118. bully\*.mp.*

*119. bullied.mp.*

*123. parental loss.mp.*

*124. (Separation adj5 parent).mp.*

*138. childhood trauma.mp.*

*139. early trauma.mp.*

*155. Neglect\*.mp.*

*156. (trauma\* adj5 experienc\*).mp.*

*160. adversit\*.mp.*

*161. (advers\* adj5 experienc\*).mp.*

*233. exp Child Abuse/*

*234. exp Physical Abuse/*

*235. exp Sexual Abuse/*

*236. exp Emotional Abuse/*

*237. exp Child Neglect/*

*238. exp Emotional Trauma/*

*239. exp BULLYING/*

*240. exp Parental Absence/*

*241. exp RAPE/*

*242. exp Domestic Violence/*

*243. exp Victimization/*

***Mediation terms***

*127. mediat\*.mp.*

*130. (psycholog\* adj3 mechanism\*).mp.*

*131. (biolog\* adj3 mechanism\*).mp.*

*143. path analysis.mp*

*157. network analysis.mp.*

*170. structural equation.mp.*

*171. path analysis.mp*

*246. exp MEDIATION/*

*247. exp Structural Equation Modeling/*

*248. exp Path Analysis/*

***Psychosis terms***

*87. psychosis.mp.*

*88. psychot\*.mp.*

*100. schizophr\*.mp.*

*101. schizotyp\*.mp.*

*102. hallucinat\*.mp.*

*103. parano\*.mp.*

*104. delusion\*.mp.*

*105. persecut\*.mp.*

*167. (disorganiz\* adj5 symptom\*).mp.*

*168. (disorganiz\* adj5 dimension\*).mp.*

*251. exp PSYCHOSIS/*

*252. exp SCHIZOPHRENIA/*

*253. exp CHILDHOOD SCHIZOPHRENIA/*

*254. exp SCHIZOTYPY/*

*255. exp HALLUCINATIONS/*

*256. exp PARANOIA/*

*257. exp DELUSIONS/*

*258. exp PERSECUTION/*

**b. Data extraction procedures**

*Definition of the different types of mediating effects*

Null mediation was considered as the situation in which the indirect or mediating effect is not statistically significant (p>0.05). “Partial mediation” is the situation in which the path between adversity and psychosis (also called the direct effect) is reduced but still statistically significant when the mediator is introduced. “Total mediation” describes the case were the path between adversity and psychosis (direct effect) is no longer significant after the introduction of the mediating variable. “Suggested mediation” was considered when the indirect (or mediating) effect were reported but not the direct effects, not allowing us to determine whether the mediation was total or partial. “Suggested mediation” was also considered in a subset of studies using a regression-based approach, in which an important reduction of the total effect occurred once the mediator was included in the model. Studies including this type of scenario were also considered but where rated and methodologically less robust (section “Assessment of outcome” from the Newcastle Ottawa Scale as described above) than the ones testing mediation with mediation analyses, path analyses, structural equation models (SEM)) and providing the direct and indirect effects. Data extraction was performed in duplicate (50% of papers by LA and GT and 50% by LA and PM).

*Estimation of the percentage of total effect mediated*

This measure is the proportion of the total effect that is accounted for by the pathway through the mediating variable. Despite reported by authors in most of the papers; when this information was not given, we estimated the percentage by dividing the indirect (or mediating effect) by the total effect (shown in coefficients) and multiplying it by 100 according to previous published studies (Alwin and Hauser, 1975). When results were reported in odd rations, and not in coefficients, these were transformed into log odds before calculating the percentage. Authors were contacted when provided data was not enough to extract as exposed. We managed to obtain this information for 83.1% of the analyses that found a significant indirect effect, details are provided in **Figure 2** footnote and the percentage of total effect mediated can also be found in detailed Tables S1a, S1b and S1c.

*Estimation of the proportion of analyses showing evidence of mediation*

In **Tabes 1, 2, 3** and **Table S2**, as well as in the text we provided the “percentage of analyses showing evidence of mediation”, across all categories of mediators. We considered that one analysis showed evidence of mediation when authors reported significant p-values (<0.05) in the indirect (or mediating) effects, or when using a regression-based approach, an important reduction of the total effect occurred once the mediator was included in the model. This allowed us to provide the percentage of analyses supporting mediation per category (as an example: for dissociation in general population there were 17 pathways tested across 6 different studies, 12 of them were supportive of mediation and 5 were not, thus 70% (12/17) of analyses were supportive of mediation through dissociation in the general population).

**c. Quality assessment procedures**

The quality assessment was carried out using the Newcastle–Ottawa Scale (see Quality Assessment Tool (Stang, 2010)) for cohort studies by two independent reviewers (LA and PM). Those papers over which there was disagreement were discussed at a project group meeting. The Newcastle–Ottawa is a ten-point scale allocating points based on: the selection of cohorts (e.g. representativeness of the sample; 0–4 points), the comparability of cohorts (e.g. whether the study controls for confounding factors; 0–2 points), the identification of the exposure (e.g. objectivity of exposure measurement) and the outcomes of study participants (e.g. independence of outcome measurement, adequacy of follow-up; 0–3 points). Scores were considered as follows: “poor” quality for 3 or less; “fair” between 4 and 7 and “good” for scores of 8 or above. The agreed quality grades of each study are presented in Table S1 and the specific criteria used for our systematic review are specified in the Newcastle Ottawa Scale displayed below.

**Newcastle Ottawa Scale Selection**

*Note: A study can be awarded a maximum of one star for each numbered item within the Selection and Exposure categories. A maximum of two stars can be given for Comparability.*

1. Representativeness of the exposed cohort
   1. truly representative of the average individuals with psychosis or attenuated psychotic symptoms in the community \*
   2. somewhat representative of the average individuals with psychosis or attenuated psychotic symptoms in the community \*
   3. selected group of users eg nurses, volunteers
   4. no description of the derivation of the cohort
2. Selection of the non exposed cohort
   1. drawn from the same community as the exposed cohort \*
   2. drawn from a different source
   3. no description of the derivation of the non-exposed cohort
3. Ascertainment of exposure
   1. secure record\*
   2. structured interview\*
   3. written self-report\* (star included here given the common use of self-reports in the field of adversity in psychosis)
   4. no description
4. Demonstration that outcome of interest was not present at start of study
   1. yes \* (here we considered a start when the mediator was not present at the time of the assessment to traumatic experiences)
   2. no Comparability
5. Comparability of cohorts on the basis of the design or analysis
   1. study controls for confounders \*
   2. study controls for any additional factor (we considered a start here if studies used a robust method of adjustment for multiple comparison such as bootstrapping)
6. Outcome
   1. Assessment of outcome
      1. independent blind assessment \*
      2. record linkage \*
      3. self-report
      4. no description
7. (in this section we considered none star if studies did not report the indirect and direct effects nor the percentage of total effect mediated. One start if they reported that information partially and two stars if they provided that information fully)
8. Was follow-up long enough for outcomes to occur
   1. yes (if follow-up longer than 6 months) \*
   2. no
9. Adequacy of follow up of cohorts
   1. complete follow up - all subjects accounted for \*
   2. subjects lost to follow up unlikely to introduce bias - small number lost - > 20 % \*
   3. follow up rate < 80%) and no description of those lost
   4. no statement

**2. Supplementary Tables**

**Table S1a.** Overview of clinical studies included in this review

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Authors**  **Country** | **Sample**  **Mean Age**  **% female** | **Design** | **Measures of childhood adversity** | **Mediator(s)** | **Analysis** | **Boostrap**  **(yes / no) / confounders (yes / no)** | **Psychosis** | **Main findings**  **Pathway**  **Total / partial mediation**  **Direct Effect (DE)**  **Indirect effect (IE)**  **% total effect mediated** | **Quality Score** |
| **Appiah-Kusi *et al.* (2017)**  **UK** | 30 UHR; 38 HC  23.9  56.7% | Cross sectional  Case control study | EA  CTQ | (1) Schematic beliefs (BCSS)  1.a - Negative Self-schemas (NSS) | Regression based approach | Yes  Yes (Cannabis use, depression, anxiety) | (1) UHR caseness  (2) Paranoia  (PSQ) | **EN 🡪 BCSS 🡪 UHR**  Partial mediation (DE = 0.261\*; IE = 0.045\*)  % = 14.7  **EN 🡪 BCSS 🡪 PSQ**  Partial mediation (DE = 1.353\*; IE = 0.988\*)  % = 42.2  Other adversities were not related to outcomes so were not included for mediation analyses | 6 |
| **Chatziioannidis *et al.* (2019)**  **Switzerland** | 63 SSP; 61 HC  44.4 SSP  30.16% SSP  39.33 HC  29.5% HC | Cross sectional  Case control study | Composite  CECA.Q | (1) Attachment (ECR-R)  1.a - Avoidance  1.b - Anxiety | Parallel Multiple mediation model | Yes  Yes (education) | (A) Caseness (SSP)  (MINI) | **CT 🡪 1.b 🡪 SSP**  Partial mediation (DE = 1.70\*; IE = 1.24\*)  % = 41.9  No significant mediation of attachment avoidance between CT and SSP | 6 |
| **Choi Ji *et al.* (2015)**  **Republic of Korea** | 126 psychosis  36.1  55.6% | Cross sectional | Composite abuse (CA)  Korean CTQ | (1) Posttraumatic stress symptoms (IESR) | SEM | No  No | (1) Psychotic symptoms (PS)  PSYCH subscale of the PSY-5 factor scale of MMPI-2 | **CA 🡪 IESR 🡪 PS**  Partial mediation (DE = 0.30\*; IE = 0.171\*)  % = 36.3 | 4 |
| **Evans *et al.* (2015)**  **UK** | 29 EP; 31 HC  18-38 EP  34.5% EP  NA HC  38.7% HC | Cross sectional  Case control study | Composite and subscales (SA, PA, EA, PN, EN)  CTQ | (1) The Self-Concept Clarity Scale (SCCS)  (2) Dissociation (DES-II) | Mediation analysis | Yes  No | (1) Caseness  (PANSS) | **EN 🡪 SCCS 🡪 1**  Total mediation (DE = 0.033; IE = 0.157\*)  % = 82.8  None of the other total effects were significant so no mediation was possible  The remaining pathways between EN and caseness through SCCS and DES were not significant | 5 |
| **Hardy *et al.* (2016)**  **UK** | 228 psychosis  38.2  27.6% | Cross sectional | Childhood sexual abuse (SA), childhood physical abuse (PA) Childhood emotional abuse (EA)  THQ | (1) PTSD symptoms  (SRS-PTSD)  1.a - Avoidace & Numbing  1.b - Hyperarousal  1.c - Intrusive trauma memory  (2) Cognitive bias / schemas  (BCSS)  2.a - Negative others beliefs | Mediation analysis | No  Yes (age, gender and ethnicity | (A) Positive symptoms  A.1 - Auditory hallucinations  A.2 - Persecutory hallucinations  A.3 - Ideas of reference | **SA 🡪 1.a 🡪 A.1**  Total mediation (DE = 2.052; IE = 1.475\*)  % = 48.74  **SA 🡪 1.b 🡪 A.1**  Total mediation (DE = 2.104; IE = 1.439\*)  % = 47.5  **EA 🡪 2.a 🡪 A.2**  Total mediation (DE = 1.889; IE = 1.359\*)  % = 52.9  Non-significant mediating effects of CSA with A1 through 2.a; CEA with A.3 through 2.a and CSA with A.1 through 1.c | 5 |
| **Isvoranu *et al.* (2017)**  **Netherlands** | 552 psychosis  30.76  25% | Cross sectional | SA, PA, EA, PN, EN  CTQ | (1) 18 items from general psychopathology (PANSS) | Network based analysis | No  Yes (all PANSS items) | (1) 6 items from positive dimension (PANSS) | Suggested mediation in pathways:  **1) EA 🡪 Anxiety 🡪 paranoia / suspiciousness**  **2) PA 🡪 impulse control 🡪 grandiosity / excitement / hostility**  **3) PN 🡪 motor retardation 🡪 Negative symptoms**  % = N/A | 4 |
| **McDonnell *et al.* (2018)**  **UK** | 64 UHR  22.5  40.6% | Cross  sectional | Bullying severity in childhood / adolescence (BS)  RBQ | (1) Interpersonal sensitivity (IS) (IPSM) | Path analysis | Yes  No | (1) Paranoid ideation (PI) (SSPS) | **BS (Childhood) 🡪 IS 🡪 PI**  Total mediation (DE = 0.131; IE = 0.129\*)  % = 49.6  Bullying in adolescence was not significantly associated with paranoid ideation | 5 |
| **Morgan *et al.* (2014)**  **UK** | 390 FEP; 391 HC  30.5  44.1% | Cross sectional  Case control study | Parental separation / death  MRC | (1) Self-Esteem (RSES) | Multiple mediation analyses | Yes  Yes (age, gender, ethnicity, study centre, parental history of psychosis and IQ) | (1) FEP caseness based on ICD-10 | Null mediation | 6 |
| **Peach *et al.* (2019)**  **Australia** | 66 FEP  20.18  54.5% | Cross sectional | Composite  CTQ | (1) Post traumatic intrusions (CAPS)  (2) Trauma related beliefs (PTCI) | Simple mediation analyses | Yes  No | (A) Hallucinations (PANSS)  (B) Delusions  (PANSS) | **CT 🡪 CAPS 🡪 A**  Total mediation (DE = 0.01; IE = 0.01\*)  % = 50  **CT 🡪 CAPS 🡪 B**  Total mediation (DE = 0.01; IE = 0.02\*)  % = 66.6  **CT 🡪 PTCI 🡪 A**  Total mediation (DE = 0.01; IE = 0.01\*)  % = 50  **CT 🡪 PTCI 🡪 B**  Total mediation (DE = 0.01; IE = 0.02\*)  % = 66.6 | 5 |
| **Perona‐Garcelán *et al.* (2012)**  **Spain** | 71 psychosis  39.1  31.5% | Cross sectional | Composite  TQ | (1) Dissociation (DES-II)  1.a - Dissociative  Amnesia (DAM)  1.b - Absorption and Imaginative Involvement  (ABI)  1.c – Depersonalization / Derealization (DP) | Simple and multiple mediation analysis | Yes  No | (1) Hallucinations (PANSS)  (2) Delusion  (PANSS) | **TQ 🡪 DES 🡪 hallucinations**  Total mediation (DE = 0.20; IE = 0.21\*)  % = 51.2  **TQ 🡪 DP 🡪 hallucinations**  Total mediation (DE = 0.20; IE = 0.19\*)  % = 46.3  No mediating effects on delusions or mediating effects of ABI, DAM on hallucinations | 5 |
| **Schalinski *et al.* (2019)**  **Germany** | 180 psychosis  28.6  31.7% | Cross sectional  Case control study | Composite (CT) and specific (abuse, neglect, neglect age 10)  MACE | (1) Dissociation (SDS) | Mediation Analysis | Yes  Yes (age, gender) | (1) Psychotic symptoms (PANSS) | **CT 🡪 SDS 🡪 positive symptoms**  Total mediation (DE = 0.20; IE = 0.07\*)  % = 25.9  No mediating effects with specific trauma subscales | 6 |
| **Steenkamp *et al.* (2019)**  **Netherlands** | 50 NAP  31.8  42.4% | Cross sectional | Composite abuse (CA)  CECA.Q | (1) Loneliness (ESM)  (2) Depressive symptoms (ESM)  (3) Anxious Symptoms (ESM) | SEM | No  No | (A) Positive symptoms  (ESM) | **CA 🡪 1 🡪 A**  Total mediation (DE = -0.01; IE = 0.08\*)  % = 11.9  No significant indirect effect of CT on  positive symptoms through depressive or anxious feelings | 4 |
| **Styla *et al.* (2019)**  **Poland** | 45 SCZ  45 HC  42.4 SCZ  48.9% SCZ  41.78 HC  46.7% HC | Cross sectional  Case control study | Composite  Childhood adversities (CA)  CEQ | (1) Time Perspective (TP) (ZTPI) | Mediation analyses | Yes  Yes (education) | Caseness (SCZ) based on  ICD-10 | **CA 🡪 TP 🡪 SCZ**  Total mediation (DE = 0.352; IE = 0.249\*)  % = 37 | 6 |
| **Sun *et al.* (2018)**  **Australia** | 66 FEP  20.18  54.5% | Cross sectional | Composite and Binary  CTQ | (1) Dissociation (SCID-D-R) | Simple mediation analyses | Yes  No | (1) Positive symptoms (PANSS)  1.a -Hallucinations  1.b -  Delusions | **CTQ 🡪 SCID-D-R 🡪 1.b**  Total mediation (DE = 0.01; IE = 0.02\*)  % = 66.6  Non-significant mediation of dissociation between Ct and hallucinations | 5 |
| **Thompson *et al.* (2016)**  **Australia** | 233 UHR  18.5 at baseline  48.8% | Prospective. Mean of 7.0 years (SD 3.2) follow-up | Sexual trauma (ST) score  CTQ | (1) Anxiety  (2) Depression  (3) Dissociation  (4) Mood swings  (5) Mania  (HAM-A, CAARMS) | Mediation analysis | No  No | (1) Transition to psychotic disorder  Based on CAARMS BPRS | Null mediation | 6 |
| **Van Dam *et al.* (2014)**  **USA** | 131 psychosis  31.2  16% | Cross sectional | Composite  CTQ | (1) Attachment (PAM)  1.a - Avoidant  1.b - Anxiety | Regressions analyses following Baron and Kenny criteria | No  Yes (age and gender) | (1) Positive symptoms  (SAPS) | Null mediation | 4 |
| **Varese *et al.* (2012)**  **UK** | 45 psychosis;  20 HC  44.6  46.7% | Cross sectional  Case control study | Composite (CATS) and specific (SA, PA, EA, N)  CATS | (1) Dissociation (DES) | Mediation analysis | Yes  No | (1) Hallucinations (LSHR-R) | **CATS 🡪 dissociation 🡪 hallucinations**  Partial mediation (DE = 0.15\*; IE = 0.11\*)  % = 42.3  **SA 🡪 dissociation 🡪 hallucinations**  Partial mediation (DE = 0.77\*; IE = 0.57\*)  % = 42.8  No mediating effects with specific trauma subscales | 5 |
| **Weijers *et al.* (2018)**  **Netherlands** | 87 NAP  31.7  35.6% | Cross sectional | Composite abuse (Abuse)  CECA | (1) Mentalising capabilities (MC) (HT) | Mediation analysis | Yes  No | (1) Positive PANSS | Null mediating effect with positive symptoms (only with negative partial mediation) | 5 |
| **Wickham and Bentall (2016)**  **UK** | 72 psychosis; 72 HC  43.5  36.1% | Cross sectional  Case control study | Specific (childhood sexual abuse (SA) ; Childhood emotional neglect (EN) (bullying, PA, EA also initially explored)  CTQ and RBC | (1) Perception of injustice (BJW)  1.a - Personal  1.b - General | Mediation analysis | Yes  Yes (age, gender, SA, hallucinationsand paranoia) | (1) Paranoia  (2) Hallucinations (PANSS) | **EN 🡪 Personal 🡪 Paranoia**  Partial mediation (DE = 0.11\*; IE = 0.032\*)  % = N/A  No mediating effect of general injustice on paranoia, or personal and general perception of injustice on hallucinations | 6 |

**Table S1b** Overview of General population studies included in this review

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Authors**  **Country** | **Sample**  **Mean Age**  **% female** | **Design** | **Measures of childhood adversity** | **Mediator(s)** | **Analysis** | **Boostrap**  **(yes / no) / confounders (yes / no)** | **Psychosis** | **Main findings**  **Pathway**  **Total / partial mediation**  **Direct Effect (DE)**  **Indirect effect (IE)**  **% total effect mediated** | **Quality Score** |
| **Ashford *et al.* (2012)**  **UK** | 135  19.8  91.1% | Cross sectional | Bullying subscales: direct physical aggression (DPA); direct verbal aggression (DVA); Indirect aggression (IA)  DIAS | (1) Interpersonal sensitivity (IPSM)  (2) Anxiety (HADS)  (3) Depression (HADS)  (4) Negative core beliefs (BCSS)  4.a - Negative self beliefs  4.b - Negative beliefs others | Multiple mediation | Yes  Yes (ethnicity, gender and other bullying categories) | (a) Paranoia (ideas of social reference) (GPTS)  (b) Paranoia  (persecution)  (GPTS) | **IA 🡪 Depression 🡪 a**  Suggested mediation (IE = 0.11; DE = N/A  % = N/A  **IA 🡪 Negative self beliefs 🡪 a**  Suggested mediation  (IE = 0.16; DE = N/A)  % = N/A  **IA 🡪 Depression 🡪 b**  Suggested mediation  (IE = 0.10; DE = N/A)  % = N/A  **IA 🡪 Negative self Beliefs 🡪 b**  Suggested mediation  (IE = 0.18; DE = N/A)  % = N/A  **DVA 🡪 Negative beliefs others 🡪 a**  Suggested mediation  (IE = 0.24; DE = N/A)  % = N/A  **DVA 🡪 Negative beliefs others 🡪 b**  Suggested mediation (IE = 0.11; DE = N/A)  % = N/A | 5 |
| **Bortolon *et al.* (2017)**  **France** | 425  36.23  79.1% | Cross sectional | Specific (PA, EA)  CTQ | (1) Maladaptative schemas (MS)  (SQ-SF):  1.a - Abandonment  (2) Dissociation  (DES):  2.a - Defensive dissociation | PLS-SEM | Yes  Yes (age, gender, psychopathology) | (1) Auditory hallucination (AH) (LSHS-R) | **PA 🡪 2.a 🡪 AH**  Suggested mediation (DE = N/A; IE = 0.1081\*)  % = N/A  **EA 🡪 1.a 🡪 AH**  Suggested mediation  (DE = N/A; IE = 0.055\*)  % = N/A | 5 |
| **Bortolon and Raffard (2018)**  **France** | 403  33.24  82.1% | Cross sectional | Composite (CT)  CTQ | (1) Defensive dissociation  (DES) | SEM | Yes  Yes (age, gender, anxiety, depression) | (A) Seeing visions (LSHS)  (B) Hearing voices  (LSHS) | **CT 🡪 1 🡪 A**  Total mediation (DE = 0.008; IE = 0.122\*)  % = 93.7  **CT 🡪 2 🡪 B**  Partial mediation  (DE = 0.090\*; IE = 0.124\*)  % = 57.94 | 6 |
| **Boyda and McFeeters (2015)**  **Northern Ireland** | 7403  46  51.4% | Cross sectional | Specific (SA, EN)  Questionnaire | (1) Social functioning  1.a - Loneliness  (NA) | Logistic mediation analyses | Yes  No | Psychotic-like experiences (PSQ) | **SA 🡪 Loneliness 🡪 PSQ**  Total mediation (DE = 1.38; IE = 0.22\*)  % = N/A  Total mediation  **EN 🡪 Loneliness 🡪 PSQ**  Total mediation (DE = 0.94; IE = 0.46\*)  % = N/A | 5 |
| **Boyda *et al.* (2018)**  **UK** | 302  36  69.9% | Cross sectional | Composite, subscales (EA, SA)  ACE-IQ | (1) Early Maladaptative Schemas (EMS)  (YSQ-SF)  1.a – Defectiveness / Shame  1.b – Dependency / Incompetence  1.c – Enmeshment / Undeveloped self  1.d - Emotional inhibition | Multiple mediation  analyses | No  Yes (age, gender, urbanicity, ethnicity, socio-economic status, drug use) | (1) Psychotic experiences (PE)  (CAPE) | **EA 🡪 1.b 🡪 PE**  Suggested mediation (DE = N/A; IE = 0.083\*)  % = N/A  **SA 🡪 1.b 🡪 PE**  Suggested mediation (DE = N/A; IE = 0.073\*)  % = N/A  **EA 🡪 1.c 🡪 PE**  Suggested mediation  (DE = N/A; IE = 0.063\*)  % = N/A  **SA 🡪 1.c 🡪 PE**  Suggested mediation (DE = NA; IE = 0.043\*)  % = N/A | 5 |
| **Cole *et al.* (2016)**  **UK** | 200  19.96  82.5% | Cross sectional | Composite Childhood maltreatment (CM)  CATS | (1) Dissociation:  1.a - Dissociative amnesia (DA) (DES-II)  1.b1 -Depersonalization-  (CDS)  1.b2 - Depersonalization (DES-II)  1.c - Absorption (Abs)  (DES-II) | (A) Simple and  (B) multiple mediation analysis | Yes  No | (1) Hallucination-proneness (HP) (LSHS-R)  (2) Delusional ideation (DI)  (PDI) | (A) Simple  **CM 🡪 Dissociation 🡪 HP**  Partial mediation  (DE = 2.92\*; IE = 3.94\*)  % = 57.4  **CM 🡪 Dissociation 🡪 DI**  Partial mediation (DE = 10.90\*; IE = 10.75\*)  % = 49.6  (B) Multiple  **CM 🡪 Abs 🡪 HP**  Total mediation (DE = 1.64; IE = 3.45\*)  %=50.29    **CM 🡪 DA 🡪 DI**  Partial mediation  (DE = 7.45\*; IE = -3.68\*)  % = -16.99  **CM 🡪 Abs 🡪 DI**  Partial mediation  (DE = 7.45\*; IE = 7.18\*)  % = 33.1  Remaining items within dissociation were not significant | 5 |
| **Fisher *et al.* (2012)**  **UK** | 212  27  65.4% | Cross sectional | Specific (EA, PA)  CTQ | (1) Depression (BDI)  (2)Anxiety (BAI)  (3) Negative schematic beliefs (BCSS)  3.a - Negative self-schemas  3.b - Negative others schemas | Mediation analysis | Yes  Yes (gender, age, ethnicity, family history) | (1) Paranoia (PSQ) | **EA 🡪 Anxiety 🡪 Paranoia**  Total mediation (DE = 1.16; IE = 1.05\*)  % = 17.57  No mediation effects of depression, negative self-schemas and other schemas | 6 |
| **Fisher *et al.* (2013)**  **UK** | 6692  12.9  50.9% | Prospective  From childhood (8, 21, 33, 47, 61, 73 months) to mean age of 12.9 yoa | Specific (Harsh parenting (HP), domestic violence (DV) and bullying victimization (BV))  Questionnaire to mothers ; Bullying and Friendship Interview Schedule (BI) | (1) External locus of control (LoC) (12 item version of NSIE)  (2) Self Steem (shortened form of Harter`s Self Perception Profile for Children)  (3) Affective symptoms (DAWBA and SMFQ)  3.a - Anxiety  3.b - Depression | Multiple mediation analysis | Yes  Yes (gender, ethnicity, birth weight, family history of schizophrenia, depression or suicide, child’s IQ, and general family adversity) | (1) Psychotic Symptoms (PS)(PLIKSi) | **HP 🡪 Anxiety 🡪 PS**  Total mediation (DE = 1.02; IE = 1.01\*)  % = 21  **DV 🡪 Anxiety 🡪 PS**  Total mediation (DE = 1.06; IE = 1.00\*)  % = 8  **BV 🡪 Anxiety 🡪 PS**  Partial mediation (DE = 1.14\*; IE = 1.00\*)  % = 2  **HP 🡪 Depression🡪 PS**  Total mediation (DE = 1.00; IE = 1.03\*)  % = 94  **DV 🡪 Depression 🡪 PS**  Total mediation (DE = 1.04; IE = 1.01\*)  % = 18  **BV 🡪 Depression 🡪 PS**  Partial mediation (DE=1.14\*; IE = 1.01\*)  % = 8  **HP 🡪 LoC 🡪 PS**  Total mediation (DE = 1.01; IE = 1.01\*)  % = 47  **DV 🡪 LoC 🡪 PS**  Total mediation (DE = 1.03; IE = 1.00\*)  % = 1  **BV 🡪 LoC 🡪 PS**  Partial mediation (DE = 1.13\*; IE = 1.02\*)  % = 13  **HP 🡪 Self-steem 🡪 PS**  Total mediation (DE = 1.00; IE = 1.01\*)  % = 97  **DV 🡪 self-steem 🡪 PS**  Total mediation (DE = 1.04; IE = 1.00\*)  % = 7  **BV 🡪 Self steem 🡪 PS**  Partial mediation (DE = 1.13\*; IE = 1.01\*)  % = 10  **HP 🡪 all mediators 🡪 PS**  Total mediation (DE = 0.97; IE = 1.04\*)  % = 100  **BV 🡪 all mediators 🡪 PS**  Partial mediation (DE = 1.10\*; IE = 1.04\*)  % = 29  **DV 🡪 all mediators 🡪 PS**  Total mediation (DE = 1.03; IE = 1.02\*)  % = 42 | 8 |
| **Gaweda *et al.* (2019)**  **Germany** | 649  51.1  55.2% | Cross sectional | Composite (CT), Abuse, neglect  CTQ | (1) Aberrant salience Inventory (ASI)  (2) Anomalous self-experiences (IPASE) | Parallel multiple mediation models | Yes  Yes (gender) | Psychotic-like experiences  (PLE) (PQ) | **CT 🡪 1 + 2 🡪 PLE**  Total mediation (DE = 0.05; IE 1 = 0.076\*; IE 2 = 0.1443\*)  % 1 = 28.1  % 2 = 53.4  **Neglect 🡪 1 + 2 🡪 PLE**  Total mediation (DE = 0.01; IE 1 = 0.0451\*; IE 2 = 0.1404\*)  % 1 =26.5  % 2 =82.58  **Abuse 🡪 1 + 2 🡪 PLE**  Partial mediation (DE = 0.10\*; IE 1 = 0.092\*; IE 2 = 0.1188\*)  % 1 = 29.67  % 2 = 38.32 | 6 |
| **Gibson *et al.* (2019)**  **USA** | 945  20.13  75.6% | Cross sectional | Composite (CT)  CTQ | (1) Perceived Stress  (PSS)  (2) Dissociation (DES)  (3) Cognitive bias  3.1 Negative self-schemas (BCSS)  3.2 Negative others- schemas (BCSS)  3.3 External locus of control  (RI-E) | Multiple mediation analyses | Yes  Yes (gender, race, age) | (A) Psychotic-Like Experiences  (PLE) (PQ) | **Multiple mediation**  **CT 🡪 1 🡪 PLE**  Total mediation (DE = 0.04; IE = 0.0405\*)  % = 25.31  **CT 🡪 2 🡪 PLE**  Total mediation (DE = 0.04; IE = 0.0549\*)  % = 34.31  **CT 🡪 3.1 🡪 PLE**  Total mediation (DE = 0.04; IE = 0.007\*)  % = 14.43  **CT 🡪 3.2 🡪 PLE**  Total mediation (DE = 0.04; IE = 0.0141\*)  % = 8.81  **CT 🡪 3.3 🡪 PLE**  Total mediation (DE = 0.04; IE = 0.0071\*)  % = 4.43  Only multiple mediation analyses presented and considered as the total effect of simple analyses are missing | 6 |
| **Goodall *et al.* (2015)**  **UK** | 283  26.8  72% | Cross sectional | EA analysed in mediation  CTQ | (1) Adult Attachment (ECR-R)  1.a - Attachment avoidance (AAv)  1.b - Attachment anxiety (AAn) | Parallel multiple mediation analysis | Yes  No | (1) Schizotypy  (SPQ-B) | **EA 🡪 AAv 🡪 Schizotypy**  Partial mediation (DE = 0.35\*; IE = 0.04\*)  % = 13  **EA 🡪 Aan 🡪 Schizotypy**  Partial mediation (DE = 0.35\*; IE =0.06\*)  % = 8 | 5 |
| **Jaya *et al.* (2017)**  **Germany** | 2350  32.5  37% | Cross sectional | Composite of Social Adversity (SocA) including bullying and abuse  BVQ /NEMESIS | (1) Social rank with the Social Comparison Scale (SCS)  (2) Negative schemas  Brief Core Schema Scales (BCSS)  (3) Loneliness  (UCLA) | SEM | Yes  No | (1) Positive (PS) and negative symptoms (CAPE)  (only positive considered) | **SocA 🡪 Loneliness 🡪 PS**  Suggested mediation (DE = N/A; IE = 0.02\*)  % = N/A  **SocA 🡪 BCSS 🡪 PS**  Suggested mediation (DE = N/A; IE = 0.12\*)  % = N/A  No mediation for SCS on positive symptoms | 4 |
| **Lincoln *et al.* (2017)**  **Germany** | 562  24.31  49.3% | Prospective (follow up at 4, 8, 12 months) | Composite (CT)  NEMESIS | (1) Emotion regulation (ER)  (ERSQ) | SEM | Yes  No | (1) Subthreshold psychotic experience (CAPE)  1.a - Distress  1.b - Frequency | **CT 🡪 ER 🡪 Distress**  Partial mediation (DE = 0.069\*; IE = 0.005\*)  % = 7.1  No mediating effect for symptom frequency | 6 |
| **Marwaha *et al.* (2014)**  **UK** | 8580 + 7403 Baseline  2406 FU  NA  NA | Cross sectional | Sexual abuse (SA)  Questionnaire | (1) Mood instability (MI) (BPD section of the SCID-II) | Mediation analysis | No  Yes (age, gender, marital status, employment status and ethnicity, PTSD, current affective state and hypomanic symptoms) | (1) Psychotic  Phenomena (PSQ)  1.a - Probably psychosis (PP)  1.b - Paranoid ideation (PI)  1.c - Auditory Hallucinations (AH) | **SA 🡪 MI 🡪 PP**  Suggested mediation  % = 34.6  **SA 🡪 MI 🡪 PI**  Suggested mediation  % = 34.5  **SA 🡪 MI 🡪 AH**  Suggested mediation  % = 25.3 | 4 |
| **Marwaha and Bebbington (2015)**  **UK** | 5689  N/A  N/A | Cross-sectional | Sexual abuse (Non consensual intercourse (NCI), contact abuse (CA))  Questionnaire | (1) Anxiety (CIS-R)  (2) Depressive symptoms (CIS-R)  (CIS-R) (analyzed together) | Mediation analysis | No  Yes (gender, age, ethnicity, education, being brough by both partens until 16) | (1) Psychotic symptoms (PSQ) | **NCI 🡪 1, 2 🡪 PSQ**  Partial mediation (DE = 4.08\*; IE (together) = 2.41\*)  % anxiety = 20.4  % depression = 37.4  **CA 🡪 1, 2 🡪 PSQ**  Total mediation (DE = 2.14; IE (together) = 1.60\*)  % anxiety = 24.1  % depression = 37.1  IE shows combined effects of 1, 2  Percentages shows mediators examined separately | 5 |
| **McCarthy-Jones (2018)**  **Ireland** | 5788  51.71  55.4% | Cross sectional | Childhood Sexual abuse (CSA)  Questionnaire from APMS | (1) Anxiety (CIS-R)  (2) Obsessional thought (CIS-R)  (3) Compulsions (CIS-R)  (4) PTSD (APMS questionnaire)  (5) Depression (CIS-R) | Regression-based approach | Yes  Yes (age, gender, ethnicity, education, IQ, depression) | Auditory verbal hallucinations (AVH) (PSQ) | **CSA 🡪 3 🡪 AVH**  Partial mediation (DE = 5.15\*; IE = 1.10\*)  % = 5.41  **CSA 🡪 4 🡪 AVH**  Partial mediation (DE = 5.15\*; IE = 1.11\*)  % = 5.93  Not significamt effect of anxiety, obsessions and depression between CSA and AVH | 6 |
| **Metel *et al.* (2020)**  **Poland** | 2684  26.37  62.3% | Cross sectional | Composite  TEC  CECA-Q | (1) Cognitive biases (DACOBS)  (2) Resilience (CD-RISC)  (3) Depressive symptoms (CESD-R) | Multiple mediation analysis | Yes  No | (1) Psychotic like experiences (PLE) (PQ) | **TEC/CECA-Q 🡪 DACOBS 🡪 CD-RISC 🡪 CESD-R 🡪 PLE**  Partial mediation (DE = 0.162\*; IE = 0.163\*)  % = 4 | 4 |
| **Murphy *et al.* (2015)**  **UK** | 785  16.2  56.1% | Cross sectional | Composite  ELES | (1) Negative social comparisons (SCS)  (2) Trauma-related thoughts and beliefs (PTCI) | Moderated mediation analysis | Yes  Yes (recent victimization) | (1) Psychotic experiences (APSS) | **ELES 🡪 PTCI 🡪 APSS**  Partial mediation (non lonely patients) (DE = 0.049\*; IE = 0.039\*)  % = 44.3  **ELES 🡪 PTCI 🡪 APSS**  Total mediation (lonely patients) (DE = 0.032;  IE = 0.042\*)  % = 56.7  No mediation by negative social comparisons either in lonely or non-lonely patients | 6 |
| **Perona-Garcelán *et al.* (2014)**  **Spain** | 318  21.41  78.9% | Cross sectional | Composite  Trauma Questionnaire (TQ) | (1) Dissociation  1.a - Tellegen Absorption Scale (TAS)  1.b - Depersonalization (CDS)  (2) Southampton Mindfulness Questionnaire (SMQ) | Multiple mediation analysis | Yes  No | (1) Hallucination proneness (HP) (LSHS-R) | **TQ 🡪 Absorption Scale 🡪 HP**  Total mediation (DE = 0.12; IE = 0.38\*)  % = 82.6  **TQ 🡪 Depersonalisation 🡪 HP**  Total mediation (DE = 0.12; IE = 0.16\*)  % = 34.78 (together)  No mediation by mindfulness | 5 |
| **Pinto-Gouveia *et al.* (2014)**  **Portugal** | 255  36.36  68.2% | Cross sectional | Composite (including threat, submissiveness and feeling unvalued)  ELES | (1) External shame (OAS) | Path analysis | Yes  Yes (confounders not specified) | (1) Paranoia (GPS) | **ELES 🡪 OAS 🡪 GPS**  Partial mediation (DE = 0.12\*; IE = 0.0608\*)  % = 33.6 | 6 |
| **Rössler *et al.* (2016)**  **Switzerland** | 820  31.36  55.8% | Cross sectional | Composite (CTQ) and specific (EA, PN, EN)  CTQ | (1) Stress sensitivity (SS) (PSS, PANAS-N, SSCS) | Bivariate and mediated multinomial logistic regression path models | Yes  Yes (trauma types, education) | (1) Subclinical psychotic experience (SPE)  (SIAPA, SPQ-B German version, PARA, and STS and SNS subscales from SCL-90-R) | **CTQ 🡪 SS 🡪 SPE**  Partial mediation (DE = 0.44\*; IE = 0.50\*)  % = 43.05  **EA 🡪 SS 🡪 SPE**  Total mediation (DE = 0.47; IE = 0.578\*)  % = 46.6  **EN 🡪 SS 🡪 SPE**  Total mediation (DE = -0.31; IE = 0.44\*)  % = 53.38  **PN 🡪 SS 🡪 SPE**  Total mediation (DE = 0.27; IE = 0.28\*)  % = 28.71 | 6 |
| **Sheinbaum *et al.* (2014)**  **Spain** | 546  20.6  82.3% | Cross sectional | Composite factor of physical and emotional trauma (P/E)  CTQ | (1) Attachment style (RQ)  1.a - Dismissing  1.b - Preoccupied  1.c - Fearful | Parallel multiple mediation analyses | Yes  No | (1) PLEs (CAPE)  (2) Paranoid beliefs (SPQ)  (3) Schizotypy (WSS) | **P/E 🡪 Fearful 🡪 Schizotypy**  Partial mediation (DE = 0.140\*; IE total = 0.028\*; IE fearful = 0.010\*)  % total = 16.6  % fearful = 5.9  **P/E 🡪 Fearful 🡪 Suspiciousness**  Partial mediation (DE = 0.420\*; IE total = 0.093\*; IE fearful = 0.056\*)  % total = 18  % fearful = 10.8  **P/E 🡪 Fearful 🡪 PLE**  Partial mediation (DE = 0.822\*; IE total = 0.142\*; IE fearful = 0.063\*)  % total = 14.7  % fearful = 6.5  None of the other mediators were significant | 5 |
| **Shevlin *et al.* (2015)**  **UK** | 7403  51.12  56.8% | Cross sectional | Specific CSA and/or CPA and CSA + CPA composite scores  Questionnaire | (1) Loneliness (SFQ) | Mediation analysis | No  Yes (age, gender, education, ethnicity, cannabis use and adult CSA and CPA) | (1) Psychosis diagnosis (SCAN) | **CSA + CPA 🡪 Loneliness 🡪 Psychosis**  Partial mediation (DE = N/A; IE = 0.722\*)  % = N/A  No mediation of the CPA, CSA separately | 5 |
| **Sitko *et al.* (2014)**  **UK** | 5877  34.5  50.5% | Cross sectional | History module  Specific (Rape, sexual molestatin, PA, Physical assault/attack)  UM-CIDI - Life Event | (1) Attachment style (AAQ)  1.a - Secure (reversed)  1.b - Avoidance  1.c - Anxious | Regression based approach | Yes  Yes (age and gender) | (1) Lifetime psychotic symptoms (LPS) (Beliefs and Experiences module of the  UM-CIDI)  1.A - Paranoia  1.B - Hallucinations | **Neglect 🡪 1.c + 1.b 🡪 1.A**  Total mediation (DE = 0.047; IE = N/A)  % both = 100  **Rape 🡪 1.c 🡪 1.B**  Partial mediation (DE = 0.088\*; IE = N/A)  % = 3.0 | 6 |
| **Van Nierop *et al.* (2014)**  **Netherland** | 6646  44  55% | Cross sectional | Composite (CT)  NEMESIS-1 | (1) Social defeat (SD)  (NEMESIS questionnaire)  (2) Affective dysregulation (AD)  (NEMESIS questionnaire) | Multiple mediation  analyses | Yes  Yes (CT, age, gender, cannabis use and affective dysregulation) | (1) Psychosis diagnosis (PD) DSM-IV (SCID-I)  (2) Extended psychosis phenotype (EPP) (NEMESIS interview) | **CT 🡪 AD 🡪 EPP**  Partial mediation (DE = N/A; IE = 0.04\*)  % = 49.7  **CT 🡪 SD 🡪 PD**  Partial mediation (DE = N/A; IE = 0.04\*)  % = 86.6  No significant mediation of SD on the link between CT and EPP and of AD on the link between CT and PD | 6 |
| **Wolke *et al.* (2014)**  **UK** | 4720  17.1  56.5% | Prospective, assessed for adversity at 8 and 11 yoa, and for symptoms at 12.9 and 18 yoa | Two composite scores peer victimization (PV) (child-reported and mother-reported bullying)  BFIS  SDQ | (1) Depression symptoms at age 12, 13, 14 yoa (SQFM) | Path analysis | No  Yes (gender, any DSM-IV Axis I diagnosis, IQ and internalizing / externalizing behavior) | (1) Psychotic experiences (PE) at age18 yoa (PLIKSi) | **PV 🡪 Depression (12.9) 🡪 PE (18)**  Partial mediation (DE = 0.13\*; IE child reported = 0.03\*; IE mother reported = 0.02\*)  % child reported = 18.75  % mother reported = 13.3 | 7 |
| **Yamasaki *et al.* (2016)**  **Japan** | 4277  9.8  46.9% | Cross sectional | Composite score (peer victimization (PV))  OVBQ | (1) Dissociation (CBCL)  (2) Depressive symptoms (SMFQ)  (3) External locus of control (shortened  version of the CNSIE) | SEM | No  No | (1) Hallucinations (CBCL) | **PV 🡪 Dissociation 🡪 CBCL**  Total Mediation (DE = 0.02; IE = 0.038\*  % = 95  No mediation by depression or external locus control | 4 |

**Table S1c.** Overview of clinical studies examining biological mediators between childhood adversity and psychosis

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Authors**  **Country** | **Sample**  **Mean Age**  **% female** | **Design** | **Measures of childhood trauma** | **Mediator(s)** | **Analysis** | **Boostrap**  **(yes / no) / confounders (yes / no)** | **Psychosis** | **Main findings**  **Pathway**  **Total / partial mediation**  **Direct Effect (DE)**  **Indirect effect (IE)**  **% total effect mediated** | **Quality Score** | |
| **Cancel *et al.* (2015)**  **France** | 21 NAP; 33 HC  32.1 NAP  29% NAP  32.9 HC  33% HC | Cross sectional | Subscales (EN)  CTQ | (1) Grey matter volume in DLPFC | Regression based approach and SEM | No  Yes  (duration of illness and parents’ education levels) | (1) Disorganization (SANS) | **EN 🡪 DLPFC 🡪 Disorganization**  Suggested mediation  % = NA | 4 | |
| **Quidé *et al.* (2018)**  **Australia** | 112 psychosis;  53 HC  38 psychosis  47% psychosis  38.7 HC  39.6% HC | Cross sectional  Case control study | Composite (CTQ)  CTQ | (1) Inferior frontal girus (IFG) activation | Mediation analysis | Yes  No | (1) Positive symptoms (PANSS) | **CTQ 🡪 IFG activation 🡪 PANSS positive**  Null mediation | 4 |

AAQ: Acceptance and Action Questionnaire; ACE-IQ: Adverse Childhood Experiences International Questionnaire; APMS: Adult Psychiatric Morbidity Survey; APSS: Adolescent Psychotic-like Symptom Screener; BAI: Beck Anxiety Inventory; BCSS: Brief Core Schema Scale; BDI-II: Beck Depression Inventory; BFIS: Bullying and Friendship Interview Schedule; BJW: The General / personal Beliefs in a Just World Scale; BPD: Borderline Personality Disorder; BPRS: Brief Psychiatric Rating Scale; BVQ: Bullying Victimization Questionnaire; CAARMS: Comprehensive Assessment of At Risk Mental States; CAPE: Community Assessment of Psychic Experiences; CAPS: Clinician-Administered PTDS Scale; CATS: the Child Abuse and Trauma Scale; CBCL: Child Behavior Checklist; CDS: Cambridge Depersonalization Scale; CD-RISC: Connor-Davidson Resilience Scale; CECA: Childhood Experiences of Care and Abuse; CECA.Q: Childhood Experiences of Care and Abuse Questionnaire; CESD-R: Center for Epidemiologic Studies-Depression Scale; CHR: Clinical High Risk for psychosis; CIS-R: Clinical Interview Schedule-Revised; CNSIE: Childhood Nowicki–Strickland Internal–External; CTQ: Childhood Trauma Questionnaire; DACOBS: Davos Assessment of Cognitive Biases Scale; DAWBA: Development and Well-Being Assessment; DES-II: Dissociative Experience Scale; DIAS: Modified Direct and Indirect Aggression Scales; DLPFC: Dorsolateral Prefrontal Cortex; EA: Emotional abuse; ECR-R: Experiences in Close Relationships-Revised Questionnaire; ELES: Early Life Experiences Scale; EP: Early Psychosis; ERSQ: Emotion Regulation Skills Questionnaire; ESM: Experience Sampling Method; FEP: First Episode of Psychosis; FKK: German Competence and Control Beliefs Questionnaire; GAF: Global Assessment of Functioning; GPS: General Paranoia Scale; GPTS: Green et al. Paranoid Thought Scales; HADS: Hospital Anxiety and Depression Scale; HAM-A: Hamilton Anxiety Rating Scale; HC: Healthy Control; HT: Hinting Task; ICD-10: International Classification of Diseases, 10th revision; IESR: Impact Event Scale-Revised; IPASE: Inventory of Psychotic-Like Anomalous Self-Experiences; IPSM: Interpersonal sensitivity scale; ISMIS: Internalised Stigma of Mental Illness Scale; IVM: Dutch equivalent of the International Crime Victimization Survey; LSHR-R: Launay-Slade Hallucinations Scale-revised; MACE: Maltreatment and Abuse Chronology of Exposure scale; MADRS: Montgomery Asberg Depression Rating Scale; MCVI: MacArthur Community Violence Instrument; MMPI-2: Minnesota Multhiphasic personality Inventory; MRC: MRC Sociodemographic Schedule ; N: Neglect; NAP: non-affective psychosis; NEMESIS: Netherlands Mental Health Survey and Incidence Study; NEO-FFI: assess the Five-factors Model (FFM) personality traits; NSIE: Nowicki–Strickland Internal–External; OAS: Other As Shamer Scale; OVBQ: Olweus Bully/Victims Questionnaire; PACE: Personal Assessment and Crisis Evaluation; PA: Physical abuse; PAM: Psychosis Attachment Scale; PANAS-N: Negative Affect Subscale of the Positive and Negative Affect Scale; PANSS: Positive and Negative Syndrome Scale; PARA: Paranoia Checklist; PDI: Peters et al. Delusion Inventory; PG: prodromal questionnaire; PHQ-9: Japanese version of the Patient Health Questionnaire-9; PLIKSi: Semi-structured Psychosis Interview; PLS-SEM: Partial least squares – Structural equation models; PQ: Prodromal Questionnaire; PSPS: Personal and Social Performance Scale; PSQ: Psychosis Screening Questionnaire; PSS: Perceived Stress Scale; PTCI: Posttraumatic Cognitions Inventory; PTSD: Post-traumatic stress disorder; QoL: World Health Organization Quality of Life-Bref (WHOQOL-BREF); RBC: ; RBQ: Retrospective Bullying Questionnaire; RSES: Rosenberg Self-Esteem Scale; RQ: Relationship Questionnaire; SA: Sexual abuse ; SAPS: Scales for Assessment of Positive symptoms; SCAN: Schedules for Clinical Assessment in Neuropsychiatry; SCID-II: Structured Clinical Interview for DSM-IV Personality Disorders; SCID-D-R: Structured Clinical Interview for DSM-IV Dissociative Disorders; SCL-90-R: Symptom Checklist-90-R; SCS: Social Comparison Scale; SCZ: Schizophrenia; SDQ: Strengths and Difficulties Questionnaire; SDS: Shutdown Dissociation Scale; SEM: Structural Equation Modeling; SFQ: Social Functioning Questionnaire; SFS: Social Functioning Scale; SIAPA: Structured Interview for Assessing Perceptual Anomalies; SNS: Schizophrenia Nuclear Symptom Scale; SOFAS: Social and Occupational Functioning Assessmnet Scale; SPI-A and SPI-CY (for adolescents): Schizophrenia Proneness Instrument; SPQ-B: Schizotypal Personality Questionnaire-Brief; SSP: Schizophrenia-Spectrum Psychosis; SQFM: Short Mood and Feelings Questionnaire; SQ-SF: Young Schema Questionnaire Short Form; SMFQ: Short Mood and Feelings Questionnaire; SRS-PTSD: Self-Rating Scale for Post-traumatic Stress Disorder; SSCS: Screening Scale for Chronic Stress; SSPS: State Social Paranoia Scale; STS: Schizotypal Signs Scale; SVF-KJ: German Stress-Coping-Questionnaires using the version for adults and children / adolescents; TDS : Traumatic Dissociation Scale; TEC: Traumatic Experience Checklist; THQ: Trauma History Questionnaire; TLEC: the life-events checklist; TQ: Trauma Questionnaire; UCLA: ; UHR: Ultra High Risk; UM-CIDI - Life Event: modified version of the Composite International Diagnostic Interview; WSS: Wisconsin Schizotypy Scales; Y-BOCS: Dutch version of the Yale-Brown Obsessive-Compulsive Scale; ZTPI: Zimbardo Time Perspective Inventory.

\* *p*-value ≤ 0.05

Note= when « Psychosis » is used it means that patients were no FEP.

Note see data extraction procedure for details on definitions of total, partial, null mediation and « suggested mediation ».

**d. Table S2.** Summary of evidence for mediators within the Dissociation category between

adversity and psychosis



\* We considered that one analysis showed evidence of mediation when authors reported significant p-values

(<0.05) in the indirect (or mediating) effects, or when using a regression-based approach, an important reduction

of the total effect occurred once the mediator was included in the model. Null mediation was defined as the non significant

(p>0.05) indirect or mediating effect or as the lack of reduction of the total effect once the mediator was included in the

model when using a regression-based approach.

**3. Supplementary Figures**

**a. Figure S1. Flow chart**



**4. Supplementary references**

**Alwin DF, Hauser RM** (1975) The Decomposition of Effects in Path Analysis. SAGE Publications *American Sociological Review* **40**, 37.

**Appiah-Kusi E, Fisher HL, Petros N, Wilson R, Mondelli V, Garety PA, Mcguire P, Bhattacharyya S** (2017) Do cognitive schema mediate the association between childhood trauma and being at ultra-high risk for psychosis? Elsevier Ltd *Journal of Psychiatric Research* **88**, 89–96.

**Ashford CD, Ashcroft K, Maguire N** (2012) Emotions, Traits and Negative Beliefs as Possible Mediators in the Relationship between Childhood Experiences of being Bullied and Paranoid Thinking in a Non-Clinical Sample. *Journal of Experimental Psychopathology* **3**, 624–638.

**Bortolon C, Raffard S** (2018) Dissociation Mediates the Relationship between Childhood Trauma and Experiences of Seeing Visions in a French Sample. *Journal of Nervous and Mental Disease* **206**, 850–858.

**Bortolon C, Seillé J, Raffard S** (2017) Exploration of trauma, dissociation, maladaptive schemas and auditory hallucinations in a French sample. Taylor & Francis *Cognitive Neuropsychiatry* **22**, 468–485.

**Boyda D, McFeeters D** (2015) Childhood maltreatment and social functioning in adults with sub-clinical psychosis. Elsevier *Psychiatry Research* **226**, 376–382.

**Boyda D, McFeeters D, Dhingra K, Rhoden L** (2018) Childhood maltreatment and psychotic experiences: Exploring the specificity of early maladaptive schemas. *Journal of Clinical Psychology* **74**, 2287–2301.

**Cancel A, Comte M, Truillet R, Boukezzi S, Rousseau PF, Zendjidjian XY, Sage T, Lazerges PE, Guedj E, Khalfa S, Azorin JM, Blin O, Fakra E** (2015) Childhood neglect predicts disorganization in schizophrenia through grey matter decrease in dorsolateral prefrontal cortex. *Acta Psychiatrica Scandinavica* **132**, 244–256.

**Chatziioannidis S, Andreou C, Agorastos A, Kaprinis S, Malliaris Y, Garyfallos G, Bozikas VP** (2019) The role of attachment anxiety in the relationship between childhood trauma and schizophrenia-spectrum psychosis. Elsevier Ireland Ltd *Psychiatry Research* **276**, 223–231.

**Choi JY, Choi YM, Kim B, Lee DW, Gim MS, Park SH** (2015) The effects of childhood abuse on self-reported psychotic symptoms in severe mental illness: Mediating effects of posttraumatic stress symptoms. Elsevier *Psychiatry Research* **229**, 389–393.

**Cole CL, Newman-Taylor K, Kennedy F** (2016) Dissociation mediates the relationship between childhood maltreatment and subclinical psychosis. Routledge *Journal of Trauma and Dissociation* **17**, 577–592.

**Evans GJ, Reid G, Preston P, Palmier-Claus J, Sellwood W** (2015) Trauma and psychosis: The mediating role of self-concept clarity and dissociation. Elsevier Ireland Ltd *Psychiatry Research* **228**, 626–632.

**Fisher HL, Appiah-Kusi E, Grant C** (2012) Anxiety and negative self-schemas mediate the association between childhood maltreatment and paranoia. Elsevier Ltd *Psychiatry Research* **196**, 323–324.

**Fisher HL, Schreier A, Zammit S, Maughan B, Munafò MR, Lewis G, Wolke D** (2013) Pathways between childhood victimization and psychosis-like symptoms in the ALSPAC birth cohort. *Schizophrenia Bulletin* **39**, 1045–1055.

**Gawęda Ł, Göritz AS, Moritz S** (2019) Mediating role of aberrant salience and self-disturbances for the relationship between childhood trauma and psychotic-like experiences in the general population. *Schizophrenia Research* **206**, 149–156.

**Gibson LE, Reeves LE, Cooper S, Olino TM, Ellman LM** (2019) Traumatic life event exposure and psychotic-like experiences: A multiple mediation model of cognitive-based mechanisms. Elsevier B.V. *Schizophrenia Research* **205**, 15–22.

**Goodall K, Rush R, Grünwald L, Darling S, Tiliopoulos N** (2015) Attachment as a partial mediator of the relationship between emotional abuse and schizotypy. Elsevier *Psychiatry Research* **230**, 531–536.

**Hardy A, Emsley R, Freeman D, Bebbington P, Garety PA, Kuipers EE, Dunn G, Fowler D** (2016) Psychological Mechanisms Mediating Effects between Trauma and Psychotic Symptoms: The Role of Affect Regulation, Intrusive Trauma Memory, Beliefs, and Depression. *Schizophrenia Bulletin* **42**, S34–S43.

**Isvoranu AM, Van Borkulo CD, Boyette L Lou, Wigman JTW, Vinkers CH, Borsboom D, Kahn R, De Haan L, Van Os J, Wiersma D, Bruggeman R, Cahn W, Meijer C, Myin-Germeys I** (2017) A network approach to psychosis: Pathways between childhood trauma and psychotic symptoms. *Schizophrenia Bulletin* **43**, 187–196.

**Jaya ES, Ascone L, Lincoln TM** (2017) Social adversity and psychosis: The mediating role of cognitive vulnerability. *Schizophrenia Bulletin* **43**, 557–565.

**Lincoln TM, Marin N, Jaya ES** (2017) Childhood trauma and psychotic experiences in a general population sample: A prospective study on the mediating role of emotion regulation. Elsevier Masson SAS *European Psychiatry* **42**, 111–119.

**Marwaha S, Bebbington P** (2015) Mood as a mediator of the link between child sexual abuse and psychosis. *Social Psychiatry and Psychiatric Epidemiology* **50**, 661–663.

**Marwaha S, Broome MR, Bebbington PE, Kuipers E, Freeman D** (2014) Mood instability and psychosis: Analyses of British national survey data. *Schizophrenia Bulletin* **40**, 269–277.

**McCarthy-Jones S** (2018) Post-Traumatic Symptomatology and Compulsions as Potential Mediators of the Relation between Child Sexual Abuse and Auditory Verbal Hallucinations. *Behavioural and Cognitive Psychotherapy* **46**, 318–331.

**McDonnell J, Stahl D, Day F, McGuire P, Valmaggia LR** (2018) Interpersonal sensitivity in those at clinical high risk for psychosis mediates the association between childhood bullying victimisation and paranoid ideation: A virtual reality study. Elsevier B.V. *Schizophrenia Research* **192**, 89–95.

**Mętel D, Arciszewska A, Daren A, Pionke R, Cechnicki A, Frydecka D, Gawęda Ł** (2020) Mediating role of cognitive biases, resilience and depressive symptoms in the relationship between childhood trauma and psychotic-like experiences in young adults. *Early Intervention in Psychiatry* **14**, 87–96.

**Morgan C, Reininghaus U, Fearon P, Hutchinson G, Morgan K, Dazzan P, Boydell J, Kirkbride JB, Doody GA, Jones PB, Murray RM, Craig T** (2014) Modelling the interplay between childhood and adult adversity in pathways to psychosis: Initial evidence from the AESOP study. *Psychological Medicine* **44**, 407–419.

**Murphy S, Murphy J, Shevlin M** (2015) Negative evaluations of self and others, and peer victimization as mediators of the relationship between childhood adversity and psychotic experiences in adolescence: The moderating role of loneliness. *British Journal of Clinical Psychology* **54**, 326–344.

**Peach N, Alvarez-Jimenez M, Cropper SJ, Sun P, Bendall S** (2019) Testing models of post-traumatic intrusions, trauma-related beliefs, hallucinations, and delusions in a first episode psychosis sample. *British Journal of Clinical Psychology* **58**, 154–172.

**Perona-Garcelán S, Carrascoso- López F, García-Montes JM, Ductor-Recuerda MJ, López Jiménez AM, Vallina-Fernández O, Pérez-Álvarez M, Gómez-Gómez MT** (2012) Dissociative experiences as mediators between childhood trauma and auditory hallucinations. *Journal of Traumatic Stress* **25**, 323–329.

**Perona-Garcelán S, García-Montes JM, Rodríguez-Testal JF, López-Jiménez AM, Ruiz-Veguilla M, Ductor-Recuerda MJ, Benítez-Hernández M del M, Arias-Velarde MÁ, Gómez-Gómez MT, Pérez-Álvarez M** (2014) Relationship Between Childhood Trauma, Mindfulness, and Dissociation in Subjects With and Without Hallucination Proneness. *Journal of Trauma and Dissociation* **15**, 35–51.

**Pinto-Gouveia J, Matos M, Castilho P, Xavier A** (2014) Differences between Depression and Paranoia: The Role of Emotional Memories, Shame and Subordination. *Clinical Psychology and Psychotherapy* **21**, 49–61.

**Quidé Y, O’Reilly N, Watkeys OJ, Carr VJ, Green MJ** (2018) Effects of childhood trauma on left inferior frontal gyrus function during response inhibition across psychotic disorders. *Psychological Medicine* **48**, 1454–1463.

**Rössler W, Ajdacic-Gross V, Rodgers S, Haker H, Müller M** (2016) Childhood trauma as a risk factor for the onset of subclinical psychotic experiences: Exploring the mediating effect of stress sensitivity in a cross-sectional epidemiological community study. Elsevier B.V. *Schizophrenia Research* **172**, 46–53.

**Schalinski I, Breinlinger S, Hirt V, Teicher MH, Odenwald M, Rockstroh B** (2019) Environmental adversities and psychotic symptoms: The impact of timing of trauma, abuse, and neglect. Elsevier B.V. *Schizophrenia Research* **205**, 4–9.

**Sheinbaum T, Kwapil TR, Barrantes-Vidal N** (2014) Fearful attachment mediates the association of childhood trauma with schizotypy and psychotic-like experiences. Elsevier *Psychiatry Research* **220**, 691–693.

**Shevlin M, McElroy E, Murphy J** (2015) Loneliness mediates the relationship between childhood trauma and adult psychopathology: evidence from the adult psychiatric morbidity survey. *Social Psychiatry and Psychiatric Epidemiology* **50**, 591–601.

**Sitko K, Bentall RP, Shevlin M, O’Sullivan N, Sellwood W** (2014) Associations between specific psychotic symptoms and specific childhood adversities are mediated by attachment styles: An analysis of the National Comorbidity Survey. *Psychiatry Research* **217**, 202–209.

**Stang A** (2010) Critical evaluation of the Newcastle-Ottawa scale for the assessment of the quality of nonrandomized studies in meta-analyses. Springer *European Journal of Epidemiology* **25**, 603–605.

**Steenkamp L, Weijers J, Gerrmann J, Eurelings-Bontekoe E, Selten JP** (2019) The relationship between childhood abuse and severity of psychosis is mediated by loneliness: an experience sampling study. Elsevier B.V. *Schizophrenia Research*.

**Styła R, Stolarski M, Szymanowska A** (2019) Linking childhood adversities with schizophrenia: A mediating role of the balanced time perspective. *Schizophrenia Research* **209**, 281–283.

**Sun P, Alvarez-Jimenez M, Simpson K, Lawrence K, Peach N, Bendall S** (2018) Does dissociation mediate the relationship between childhood trauma and hallucinations, delusions in first episode psychosis? Elsevier Inc. *Comprehensive Psychiatry* **84**, 68–74.

**Thompson A, Marwaha S, Nelson B, Wood SJ, McGorry PD, Yung AR, Lin A** (2016) Do affective or dissociative symptoms mediate the association between childhood sexual trauma and transition to psychosis in an ultra-high risk cohort? Elsevier *Psychiatry Research* **236**, 182–185.

**Van Dam DS, Korver-Nieberg N, Velthorst E, Meijer CJ, de Haan L** (2014) Childhood maltreatment, adult attachment and psychotic symptomatology: a study in patients, siblings and controls. *Social Psychiatry and Psychiatric Epidemiology* **49**, 1759–1767.

**Van Nierop M, van Os J, Gunther N, van Zelst C, de Graaf R, ten Have M, van Dorsselaer S, Bak M, Myin-Germeys I, Van Winkel R** (2014) Does social defeat mediate the association between childhood trauma and psychosis? Evidence from the NEMESIS-2 Study. *Acta Psychiatrica Scandinavica* **129**, 467–476.

**Varese F, Barkus E, Bentall RP** (2012) Dissociation mediates the relationship between childhood trauma and hallucination-proneness. *Psychological Medicine* **42**, 1025–1036.

**Weijers J, Fonagy P, Eurelings-Bontekoe E, Termorshuizen F, Viechtbauer W, Selten JP** (2018) Mentalizing impairment as a mediator between reported childhood abuse and outcome in nonaffective psychotic disorder. Elsevier Ireland Ltd *Psychiatry Research* **259**, 463–469.

**Wickham S, Bentall R** (2016) Are specific early-life adversities associated with specific symptoms of psychosis?: A patient study considering just world beliefs as a mediator. *Journal of Nervous and Mental Disease* **204**, 606–613.

**Wolke D, Lereya ST, Fisher HL, Lewis G, Zammit S** (2014) Bullying in elementary school and psychotic experiences at 18 years: A longitudinal, population-based cohort study. *Psychological Medicine* **44**, 2199–2211.

**Yamasaki S, Ando S, Koike S, Usami S, Endo K, French P, Sasaki T, Furukawa TA, Hasegawa-Hiraiwa M, Kasai K, Nishida A** (2016) Dissociation mediates the relationship between peer victimization and hallucinatory experiences among early adolescents. The Authors *Schizophrenia Research: Cognition* **4**, 18–23.