UNIVERSITAT DE BARCELONA

Experiències traumàtiques en la infància i conductes suïcides en pacients amb un primer episodi psicòtic

Regina Vila Badia

UNIVERSITAT DE
BARCELONA

Experiències traumàtiques en la infància i conductes suïcides en pacients amb un primer episodi psicòtic.

Regina Vila Badia

El treball descrit en aquesta tesi s'ha realitzat al Parc Sanitari Sant Joan de Déu (Sant Boi de Llobregat), a l'Hospital Sant Joan de Déu Infantil (Esplugues del Llobregat) i al Departament de Medicina Translacional i de Recerca de la Facultat de Medicina, Universitat de Barcelona (Barcelona).

Aquest treball va comptar amb el suport del Ministeri de Sanitat Espanyol Carlos III, beca de recerca número PI17/00111 i una beca personal de recerca número FI18/00028. A més, l'autora d'aquesta tesi va rebre una beca de la Fundació Agustí Pedro i Pons (Universitat de Barcelona) per dur a terme una estada de recerca en un centre de referència de recerca en primers episodis psicòtics a la Unitat de Psiquiatria Contextual de la Universitat de Lovaina.

UNIVERSITAT DE BARCELONA

EXPERIÈNCIES TRAUMÀTIQUES EN LA INFÀNCIA I CONDUCTES SUÏCIDES EN PACIENTS AMB UN PRIMER EPISODI PSICÒTIC.

Memòria de tesi doctoral presentada per REGINA VILA BADIA per optar al grau de doctora per la Universitat de Barcelona

Directora:

Judith Usall i Rodié

Tutor:

Josep Maria Haro Abad

Programa de Doctorat Medicina i Recerca Translacional.

Facultat de Medicina i Ciències de la Salut. Universitat de Barcelona.

Barcelona, Juliol 2022

FAIG CONSTAR que aquest treball, titulat “Experiències traumàtiques en la infància i conductes suïcides en pacients amb un primer episodi psicòtic”, que presenta la Regina Vila Badia per a l’obtenció del títol de Doctora, ha estat realitzat sota la meva direcció al Departament de Medicina i Recerca Translacional d’aquesta universitat.

Barcelona, a 28 de Juliol 2022

La Directora de la tesi doctoral

Judith Usall i Rodié

A la meva família,
pare, mare, Neus i Aleix.

"Invencibles. Junts, anem més lluny".

Agraïments

El primer agraïment és per dos dones que són un exemple per a mi, tan diferents però que encaixen a la perfecció formant un gran equip. És difícil explicar en paraules tot el que han representat fins al dia d'avui. Primer, a tu, Susana Ochoa, la persona que em va donar l'oportunitat i que va confiar en mi per incloure'm dins del que ha estat la meva casa durant aquests anys "el grup MERITT". Sense ella, avui no seria aquí. Gràcies per ensenyar-me i encomanar-me la teva passió per la recerca, per ser com una segona mare quan vivia a Barcelona. Gràcies pel teu suport i el teu mentoratge que han estat claus en el meu aprenentatge com a investigadora, i pels teus consells que m'han fet créixer com a persona. A tu, Judith Usall, per donar-me l'oportunitat de formar part del Grup PROFEP i transmetre'm la teva energia i passió per la psicosi, pel gènere i per la vida en general. Per ser la meva directora, i acompanyar-me en aquest procés. Però sobretot, per empoderar-me, gràcies a tu, em sento forta, valenta i amb confiança per aconseguir allò que em proposi. Per fer recordar-me dia a dia que no oblidi mai la meva identitat, i per donar-me nous punt de vista que m'han fet pensar i qüestionar milers de coses, enriquint-me i transformant-me em qui soc avui.

Al grup MERITT, Clara, Marina, Luciana, Marta, Raquel, Sílvia, Elena, Alicia i Manu per acompanyar-me a primer línia d'aquesta batalla. Per compartir coneixements, preocupacions, neguits i també alegries i molts "cotis". Per fer pinya, i fer que la pandèmia fos més fàcil de portar. En especial, a l'Anna Butjosa, que em va engrescar al "meravellós" i alhora "dur i angoixant" món de les experiències traumàtiques en la infància, i que em va engrescar a dur a terme aquesta tesi. També a la Núria Del Cacho per fer-me més fàcil la incorporació a la línia de primers episodis psicòtics.

A tots i totes les companyes de despatx i de la unitat d'investigació, pels dinars, cafès i festes que han fet d'aquests anys moments únics. A tu Cris, companya de patins i de cotxe, que mai ens hauríem imaginat tornar-nos a trobar i menys en una unitat d'investigació. Pels cafès i xerrades interminables al cotxe que s'allargaven més que el propi trajecte, i mira que és dir! I a tu, Ignacio, que tot i que la pandèmia hagi separat els nostres camins, les partides al futbolín i les cerveses post-feina del començament van ser imprescindibles per afrontar amb més ganes els problemes i maldecaps de principiants.

A les meves amigues, les “xaies”, i acompanyants, “passidaguets”, per fer de cada entrebanc una anècdota i un motiu per aprendre i riure’m de mi mateixa. Per fer que les nits de “us enrecordeu de...” hagin estat i segueixin sent un motiu per oblidar les dificultats, recarregar energies i afrontar nous reptes.

A la meva família, per ensenyar-me a que les coses que vols i que valen la pena s’ha de lluitar i treballar i que si hi poses ganes, esforç i sobretot amor, tot és possible. Per estar sempre al meu costat, respectar les meves decisions, animar-me en tot allò que em proposava, i ajudar-me a seguir creixent personal i professionalment.

I a tu, Aleix, per acompanyar-me en aquesta etapa, tant gratificant i en alguns moments tant estressant. Per animar-me amb els meus propòsits, per sumar forces, per posar calma en moments de tempesta, i sobretot, per posar ordre dins del meu desordre.

Finalment, agrair a tots i totes les participants que han contribuït a aquest treball, i també a tots i totes les professionals que hi han col·laborat, especialment al Grup PROFEP.

Fonts de finançament de la tesi doctoral

Aquesta tesi es desenvolupa en el marc d'un projecte finançat per el Ministeri de Sanitat Espanyol Carlos III ("*Impacto de la interacción de los factores protectores y de estrés psicosocial en la aparición y pronóstico de un primer episodio psicótico*; PI17/00111) i gràcies també a una beca personal associada al projecte esmentat ("*Interacción entre factores protectores y estrés psicosocial en primeros episodios psicóticos;* FI18/00028).

A més, l'autora d'aquesta tesi, va rebre una beca de la Fundació Agustí Pedro i Pons (Universitat de Barcelona) per dur a terme una estada de recerca en un centre de referència de recerca en primers episodis psicòtics a la Unitat de Psiquiatria Contextual de la Universitat de Lovaina (Bèlgica).

Índex

Glossari

ACSS-FAD Acquired Capability for Suicide Scale-Fearlessness About Death

BBTS Brief Betrayal Trauma Survey

BDI Beck's Depression Inventory

CAARMS The Comprehensive Assessment of At Risk Mental States

CDSS Calgary Depression Scale for Schizophrenia, escala per a la depressió en esquizofrènia

CECA.Q Childhood Experience of Care and Abuse Questionnaire

CS Conductes Suïcides

CTQ-SF Childhood Trauma Questionnaire-Short Form, escala de Trauma Infantil

C-SSRS Columbia Suicide Severity Rating Scale

DSM-5 Diagnostic and statistical manual of mental disorders (fifth edition), Manual diagnòstic i estadístic dels trastorns mentals (cinquena edició)

DUP Duration of untreated psychosis, durada de la psicosi sense tractar

EMAR estats mentals d'alt risc

ETI experiència traumàtica en la infància

EVE esdeveniment vital estressant

OMS Organització Mundial de la Salut

PANSS Positive and Negative Syndrome Scale, escala de simptomatologia en esquizofrènia

QI quocient intel·lectual

PEP Primer episodi psicòtic

SCAN Schedules for Clinical Assessment in Neuropsychiatry

SPA abús sexual i físic

SRSP Plutchik Suicide Risk Scale, Escala de Risc Suïcida de Plutchik

TEC The Trauma Experience Checklist

Enumeració d'articles que componen la tesi

Aquesta Tesi és en forma compendi d'articles i consta de 4 articles científics per donar resposta a 4 objectius.

Article 1:

Vila-Badia R, Butjosa A, Del Cacho N, Serra-Arumí C, Esteban-Sanjusto M, Ochoa S, Usall J. Types, prevalence and gender differences of childhood trauma in first-episode psychosis.What is the evidence that childhood trauma is related to symptoms and functional outcomes in first episode psychosis? A systematic review. Schizophr. Res. 2021; 228:159-179. doi: 10.1016/j.schres.2020.11.047

Factor d'impacte: 4,662

Quartil (Journal Rank in Psychiatry and Mental Health): Q2

Article 2:

Vila-Badia R, Del Cacho N, Butjosa A, Serra-Arumí C, Esteban Sanjusto M, Abella M, Cuevas-Esteban G, Morelló G, Pardo M, Muñoz-Samons D, PROFEP G, Usall J. Prevalence and types of childhood trauma in first episode psychosis patients. Relation with clinical onset variables. J. Psychiatr. Res. 2022; 146:102-108. doi: 10.1016/j.jpsychires.2021.12.033

Factor d'impacte: 5,250

Quartil (Journal Rank in Psychiatry and Mental Health): Q2

Article 3:

Vila-Badia R, Kaplan M, Butjosa A, Del Cacho N, Serra-Aumí C, Colomer-Salvans A, Esteban Sanjusto M, Iglésias-González M, Cuñat O, Del Hoyo-Buxó B, PROFEP G, Usall J. Suicidal behaviour in first-episode psychosis: The relevance of age, perceived stress and depressive symptoms. Clin Psychol Psychother. 2022. Publicació en línia. doi: 10.1002/cpp.2716

Factor d'impacte: 3,198

DOI: 10.1002/cpp.2716

Quartil (Journal Rank in Psychiatry and Mental Health): Q3

Article 4:

Diago M, **Vila-Badia R**, Serra Arumí C, Butjosa A, Del Cacho N, Esteban Santjusto M, Colomer-Salvans A, Sánchez L, Dolz M, Muñoz-Samons D, PROFEP G, Usall J. Emotional abuse and perceived stress: the most relevant factors in suicide behaviour in first-episode psychosis patients. Psychiatry Res. 2022. Publiació online. doi: 10.1016/j.psychres.2022.114699

Factor d'impacte: 11,225

Journal Rank in Psychiatry and Mental Health: Q1

Resum

Introducció:

L'impacte de les experiències traumàtiques en la infància (ETIs) té conseqüències importants en la salut física i mental d'infants i adolescents no només en aquesta etapa vital sinó també conseqüències en l'edat adulta. Patir una ETI s'ha associat amb una pitjor salut mental i amb un increment de trastorns psiquiàtrics, entre aquests, els trastorns psicòtics. Per altra banda, les conductes suïcides (CS) han augmentat en el últims anys, associant-se també a una pitjor salut mental. Concretament, en les persones que pateixen un primer episodi psicòtic (PEP) aquestes conductes són d'especial importància ja que es donen en un 60%. La relació entre les ETIs i les CS en PEP no ha estat gaire estudiada, però en població general s'ha vist una increment de CS en persones que han patit una ETI. Per tant, una detecció precoç de les ETIs i alhora, de les CS pot esdevenir de vital importància per prevenir problemes de salut mental, entre aquests el fet de patir un PEP.

Objectius:

1. Revisar la literatura sobre les experiències traumàtiques en la infància i la seva influència en l'aparició d'un primer episodi psicòtic, tenint present els instruments utilitzats en la seva avaluació, la seva definició i característiques, les diferències d'aquestes entre les persones que pateixen un primer episodi psicòtic en comparació amb altres mostres clíniques i sanes, les diferències de sexe i la relació entre aquestes experiències i la simptomatologia i el funcionament dels pacients amb un primer episodi psicòtic.
2. Analitzar els tipus d'experiències traumàtiques en la infància i la seva prevalença en una mostra de pacients amb un primer episodi psicòtic i comparar-ho amb un mostra de persones control sanes, i estudiar quines variables clíniques, psicosocials i sociodemogràfiques en l'inici d'un primer episodi psicòtic estaven relacionades amb haver patit alguna experiència traumàtica en la infància.

3. Analitzar la freqüència de la conducta suïcida en una mostra de pacients amb un primer episodi psicòtic i comparar-ho amb una mostra de persones control sanes, estudiar les diferències de sexe en les conductes suïcides en els i les pacients amb un primer episodi psicòtic i estudiar la relació entre les conductes suïcides i les variables sociodemogràfiques, clíniques i psicosocials a l'inici del primer episodi psicòtic.
4. Estudiar l'impacte de les experiències traumàtiques en la infància en les conductes suïcides en pacients amb un PEP, controlant per variables sociodemogràfiques, clíniques i psicosocials rellevants per a les conductes suïcides

Mètode:

Estudi descriptiu observacional transversal d'una mostra de persones amb un primer episodi psicòtic i una mostra de persones control sanes. Les persones amb un PEP van ser reclutades de les unitats d'Urgències i dels Centres de Salut Mental d'Adults del Parc Sanitari Sant Joan de Déu i de la Unitat d'Urgències i dels Centres de Salut Mental Infanto-Juvenil del Hospital Sant Joan de Déu i van ser avaluades al moment de l'ingrés. Per altra banda, el grup control, que eren persones voluntàries sense malalties mentals i sense antecedents familiars de l'espectre psicòtic van ser reclutades a través de les xarxes socials del Parc Sanitari Sant Joan de Déu, així com a través de les xarxes socials de l'equip de recerca. A tots i totes les participants se'ls va administrar l'escala d'experiències traumàtiques en la infància (CTQ-SF) per avaluar les ETIs i l'escala de Risc Suïcida de Plutchik (SRSP) per avaluar les CS. A més a més, també se'ls hi va administrar una sèrie d'escales i qüestionaris per obtenir dades sociodemogràfiques, clíniques i funcionals.

Resultats:

Els resultats van mostrar una prevalença de ETIs del 59% en els i les pacients amb un PEP i del 17% en la mostra de controls. Tenir un pare o mare amb una malaltia mental i presentar més símptomes positius a l'inici del PEP es va relacionar amb el fet d'haver patit més ETIs. L'edat d'inici de la psicosi, els anys d'educació, la duració de psicosi no tractada, la simptomatologia psicòtica, l'estrès percebut, el funcionament personal i social i el risc suïcida van ser variables que es van relacionar amb algunes ETIs específiques.

Pel que fa a les CS, el 47% dels i les pacients amb un PEP van reportar haver presentat ideació suïcida i el 16.7% algun intent de suïcidi en algun moment de la seva vida, enfront al 20,5% i al 1.6% respectivament de la mostra controls.

Una edat més primerenca d'inici de la psicosi, presentar nivells més alts d'estrès percebut i de desesperança, i presentar més simptomatologia depressiva van ser les variables que van predir les CS.

Finalment, de totes les ETIs, l'abús emocional, juntament amb la presència de més nivell d'estrès percebut van ser les variables predictores per a les CS.

Conclusions:

Aquesta tesi ha demostrar l'alta prevalença de ETIs i CS en els i les pacients amb un PEP o l'impacte d'aquestes últimes en l'aparició de la malaltia. A més, el fet d'haver patit ETIs va ser una variable important en l'aparició de les CS, mostrant una relació entre les dues variables. Per tant, per una banda, la present tesi posa de manifest la importància de detectar les ETIs i de crear intervencions específiques amb l'objectiu de prevenir els trastorns mentals, sobretot els trastorns psicòtics. I per altra banda, la importància d'ajudar en la detecció i prevenció de les CS, i en la millora del benestar personal, per proporcionar una millora de la salut mental i la qualitat de vida i alhora ajudar a la prevenció de trastorns mentals.

Abstract

Introduction:

The impact of traumatic childhood experiences (TCEs) has important consequences on the physical and mental health of the victims. These consequences are also apparent during adulthood. Having suffered TCEs is associated with worse mental health and an increased risk of developing psychiatric disorders, including psychotic disorders.

Likewise, the prevalence of suicidal behaviors (SB) has increased in the last years and is also associated with worse mental health. For instance, these behaviors are found in 60% of patients with first-episode psychosis (FEP). In the general population, there is a well-established association between TCEs and SB. However, the link between TCEs and SB is not fully understood in FEP. Clarifying these associations could be vital in preventing mental health problems, probably including the prevention of FEP.

Objectives:

1. To review the literature on the assessment, characteristics, and influence of TCEs on the appearance of a first psychotic episode.

2. Analyze the types of traumatic experiences in childhood and their prevalence in a sample of people who have suffered a first psychotic episode and their relationship with sociodemographic, clinical, and psychosocial variables.

3. Analyze the frequency of suicidal behaviors in a sample of patients with a first episode of psychosis, study their relationship with sociodemographic, clinical, and psychosocial variables, and study gender differences.

4. To study the relationship between the different types of traumatic experiences in childhood and suicidal behaviors, and to study which sociodemographic, clinical, and psychosocial variables predict suicide risk along with traumatic experiences in childhood.

Method:

We used a cross-sectional, observational, descriptive study of a sample of patients with first-episode psychosis and a sample of healthy controls.

People with FEP were recruited from the Emergency Units and Adult Mental Health Centers of Parc Sanitari Sant Joan de Déu (PSSJD) and the Emergency Unit and the Child and Adolescent Mental Health Centers of the Hospital Sant Joan de Déu and were evaluated at the time of admission. The control group was composed of volunteers without current mental illness or a family history of psychotic spectrum disorders. The control group was recruited through the social networks of the PSSJD, as well as through the social networks of the research team. Each participant was administered the Childhood Trauma Questionnaire (CTQ-SF) to assess CTEs and the Plutchik Suicide Risk Scale to assess SB. In addition, they were administered a series of scales and questionnaires to obtain sociodemographic, clinical, and functional data.

Results:

The prevalence of TCEs was 59% in the FEP group and 17% in the control sample. The strongest predictors for past CTEs were the age of onset of psychosis, years of education, duration of untreated psychosis, psychotic symptoms, perceived stress, personal and social functioning, and suicide risk.

As for SB, 47% of patients with FEP reported having suicidal ideation and 16.7% had attempted suicide at some point in their lives, compared to 20.5% and 1.6% respectively of the sample controls. The best predictors for SB were an earlier age of onset of psychosis, higher levels of perceived stress and hopelessness, and more depressive symptoms.

Finally, of all TCEs, emotional abuse together with higher perceived stress were the most important predictors of SB.

Conclusions:

This thesis demonstrates the high prevalence of TCEs and SB in patients with FEP, as well as the impact of the latter on the onset of the disease.

Having suffered TCEs was strongly associated with the appearance of SB. Therefore, the work in this thesis emphasizes the importance of an early detection of TCEs and the development of preventive strategies to prevent mental illness, especially psychotic disorders. Similarly, the work described in this thesis highlights the need to explore and address SB to improve well-being, mental health and quality of life, as well as in preventing mental illness.

0. Pròleg

La present tesi representa la memòria-treball d'investigació realitzada entre els anys 2018 i 2022 com a estudiant predoctoral al programa de Doctorat en Medicina i Recerca Translacional i la Unitat de Recerca, Docència i Innovació del Parc Sanitari Sant Joan de Déu, dins del projecte (FIS) "*Impacto de la interacción de los factores protectores y de estrés psicosocial en la aparición y pronóstico de un primer episodio psicótico*" i dins del grup MERITT (Etiopatogènia i tractament dels trastorns mentals greus), reconegut com a grup d'investigació emergent de la Generalitat de Catalunya (SRG 934), vinculat a la Fundació Sant Joan de Déu.

La tesi s'estructura en dos parts: una part amb un marc teòric i l'altra part empírica formada per 4 articles científics.

La primera part de la tesi, el marc teòric, està estructurada de la següent manera: primerament, es fa una breu presentació sobre els trastorns psicòtics i les seves característiques clíniques. Seguidament, es presenta el model de vulnerabilitat-estrès i els diferents factors de risc per a l'aparició dels trastorns psicòtics. A continuació, es presenten les experiències traumàtiques en la infància i la seva relació amb la salut mental de les persones i en concret l'impacte que tenen en l'aparició d'un PEP, així com les diferents maneres d'avaluar-les. Seguidament, es fa una presentació teòrica sobre les conductes suïcides en els últims anys i les implicacions d'aquestes en la salut mental i en les persones que han patit un PEP, i les formes que hi han per avaluar-les. Finalment, es presenten les diferències entre homes i dones pel que fa als trastorns psicòtics, a les experiències traumàtiques infantils i a les conductes suïcides.

La segona part de la tesi, la part empírica, és on es presenten els objectius i les hipòtesis, es presenten els materials i els mètodes i els resultats, i es realitza la discussió d'aquests i les principals conclusions d'aquest treball. Finalment, també es presenten una sèrie de limitacions, perspectives clíniques i reptes i línies futures.

1. Introducció

1.1 Trastorn psicòtics.

Els trastorns psicòtics es caracteritzen per una distorsió de la percepció de la realitat i per una alteració significativa del pensament, les emocions i la conducta, és a dir, d'una alteració general del funcionament mental (1,2).

Els trastorns psicòtics solen aparèixer al final de l'adolescència o durant els primers anys de l'edat adulta, concretament entre el 18 i els 35 anys (3). Aproximadament 3 de cada 100 persones adultes joves experimentaran un episodi psicòtic al llarg de la seva vida (4).

Els objectius a llarg termini del tractament en els trastorns psicòtics inclouen mantenir la remissió, reduir les recaigudes i millorar el nivell de funcionament i la qualitat de vida de les persones afectades. Els medicaments antipsicòtics són el pilar del tractament de la psicosi i s'han d'iniciar ràpidament després que s'hagi establert un diagnòstic precís (5). A més a més d'aquest tractament farmacològic, la majoria de les persones amb un trastorns psicòtic es beneficiaran d'intervencions psicològiques i psicosocials, com ara educació i informació sobre la malaltia (psicoeducació), formació en habilitats socials i metacognició, teràpia cognitiva-conductual, rehabilitació cognitiva, programes de prevenció de recaigudes o teràpia familiar per resoldre problemes, entre d'altres (5–7).

Per poder realitzar un bon diagnòstic en pacients amb psicosi, és important que el personal clínic sigui capaç d'avaluar i valorar els cinc dominis propis de la psicosi: deliris, al·lucinacions, pensament desorganitzat (parla), comportament motor molt desorganitzat o anormal (inclosa la catatonia) i els símptomes negatius (2).

1.1.1. *Primer episodi psicòtic*

En la literatura científica trobem moltes definicions diferents respecte a què és un PEP, no trobant una definició operativa consensuada. Els sistemes diagnòstics existent (DSM-V i CIE-10), no ofereixen una clara definició per aquest constructe. Aquesta variabilitat en les definicions, i per tant, en la inclusió d'aquests i aquestes pacients en els estudis i inclús en els programes clínics destinats a aquesta població, posa de manifest les dificultats en la

integració dels resultats i del progrés en la identificació d'elements per a la detecció precoç i per a la millora dels tractament dels trastorn psicòtics (8).

En els estudis de la present tesi definim Primer Episodi Psicòtic com la presència de idees delirants, al·lucinacions, llenguatge desorganitzat, comportament catatònic o desorganitzat i símptomes negatius (alògia, abúlia, aplanament afectiu) durant almenys una setmana i de menys de cinc anys d'evolució. Per altra banda, cal remarcar que les persones incloses en el nostre estudi són persones que tenen el primer contacte amb els serveis d'urgència o centres de salut mental, i que no han pres medicació antipsicòtica prèvia a aquest contacte.

1.1.2. Característiques clíniques

Les característiques clíniques d'un primer episodi psicòtic (PEP) inclouen la presència de símptomes positius, com ara les al·lucinacions, els deliris, un discurs i un pensament desorganitzat i un comportament molt desorganitzat o catatònic (DSM-V) (1). A més a més també és freqüent la presència de símptomes negatius, com ara l'aplanament o l'aplanament afectiu (disminució de l'expressió i la reactivitat emocional observada), l'alògia (absència o disminució de la parla// alteració del pensament caracteritzada per la incapacitat de produir idees), l'anhedonisme (desaparició o disminució de la capacitat d'experimentar plaer), l'associalitat (manca de motivació per participar en la interacció social) i l'abúlia (manca de desig o motivació) (1,9).

Sovint, les persones que presenten un PEP també presenten clínica afectiva associada, com ara depressió i l'ansietat (10–12), i també símptomes cognitius com ara problemes de concentració i atenció, dèficits en el funcionament executiu i deteriorament de la memòria de treball (2,13–16).

Aquesta simptomatologia descrita acaba produint un deteriorament funcional i una reducció de la qualitat de vida d'aquestes persones, que pot estar present inclús abans de l'inici del PEP.

Per altra banda, tant l'estigma social cap a les persones amb un trastorn psicòtic (17–19), com la falta de consciència de malaltia que presenten aquestes persones (20,21), són factors claus que siguin reticents a demanar ajuda o que aquesta arribi tard, i això pot fer

allargar el temps que estan sense tractament (22). El concepte de durada de psicosi sense tractar (DUP) es refereix al període de temps entre l'aparició dels símptomes de la psicosi i l'inici del tractament (23) i és un dels predictors a nivell clínic i de pronòstic del PEP (24–27).

1.2. Model de vulnerabilitat-estrès en l'esquizofrènia

Els mecanismes implicats en l'aparició i/o evolució de la psicosi encara no es coneixen amb certesa.

Des de finals de la dècada de 1970 s'ha atribuït a l'estrès un paper central en la patogènesi dels trastorns psicòtics (28,29). Els models de vulnerabilitat-estrès difereixen en detall, però tots assumeixen que les persones tenen diferents nivells de vulnerabilitat i que la probabilitat de símptomes psicòtics és una funció de l'abast de la vulnerabilitat i l'estrès amb què es troba l'individu.

El model de vulnerabilitat-estrès és el que ha tingut una major acceptació en les últimes dècades, i assenyala la contribució i la interacció de diversos factors biològics i ambientals per explicar l'origen i l'evolució d'aquesta patologia (29–32). Aquest model suposa que la probabilitat de desenvolupar una malaltia mental depèn de la predisposició genètica (diàtesi) i de la interacció amb l'entorn, concretament de les situacions d'estrès a què s'enfronta una persona al llarg de la seva vida i de la seva capacitat per afrontar i gestionar aquestes situacions (33).

Aquest model es recolza en investigacions on diferents esdeveniment vitals estressants han precedit un episodi psicòtic agut (34), i alhora en investigacions que han mostrat que la sensibilitat a l'estrès, assignació de rellevància aberrant (tendència que els estímuls irrellevants se'ls atribueixin prominència motivacional i, per tant, atreure l'atenció i influir en el comportament de manera inadequada) (35,36) i l'anticipació a les amenaces han tingut un paper destacat en el desenvolupament d'experiències psicòtiques, tant en primers episodis de psicosi con en població d'alt risc (37).

1.3. Factors de Risc

La importància d'establir factors de risc per al desenvolupament de la psicosi és de gran rellevància clínica principalment per tres motius: a) permetrà poder predir quan es desenvoluparà el trastorn en poblacions d'alt risc; b) permetrà crear i aplicar intervencions per prevenir-ne l'aparició o millorar-ne el curs, ja que alguns dels factors son potencialment modificables; c) permetrà informar a la població general sobre la importància d'aquests factors per tal que en prengui consciència. Això ajudarà a promoure una millor salut mental i qualitat de vida de les persones (38).

Tot i la importància d'establir factors de risc i protecció per al desenvolupament de la psicosi, i la literatura creixent que hi ha al respecte, no hi ha conclusions evidents ja que els resultats publicats són controvertits i estan afectats per biaixos (38,39).

Revisions sistemàtiques d'estudis epidemiològics han mostrat que trastorns com l'esquizofrènia i altres trastorns psicòtics es veuen afectats per factors genètics i ambientals (38,40,41).

Pel que fa als factors genètics, l'heretabilitat de l'esquizofrènia se situa entre el 66 i el 83% (42–45), tot i així, aquests estudis emfatitzen que aquesta heretabilitat no només es deguda a causes purament genètiques, sinó que també hi influeixen factors ambientals ja que no és fàcil separar genètica i ambient. També s'ha descrit la relació entre alguns gens i l'alteració de les vies neurològiques i del neurodesenvolupament pròpies de l'esquizofrènia (46–48), així com la detecció de reordenacions cromosòmiques en aquesta patologia (49–51).

Pel que a als factors ambientals, un estudi de Khamker, (52) va concloure que els factors ambientals més relacionats amb el risc de desenvolupar esquizofrènia eren: els antecedents de complicacions obstètriques i perinatals, el trauma i l'abús infantil, el fet de viure en un entorn urbà molt poblat, l'adversitat social i, per últim, el consum de substàncies, concretament de cànnabis.

Una revisió exhaustiva de la literatura ("*comprenhensive literature*") sobre l'impacte de viure en un entorn urbà i el desenvolupament d'un trastorn psicòtic, va establir un vincle que evidenciava un augment del risc de desenvolupar psicosi en els països desenvolupats. Aquests resultats es van mantenir després de controlar-los per un alt nombre de possibles

factors de confusió (53). En aquesta mateixa línia, altres estudis han estimat que hi ha al voltant d'un 30% més de risc de desenvolupar esquizofrènia entre les persones que viuen en un entorn urbà (54,55). Tot i així, estudis i revisions recents, troben resultats contraris i apunten que els entorns urbans no augmenten el risc de psicosi, si no que els seus efectes estan condicionats a múltiples factors que es poden donar amb més freqüència en entorns urbans (56–58).

Pel que fa al trauma i l'abús infantil, i determinats esdeveniments vitals estressants com ara la separació o mort dels progenitors durant la infància o l'adolescència, ser abandonat/da, que el pare o la mare consumeixi substàncies il·legals...(59) són factors que en aquests períodes de vulnerabilitat poden actuar com a predisposants i mediadors en el desenvolupament de trastorns psicòtics.

Pel que fa al consum de cànnabis, una revisió de revisions i metanàlisis de Hasan i col·l., (60) específiques sobre consum de cànnabis i psicosi va mostrar que: els trastorns psicòtics es produïen amb més freqüència en les persones consumidores de cànnabis que en les no consumidores; que qualsevol consum de cànnabis al llarg de la vida estava associat amb un risc de 1,4 vegades més gran de desenvolupar un trastorn psicòtic, i la dependència al cànnabis, amb un risc de 3,4 vegades; i que les persones consumidores de cànnabis tenien un inici de psicosi més primerenc que les no consumidores. Per altra banda, l' única revisió sistemàtica dels últims 20 anys sobre factors de risc i protecció prenatals i perinatals en psicosi de Davies i col·l., (61) va posar de manifest 30 factors de risc i 5 factors de protecció significatius per al desenvolupament d'un trastorn psicòtic, mostrant així una clara relació entre alguns factors prenatals i perinatals i els trastorns psicòtics.

Una recent revisió paraigua ("*umbrella review")*, revisió que es centra en la síntesi de totes les revisions sistemàtiques que aborden un tema concret, va analitzar factors de risc i de protecció per al desenvolupament de la psicosi i va revelar que, la urbanicitat i l'estat mental d'alt risc, mostraven una forta associació amb els trastorns psicòtics. A més a més, també va exposar que factors perinatals, com néixer a l'hivern o a la primavera en els països de l'hemisferi Nord, o factors posteriors, com el trauma infantil, l'aïllament social en la infància, un baix QI premòrbid, ser esquerrà/na, anhedonisme tret, van mostrar una associació amb l'inici de la psicosi, però de forma més lleu. Per contra, va exposar que el consum elevat de cànnabis, i les complicacions obstètriques, van ser factors que van

mostrar una dèbil associació amb la psicosi sobretot degut a la falta d'estudis ben realitzats per poder arribar a conclusions consistents (38).

1.4. Experiències traumàtiques en la infància (ETIs)

La presència de factors d'estrès psicosocial en les persones té conseqüències importants tant a nivell fisiològic com emocional en qualsevol època del desenvolupament, però és en la infància i en l'adolescència quan el seu impacte és més rellevant. Aquests factors tenen en comú desregular les vies biològiques implicades en la resposta a l'estrès, i el fet que el cervell humà en aquestes etapes segueixi desenvolupant-se, fa que sigui especialment vulnerable davant d'aquestes situacions, i per tant, es poden produir danys, de vegades irreversibles, de tipus físic, emocional i cognitiu (62,63). Per exemple, les nenes i els nens que han patit trauma infantil tenen més probabilitats de mostrar retards en el desenvolupament cognitiu, com ara dèficits en el desenvolupament del llenguatge, puntuacions baixes en les proves d'intel·ligència i un pitjor rendiment escolar (64,65). Ha estat sobretot en les darreres dècades que ha crescut l'interès per aquest tema (34,66), i s'ha posat de manifest la importància de clarificar i definir diferents conceptes relacionats amb els factors d'estrès psicosocial.

1.4.1. Definició i classificació

En la literatura trobem diferents conceptes relacionats amb l'estrès psicosocial. Els més utilitzats són els esdeveniments vitals estressants, l'estrès percebut i el trauma infantil.

Els esdeveniments vitals estressants (EVEs) són esdeveniments que directament o indirectament i subjectivament i/o objectivament afecten els individus i poden provocar canvis en la vida de l'individu requerint un reajustament en les activitats habituals i en les seves estratègies compensatòries (67,68). En general, els EVEs es classifiquen comunament entre positius i negatius, entenent que la seva percepció depèn de la interrelació dels factors personals (edat, sexe, temperament, etc.) i ambientals (família, escola, suport social, etc.).

L'estrès percebut, és el resultats de l'estrès que sent una persona davant de situacions viscudes en el seu dia a dia i els recursos personals i intrínsecs que l'individu té com, per exemple, la personalitat, les estratègies d'afrontament, la resiliència, etc.. (69). Per tant, és el subjecte qui avalua un estímul com a amenaçador si supera els seus recursos i posa en perill el seu benestar. Un estímul o situació pot ser amenaçador i generar estrès a uns individus mentre que a altres no. Igual que un mateix estímul o situació pot ser estressant per a un individu en un moment concret i en un altre moment no causar cap estrès (70). És important destacar que l'estrès sovint s'associa amb esdeveniments negatius, però els esdeveniments i les experiències positives també poden ser estressants.

Finalment el trauma infantil, segons el National Institute of Mental Health (USA) es pot definir com la "vivència d'un esdeveniment per part d'un nen, nena o adolescent que és emocionalment dolorós o angoixant, i que sovint provoca efectes físics i mentals duradors". L'abús emocional, l'abús físic, l'abús sexual, la negligència emocional i la negligència física són les experiències traumàtiques més freqüents durant la infància (71). Les principals experiències traumàtiques en la infància són l'*abús emocional* (agressions verbals al benestar d'un infant o adolescent o qualsevol comportament humiliant o degradant), l'*abús físic* (agressions corporals a un infant o adolescent per part d'una persona adulta que suposen un risc de lesions o en provoquen *)*, l'*abús sexual* (contacte o conducta sexual entre un menor o una menor de 18 anys edat i una persona adulta), la *negligència emocional* (incapacitat de les persones cuidadores per satisfer les necessitats emocionals i psicològiques bàsiques del nen, nena o adolescent, com ara l'amor, la pertinença, l'alimentació i el suport) i la *negligència física* (incapacitat o mala supervisió de les persones cuidadores a l'hora de cobrir les necessitats físiques bàsiques del nen, nena o adolescent, com ara menjar, allotjament, roba, seguretat i atenció sanitària) (71). La present tesi es centra en aquest últim factor d'estrès psicosocial, el trauma infantil.

1.4.2. Experiències traumàtiques en la infància i Primer Episodi Psicòtic

En les últimes dècades hi ha hagut un interès creixent en l'estudi del trauma en la infància. Això és degut a l'impacte que té el trauma infantil en la salut mental de les persones i en les dades que mostren que les persones amb trastorns de salut mental experimenten una major prevalença d'esdeveniments traumàtics en la infància (30–32). Concretament, entre el 34 i el 53% de les persones amb problemes de salut mental, tenen algun antecedent

d'abús físic i sexual durant la infància (72). Centrant-nos en les persones que pateixen un trastorn psicòtic, el trauma infantil s'ha descrit com un factor de risc per al desenvolupament de la psicosi (73–76), amb una prevalença de trauma infantil al voltant del 50 i 75% en les persones que han patit un primer episodi psicòtic (77–80).

Per altra banda, el trauma infantil també s'ha relacionat amb la gravetat i l'evolució del PEP. Les persones amb un PEP i amb antecedents de trauma infantil tendeixen a tenir més simptomatologia psicòtica, una pitjor funcionalitat, més risc de suïcidi, més símptomes d'estrès post-traumàtic, més temps de psicosi no tractada (DUP), antecedents de consum de cànnabis, menys anys d'educació i una edat primerenca d'aparició de l'inici de la psicosi (80–87).

A més a més, quan s'estudia el funcionament cognitiu, els i les pacients amb un PEP i que han patit trauma en la infància mostren un pitjor funcionament cognitiu, sobretot en tasques de memòria de treball, velocitat de processament i funcions executives (88,89).

Aquests resultats no estan exempts de controvèrsia, ja que altres estudis no van trobar diferències significatives entre els i les pacients amb un PEP que han patit trauma infantil i els que no en les variables exposades.

L'heterogeneïtat dels resultats pot ser deguda entre altres raons a la diferent conceptualització i també als diferents instruments utilitzats per avaluar el trauma infantil. En alguns instruments sols inclouen l'avaluació de les experiències traumàtiques en la infància, en canvi en d'altres, també barregen esdeveniments vitals estressants. Per altra banda, hi ha estudis que es centren en estudiar algun tipus concret de trauma infantil, o que ajunten diferents traumes infantils a l'hora de reportar els resultats, com per exemple, alguns estudis es centren en estudiar de forma conjunta l'abús físic i sexual (82,90), això també fa que sigui més difícil poder comparar resultats. Un altre motiu per a la heterogeneïtat dels resultats, pot ser a que pocs estudis controlen els resultats obtinguts per possibles variables de confusió. És important controlar els resultats per aquelles variables que han mostrat ser rellevants en la psicosi, com per exemple el consum de cànnabis, els símptomes, la cognició...

Aquestes discrepàncies en els resultats posen de manifest la importància de continuar estudiant el paper del trauma infantil en l'aparició i evolució del primer episodi psicòtic.

1.4.3. Avaluació del Trauma en la infància

Com ja s'ha dit en el paràgraf anterior el trauma infantil és un concepte molt ampli que sol ser difícil de conceptualitzar i resumir. Això ha provocat una gran heterogeneïtat en els resultats esmentats anteriorment. La majoria dels instruments creats i utilitzats per avaluar el trauma infantil també incorporen esdeveniments vitals estressants, com ara el divorci dels progenitors o estar sota atenció institucional (91–94). La literatura existent mostra diferències en la metodologia utilitzada, diverses conceptualitzacions de les ETIs i una heterogeneïtat en la seva avaluació. Aquesta heterogeneïtat dificulta la comparabilitat i l'obtenció de conclusions sòlides.

Els instruments més utilitzats en la literatura fins al moment per avaluar el trauma en la infància en pacients amb un primer episodi psicòtic han estat escales auto-administrades. A continuació s'anomenen les escales i instruments en la seva versió original més utilitzats en l'avaluació de les ETIs:

- Childhood Trauma Questionnaire, short fortm (CTQ-SF) (71,95). Aquest instrument ha estat l'utilitzat en la present tesi per avaluar les ETIs. Es tracta d'un qüestionari autoadministrats que avalua a través de 28 ítems 5 tipus d'experiències traumàtiques en la infància: abús emocional, físic i sexual i negligència emocional i física. Cada ítem es puntua d'1 (mai cert) a 5 (molt sovint cert). Es van utilitzar puntuacions numèriques per estudiar el nivell de trauma infantil. Els talls proposats per Bernstein i Fink (96) i Üçok i Bikmaz (97) es van utilitzar per estudiar la presència o absència de cada subtipus de trauma: l'abús emocional es va definir com una puntuació de ≥13, l'abús físic com ≥10, l'absència sexual. abús com a ≥8, negligència emocional com ≥15 i negligència física com ≥10. La consistència interna per a les puntuacions totals va ser un alfa de Cronbach de 0,98 i entre 0,79 i 0,94 per a les subescales. Al final del qüestionari, vam afegir la següent frase: "He viscut algun dels esdeveniments estressants de la vida anteriors, però no ho vull dir".
- Childhood Experience of Care and Abuse Questionnaire (CECA.Q) (94). El CECA.Q avalua la separació d'un progenitor durant almenys un any, la mort d'un progenitor, el maltractament físic per part de les principals figures parentals durant la infància i l'abús sexual.

- The Trauma Experience Checklist (TEC) (98). Inclou ítems dirigits a avaluar la negligència emocional, l'abús emocional, l'abús físic, l'assetjament sexual, l'abús sexual i l'amenaça corporal.
- La Brief Betrayal Trauma Survey (BBTS) (93). Es divideix en 4 categories (trauma no interpersonal; trauma interpersonal per algú no proper; trauma interpersonal perpetrat per algú proper; i altres traumes).

L'ús de qüestionaris és més freqüent que l'ús d'entrevistes en els estudis realitzats. Només tenim constància d'una entrevista semi-estructurada utilitzada per a l'avaluació del TI en pacients amb un primer episodi psicòtic, Childhood Experience of Care and Abuse (CECA) (91). La CECA va estar dissenyada per avaluar la indiferència/negligència de les persones cuidadores, l'abús físic i l'abús sexual. L'ús d'instruments per sobre de la utilització d'entrevistes es deu probablement al fet que els qüestionaris són econòmics, pràctics, ràpids i escalables. Un estudi va utilitzar els dos enfocaments en la seva avaluació de les ETIs i va trobar que, només el 50% de les persones participants que van informar d'abús sexual als qüestionaris, van informar d'abús sexual durant l'entrevista (99), cosa que indica que els i les participants poden sentir-se més còmodes informant d'experiències traumàtiques en qüestionaris auto-administrats.

En la present tesi, l'avaluació del trauma infantil es fa a través de l'escala CTQ, la més utilitzada fins al moment per a l'avaluació de les ETIs en pacients amb PEP. Simpson i col·l., (100) van estudiar la fiabilitat de la valoració del trauma infantil en PEP, mitjançant aquesta escala, després d'un període de tres mesos, i va trobar bons nivells de concordança entre les dues avaluacions. Per tant, la CTQ-SF és una escala amb bones propietats psicomètriques i de gran utilitat en pacients amb un PEP.

1.5. Conductes Suïcides

El suïcidi és una de les principals preocupacions de salut pública a nivell mundial (101–103). L'Organització Mundial de la Salut (OMS) ha posat de manifest la importància del suïcidi, sent una de les principals causes de mort amb 800.000 casos a l'any, és a dir, cada 40

segons es reporta una mort per suïcidi. Es preveu la continuació d'aquesta tendència fins al 2030 (104).

L'any 2020 va marcar un màxim històric de persones mortes per suïcidi a Catalunya, amb 556 suïcidis, 414 (74,5%) homes i 142 (25,5%) dones. Aquestes taxes de suïcidi han generat més morts que la COVID-19 en joves (entre 16 i 29 anys), i després dels tumors, és la principal causa de mort d'aquest col·lectiu poblacional (105).

Abans del suïcidi consumat, apareixen les idees suïcides i/o es produeixen els intents de suïcidi (conductes suïcides, CS). Per tant, identificar i intervenir sobre els primers signes de conducta suïcida és essencial en la seva prevenció. A tot el món, s'estima que entre 2 i 4 milions de persones patiran CS al llarg de la seva vida. Concretament, segons l'OMS, hi ha aproximadament 20 intents per cada suïcidi consumat (104). Això vol dir que en un any es podrien produir uns 11.120 intents de suïcidi a Catalunya.

La gran rellevància que té el suïcidi en tot el món ha fet que per primera vegada el DSM-5 contempli el trastorn del comportament suïcida. El DSM-5 defineix l'intent suïcida com "seqüència de comportaments iniciada per el mateix individu, que a l'hora d'iniciar-los espera que el conjunt d'accions portarà a la seva pròpia mort. El moment d'inici és el moment en què va tenir lloc un comportament en què es va aplicar el mètode de suïcidi" (1).

Un gran nombre de països lluiten activament contra el suïcidi mitjançant polítiques dinàmiques de prevenció, formació i sensibilització, i establint estratègies com ara la detecció precoç o l'ajuda psicològica. Per aquest motiu, abordar adequadament el suïcidi s'estableix com uns dels grans reptes actuals en matèria de salut mental i contribuiria a millorar el benestar de la societat.

1.5.1. Conductes Suïcides i Primer Episodi Psicòtic

Les persones amb un trastorn mental són un dels grups de presenten més risc de comportament suïcida (106). El risc de suïcidi sembla ser especialment rellevant en els trastorns psicòtics (107). Els i les pacients amb trastorns psicòtics, i especialment les persones diagnosticades d'esquizofrènia, tenen un major risc de suïcidi en comparació amb

la població general (108). Al voltant del 30%-40% de les persones amb psicosi presenten ideació suïcida (109–111), entre el 20% i el 40% han tingut almenys un intent de suïcidi (112), i s'estima que entre un 4% i un 13% portaran a terme un intent de suïcidi (113,114). A més a més, una revisió sistemàtica de Saha i col·l., (115) revela que el suïcidi és la principal causa de mort prematura en esquizofrènia. En aquesta línia White i col·l., (116) puntualitza que el suïcidi és el que més contribueix a la disminució de l'esperança de vida de les persones amb esquizofrènia sent aquesta uns 10 anys menys longeva.

Concretament, hi ha un major risc de suïcidi durant les primeres fases del trastorn, és a dir, durant el primer episodi de psicosi (PEP) (117–119). Durant aquest període, la conducta suïcida és un 60% més elevada que en altres estadis de la malaltia (120–122), i aquesta es manté després del PEP en el 16%-40% dels i les pacients (123–125).

A més, un estudi de cohorts realitzat a Anglaterra i Escòcia va trobar que la mortalitat per suïcidi era 12 vegades superior a la mostra de PEP que a la població general (120), i la literatura ha trobat que la taxa de suïcidi augmenta de l'1% al 3% en els primers 4-5 anys (126–128).

El coneixement dels factors de risc de suïcidi en pacients amb psicosi és de vital importància per tal de millorar el seu tractament i avançar en enfocaments i intervencions amb l'objectiu de disminuir la incidència de suïcidi. Degut a la importància del risc suïcida en els PEP, diferents recerques s'han portat a terme per estudiar i saber quins són els factors de risc associats a les CS i el suïcidi consumat.

Alguns factors de risc associats a la conducta suïcida en PEP inclouen la història personal d'intents de suïcidi, la depressió, la desesperança (117,119,123,124,129), l'abús de substàncies (130) i una llarga durada de la psicosi no tractada (DUP) (127,130–132). La pandèmia per COVID-19 ha agreujat el pes d'algun d'aquests factors (com la depressió, la desesperança, el consum de substàncies), i ha contribuït així a aquest augment de CS en els dos últims dos anys (133,134).

En aquesta línia, una recent revisió sistemàtica de Sicotte i col·l., (135) va investigar l'evolució dels pensaments i conductes suïcides i els factors associats en una mostra de persones amb un PEP. Dels 53 factors avaluats en els diferents estudis que componen la revisió, només el sexe masculí, la presència de símptomes depressius, i els pensaments i

conductes suïcides prèvies al PEP van ser els factors de risc relacionats amb més pensaments i comportaments suïcides en l'inici del PEP i durant el seguiment. Per altra banda, aquesta revisió remarca els resultats d'un estudi de Fedyszyn i col·l., (136) sobre el paper dels esdeveniments estressants i traumàtics recents en el desenvolupament dels pensaments i comportaments suïcides, donant suport a la realització d'intervencions dirigides als símptomes depressius i a les estratègies d'afrontament i de regulació emocional per tal de reduir aquestes conductes en les persones amb un PEP. Finalment, aquesta revisió, posa de manifest la falta d'estudis sobre aquesta temàtica, ja que està formada per només 17 articles (11 amb mostres no solapades), i remarca la importància de futurs estudis per tal d'abordar aquesta temàtica.

1.5.2. Avaluació dels Comportaments Suïcides

El suïcidi és un objectiu difícil per a la investigació, ja que suposa un repte ètic i pràctic identificar el suïcidi com el resultat principal de l'estudi d'intervenció (137). Per millorar la investigació en aquest camp els estudis es centren en estudiar les idees suïcides i/o intents suïcides. La ideació suïcida es defineix com "pensar, considerar o planificar el suïcidi", i els comportaments suïcides es poden definir com "una lesió autoinfligida amb o sense intenció de suïcidar-se" (106).

Gran part de les investigacions que es centren en l'estudi de les conductes suïcides ho fan a través de preguntes dicotòmiques (si/no) en referència a la ideació suïcida o l'intent suïcida. Algunes de les escales o ítems més utilitzats són: ítem 9 de l'escala BDI "Suicidal thoughts or wishes "(124), l'ítem 7.3 de l'escala CAARMS "Suicidality/Self Harm" (124), ítem de la Calgary (138,139), Columbia Suicide Severity Rating Scale (C-SSRS) (140–142), Acquired Capability for Suicide Scale-Fearlessness About Death (ACSS-FAD) (142), Schedules for Clinical Assessment in Neuropsychiatry (SCAN) (143) i preguntes directes fetes per els i les investigadores (144).

En el present estudi s'utilitza l'escala de Risc Suicida de Plutchik (SRSP). Es tracta d'un qüestionari auto-administrat de 15 ítems amb respostes dicotòmiques (sí/no), en què les respostes afirmatives ("sí") sumades donen la puntuació total de l'escala SRSP, definida com a major risc de suÏcidi. A més a més, l'ítem 13 (Alguna vegada has pensat en suïcidar-te?) i l'ítem 15 (Alguna vegada has intentat suïcidar-te?) mesuren respectivament les ideacions i els intents de suïcidi, respectivament. La versió espanyola va mostrar una bona

fiabilitat amb un valor alfa de Cronbach de 0,90 i va establir un punt de tall de 6 o més en la puntuació total per categoritzar aquelles persones que si presentaven un risc per al suïcidi (145).

1.6. Diferències entre dones i homes en les ETIs i les CS en pacients amb un PEP.

Les teories del rol social del desenvolupament assumeixen que les diferències entre dones i homes resulten principalment dels rols de gènere percebuts, la socialització del gènere i els diferencials de poder socioestructurals (146). Empíricament, l'evidència suggereix diferències de gènere en la majoria dels aspectes de la personalitat -la teoria de la personalitat dels Cinc Grans trets ("*Big Five traïts*"), la Tríada fosca de personalitat ("*Dark Triad traïts*"), autoestima, benestar subjectiu, depressió i els valors- (146). Així doncs adoptar una perspectiva de gènere és crucial.

Per altra banda, s'han descrit diferències de sexe en els trastorns psiquiàtrics. L'aparició, el tipus i l'expressió de la malaltia psiquiàtrica segueix un patró específic de sexe i gènere (147). En general, les dones tenen una major prevalença de trastorns d'ansietat i depressió al llarg de la vida (148), mentre que els homes estan sobre-representats amb trastorns d'externalització (per exemple, trastorns per consum de substàncies) i mortalitat per suïcidi (149–151).

L'existència de diferències de sexe en els trastorns psicòtics ha rebut un ampli suport empíric pel que fa a l'edat d'inici, el funcionament premòrbid, el curs de la malaltia, la transmissió familiar i els factors neurobiològics (152). Una de les troballes més replicades és una edat d'inici més primerenca en els homes. Un altre conjunt important de dades recents indiquen que les taxes d'incidència i prevalença de l'esquizofrènia poden ser més altes en els homes. Altres diferències de sexe trobades en diversos estudis són que les dones tenen un millor funcionament premòrbid, una millor resposta al tractament farmacològic i un millor pronòstic (152).

Finalment, també s'han descrit diferències de sexe en termes de trauma infantil i de conductes suïcides. Un estudi de les Nacions Unides de Pinheiro (153) sobre la violència contra els nens i nenes i adolescents va informar clarament que les nenes i les adolescents

pateixen més abús sexual i més abusos sexuals i físics (SPA). Un estudi realitzat a Espanya va concloure que els nois pateixen més maltractament físic i psicològic, així com negligència, mentre que els abusos sexuals són més freqüents en les noies (154). Els resultats en aquest camp no són concloents i cal més investigació.

Pel que fa a la conducta suïcida, el 74% de les morts per suïcidi es van produir en homes, enfront del 26% de dones a Espanya durant l'any 2020. En canvi, la idea i els intents de suïcidi semblen ser més freqüents en les joves i adolescents de la població espanyola. Tanmateix, també hi ha estudis que no troben diferències de sexe o que els intents de suïcidi són més freqüents en homes joves que en dones. Per tant, l'extensió a la qual les CS afecten de manera diferent a les noies i els nois segueix sent poc concloent (105).

2. Hipòtesis

1. Les persones amb un primer episodi psicòtic reportaran haver patit més ETIs en comparació amb la mostra de persones control sanes. A més a més, aquelles persones amb un PEP i que hagin patit una ETI presentaran més gravetat clínica i funcional a l'inici d'un PEP.
2. Les conductes suïcides seran més freqüents en les persones amb un primer episodi psicòtic en comparació amb la mostra de persones control sanes. A més a més, aquelles persones amb un PEP i CS presentaran més gravetat clínica i funcional a l'inici d'un PEP. Existiran diferències de sexe.
3. Les persones amb un PEP que presenten CS reportaran haver experimentat més ETIs que les persones sense CS. El trauma infantil serà una variable predictora de les CS.

3. Objectius

L'objectiu principal de la present tesi va ser avaluar l'impacte de les experiències traumàtiques en la infància (ETIs) i de les conductes suïcides (CS) en l'aparició d'un primer episodi psicòtic, estudiar la relació de les ETIs i les CS amb les variables sociodemogràfiques, clíniques i psicosocials a l'inici del PEP i estudiar la relació entre les ETIs i les CS. Per fer-ho, l'objectiu principal es va dividir en quatre objectius:

1. Revisar la literatura sobre les experiències traumàtiques en la infància i la seva influència en l'aparició d'un primer episodi psicòtic, tenint present els instruments utilitzats en la seva avaluació, la seva definició i característiques, les diferències d'aquestes entre les persones que pateixen un primer episodi psicòtic en comparació amb altres mostres clíniques i sanes, les diferències de sexe i la relació entre aquestes experiències i la simptomatologia i el funcionament dels pacients amb un primer episodi psicòtic (article 1).
2. Analitzar els tipus d'experiències traumàtiques en la infància i la seva prevalença en una mostra de pacients amb un primer episodi psicòtic i comparar-ho amb un mostra de persones control sanes, i estudiar quines variables clíniques, psicosocials i sociodemogràfiques en l'inici d'un primer episodi psicòtic estaven relacionades amb haver patit alguna experiència traumàtica en la infància (article 2).
3. Analitzar la freqüència de la conducta suïcida en una mostra de pacients amb un primer episodi psicòtic i comparar-ho amb una mostra de persones control sanes, estudiar les diferències de sexe en les conductes suïcides en els i les pacients amb un primer episodi psicòtic i estudiar la relació entre les conductes suïcides i les variables sociodemogràfiques, clíniques i psicosocials a l'inici del primer episodi psicòtic (article 3).
4. Estudiar l'impacte de les experiències traumàtiques en la infància en les conductes suïcides en pacients amb un PEP, controlant per variables sociodemogràfiques, clíniques i psicosocials rellevants per a les conductes suïcides (article 4).

4. Material i Mètodes i Resultats

4. 1. Estudi 1

Objectiu 1. Revisar la literatura sobre les experiències traumàtiques en la infància i la seva influència en l'aparició d'un primer episodi psicòtic, tenint present els instruments utilitzats en la seva avaluació, la seva definició i característiques, les diferències d'aquestes entre les persones que pateixen un primer episodi psicòtic en comparació amb altres mostres clíniques i sanes, les diferències de sexe i la relació entre aquestes experiències i la simptomatologia i el funcionament dels pacients amb un primer episodi psicòtic.

Article 1

Types, prevalence and gender differences of childhood trauma in first-episode psychosis. What is the evidence that childhood trauma is related to symptoms and functional outcomes in first episode psychosis? A systematic review.

Vila-Badia R, Butjosa A, Del Cacho N, Serra-Arumí C, Esteban-Sanjusto M, Ochoa S, Usall J.

Schizophrenia Research. 2021; 228:159-179.

Schizophrenia Research 228 (2021) 159–179

Contents lists available at ScienceDirect

Schizophrenia Research

journal homepage: www.elsevier.com/locate/schres

Types, prevalence and gender differences of childhood trauma in first-episode psychosis. What is the evidence that childhood trauma is related to symptoms and functional outcomes in first episode psychosis? A systematic review

Regina Vila-Badia [a,b,*], Anna Butjosa [c], Núria Del Cacho [a,b], Clara Serra-Arumí [a,b], Marina Esteban-Sanjusto [a], Susana Ochoa [a], Judith Usall [a]

[a] Parc Sanitari Sant Joan de Déu, Teaching, Research & Innovation Unit, Institut de Recerca Sant Joan de Déu, CIBERSAM, Sant Boi de Llobregat, Spain
[b] Universitat de Barcelona, Barcelona, Spain
[c] Hospital Infanto-juvenil Sant Joan de Déu, Institut de Recerca Sant Joan de Déu, Esplugues de Llobregat, CIBERSAM, Barcelona, Spain

ARTICLE INFO

Article history:
Received 28 August 2020
Received in revised form 28 November 2020
Accepted 28 November 2020
Available online xxxx

Keywords:
Childhood trauma
Abuse
Neglect
First-episode psychosis
Gender

ABSTRACT

This paper reviews and discusses the literature on childhood trauma (CT) in people with first-episode psychosis (FEP). The aim is to update the knowledge on the prevalence and the types of CT suffered by FEP people, to compare them with other samples, to study the impact of gender, and to examine the relationship between CT and symptoms and functional outcomes. We conducted a literature search (1995–2019), to identify reported data on any topic related to CT in FEP samples. The following terms were used in the search: CT or sexual abuse or physical abuse or neglect, and first-episode psychosis. We found 493 studies, of which 68 were included in the review. FEP presented a higher prevalence of CT than controls. Women suffer more sexual abuse. The effect of CT on the severity, the prognosis and the evolution of FEP is unclear. FEP have a high prevalence of CT. Its relationship with symptoms and functional outcomes indicates its importance within treatment. This suggests the importance of creating and implementing specific interventions and personalized therapies addressed to work through their past traumatic experiences to improve their quality of live and their prognosis.

1. Introduction

Traumatic experiences have an important impact on physical and emotional health for people of any age and at any stage of development (Dorji et al., 2020; Kalmakis and Chandler, 2015; Sonu et al., 2019).

The impact of traumatic experiences in childhood and adolescence can be particularly significant because the human brain is still under development. Traumatic experiences can sometimes produce irreversible harm in the physical, emotional and cognitive spheres (López-Soler, 2008; Mesa-Gresa and Moya-Albiol, 2011). Recent research has focused on studying the role that traumatic experiences during childhood and adolescence may play in the onset and the prognosis of different mental illnesses, including psychotic disorders and, more specifically, in first episode psychosis (FEP).

Childhood Trauma (CT) appears to be a risk factor for developing psychosis (Bentall et al., 2014; Varese et al., 2012). In addition, the presence of CT has been linked to more clinical severity and to worse functional outcomes in FEP, leading to earlier diagnosis and a higher number of suicide attempts (Alvárez et al., 2011; Conus et al., 2010a, 2010b; Garno et al., 2005; Lysaker and LaRocco, 2008; Morrison et al., 2003; Schenkel et al., 2005).

CT is a very broad concept which is usually difficult to conceptualize and summarize. This has caused heterogeneity in previous results. The most common traumatic experiences described in childhood are emotional abuse, physical abuse, sexual abuse, emotional neglect, and physical neglect (Bernstein et al., 2003). However, most of the instruments created to assess CT have also considered stressful live events as traumatic experiences. These include loss or abandonment of one parent, parental divorce and being under institutional care (Bifulco et al., 1994; Bremner et al., 2007; Goldberg and Freyd, 2006; Smith et al., 2002; Wolfe et al., 1996). Existing literature has differences in methods, diverse conceptualizations of CT and heterogeneity in its assessment. This heterogeneity hinders comparability and obtaining solid conclusions.

We consider that proper assessment of CT provides with crucial information and possible implications for therapeutic interventions in first-episode psychosis. Understanding what specific psychotic

* Corresponding author at: Parc Sanitari Sant Joan de Déu, Centro de Investigación en Red en Salud Mental, Calle Antoni Pujades 42, CP 08830 Sant Boi de Llobregat, Barcelona, Spain.
E-mail address: r.vila@pssjd.org (R. Vila-Badia).

https://doi.org/10.1016/j.schres.2020.11.047
0920-9964/

symptoms and functional outcomes are related to CT could, in turn, improve the patient's clinical evolution and prognosis.

Given the former rationale, we believe a review and discussion of CT in patients with FEP deems appropriate.

The purpose of the present study is to review the literature exploring CT in people with FEP. Specifically, we decided to address: the instruments used in assessing CT, the description of the characteristics of CT in patients with FEP, differences in CT suffered by people with FEP in comparison to other clinical and healthy samples, gender differences in CT and explore CT in relation with symptoms and functional outcome.

2. Methods

2.1. Search strategy

The article selection was carried out by 4 psychologists and 2 psychiatrists. The systematic search was conducted in MEDLINE, PsycINFO and Scopus. We included articles dating from 1995 to September 2019. The search terms were: "Childhood Trauma" OR "sexual abuse" OR "physical abuse" OR "neglect" AND "first-episode psychosis".

2.2. Eligibility criteria

Original articles were included if they explored and described CT in samples with FEP or if they explored the relation of CT with symptoms and functional outcomes. Trauma was defined as having experienced sexual, physical or emotional abuse, or physical or emotional neglect.

We excluded: articles related to other mental disorders that did not include FEP, articles exploring trauma in adulthood, articles exploring stressful life events, letters to the editor, study protocols, editorial articles, book chapters and systematic reviews. Also, we excluded all those articles that studied the relationship of CT with other variables that were not symptoms and functional outcomes. We only included articles written in English or Spanish.

2.3. Study selection and data extraction

Duplicates were reviewed and removed. Each abstract was read independently by two authors. We obtained the full text for all the eligible abstracts. Fig. 1 presents the flowchart of the search process. Disagreements were discussed and solved in an expert meeting. Table 1 presents a summary of the selected articles, indicating their objectives, methodology, results, conclusions and key words.

2.4. Risk of bias

We assessed the risk of bias of individual studies using the National Heart, Lung, and Blood Institute Study Quality Assessment Tools (2014). This tool was only used in observational cohorts and cross-sectional studies. Two authors independently evaluated the risk of bias and gave each study a rating of "good," "fair," or "poor" following the mentioned guidelines; discrepancies were discussed with a third member of the team to achieve consensus.

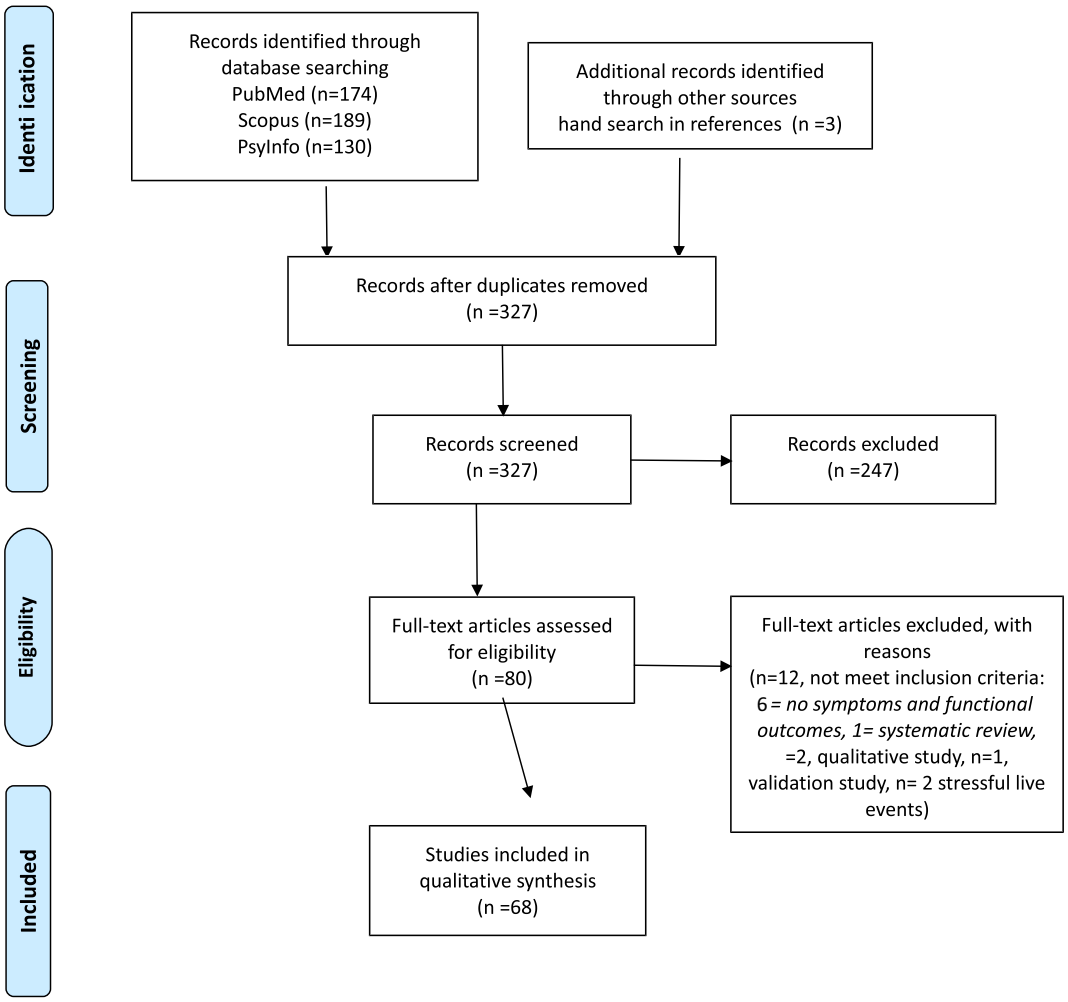

Fig. 1. Flowchart of the articles of the systematic review.

Table 1
Description of the studies included in the systematic review.

		Method			
Year	Aims	Sample	Trauma assessment instruments	Results and conclusions	Key words
Phassouliotis et al. (2012). *Enhanced cortisol suppression following administration of low-dose dexamethasone in first-episode psychosis patients*	To examine the cortisol response to the administration of low-dose dexamethasone in FEP patients and its relationship to childhood trauma.	21 FEP 20 HC	CTQ	FEP patients showed higher scores in EA, SA, PA and EN than HC. No correlation between CT and post-DEX cortisol response in FEP	childhood trauma, cortisol, dexamethasone suppression test and first-episode psychosis
Bendall et al. (2012). *Childhood trauma increases the risk of post-traumatic stress disorder in response to first-episode psychosis.*	To investigate the relationship between CT, post-traumatic stress symptoms due to the experience of CT, and post-traumatic stress symptoms due to the experience of psychosis.	36 FEP	CTQ	64% identified some kind of CT of which 33% SA, 36% PA and 44% EA. 39% showed PTSD symptoms reported with their CT FEP with CT were 27.43 times more likely to report clinical level PTSD symptoms as a consequence of their experience of acute psychosis FEP with PTSD related to their CT were 20.40 times more likely to report PTSD related to their experience of acute psychosis.	child abuse, post-traumatic, psychotic disorders and stress disorders
Hoy et al. (2012). *Childhood Trauma and Hippocampal and Amygdalar Volumes in First-Episode Psychosis*	To assess the experience of childhood maltreatment and its association with hippocampal and amygdalar volumes	90 FEP	TEC	76% reported experiencing CT (31.25% occurred between age 0–6 years, 62.5% between 7 and 12 years, and 6.25% between 13 and 18 years) CT was not associated with any gross volumetric regions, but decreased hippocampal volume (left part) no relationships between CT and PANSS BDI scores at presentation correlated with the CT investment	psychosis, trauma, hippocampus and amygdala
Aas et al. (2011). *Childhood trauma and cognitive function in first-episode affective and non-affective psychosis*	To study the association between CT and a range of cognitive domains	138 FEP 138 HC	CECA.Q	16% SA, 24% PA, 50% separation and 9% loss. FEP reported more PA and separation from parents in their childhood than HC CT in FEP was associated with lower scores in verbal intelligence, language domain and the attention, concentration and mental speed domain. No differences in pre-morbid IQ Split by gender (FEP): females more CT. The effect of CT was more present in males, whose performed worse than male patients without trauma on 4 of the 6 domains. In women any differences	childhood trauma, first-episode psychosis, cognition, diagnosis (schizophrenia and affective psychosis) and gender differences
Pruessner et al. (2019). *Gender differences in childhood trauma in first episode psychosis: Association with symptom severity over two years*	to investigate gender differences in CT and whether the experience of trauma is differentially associated with symptomatic and functional outcome in male and female patients at psychosis onset and 12 and 24 months thereafter	210 FEP	CTQ	54.3% FEP experienced CT (25.2% PN, 21.9% PA, 25.7% EN, 24.3% EA, 19% SA) men: more PN and EN women: more EA CTQ total was related to (24 m) more severe positive symptoms. In man and women, more negative symptoms. In men, and more depressive symptoms. In women, and less GAF in men.	first episode psychosis, childhood trauma, gender differences, sex differences and outcome symptom severity
Ajnakina et al. (2018). *Different types of childhood adversity and 5-year outcomes in a longitudinal cohort of first-episode psychosis patients*	to investigate relationships between six forms of childhood adversity occurring before 17 years of age and FEP clinical and social outcomes, service utilization and self-injurious behaviour during a 5-year follow-up	237 FEP, 172 at 5 years follow up	CECA.Q	57.8% parental separation, 24.5% PA, 21.9% disrupted family arrangements and 15.6% SA 5 follow-up. Reported CT was less probability to recovery, more admissions and substance dependence, No relation with CT and social outcomes	child abuse, functioning, inpatient admission, longitudinal, maltreatment and parental separation

(continued on next page)

Table 1 (*continued*)

		Method			
Year	Aims	Sample	Trauma assessment instruments	Results and conclusions	Key words
Baudin et al. (2017). *Childhood trauma and psychosis: Beyond the association*	To examine which specific aspects of CT are significantly associated with a first episode of psychosis.	109 FEP 145 HC	CECA	33% SPA (11% 0–4 years, 10% 5–8 years, 5.5% 9–12 years, 6.42% 13–16 years) and 46% CEA (21.1% 0–4 years, 9.17% 5–8 years, 14.68% 9–12 years, 0.92% 13–16 years) SPA; Father (9.17%) Mother (4.59%) Both parents (3.67%) Other (16.51%). CEA Father (1.83%) Mother (5.50%) Both parents (23.85%) Other (14.68%)8.FEP presented more SPA, CEA, separation from father, mother or both than HC.	child abuse, psychotic disorders, risk factor and social support
Braehler et al. (2013). *Childhood trauma and dissociation in first-episode psychosis, chronic schizophrenia and community controls*	to study the relationship between CT and dissociation symptoms	62 FEP 43 chronic psychotic patients 66 HC	CTQ	50.8% reported CT 50.8% reported CT (55.6% men; 37.5% women); 26.2% EA (22.2% men; 37.5% women); 14.8% PA (17.8% men; 6.3% women); 21.3% SA (22.2% men; 18.8% women); 29.5% EN (33.3% men; 18.8% women); 27.9% PN (33.3% men; 12.5% women). No differences between males and females FEP in CTQ Greater dissociative symptom severity was associated with more total CTQ, more EA, PA, SA and more EN. Correlation between PN and dissociative symptoms in men.	psychosis, childhood abuse, childhood neglect, emotional abuse, physical abuse, sexual abuse and physical neglect
Conus et al. (2010b). *Pretreatment and Outcome Correlates of Sexual and Physical Trauma in an Epidemiological Cohort of First-Episode Psychosis Patients*	To examine the prevalence rate of various types of stressful events and pretreatment, baseline, and outcome differences between subjects who did and did not report past sexual and/or physical abuse.	658 FEP	EPFQ	26% PA, 16% SA Females more SPA than men. FEP with SPA have fewer years of education, poorer premorbid functioning, longer DUP, past history of psychiatric disorder, a past history of suicide attempts and to have a lifetime diagnosis of a SUD. SPA was related to presence of a comorbid diagnosis, polysubstance abuse/dependence, unemployment and living away from family.	sexual abuse, physical abuse, early psychosis and outcome
Bae et al. (2010). *Childhood abuse and verbal intelligence among adults diagnosed with first-episode schizophrenia*	to study the relationship between childhood abuse and intelligence	46 FEP	Semi-structured interview	46% had a history of SPA; 10.87% SA, 41.30% PA, 6.52% physical and sexual abuse Patients with a history of childhood abuse reported significantly fewer years of education compared to those without a history of childhood abuse.	child abuse, trauma, intelligence, and schizophrenia
Compton et al. (2004). *Preliminary evidence of an association between childhood abuse and cannabis dependence among African American first-episode schizophrenia-spectrum disorder patients*	to study the associations between the presence of cannabis dependence and patients' reports of childhood traumatic events	18 FEP	CTQ	10.6% EA, 9% PA, 8.28% SA, 9.89% EA, 7.89% EN. Males with cannabis dependence had higher scores for PA compared to males without cannabis dependence.	schizophrenia, first-episode psychosis, cannabis dependence, childhood maltreatment, childhood physical abuse and childhood sexual abuse
Alemany et al. (2015). *Childhood abuse in the etiological continuum underlying psychosis from first-episode psychosis to psychotic experiences*	to study the prevalence of child abuse across the continuum of psychosis	48 FEP 77 individuals subclinical psychosis 73 HC	Scale of stressful events during childhood-adolescence, SLESQ-R and CTQ	52,1% FEP reported childhood abuse. No differences were found between FEP and High CAPE group.	child abuse, schizophrenia and psychosis and epidemiology
Stain et al. (2014). *Impact of interpersonal trauma on the social functioning of adults with first-episode psychosis).*	to study the role of CT as a predictor of poor social functioning for adults with psychosis and to study if trauma in adulthood would	247 FEP	BBTS	43.7% reported having experienced some form of CT. 20,2% reported Interpersonal trauma by someone not close to the individual and 18% by	childhood trauma, social satisfaction, relationships and early psychosis

Table 1 (*continued*)

		Method			
Year	Aims	Sample	Trauma assessment instruments	Results and conclusions	Key words
	moderate the relationship founded in the before aim			someone close to the individual Non interpersonal trauma was reported in childhood by 16,7% FEP with CT had poorer premorbid social and academic functioning and poorer social functioning compared with those who had not experienced CT. In adulthood, those with CT were significantly less satisfied with their family relationships No differences between both groups in GAF Childhood interpersonal is one predictor of the variable that measure satisfaction with social and family relationships	
Aas et al. (2012). Is *there a link between childhood trauma, cognition, and amygdala and hippocampus volume in first-episode psychosis?*	to investigated the association between CT, cognitive function and amygdala and hippocampus volume, in FEP	83 FEP 63 HC	CECA.Q	4,4% reported having experienced some form of CT; 26,5,9% PA, 10,8% SA, 2,4% reported parental loss and 33,7% reported parental separation. 44,1% reported 1 Trauma, 40% reported 2 or more trauma Increased CT exposure was associated with smaller total, left and right amygdala volumes. This relationship was higher in those who experienced 2 or more trauma events. Hippocampus volumes were not significantly associated with trauma events CT was also significantly negatively correlated with executive function, working memory, attention and concentration, language and verbal intelligence. The negative effect of CT on cognitive performance was mediated by smaller left amygdala volume.	amygdala, hippocampus, cognitive function, first-episode psychosis and childhood trauma
Bendall et al. (2011). *What self-generated speech is externally misattributed in psychosis? Testing three cognitive models in a first-episode sample*	to study if FEP with CT show greater external source attribution bias for words associated with their trauma than compared to those with FEP without CT.	44 FEP 26 HC	CTQ	56,82% FEP reported CT 15,38% HC reported CT. FEP with CT reported significantly greater depressive symptoms than FEP without CT and the control groups, FEP with CT did not externally attribute CT words significantly more than either those with FEP without CT or HC	first-episode psychosis, hallucination, misattribution, source monitoring and bias
Campbell et al. (2013). *The relationship between childhood trauma and neuropsychological functioning in first episode psychosis*	To study the relationship between trauma and neurocognition in FEP	30 FEP	TEC	70% reported CT; 47% EN, 57% EA, 23% SA FEP with CT had a significantly higher number of lifetime troubles-related experiences. 30% FEP met the DSM-IV criteria for a diagnosis of PTSD related to a childhood event. FEP with CT had a significantly higher pre-morbid IQ than those not reporting CT, and also showed worse scores in semantic fluency, visuospatial short term memory span and visuospatial delayed recall.	child abuse, first episode, trauma and schizophrenia
Mondelli et al. (2011). *Stress and inflammation reduce brain-derived neurotrophic factor expression*	To investigate the association between BDNF levels and measures of stress, inflammation and	49 FEP 30 HC	CECA	78% of FEP reported some kind of CT. CT were negatively correlated with BDNF mRNA levels.	None

(*continued on next page*)

Table 1 (*continued*)

		Method			
Year	Aims	Sample	Trauma assessment instruments	Results and conclusions	Key words
in first-episode psychosis: A pathway to smaller hippocampal	hippocampal volume in FEP.			CT is a predictors of BDNF gene expression in FEP.	
Seitz et al. (2019) *The Trier Social Stress Test in first episode psychosis patients: Impact of perceived stress, protective factors and childhood trauma*	to investigate the cortisol stress response to the TSST and its association with CT, acute and chronic stress perception and protective factors in a larger group of FEP patients	57 FEP 43 HC	CTQ	Attenuated cortisol levels were associated with more PN during childhood.	first episode psychosis, trier social stress test, hypothalamus-pituitary-adrenal axis, cortisol, perceived stress, childhood trauma, self-esteem, social support and coping
Trauelsen et al. (2019) *Does childhood trauma predict poorer metacognitive abilities in people with first-episode psychosis?*	To test associations between CT and metacognition in non-affective FEP, while controlling for other important factors - age, gender and 1st degree psychiatric illness.	92 FEP	CTQ and BBTS	SA, EA and EN predicted higher Self-reflectivity scores; SA and EA predicted higher Decentration scores. Furthermore, none of the seven CT or number of adversities added to the prediction of variability in MAS-A total.	case-control, schizophrenia, schizoaffective, child abuse, child neglect, mentalization, social cognition and theory of mind
Galletti et al. (2017) *Auditory and non-auditory hallucinations in first-episode psychosis: Differential associations with diverse clinical features*	to explore associations between types of hallucinations and nine diverse clinical characteristics age at onset of psychotic symptoms, mode of onset of psychotic symptoms, family history of psychosis, substance abuse/dependence, five types of delusions, negative symptom severity, three types of childhood adversity, DUP and insight.	247 FEP	CTQ and TEC	Auditory and Non-Auditory Hallucinations were similarly associated with interpersonal childhood abuse.	auditory hallucinations, first-episode psychosis, hallucinations, psychosis, schizophrenia and visual hallucinations
Trauelsen et al. (2015) *Childhood adversity specificity and dose-response effect in non-affective first-episode psychosis*	To explore the relation between adversity specificity and dose-response effect in an epidemiological sample of non-affective FEP compared to a non-clinical control group.	101 FEP 101 HC	CTQ and CECA.Q	SA, PA, EA, EN, separation and institutionalization were about four to 17 times higher for the FEP group.	case control, psychological, trauma, abuse, neglect and risk
Paolini et al. (2016) *Delusions in First-Episode Psychosis: Principal Component Analysis of Twelve Types of Delusions and Demographic and Clinical Correlates of Resulting Domains*	To explore whether greater childhood adversity would be associated with a greater severity of one or more of the various types of delusional thought content.	247 FEP	CTQ and TEC	Environmental Violence and Interpersonal Abuse correlated significantly with all delusional themes revealed by the PCA (except for the nonsignificant relationship between Environmental Violence and Somatic Delusions). Somatic Delusions was the only domain showing a correlation with Neglect.	childhood adversities, delusions, depression, drugs of abuse, hallucinations, paranoia and persecutory delusions
Şahin et al. (2013) *The history of childhood trauma among individuals with ultra high risk for psychosis is as common as among patients with first-episode schizophrenia*	To investigated the frequency of CT, and its relationship with clinical features of patients within FES and UHR groups.	83 FES 41 UHR 69 HC	CTQ	EA, PA and EN and CTQ total score were higher in FEP than in the control group. However, these results did not differ between FES and UHR groups. FEP with higher CTQ scores obtained higher total scores on SAPS and higher total scores on Schneide-rian items.	childhood trauma, first episode, schizophrenia, Schneide-rian signs and ultra high risk for psychosis
Comacchio et al. (2019) *The impact of gender and childhood abuse on age of psychosis onset, psychopathology and needs for care in psychosis patients*	To assess the combined effect of gender and traumatic experiences (physical and sexual abuse) on psychopathology, age of psychosis onset and needs for care.	444 FEP	CECA-Q.	30,6% reported PA (29.0% females, 31.7% males) and 16.2% reported SA (22.6% female, 11.6% males) There were no gender differences in positive symptoms for patients (male or female) with or without a history of PA; however, PA was associated with higher levels of negative symptoms in both men and women. Similarly, while there were no differences for positive symptoms for SA by gender, SA was associated with higher levels of negative	gender, childhood trauma, childhood abuse, sexual abuse, physical abuse, psychosis, first episode psychosis and FEP

Table 1 (*continued*)

		Method			
Year	Aims	Sample	Trauma assessment instruments	Results and conclusions	Key words
				symptoms for both men and women.	
Ciufolini et al. (2019) *Cortisol awakening response is decreased in patients with first-episode psychosis and increased in healthy controls with a history of severe childhood abuse*	To investigate the effects of presence and degree of severity of childhood abuse (before the age of 17) on HPA axis activity in a FEP sample and HC.	169 FEP 133 HC	CECA-Q	23,6% reported SA and PA 29% reported severe abuse (sexual and/or physical abuse) FEP patients showed an inverted U-shaped relationship between childhood abuse and CARg.	cortisol, childhood abuse, psychosis, HPA axis, stress, schizophrenia and early adversity
Kilian et al. (2017a) *Childhood adversity and cognitive function in schizophrenia spectrum disorders and healthy controls: evidence for an association between neglect and social cognition*	To investigate the relationships between a history of childhood adversity and cognitive performance in patients with schizophrenia.	56 FEP 52 HC	CTQ	No significant differences between FEP and HC in Abuse and Neglect. Exposure to childhood neglect was a predictor of impairment in social cognition and verbal learning in FEP. However, childhood abuse did not significantly predict cognitive impairments in FEP.	childhood trauma, neglect, outcome, psychosis and social cognition
Aas et al. (2016) *A history of childhood trauma is associated with slower improvement rates: Findings from a one-year follow-up study of patients with a first-episode psychosis*	To investigate whether CT was associated with more severe clinical features in patients with FEP, both at the initial assessment and after one year.	96 FEP 264 HC	CTQ	FEP more CTQ total score, PA, EA, EN and PN than HC. CT in FEP was related to poorer functioning and more severe affective symptoms at baseline and at the one-year follow up, with a slower improvement rate over time.	None
Tomassi et al. (2017) *Influence of childhood trauma on diagnosis and substance use in first episode psychosis*	To test whether people with first-episode psychosis who had experienced CT, when compared with those who had not, showed a higher rate of affective psychosis an increased lifetime rate of substance use.	345 FEP (199 males, 146 females).	CECA- Q	8% SA, 14% PA, 20% were separated for more than 6 month from at least one of the parental figures and/or lost one of their parents. SA was significantly associated with a diagnosis of affective psychosis and higher rates of lifetime use of cannabis and heroine and PA with increased lifetime use of heroine and cocaine.	None
Simpson et al. (2019) *Stability of retrospective self-reports of childhood trauma in first-episode psychosis*	to investigate the reliability of CT reports using CTQ and to investigate the impact of acute positive symptoms on the reporting of CT.	24 FEP 30 HC	CTQ	FEP reported higher CT than HC. Reliability analyses suggested strong agreement between CT reports at baseline and follow-up. Positive psychotic symptoms were unrelated to CT reports.	abuse, acute phase, hallucinations, delusions, childhood trauma, psychosis, reliability and schizophrenia
Fisher et al. (2009) Gender differences in the association between childhood abuse and psychosis.	To investigate gender differences in the prevalence of childhood sexual and physical abuse among people with psychosis in comparison with HC.	390 FEP 391 HC	CECA.Q	23% reported PA (20% males, 27% females) 16% reported SA (8% males, 27% females) 8% reported SPA (4% males, 13% females) Among women, those in the cases group were twice as likely to report either SPA compared with HC. Reports of severe SPA were associated with psychosis in women but not in men.	None
Robinson et al. (2009) Prevalence and predictors of suicide attempt in an incidence cohort of 661 young people with first-episode psychosis.	To examine the prevalence and predictors of suicide and suicide attempt before and during the first 18–24 months of treatment.	661 FEP	EPFQ	15,65% reported SA Predictors of suicide attempt were: previous attempt, SA, comorbid polysubstance, greater insight, lower baseline Global Assessment of Functioning Scale and Scale of Occupational and Functional Assessment score, and longer time in treatment.	suicide attempt and first-episode psychosis
Greenfield et al. (1994) Childhood abuse in first-episode psychosis.	To examine prospectively the relationship between FEP, childhood abuse, and dissociative symptoms and to	38 FEP	LEQ	52,6% reported SPA, 23,7% reported PA, 7,9% reported SA and 21,1% reported SA and PA. 60% reported being abused by	None

(*continued on next page*)

Table 1 (*continued*)

Year	Aims	Method		Results and conclusions	Key words
		Sample	Trauma assessment instruments		
	examine the association of these factors with clinical outcomes.			one or both parents, and 40% reported abuse by another relative, friend, or stranger No differences in childhood abuse between man and women. FEP with childhood abuse had significantly more dissociative symptoms, but not more severe psychiatric symptoms and also not related to rate of recovery. Although childhood abuse did not affect recovery during FEP, it may contribute to a chronic course in some patients.	
Corsi-Zuelli et al. (2019) Cytokine profile in first-episode psychosis, unaffected siblings and community-based controls: the effects of familial liability and childhood maltreatment.	To investigate the role of childhood maltreatment and recent stress in determining the differences in cytokine levels shown among the above groups, controlling for confounders.	114 FEP, 57 unaffected biological siblings of FEP, 251 HC	CTQ	43,9% reported some CT; 23,7% EA, 18,4% PA, 6,1% SA, 23,7% EN and 16,7% PN. CT and PA was associated with higher levels of TGF-β in FEP.	anti-inflammatory cytokines, childhood maltreatment, cytokines, early-life stress, first-episode psychosis, inflammation, pro-inflammatory cytokines, schizophrenia, siblings and transforming growth factor-beta
Doré-Gauthier et al. (2019) How to help homeless youth suffering from first episode psychosis and substance use disorders? The creation of a new intensive outreach intervention team.	To describe the characteristics, clinical, functional and housing outcomes of homeless youth suffering from FEP and addiction (HYFEPA) followed by new intensive outreach intervention team (EQIIP SOL).	42 FEP	Interview	88,1% CT; 79,4% Childhood abuse At baseline, HYFEPA showed poor prognostic factors (e.g. cluster B personality, substance use disorders, legal problems, CT and lower education level).	Addiction, clinical outcome, FEP, functional outcome, housing stability, psychotic disorder and young adult.
Zhuo-hui et al. (2019) Individuals at high risk for psychosis experience more childhood trauma, life events and social support deficit in comparison to healthy controls.	To investigate CT, life events and social support in subjects with HR, FEP and HC.	56 FEP 83 UHR 61 HC	CTQ	HR group was significantly associated with more CT, poorer overall function and unmarried state than HC group after controlling the interfering factors. HR group was similar with FEP group in these assessments.	childhood trauma, high risk for psychosis, life events and social support
Sun et al. (2018) Investigating the prevalence of dissociative disorders and severe dissociative symptoms in first episode psychosis.	to investigate the prevalence of dissociative disorders and symptoms in a FEP sample as well as the prevalence of severe dissociative symptoms in those with or without experiences of CT.	66 FEP	CTQ	53% history of CT FEP with CT presented more clinical dissociative symptoms than FEP without CT	dissociative disorders, early intervention, prevalence, psychotic disorder and schizophrenia
Catalan et al. (2018) Can childhood trauma influence facial emotion recognition independently from a diagnosis of severe mental disorder?	to analyze the possible relationship between the existence of trauma in childhood irrespective of a severe mental disorder (SMD)	73 FEP 179 HC 69 BPD	CTQ	27,4% CT; 21,9% EA and Neglect; 13,7% PN and SPA SPA was related independently to the existence of SMD with a worse total Facial emotion recognition ratio, as well as to a worse rate of recognition in expressions of happiness. Subjects with a history of CT attributed expressions of anger and fear more frequently to neutral and happy faces, irrespective of other variables.	Borderline personality disorder, childhood maltreatment, facial emotion recognition, psicosis, psychosis, reconocimiento de emociones faciales, trastorno límite de personalidad and trauma infantil.
Peach et al. (2019) Testing models of post-traumatic intrusions, trauma-related beliefs, hallucinations, and delusions in a first episode psychosis sample.	To test predictions of cognitive-behavioral models of psychosis from trauma by investigating the role of post-traumatic intrusions and trauma-related beliefs in the experience of hallucinations and delusions.	66 FEP	CTQ	53% CT; 34,8% EA, 18,2% PA, 24,2% SA, 24,2% EN, 24,2% PN. 31,8% reported more than one trauma Both, post-traumatic intrusions and CT-related beliefs mediated the relationships between CT and hallucinations, and CT and delusions.	None
Gimenez-Donoso et al. (2018) Evaluation of verbal inhibitory control with the Stroop Test in early episodes	to examine the relationship between subjective experience of trauma, verbal response inhibition in the Stroop Test, and severity of	119 FEP	CTQ	Statistically significant differences were obtained in verbal response inhibition, being more subjects with high response inhibition when the	Childhood, psychosis, Stroop test, trauma and verbal response inhibition

Table 1 (*continued*)

		Method			
Year	Aims	Sample	Trauma assessment instruments	Results and conclusions	Key words
of psychosis with the experience of traumatic events in infancy.	the diagnosis at six months from the onset of the disease, in patients with FEP.			said trauma was of low intensity.	
Spidel et al. (2010). *Early psychosis and aggression: Predictors and prevalence of violent behaviour among individuals with early onset psychosis.*	to investigate the prevalence of childhood abuse, violence, psychopathic traits, and substance abuse in FEP and to determine the best predictors of violent behaviour, among childhood abuse, psychopathic traits, and substance abuse.	118 early psychosis	CTQ	90.4% EA; 61.2% PA; 39.8% SA. Higher level of physical violence was most strongly predicted by a history of childhood abuse. Higher scores on a history of childhood abuse and drug abuse more strongly predicted verbal violence	psychosis, violence, substance abuse and psychopathy
Trauelsen et al. (2016). *Metacognition in first-episode psychosis and its association with positive and negative symptom profiles*	to investigate the severity of metacognitive impairments in FEP compared to non-clinical controls and to explore associations with positive and negative symptom profiles	97 FEP 101 HC	CTQ	FEP group reported more CT compared to the control group. No differences between the symptom profiles and CT.	case-control, risk, positive symptoms, negative symptoms, self-reflectivity and mentalizing
Ramsay et al. (2011). *Clinical correlates of maltreatment and traumatic experiences in childhood and adolescence among predominantly African American, socially disadvantaged, hospitalized, first-episode psychosis patients*	to examined associations between trauma variables and social, substance-related, and symptom variables in FEP sample	61 FEP	CTQ and TEC	PA (29,5% men, 17,6% female); EA (41,9% men, 35,3% female), SA (29,5% men, 29,4% female), EN (18,2% men, 17,6% female), PN (27,3% men, 35,3% female). Men more PA, while women more PN. EA, PA, CTQ total score and TEC score were associated with harsh discipline, violence exposure during adolescence and lifetime cannabis use. Years of education completed was inversely correlated with PA and EA. The number of current Axis IV psychosocial problems was directly correlated with PA, PN, EN and TEC. PA, PN and TEC were inversely correlated with the age at initiation of alcohol use and lifetime alcohol intake was significantly associated with TEC. SAPS was significantly correlated with EA and TEC and SANS with the EN.	child abuse, childhood traumatic experiences, first-episode psychosis, negative symptoms, positive symptoms, schizophrenia and substance abuse
Lambert et al. (2010). *Prevalence, Predictors, and Consequences of Long-Term Refusal of Antipsychotic Treatment in First-Episode Psychosis*	to assess the prevalence and predictors of such a medication refusal subgroup and its association with illness outcome	605 FEP	EPFQ	17,2% SA; 28,4% PA. PA was related to both medication refusal and nonadherence.	first-episode psychosis, schizophrenia, medication adherence, predictors, follow-up and adolescents
Garcia et al. (2016). *Sex differences in the effect of childhood trauma on the clinical expression of early psychosis*	to evaluate sex differences in the relationship between CT and clinical variables	79 early psychosis 58 HC	CTQ.	Patients more CT in all subscales than HC No sex differences in CT in both groups. CT was associated with increased alcohol intake in men, whereas the opposite relationship was found in women. A greater severity in positive and negative psychotic symptoms, general psychopathology, depressive symptoms and impaired functioning was observed in women with higher CTQ scores, particularly with EN. EA was also associated with positive psychotic symptoms in women. CT was associated with poorer	None

(*continued on next page*)

Table 1 (*continued*)

		Method			
Year	Aims	Sample	Trauma assessment instruments	Results and conclusions	Key words
				social cognition, greater severity in the PANSS general psychopathology and poorer functioning, with no sex interactions.	
Sideli et al. (2014) *Failure to find association between childhood abuse and cognition in first-episode psychosis patients*	to investigated the relationship between severe childhood abuse and cognitive functions in FEP	134 FEP 125 HC	CECA,Q	32,8% FEP reported childhood abuse, FEP reported higher prevalence of any childhood abuse than HC Abused patients did not significantly differ from non-abused patients in any measure of general intellectual ability or cognitive function	schizophrenia and psychosis, child abuse and social and cross-cultural psychiatry
Cotton et al. (2013). *Gender differences in first episode psychotic mania.*	to delineate the impact of gender on premorbid history, onset, and 18 month outcomes of FEP mania patients	118 FEPM (71 males, 47 females)	EPFQ	29,8% females and 5,6% males have been experienced SA; 14,1% males and 19,1% females PA. Females with FEPM were 7 times more likely to have experienced SA than males. No sex differences in PA. Exposure to SA, together with past history of substance abuse and living with family discharge were the variables that best discriminated between males and females with FEPM.	gender, mania, psychosis and bipolar disorder
Conus et al. (2010a). *Pretreatment and outcome correlates of past sexual and physical trauma in 118 bipolar I disorder patients with a first episode of psychotic mania*	to assess the prevalence and correlates of childhood and adolescent sexual and/or physical abuse in bipolar I disorder patients treated for a FEPc mania	118 FEPM (71 males, 47 females)	EPFQ	39,8% separation of parents, 19,5% death or loss of close other, 16,1% PA (19,1% female; 14,1% male), 15,3% SA (29,8% female, 5,6% male), 13,6% migration and 24,6% comprise SPA (36.2% female; 16,9% male). SPA were more likely to be female (only in SA, no in PA), had a poorer premorbid functional level, more likely to have a forensic history and was related to living away from family. SPA were less likely to have a hospital admission during the follow-up period, but more likely to disengage from treatment. History of abuse was not related to either symptomatic or functional remission at discharge.	bipolar disorder, first-episode psychosis, mania, outcome, physical abuse and sexual abuse
Alameda et al. (2017). *Mild Depressive Symptoms Mediate the Impact of Childhood Trauma on Long-Term Functional Outcome in Early Psychosis Patients.*	to study if the severity of depressive symptoms would mediate the impact of CT on the functional level of patients at different time points of the follow-up	209 FEP	Interview	34.4% CT. Within the trauma group, 72.2% had been exposed before age 12 and 27.8% between age 12 and 16. At the 2 month follow up, early trauma was related to the SOFAS and related with GAF and SOFAS all the other time point, while not happen in the case of late trauma. At the 30 and 36 month follow up the overall effect of early trauma could completely be accounted for by depressive symptoms.	childhood trauma, first episode psychosis, psychopathology, depression, functional outcome, mediation and prospective
Alameda et al. (2015). *Childhood sexual and physical abuse: age at exposure modulates impact on functional outcome in early psychosis patients*	to examine the potential differential impact on functional level of exposure to SPA according to age at the time of exposure	225 FEP	Interview	24.8% SPA (18.2% before age 11 and 6.6% between ages 12 and 15). 12% SA; 17.7% PA; 5.3% SPA. No association was found between diagnostic distribution and SPA subgrouping. SPA patients were more likely to be female There were no significant	childhood trauma, first-episode psychosis, prospective and timing.

Table 1 (*continued*)

		Method			
Year	Aims	Sample	Trauma assessment instruments	Results and conclusions	Key words
				associations between Early or Late exposure to SPA and the academic domain of PAS. Significant difference between Early SPA and Non-SPA groups regarding GAF and SOFAS scores over all time points. There was, however, no significant difference in this regard between Late SPA and Non-SPA patients.	
Aas et al. (2010). *Abnormal cortisol awakening response predicts worse cognitive function in patients with first-episode psychosis*	to study the relation between stress exposure, abnormal levels of the main HPA axis hormone cortisol and cognitive impairments	30 FEP 26 HC	CECA-Q	63% reported severe trauma. Patients more CT than HC. No correlations between any of cognitive domains and CT were found.	cognition, cortisol, hypothalamic–pituitary–adrenal (HPA) axis, psychosis, schizophrenia and stress
Sun et al. (2018) *Does dissociation mediate the relationship between childhood trauma and hallucinations, delusions in first episode psychosis?*	to investigate whether dissociation mediated both the relationships between CT and hallucinations and CT and delusions.	66 FEP	CTQ	53% reported some CT; 24,2% SA, 18,2% PA, 34,8% EA, 24,2% EN, 24,2 PN, 31,8% reported more than one CT. CT was positively correlated with dissociation. Dissociation mediated the relationship between CT and delusions, but not CT and hallucinatory experiences.	None
Trotta et al. (2019). *Interaction between childhood adversity and functional polymorphisms in the dopamine pathway on first-episode psychosis.*	to examined whether the association between cumulative exposure to childhood adversity and development of psychotic disorder was moderated by the COMT, Val, Met, AKT1 rs2494732 or DRD2 rs 1,076,560 polymorphisms.	285 FEP 256 HC	CECA.Q	No main effect of COMT, Val, Met, AKT1 rs2494732 or DRD2 rs 1,076,560 polymorphisms on psychosis case status or reports of CT. Individuals reporting a history of multiple adversities were more likely to be psychosis patients than HC, regardless of their genetic risk.	AKT1, childhood trauma, COMT, DRD2, gene- environment, GxE and schizophrenia.
Catalan et al. (2017). *Relation between psychotic symptoms, parental care and childhood trauma in severe mental disorders.*	To study the rate of CT and parental rearing styles in three groups of subjects: borderline personality patients, FEP and HC and to determine the interaction between CT, parental rearing style and positive psychotic symptomatology.	36 BPD 61 FEP 173 HC	CTQ	8% SA; 8% PA; 15% EA; 13% EN; 18% PN. BPD patients had the highest rate of any kind of trauma, followed by FEP patients. A positive relationship between psychotic symptomatology and the existence of CT in all groups. An affection less control rearing style was directly associated with the existence of CT. Subjects with CT presented less probability of having an optimal parenting style in childhood.	childhood trauma, psychosis, parenting rearing style and severe mental disorder.
Kilian et al. (2017b) . *Factors moderating the Relationship Between Childhood Trauma and Premorbid Adjustment in First- Episode Schizophrenia.*	to study the relationship between CT and premorbid adjustment in first-episode schizophrenia spectrum disorder and to investigate possible mediating roles for other selected risk factors in the relationship.	77 FEP	CTQ	31.5% had experienced childhood interpersonal trauma 16.3% had experienced childhood non-interpersonal trauma Association between CT and premorbid adjustment.	None
Solesvik et al. (2016). *Visual Hallucinations in First-Episode Psychosis: Association with Childhood trauma.*	to describe the prevalence of visual hallucinations and to explore the association between visual hallucination and CT in a FEP sample.	204 FEP	BBTS	31.5% had experienced childhood interpersonal trauma, 16.3% had experienced childhood non-interpersonal trauma The experience of childhood interpersonal trauma increased the likelihood of having psychotic visual hallucinations.	None
Palmier-Claus et al. (2016). *Childhood adversity and social functioning in psychosis: Exploring clinical and cognitive mediators.*	to investigate he association between childhood adversity and social functioning and the clinical and cognitive mediators of this relationship.	20 Chronic. 20 FEP 14 UHR. 120 HC.	CTQ	CT acts on social functioning by increasing levels of depression. CT would predict worse social functioning in adulthood CT was significantly higher, in	psychosis, trauma, adversity and social functioning.

(*continued on next page*)

Table 1 (*continued*)

		Method			
Year	Aims	Sample	Trauma assessment instruments	Results and conclusions	Key words
				the clinical sample compared to the non-clinical participant	
Michail and Birchwood (2014). *Social anxiety in first-episode psychosis: The role of childhood trauma and adult attachment.*	to examine the impact of adverse developmental experiences on adult attachment relationships in people with social anxiety (with or without psychosis)	60 FEP with no SAD 20 FEP with SAD 31 people with SAD 24 HC.	CTQ	CT was significantly elevated in people with social anxiety compared to those with psychosis only and HC. No differences in CT and dysfunctional parenting between socially anxious people with and without psychosis. CT was not associated with insecure adult attachment in people with social anxiety (with or without psychosis).	childhood trauma, attachment, social anxiety and psychosis.
Reininghaus et al. (2016). Psychological processes underlying the association between childhood trauma and psychosis in daily life: an experience sampling study	to investigate whether stress sensitivity and threat anticipation underlie the association between childhood abuse and psychosis	50 FEP 44 ARMS 52 HC	CTQ	FEP more SA, PA and EA than HC. FEP lower levels of EA than ARMS. Elevated negative affect and more intense psychotic experiences in FEP exposed to high v. low levels of SA. The association between threat anticipation and psychotic experiences was also greater in FEP exposed to high v. low levels of SA.	childhood abuse, ecological momentary assessment, first-episode psychosis, mechanism, prodrome, resilience, stress sensitivity and threat anticipation
Misiak et al. (2016). Childhood traumatic events and types of auditory verbal hallucinations in first-episode schizophrenia patients.	to study the relationship between history of CT and hallucinations and whether there is any specific type of hallucinations and CT.	94 FEP	ETISR-SF	50% CT, (51,85% men, 47,50% women); 39,4% physical punishment, (42,59% men, 35% women), 38,3% EA (40,74% men, 35% women) and 23,4% SA (22,22% men, 25% women). FEP with CT had more auditory verbal hallucinations and they experienced more third person hallucinations and abusive/accusatory/persecutory voices. SA explains number of hallucination only in females.	childhood trauma, hallucinations, psychopathology, first-episode schizophrenia, psychosis and first rank
Longden et al. (2016) Associations between nonauditory hallucinations, dissociation, and childhood adversity in first-episode psychosis	to determine whether cumulative adversity exposure influences the likelihood of hallucinations among psychosis patients, and if measures of dissociation are significantly associated with non-auditory hallucinations when adjusting for exposure to childhood adversity, and psychological distress.	67 FEP	LSC-R	61,1% EA; 33,3% PA, 47,2% parental divorce, 33,3% neglect, 27,8% rape and 13,9% institutional care. FEP without no hallucinations in the illness episode have more experiences of rape. FEP with a higher number of adversity exposures report more than one hallucination modality.	childhood abuse, childhood sexual abuse, distress, dissociation and schizophrenia
Haahr et al. (2018). Relation between premorbid adjustment, duration of untreated psychosis and close interpersonal trauma in first-episode psychosis.	to investigate the associations between different types of trauma, in particular close interpersonal traumas experienced	301 FEP 191 were re-interviewed at 5 years	BBTS and CECA.Q	64% CT and 54% reported interpersonal trauma FEP with alcohol abuse at baseline reported significantly more non-personal trauma before the age of 18 Women reported more SA, physical attacks and emotional and physical maltreatment than men. Relation between early interpersonal trauma and worse premorbid adjustment and longer DUP.	adaptive, adjustment, behaviour, psychosis and sexual abuse
Sideli et al. (2018) Interaction between cannabis consumption and childhood abuse in psychotic disorders: preliminary findings on the role of different patterns of cannabis	to study additive interaction between childhood abuse and lifetime cannabis use in FEP and to investigate the moderating role of type and frequency of cannabis use on these association.	231 FEP 214 HC	CECA.Q	28,14% reported child abuse No evidence of interaction between lifetime cannabis use and childhood abuse	cannabis, childhood trauma, first-episode psychosis, interaction and marijuana smoking

Table 1 (*continued*)

		Method			
Year	Aims	Sample	Trauma assessment instruments	Results and conclusions	Key words
use.					
Ajnakina et al. (2016) Impact of childhood adversities on specific symptom dimensions in first-episode psychosis.	to explore associations between different types of childhood adversities and specific psychotic symptom	236 FEP	CECA.Q	34,9% separation from one or both parents, 27,2% PA, 12,3% SA and 9,6% reported being placed into care by the authorities SA, PA and parental separation is related with positive symptoms; and being taken into care was associated with excited symptoms.	child abuse, dimensions, factor analysis, first-episode psychosis and maltreatment
Trotta et al. (2016). Impact of Different Childhood Adversities on 1-Year Outcomes of Psychotic Disorder in the Genetics and Psychosis Study.	to determine the impact of different types of childhood adversity on 1-year outcome across 3 domains (clinical, social, and service use)	237 FEP	CECA.Q	71% reported exposure to at least 1 type of childhood adversity; 28.8% reporting multiple exposures, 56,5% separation from parents, 22,8% PA, 20,7% disrupted family arrangements (3 or more arrangements), 14,4% SA, 11,7% parental loss and 4,9% being taken into care during childhood No relationship between childhood adversities and worse follow-up recovery.	first episode, illness course, psychosis, trauma, psychotic symptoms and service use
Theleritis et al. (2014) Brain derived Neurotropic Factor (BDNF) is associated with childhood abuse but not cognitive domains in first episode psychosis.	to study the relationship of BDNF with both CT and cognitive deficits	87 FEP 152 HC	CECA-Q	49,4% CT, 36,7% separation from parents, 35,6% PA, 8,04% parental loss, 21,8% SA, 6,8% being taken into care during childhood and 24,3% reported physical and/or sexual abuse. FEP more CT than HC. Significant effect of separation, PA and SA on low levels of BDNF among those who experienced CT compared to those who did not (FEP and HC).	BDNF, first-episode psychosis, childhood trauma and cognition
Bendall et al. (2013). Testing a model of the relationship between childhood sexual abuse and psychosis in a first-episode psychosis group: the role of hallucinations and delusions, posttraumatic intrusions, and selective attention.	to test theories of the relationship between childhood sexual abuse, hallucinations and delusions, posttraumatic intrusions, and selective attention in FEP	13 FEP 21 HC	CTQ	32,5% reported SA FEP with SA have more positive and depression symptoms, more severe hallucinations and delusions than those without.	childhood trauma, first-episode psychosis, hallucinations, posttraumatic stress disorder, intrusions and selective attention
Schäfer et al. (2011). Assessment of posttraumatic symptoms in patients with first-episode psychosis.	to explore the internal reliability and comparability of a commonly used self-rating instrument of posttraumatic symptoms in FEP patients and HC who reported childhood sexual or physical abuse	38 FEP 47 HC	CECA,Q	FEP sample: 53% reported PA, 21% SA and 26% SPA	trauma, post-traumatic stress, first-episode psychosis and reliability
Mondelli et al. (2010) Abnormal cortisol levels during the day and cortisol awakening response in first-episode psychosis: the role of stress and of antipsychotic treatment	to investigate the role of stress and antipsychotic treatment on diurnal cortisol levels, and on cortisol awakening response	50 FEP 36 HC	CECA.Q	85,7% of FEP with at least one trauma FEP reported two-fold higher rates of CT than HC In FEP, the number of stressful life events in the last 6 months correlated negatively with cortisol levels Current frequency of cannabis use was positively correlated with SA	first-episode psychosis, cortisol, stress, antipsychotic, childhood trauma and HPA axis

SPA= sexual/physical abuse, CEA= childhood emotional trauma, CT= childhood trauma, CAPE=Community Assessment of Psychic Experiences, SA= sexual abuse, PA= physical abuse, EA= emotional abuse, PN= physical neglect, EN= emotional neglect, CTQ = childhood trauma questionnaire, TEC =Traumatic Experiences Checklist, EPFQ= Early Psychosis File Questionnaire, BBTS=Brief Betrayal Trauma Survey, CECA.Q= Childhood Experience of Care and Abuse Questionnaire, CECA= Childhood Experience of Care and Abuse, LSC-R= Life Stressor Checklist-Revised, ETISR-SF= Early Trauma Inventory Self-Report-Short Form, LEQ= Life Experiences Questionnaire, SLESQ-R= Stressful Live Events Screening Questionnaire-Revised and SAD= social anxiety disorder.

3. Results

A total of 68 articles met inclusion criteria. The results were divided in 5 sections: 1) Instruments to assess CT. 2) Description of the characteristics of CT in patients with FEP, 3) CT in FEP patients in comparison with other samples, 4) Gender differences in CT, 5) CT in relation to symptoms and functional outcomes.

3.1. Instruments to assess CT

The most frequently used questionnaire was the Childhood Trauma Questionnaire (CTQ) (Bernstein et al., 2003). The CTQ was used in 34 studies and presented results concerning of all or some domains of physical, sexual and emotional abuse and physical and emotional neglect.

The second most commonly used instrument was the Childhood Experience of Care and Abuse Questionnaire (CECA.Q) (Smith et al., 2002), used by 19 articles. The CECA.Q evaluates separation from a parent for at least one year, death of a parent, physical abuse by the main parental figures during childhood, and sexual abuse.

Other instruments used were: The Trauma Experience Checklist (TEC) (Nijenhuis et al., 2002), used by 5 articles. It includes items addressed to evaluated emotional neglect, emotional abuse, physical abuse, sexual harassment, sexual abuse, and bodily threat from a person. The Brief Betrayal Trauma Survey (BBTS) (Goldberg and Freyd, 2006) was also used in 5 articles. It divides CT in 4 categories (non-interpersonal trauma; interpersonal trauma by someone not close to them; interpersonal traumas perpetrated by someone close to them; and other trauma). Five articles used the Early Psychosis File Questionnaire (EPFQ) (Conus et al., 2007). The Childhood Experience of Care and Abuse (CECA)(Bifulco et al., 1994), was used by 2 studies. The CECA is a semi-structured interview designed to assess a parental indifference/neglect, physical abuse and sexual abuse from anyone. The following tests were used only by 1 article: Life Stressor Checklist-Revised (LSC-R) (Wolfe et al., 1996), the Early Trauma Inventory Self-Report-Short Form (ETISR-SF) (Bremner et al., 2007), Life Experiences Questionnaire (LEQ) (Valenzuela and Sachdev, 2007), and one study used an adapted version of the Scale of stressful events during childhood-adolescence (Jiménez et al., 2008) and the Stressful Live Events Screening Questionnaire-Revised (SLESQ-R) (Goodman et al., 1998). Finally, 4 articles assessed CT through an interview.

Noteworthy, Simpson et al. (2019) studied the reliability of the assessment of CT, through the Childhood Trauma Questionnaire, after a period of three months, in patients with FEP, finding good levels of concordance between two assessments.

3.2. Types of trauma and frequency of CT in patients with first-episode psychosis

The studies analyzed in this review reported information on the most common types of trauma and their frequency. Some studies reported the information in percentages while others reported the information in mean and standard deviation.

Due to the variety of instruments, only the studies reporting percentages will be discussed.

3.2.1. Prevalence of traumatic experiences in persons with FEP

The percentage of patients who reported some kind of trauma varied from 27% to 89% (Catalan et al., 2018; Trauelsen et al., 2015, respectively). In most of them, the percentages ranged between 52 and 73% (IQ_1-IQ3) (Aas et al., 2011; Alemany et al., 2015; Bendall et al., 2011, 2012; Campbell et al., 2013; Haahr et al., 2018; Peach et al., 2019; Pruessner et al., 2019; Simpson et al., 2019; Sun et al., 2018; Trotta et al., 2016).

3.2.2. Sexual, physical and emotional abuse

Sexual abuse ranged from 6% to 40% (Corsi-zuelli et al., 2019; Spidel et al., 2010), most of them between 12,1% and 24% (IQ_1-IQ_3) (Aas et al., 2011, 2012; Ajnakina et al., 2016; Ajnakina et al., 2018; Alameda et al., 2015; Braehler et al., 2013; Campbell et al., 2013; Comacchio et al., 2019; Conus et al., 2010a; Conus et al., 2010b; Fisher et al., 2009; Lambert et al., 2010; Pruessner et al., 2019; Robinson et al., 2009; Theleritis et al., 2014; Trotta et al., 2016).

Concerning physical abuse, the percentages ranged between 8% and 61% (Catalan et al., 2017; Spidel et al., 2010, respectively). Most of the studies reported a prevalence between 18% and 34% (IQ_1-IQ_3) (Aas et al., 2011; Ajnakina et al., 2016; Ajnakina et al., 2018; Alameda et al., 2015; Comacchio et al., 2019; Conus et al., 2010b; Corsi-zuelli et al., 2019; Fisher et al., 2009; Greenfield et al., 1994; Haahr et al., 2018; Lambert et al., 2010; Longden et al., 2016; Peach et al., 2019; Pruessner et al., 2019; Sun et al., 2018; Trotta et al., 2016).

Regarding emotional abuse, the prevalence was between 11% and 90% (Compton et al., 2004; Spidel et al., 2010). Most of them ranged between 25% and 54% (IQ_1-IQ_3) (Baudin et al., 2017; Bendall et al., 2012; Braehler et al., 2013; Misiak et al., 2016; Peach et al., 2019; Sun et al., 2018).

Some studies focused in sexual and physical abuse (SPA) and reported a prevalence for one or both trauma experiences. The prevalence in these studies variated: some found percentages around 24–35% (Alameda et al., 2015; Baudin et al., 2017; Ciufolini et al., 2019; Conus et al., 2010a; Conus et al., 2010b; Schäfer et al., 2011; Theleritis et al., 2014), but other study found a prevalence of 46% (Bae et al., 2010). Some studies specified the percentage of patients that had experienced both physical and sexual abuse. These ranged between 5 and 8% (Alameda et al., 2015; Bae et al., 2010; Conus et al., 2010b; Fisher et al., 2009) and over 20% (Ciufolini et al., 2019; Greenfield et al., 1994). Five studies presented the percentage of total child abuse, the percentages varied from 13% to 79% (Kilian et al., 2017a; Sideli et al., 2018; Sideli et al., 2014; Pruessner et al., 2019; Doré-Gauthier et al., 2019, in increased order).

3.2.3. Physical and emotional neglect

The prevalence for emotional neglect was between 10% and 47% (Compton et al., 2004; Catalan et al., 2017; Corsi-Zuelli et al., 2019; Braehler et al., 2013; Peach et al., 2019; Sun et al., 2018; Pruessner et al., 2019; Trauelsen et al., 2015; Campbell et al., 2013, in increased order). The prevalence for physical neglect ranged from 8% to 58% (Compton et al., 2004; Corsi-Zuelli et al., 2019; Catalan et al., 2017; Peach et al., 2019; Sun et al., 2018; Pruessner et al., 2019; Braehler et al., 2013; Trauelsen et al., 2015, in increased order).

Three articles presented the percentage of total childhood neglect, the percentages were 8%, 33% and 36% (Kilian et al., 2017a; Longden et al., 2016; Pruessner et al., 2019, respectively).

3.2.4. Interpersonal and non-interpersonal trauma

Three studies focused on interpersonal trauma and found that it was present in 31.5%, 36% and 54% of the participants, respectively (Haahr et al., 2018; Solesvik et al., 2016; Stain et al., 2014). On the contrary, the percentage of non-interpersonal trauma was 16% in both studies (Solesvik et al., 2016; Stain et al., 2014).

3.2.5. Age at trauma and number of traumatic experiences

Hoy et al. (2012) reported that 31.25% of FEP patients reported that experiences of CT happened between the ages of 0–6 years, 62.5% between the ages of 7 and 12, and 6.25% between the ages of 13 and 18 years. Baudin et al. (2017) reported SPA specifically 11.01% experienced SPA experience between the ages of 0 and 4 years, 10.09% between the ages of 5 and 8 years, 10% between the ages of 9 and 12 years, and 6.42% between the ages of 13 and 16. The same study found prevalences for emotional abuse: 21.10% experienced it between the ages of 0 and 4 years, 9.17% between the ages of 5 and 8, 14.68%

between 9 and 12 years and 0.92% between 13 and 16 years. Finally, Alameda et al. (2017) found that 72% had been exposed to CT before the age of 12 and 28% between the ages of 12 and 16.

Some studies reported the number of traumatic experiences in percentages. The proportion of participants that presented only one traumatic experience ranged from 17% to 44% (Ajnakina et al., 2018; Aas et al., 2012, respectively), while other studies found that 32% of the sample reported more than one traumatic experience (Peach et al., 2019; Sun et al., 2018). Studies reporting two types of trauma yielded percentages of 18%, 19% and 70,3%, respectively (Baudin et al., 2017; Bendall et al., 2012; Trauelsen et al., 2015, respectively). Two studies found a prevalence of 40% for two or more traumatic experiences (Aas et al., 2012; Ajnakina et al., 2018). Another study found that 22% had experienced 3 traumatic experiences (Bendall et al., 2012), 2 studies reported a prevalence of 24% and 53% of three or more traumatic experiences (Baudin et al., 2017; Trauelsen et al., 2015). Finally, one study reported that 35% of the sample had experienced 4 or more traumatic experiences (Trauelsen et al., 2015).

3.3. CT in FEP patients in comparison with other samples

A total of 29 (42.65%) articles explored childhood trauma in people with FEP and compare it with healthy controls and other samples (healthy controls, ultra-high risk of psychosis, borderline personality disorder, and social anxiety disorder).

A majority of the studies found higher rates of CT in the FEP group than in the control group (Aas et al., 2010, 2011, 2016; Bendall et al., 2011; Catalan et al., 2017; Corsi-Zuelli et al., 2019; Garcia et al., 2016; Palmier-Claus et al., 2016; Mondelli et al., 2011; Simpson et al., 2019; Theleritis et al., 2014; Trauelsen et al., 2015, 2016; Trotta et al., 2019; Zhuo-Hui et al., 2019). Some of these studies explored specific traumatic experiences independently. Patients with FEP reported higher scores in emotional, sexual and physical abuse, and emotional neglect than healthy controls (Aas et al., 2016; Baudin et al., 2017; Catalan et al., 2018; Ciufolini et al., 2019; Fisher et al., 2009; Phassouliotis et al., 2012; Reininghaus et al., 2016; Şahin et al., 2013; Sideli et al., 2014). Three studies did not find significant differences in CT between FEP patients and controls (Braehler et al., 2013; Kilian et al., 2017a; Kilian et al., 2017b).

Some studies explored the associated risk of having experienced CT in patients with FEP. Trauelsen et al. (2016) found that childhood and adolescent sexual, physical, emotional abuse, and physical and emotional neglect, separation and institutionalization were between 4 and 17 times higher in patients with FEP than in healthy controls. Mondelli et al. (2010) found that patients with FEP had a two-fold rate of CT compared to healthy controls. Baudin et al. (2017) found that patients with FEP were five times more likely to be a victim of physical and sexual abuse perpetrated by someone other than their parents during their childhood and adolescence.

Regarding the comparison between FEP and other clinical samples, we found inconclusive results. Several studies found no differences between patients with FEP and those with high risk, although both groups scored higher than controls (Palmier-Claus et al., 2016; Şahin et al., 2013; Zhuo-hui et al., 2019). A study by Alemany et al. (2015) explores child abuse in patients with FEP and healthy controls who scored high and low in psychotic experiences. Their results suggest that patients with FEP had higher rates of child abuse (52%) than healthy controls with more psychotic experiences (41.6%). However, these differences were even more pronounced when compared with healthy controls with fewer psychotic experiences (11%). Conversely, Reininghaus et al. (2016) found that high-risk individuals scored higher in emotional abuse than FEP patients. Similarly, when comparing borderline personality disorder (BPD) and FEP patients, the rates of any kind of trauma where higher in patients with BPD than in patients with FEP (Catalan et al., 2017). Michail and Birchwood (2014), compared patients with psychosis with and without social anxiety. Patients with social anxiety disorder had experienced more CT and dysfunctional parenting than those with psychosis only.

3.4. Gender differences in CT

A total of 13 (19.12%) articles studied gender differences in CT in samples with FEP.

According to 10 articles, women suffer more sexual abuse (Comacchio et al., 2019; Cotton et al., 2013; Greenfield et al., 1994; Haahr et al., 2018), more sexual and physical abuse combined (Alameda et al., 2015; Conus et al., 2010a; Conus et al., 2010b), more physical neglect (Ramsay et al., 2011), more emotional abuse (Pruessner et al., 2019) and have higher total scores in CT questionnaires (Aas et al., 2011). However, 2 studies found that men experienced more CT compared to women, specifically physical and emotional neglect (Pruessner et al., 2019) and physical abuse (Ramsay et al., 2011). Two studies failed to find gender differences in childhood trauma (Garcia et al., 2016; Misiak et al., 2016).

Four papers have studied the relationship between trauma and symptoms of FEP in the light of gender. Pruessner et al. (2019) found that total CTQ at baseline predicted more severe negative symptoms in men and more depressive symptoms in women. Total CTQ was related to more symptoms of mania in women than in men at 12 months follow up. At 24 months follow up, only a positive relation between total score of CTQ and symptoms in positive, negative, depressive and total symptoms was found for men. Garcia et al. (2016) found that positive symptoms, general psychopathology and depressive symptoms were related to higher scores in the total CTQ score only in women. Considering the different subscales, physical abuse was related to more general psychopathology in men, while in women were related to more depressive symptoms. The other relationships between the different subscales and symptoms were only found in women. Emotional abuse was related to positive symptoms, emotional neglect with positive, negative and depressive symptoms and physical neglect were related to negative symptoms. Contrary, Comacchio et al. (2019), did not find gender differences in associations between symptoms and physical and sexual abuse as evaluated with the CECA-Q. In terms of dissociative symptoms, Braehler et al. (2013) found a correlation between dissociation and physical neglect only in men, but not in women.

Two papers have assessed the relation between trauma and global functioning considering gender. Garcia et al. (2016) found a relation between global functioning and emotional neglect, and the total CTQ score only in women with FEP. On the contrary, Pruessner et al. (2019)

did not find any gender differences in the relationship between CTQ and global functioning, assessed with the Global Assessment of Functioning (GAF) at baseline. However, at 24 months follow-up, they found a relationship between total CTQ score and global functioning (GAF) in men.

3.5. CT in relation to symptoms and functional outcomes in patients with FEP

A total of 63 (92.65%) articles explored CT in patients with FEP in relation to symptoms and functional outcomes.

3.5.1. Symptoms

A total of 28 (41.18%) articles studied the role of CT in symptomatology in patients with FEP. We found heterogeneous results.

Some studies did not find any relation between CT and total symptomatology measured by Positive and Negative Syndrome Scale or Brief Psychiatric Rating Scale (Campbell et al., 2013; Greenfield et al., 1994; Haahr et al., 2018; Hoy et al., 2012; Trauelsen et al., 2016; Trotta et al., 2016).

Some studies did not find an association between CT and symptom remission (Conus et al., 2010b; Hoy et al., 2012; Trotta et al., 2016).

Table 2
Risk of bias assessment ratings according to the NHLBI quality assessment tools.

Study	Q1	Q2	Q3	Q4	Q5	Q6*	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Rating
Aas et al. (2010)	Yes	Yes	NR	Yes	No	Yes	Yes	Yes	Yes	No	Yes	NR	NA	No	Fair
Aas et al. (2011)	Yes	Yes	NR	Yes	No	Yes	Yes	Yes	Yes	No	Yes	NR	NA	No	Fair
Aas et al. (2012)	Yes	Yes	NR	No	No	Yes	Yes	Yes	Yes	No	Yes	NR	NA	No	Fair
Aas et al. (2016)	Yes	Yes	NR	Yes	No	Yes	Yes	Yes	Yes	No	Yes	NR	No	Yes	Good
Ajnakina et al. (2016)	Yes	Yes	NR	Yes	No	Yes	Yes	Yes	Yes	No	Yes	NR	NA	Yes	Good
Ajnakina et al. (2018)	Yes	Yes	NR	Yes	No	Yes	Yes	Yes	Yes	No	Yes	NR	NA	Yes	Good
Alameda et al. (2015)	Yes	Yes	NR	Yes	No	Yes	Yes	Yes	No	No	Yes	NR	NA	No	Fair
Alameda et al. (2017)	Yes	Yes	NR	Yes	No	Yes	Yes	Yes	No	No	Yes	NR	NA	Yes	Good
Alemany et al. (2015)	Yes	Yes	NR	No	No	Yes	Yes	Yes	Yes	No	Yes	NR	NA	Yes	Good
Bae et al. (2010)	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No	Yes	NR	NA	No	Fair
Baudin et al. (2017)	Yes	Yes	NR	Yes	No	Yes	Yes	Yes	Yes	No	Yes	NR	NA	Yes	Good
Bendall et al. (2011)	Yes	Yes	NR	No	No	Yes	Yes	Yes	Yes	No	Yes	NR	NA	No	Fair
Bendall et al. (2012)	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes	NR	NA	No	Fair
Bendall et al. (2013)	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes	NR	NA	No	Fair
Braehler et al. (2013)	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes	No	Yes	NR	NA	No	Fair
Campbell et al. (2013)	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes	No	Yes	NR	NA	No	Fair
Catalan et al. (2017)	Yes	Yes	NR	Yes	No	Yes	Yes	Yes	Yes	No	Yes	NR	NA	Yes	Good
Catalan et al. (2018)	Yes	Yes	NR	Yes	No	Yes	Yes	Yes	Yes	No	Yes	NR	NA	No	Fair
Ciufolini et al. (2019)	Yes	Yes	NR	Yes	No	Yes	Yes	Yes	Yes	No	Yes	NR	NA	No	Fair
Comacchio et al. (2019)	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes	NR	NA	No	Fair
Compton et al. (2004)	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes	NR	NA	No	Fair
Conus et al. (2010a)	Yes	Yes	NR	Yes	No	Yes	Yes	Yes	No	No	Yes	NR	NA	No	Fair
Conus et al. (2010b)	Yes	Yes	NR	Yes	No	Yes	Yes	Yes	No	No	Yes	NR	NA	No	Fair
Corsi-Zuelli et al. (2019)	Yes	Yes	NR	Yes	No	Yes	Yes	Yes	Yes	No	Yes	NR	NA	Yes	Good
Cotton et al. (2013)	Yes	Yes	NR	Yes	No	Yes	Yes	Yes	No	No	Yes	NR	NA	No	Poor
Doré-Gauthier et al. (2019)	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No	Yes	NR	No	No	Poor
Fisher et al. (2009)	Yes	Yes	NR	Yes	No	Yes	Yes	Yes	Yes	No	Yes	NR	NA	Yes	Good
Galletti et al. (2017)	Yes	Yes	NR	Yes	No	Yes	Yes	Yes	Yes	No	Yes	NR	NA	No	Fair
Garcia et al. (2016)	Yes	Yes	NR	No	No	Yes	Yes	Yes	Yes	No	Yes	NR	NA	Yes	Good
Gimenez-Donoso et al. (2018)	Yes	No	NR	No	No	Yes	Yes	Yes	Yes	No	Yes	NR	NA	No	Poor
Greenfield et al. (1994)	Yes	No	NR	No	No	Yes	Yes	Yes	Yes	No	Yes	NR	NA	No	Poor
Haahr et al. (2018)	Yes	Yes	NR	No	No	Yes	Yes	Yes	Yes	No	Yes	NR	No	No	Fair
Hoy et al. (2012)	Yes	Yes	NR	Yes	No	Yes	Yes	Yes	Yes	No	Yes	NR	No	No	Fair
Kilian et al. (2017a)	Yes	Yes	NR	Yes	No	Yes	Yes	Yes	Yes	No	Yes	NR	NA	No	Fair
Kilian et al. (2017b)	Yes	Yes	NR	Yes	No	Yes	Yes	Yes	Yes	No	Yes	NR	NA	No	Fair
Lambert et al. (2010)	Yes	Yes	NR	Yes	No	Yes	Yes	Yes	No	No	Yes	NR	NA	Yes	Fair
Longden et al. (2016)	Yes	Yes	NR	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	NR	NA	No	Fair
Michail and Birchwood (2014)	Yes	Yes	NR	Yes	No	Yes	Yes	Yes	Yes	No	Yes	NR	NA	No	Fair
Misiak et al. (2016)	Yes	Yes	NR	Yes	No	Yes	Yes	Yes	Yes	No	Yes	NR	NA	Yes	Good
Mondelli et al. (2010)	Yes	Yes	NR	Yes	No	Yes	Yes	Yes	Yes	No	Yes	NR	NA	Yes	Good
Mondelli et al. (2011)	Yes	Yes	NR	No	No	Yes	Yes	Yes	Yes	No	Yes	NR	NA	No	Fair
Palmier-Claus et al. (2016)	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes	NR	NA	Yes	Fair
Paolini et al. (2016)	Yes	Yes	NR	Yes	No	Yes	Yes	Yes	Yes	No	Yes	NR	NA	No	Fair
Peach et al. (2019)	Yes	Yes	NR	Yes	No	Yes	Yes	Yes	Yes	No	Yes	NR	NA	Yes	Good
Phassouliotis et al. (2012)	Yes	Yes	NR	Yes	No	Yes	Yes	Yes	Yes	No	Yes	NR	NA	No	Fair
Pruessner et al. (2019)	Yes	Yes	NR	Yes	No	Yes	Yes	Yes	Yes	No	Yes	NR	No	Yes	Good
Ramsay et al. (2011)	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes	NR	NA	No	Fair
Reininghaus et al. (2016)	Yes	Yes	NR	Yes	No	Yes	Yes	Yes	Yes	No	Yes	NR	NA	Yes	Good
Robinson et al. (2009)	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No	Yes	NR	NA	Yes	Fair
Şahin et al. (2013)	Yes	Yes	NR	No	No	Yes	Yes	Yes	Yes	No	Yes	NR	NA	No	Fair
Schäfer et al. (2011)	Yes	Yes	NR	Yes	No	Yes	Yes	Yes	Yes	No	No	NR	NA	No	Poor
Seitz et al. (2019)	Yes	Yes	NR	Yes	No	Yes	Yes	Yes	Yes	No	Yes	NR	NA	Yes	Good
Sideli et al. (2014)	Yes	Yes	NR	Yes	No	Yes	Yes	Yes	Yes	No	Yes	NR	NA	No	Fair
Sideli et al. (2018)	Yes	Yes	NR	Yes	No	Yes	Yes	Yes	Yes	No	Yes	NR	NA	No	Fair
Simpson et al. (2019)	Yes	Yes	NR	Yes	No	Yes	Yes	Yes	Yes	No	Yes	NR	Yes		Fair
Solesvik et al. (2016)	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes	NR	NA	Yes	Good
Spidel et al. (2010)	Yes	Yes	NR	Yes	No	Yes	Yes	Yes	Yes	No	Yes	NR	NA	No	Fair
Stain et al. (2014)	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes	NR	NA	Yes	Good
Sun et al. (2019)	Yes	Yes	NR	Yes	No	Yes	Yes	Yes	Yes	No	Yes	NR	NA	No	Fair
Sun et al. (2018)	Yes	Yes	NR	Yes	No	Yes	Yes	Yes	Yes	No	Yes	NR	NA	Yes	Good
Theleritis et al. (2014)	Yes	Yes	NR	Yes	No	Yes	Yes	Yes	Yes	No	Yes	NR	NA	No	Fair
Tomassi et al. (2017)	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes	NR	NA	No	Fair
Trauelsen et al. (2015)	Yes	Yes	NR	Yes	No	Yes	Yes	Yes	Yes	No	Yes	NR	NA	Yes	Good
Trauelsen et al. (2016)	Yes	Yes	NR	Yes	No	Yes	Yes	Yes	Yes	No	Yes	NR	NA	Yes	Good
Trauelsen et al. (2019)	Yes	Yes	NR	Yes	No	Yes	Yes	Yes	Yes	No	Yes	NR	NA	Yes	Fair
Trotta et al. (2016)	Yes	Yes	NR	Yes	No	Yes	Yes	Yes	Yes	No	Yes	NR	Yes	Yes	Fair
Trotta et al. (2019)	Yes	Yes	NR	Yes	No	Yes	Yes	Yes	Yes	No	Yes	NR	NA	No	Fair
Zhuo-hui et al. (2019)	Yes	Yes	NR	Yes	No	Yes	Yes	Yes	Yes	No	Yes	NR	NA	Yes	Good

NHLBI quality assessment tool for observational cohort and cross-sectional studies.

However, other studies found a positive relationship between CT and total symptomatology (Aas et al., 2016; Peach et al., 2019; Zhuo-hui et al., 2019).

When splitting by specific traumatic events, some studies found a positive correlation at baseline between negative symptoms and some types of CT (Comacchio et al., 2019; Ramsay et al., 2011; Trauelsen et al., 2019)

and at follow-up (Campbell et al., 2013). Other studies failed to find any associations (Ajnakina et al., 2016; Bendall et al., 2013).

Some studies found that having a history of CT was associated with greater depressive symptoms (Aas et al., 2016; Bendall et al., 2011, 2013; Palmier-Claus et al., 2016). However, other studies did not find any associations (Ajnakina et al., 2016; Campbell et al., 2013).

Some studies found a positive relationship between CT and positive symptoms (Ajnakina et al., 2016; Bendall et al., 2013; Catalan et al., 2017; Ramsay et al., 2011; Şahin et al., 2013; Sun et al., 2018), while others did not report significant correlations (Comacchio et al., 2019; Simpson et al., 2019). Noteworthy, some studies focused on hallucinations and delusions. Studies were consistent in finding that persons with FEP and CT had more severe hallucinations (Bendall et al., 2013; Misiak et al., 2016; Peach et al., 2019; Şahin et al., 2013; Solesvik et al., 2016; Sun et al., 2018). Longden et al. (2016) found that people with more exposure to adversity were more likely to report more than one hallucination modality compared with those with a lower number of traumatic events but did not find a relationship between more CT and non-auditory hallucinations.

Similarly, patients with FEP and CT reported more delusions (Bendall et al., 2013; Peach et al., 2019; Şahin et al., 2013; Sun et al., 2018). Paolini et al. (2016) found that interpersonal abuse and environmental violence correlated with delusions, but somatic delusions only correlated with neglect. Consistent with them but regarding hallucinations, (Galletti et al., 2017) found an association between interpersonal abuse and auditory hallucinations, but not with neglect. Solesvik et al. (2016) found that interpersonal CT was related to experiencing more hallucinations, while the occurrence of non-interpersonal trauma was less likely among those with mild visual hallucination in comparison to those with no visual hallucinations. Finally, Palmier-Claus et al. (2016) found a positive relationship between CT and paranoia.

Regarding dissociative symptoms, some studies found that FEP patients with CT had significantly more dissociative symptoms or experiences (Braehler et al., 2013; Greenfield et al., 1994; Sun et al., 2019). Furthermore, they found that patients that had been abused by a parent had significantly more dissociative symptoms than patients abused by a non-parent. However, 2 studies did not find this relationship (Campbell et al., 2013; Hoy et al., 2012).

Some articles studied the relation of CT and post-traumatic symptoms. Four studies reported that between 21% and 51% of their sample met the criteria for PTSD related to traumatic events that occurred in childhood (Bendall et al., 2012; Campbell et al., 2013; Hoy et al., 2012; Peach et al., 2019; Schäfer et al., 2011, in increased order). Haahr et al. (2018) found that 33% of their sample who reported any traumatic experience also reported flashbacks of their trauma during their psychotic experiences. This association was particularly prominent in patients who reported sexual abuse. Among them, 25% found it likely or very likely that psychosis was caused by traumatic experiences in their past, especially patients reporting any kind of physical abuse.

Bendall et al. (2012) found that patients with FEP and CT were 27.43 times more likely to report clinical levels of symptoms of post-traumatic stress disorder (PTSD) as a consequence of their experience of acute psychosis. Conus et al. (2010b) found that patients with FEP who reported sexual abuse in their childhood were more likely to have a past diagnosis of PTSD.

3.5.2. Functional outcomes

A total of 13 (19.12%) articles studied the impact of CT in functional outcomes in FEP patients (global functioning, social and occupational functioning, premorbid adjustment and work functioning).

Regarding premorbid adjustment and global functioning, some studies did not find associations between CT and GAF or PAS at baseline (Şahin et al., 2013; Stain et al., 2014; Trauelsen et al., 2016), at follow up assessments (Ajnakina et al., 2018; Trotta et al., 2016) and functional remission at discharge (Conus et al., 2010a; Conus et al., 2010b). Other studies found that CT was associated with poor premorbid adjustment and reduced global functioning at initial assessment (Aas et al., 2016; Conus et al., 2010a; Conus et al., 2010b; Haahr et al., 2018; Kilian et al., 2017b; Trotta et al., 2016; Zhuo-hui et al., 2019) and at the follow up (Aas et al., 2016). Of note, Haahr et al. (2018) found that differences depended on the instrument: they did not find differences in global functioning between patients with FEP and CT and patients with FEP but not CT using the GAF. However, when assessed with the PAS, they found an association between having experienced close interpersonal trauma in childhood and poor premorbid adjustment.

Alameda et al. (2017) studied the relation of CT and global, social and occupational functioning. They did not find associations between the GAF and CT at 2-month follow up. Nevertheless, they found a relationship with the SOFAS scale. At 6 and 12 months follow up, they found a relationship between the GAF and the SOFAS and CT. Specifically, Alameda et al. (2015) found that patients with FEP and sexual and physical abuse (SPA) showed poorer functioning compared to patients without SPA. At follow up, they observed worse scores in the GAF and the SOFAS scales compared to patients that had not suffered SPA.

Regarding occupational status, Haahr et al. (2018) found an association between close interpersonal trauma in childhood and unemployment during the previous years. Trotta et al. (2016) did not find associations between types of trauma and unemployment status at 1-year follow up, but those who experienced physical abuse and disrupted family arrangements had a slightly higher proportion of unemployment.

3.6. Risk of bias summary

We rated the methodological quality of the studies according to the National Heart, Lung, and Blood Institute tools (see Table 2). All the studies were observational cohort and cross-sectional studies. Therefore, we have summarized all the studies in the same table. Most of the studies were rated as having fair or moderate risk of bias (n= 41, 60.30%), twenty two studies had a low risk of bias (32.35%), and five studies had a high risk (7.35%). The main limitation to the studies was the lack of controlling for potential confounders. Strengths included a clear description of objectives and of independent and dependent variables. As a peculiarity of our review, the exposure of interest, CT, is measured retrospectively. However, the timeframe between the exposure of interest (CT) and outcome (FEP) was sufficient to see an effect between both. The most frequently unreported aspects were justification of sample sizes, estimates of effect size and the whether the evaluators were blind to the exposure status of study participants.

4. Discussion

This work provides a systematic review about patients with FEP and CT. Specifically, we have reviewed the instruments used in the assessment of CT, the description of the characteristics of CT in FEP patients, comparisons between FEP patients with CT and different samples (including healthy controls and other clinical samples), gender differences in FEP and CT and finally, FEP and CT in relation to symptoms and functional outcome.

The instruments used in the assessment of CT can be differentiated into two types: self-reported questionnaires and interview. Among the questionnaires, the most frequently used were the CTQ (35 articles) and the CECA.Q (19 articles). Among the interviews, the Brief Betrayal Trauma Survey (BBTS) was the most frequently used. The use of questionnaires was more frequent than the use of interviews. This is probably because questionnaires are economical, practical, fast and scalable. One study used both approaches in their assessment of CT and found that only 50% of participants that reported sexual abuse in the questionnaires reported sexual abuse during interview (Jansen et al., 2016), indicating that participants may feel more comfortable reporting traumatic experiences in self-administered questionnaires. A possible advantage of using an interview is that it allows capturing qualitative data. Fisher

et al. (2011) compared the ratings of abuse obtained by different measures of childhood adversity in a sample with psychosis (CECA-Q, PBI scales and independent clinical case notes), and found consistent reports of CT across different assessment methods. Some instruments assess traumatic experiences and stressful life events, what could also account for discrepancies among studies.

We found that a high number of patients with FEP have experienced some kind of traumatic event during childhood. We have included the following traumatic experiences: physical and emotional abuse, physical and emotional neglect, and sexual abuse. This is because the majority of instruments assess these dimensions of CT, making them the most reported and the most present experiences in the literature compared with other traumatic experiences. Further, some authors have specifically considered these experiences as the most common during childhood (Bernstein et al., 2003). Other experiences as parental separation, institutional care, parental loss or disrupted family arrangements were not taken into account, because they were considered stressful life events. However, as has been previously explained, some instruments include stressful life events in their total score. Therefore, separating CT and stressful life events was not possible in some cases.

We found a higher prevalence of traumatic events in FEP patients than in healthy controls. This finding supports the neural diathesis–stress model (Pruessner et al., 2017). The neural diathesis-stress model assumes that the probability of developing a mental illness will depend both in a genetic vulnerability and in the influence of the stress an individual has to face. This model is consistent with a meta-analysis by Hughes et al. (2017), which exposed that traumatic experiences are one of the risk factors for developing a mental illness. However, experiencing a traumatic event has a higher impact if they occur during childhood (López-Soler, 2008; Mesa-Gresa and Moya-Albiol, 2011). The lack of differences between FEP and high-risk patients further supports this model, as the high-risk patients present symptoms that could be related with the traumatic experiences occurred during their childhood. The differences could be explained in that the high-risk sample is experiencing a prodromal state of psychosis and in that they may have more protective factors. Future research should explore the mediating role of these variables between trauma and psychosis.

One of our objectives was to explore gender differences in CT. Cumulative evidence has found that women with FEP experience more physical abuse than men. However, data on other dimensions of CT such as physical or emotional neglect is still conflictive. Our results are consistent with the United Nations (2006) study on violence against children, which clearly reported that girls experiencing more sexual abuse and SPA than boys. However, studies examining gender differences in other traumatic experiences are lacking. Although CT represents a worldwide problem, it is more prevalent in persons with mental illness, such as in patients with FEP. It is then crucial that CT is adequately assessed and included in the therapeutic process placing special emphasis in female patients.

The influence of CT in symptoms and functional outcomes is unclear. We only found a strong association between CT and hallucinations and delusions. The literature is consistent in finding that patients that have experienced CT present more frequent and severe delusions and hallucinations.

Cognitive models have posed that certain culturally unacceptable childhood experiences and their interpretations form the basis of hallucinations and delusions (Garety et al., 2001; Morrison, 2001). Targeting CT could improve the evolution of these symptoms. At the same time, it is crucial that clinicians actively ask whether patients with delusions and hallucinations experienced CT. Evidence regarding other symptoms is not clear, suggesting that more studies are needed in this area.

We reviewed the evidence for an association of CT and symptoms of post-traumatic stress. We found that patients who have suffered CT have more symptoms of post-traumatic stress and more diagnosis of post-traumatic stress disorder. Some studies have suggested that psychosis could be due to the traumatic experiences lived in childhood (Bendall et al., 2012; Haahr et al., 2018). This is of special importance because it highlights the impact that experiencing traumatic events in childhood could have on the onset of FEP. Specific treatments aimed to the traumatic experiences should be developed, as they could aid in improving evolution and the prognosis.

We did not find clear results regarding the influence of having experienced CT and functional outcomes. Haahr et al. (2018) found different results depending on the instruments used to assess functional outcome, suggesting that discrepancies in the results are due to methodological differences. Considering that measures of CT are themselves heterogeneous, this could be the root for the discrepancies in results. Future studies should develop instruments to assess trauma that have sound psychometric properties and that prioritize comparability. As noted in the quality of the articles included, some articles that explore the relationship between childhood trauma and functional outcomes do not control for symptoms or cannabis use. These variables, among others, are instrumental in understanding functional outcome and could modify the obtained results.

However, as a summary, it seems clear that suffering trauma in childhood has clear implications for suffering a first-episode psychosis, its evolution and its prognosis.

5. Clinical perspectives

This review reveals the high prevalence of childhood trauma in patients with FEP. Childhood trauma should be addressed from primary prevention with the objective of reducing or eliminating these experiences. Campaigns addressed to the general population, but most importantly to infants, teachers and family doctors, could be beneficial in building awareness and giving detection strategies. Similarly, secondary prevention programs could help children that have experienced a traumatic event reduce the probabilities of developing psychosis.

A necessary approach to childhood trauma is creating more interventions addressed to boys and girls that have experienced a traumatic event and their families. These interventions should have as main objectives improving their quality of life and their physical and emotional health.

Our work also manifests the lack of studies directed to develop and study the efficacy of interventions directed to traumatic experiences in childhood. Specifically, study whether specialized interventions could have an impact in the evolution and course of psychosis. Given the high prevalence of childhood trauma in first-episode psychosis and its impact in symptoms and functional outcome, we consider that these experiences should be a treatment target in patients with FEP. As final remarks, we encourage that all professionals that treat patients with FEP receive specialized education on childhood trauma.

6. Limitations of the included studies

The main limitation was that most studies did not account for variables that might affect on the outcomes presented. For instance, most studies did not control for symptoms, neurocognition or cannabis use when assessing the relationship between CT and functional outcome. Most studies used cross-sectional designs, making it difficult to disentangle cause and effect. Although we included a few longitudinal studies, there was not enough data to study the impact of childhood trauma throughout the first 5 years of psychosis.

In addition, more comparisons with other clinical groups, especially with ultra-high risk patients, and exploring associations with relevant outcomes such as protective factors (resilience, social support, coping strategies…), would help to clarify the impact of childhood trauma in the appearance of a first episode psychosis.

7. Limitation and strengths

The variety of instruments used to assess CT and the different methodologies used in the literature hampered the comparability of the

studies. Consequently, we could not find homogeneous results. The heterogeneity did not only include instruments, but also a poor conceptualization of CT which was sometimes merged with stressful life events. For this reason, we decided to include only those articles that reported the following experiences: physical, emotional or sexual abuse and physical and emotional neglect. Therefore, other experiences such as loss of a parent, parental separation or institutional care have not been included unless computed in a total score in an instrument.

Another limitation to our study is that we have reported the percentage of traumatic experiences in the sample as reported in the original publications. We did not take into account whether the original studies controlled for severity or if they used cut-off scores. This varies across different instruments, making it difficult to group studies and reach conclusions.

A third limitation is that we have only included articles that specifically recruited patients with FEP. However, several of these articles did not specify their definition of FEP. FEP is broadly defined as to have suffered at least an episode of psychosis in the past 5 years. Therefore, in our results we could not analyze different stages of the disease, such as first admission, duration of untreated psychosis of less than a year or duration of untreated psychosis of more than a year.

Finally, we did not include studies that examined the relationship between childhood trauma and other variables of interest that were not symptoms or functional outcomes. We used this strategy to obtain concise conclusions.

We conducted a literature search in four databases. It is possible that some articles or books have not been included in the present work because they were not included in these databases. We did not include doctoral dissertations and communications in the literature search.

As for strengths, all the manuscripts included were reviewed by four psychologists and two psychiatrists.

Contributors

Regina Vila-Badia, Núria Del Cacho, Anna Butjosa, Susana Ochoa and Judith Usall conducted the literature review and contributed to the writing and structure of the manuscript. Clara Serra-Arumí and Marina Esteban Santjusto contributed to the writing and the structure of the review.

Funding sources

This work was supported by the Spanish Ministry of Health Carlos III, research grant number PI17/00111 and a research personal grant number FI18/00028.

Declaration of competing interest

None.

Acknowledgments

The authors wish to thank Ms. Marta Ferrer for her support in editing of the manuscript.

References

Aas, M., Dazzan, P., Mondelli, V., Toulopoulou, T., Reichenberg, A., di Forti, M., Fisher, H.L., Handley, R., Hepgul, N., Marques, T., Miorelli, A., Taylor, H., Russo, M., Wiffen, B., Papadopoulos, A., Aitchison, K.J., Morgan, C., Murray, R.M., Pariante, C.M., 2010. Abnormal cortisol awakening response predicts worse cognitive function in patients with first-episode psychosis. Psychol. Med. 41, 463–476. https://doi.org/10.1017/S0033291710001170.

Aas, M., Dazzan, P., Fisher, H.L., Morgan, C., Morgan, K., Reichenberg, A., Zanelli, J., Fearon, P., Jones, P.B., Murray, R.M., Pariante, C.M., 2011. Childhood trauma and cognitive function in first-episode affective and non-affective psychosis. Schizophr. Res. 129 (1), 12–19. https://doi.org/10.1016/j.schres.2011.03.017.

Aas, M., Navari, S., Gibbs, A., Mondelli, V., Fisher, H.L., Morgan, C., Morgan, K., Maccabe, J., Reichenberg, A., Zanelli, J., Fearon, P., Jones, P.B., Murray, R.M., Pariante, C.M., Dazzan, P., 2012. Is there a link between childhood trauma, cognition, and amygdala and hippocampus volume in fi rst-episode psychosis? Schizophr. Res. 137 (1–3), 73–79. https://doi.org/10.1016/j.schres.2012.01.035.

Aas, M, Andreassen, O. A., Aminoff, S. R., Faerden, A., Romm, K. L., Nesvåg, R., Berg, A. O., Simonsen, C., Agartz, I., & Melle, I. (2016). A history of childhood trauma is associated with slower improvement rates: findings from a one-year follow-up study of patients with a first-episode psychosis. BMC Psychiatry, 16(126). doi:https://doi.org/10.1186/s12888-016-0827-4.

Ajnakina, O, Trotta, A., Oakley-Hannibal, E., Forti, M. di, Stilo, S. A., Kolliakou, A., Gardner-Sood, P., Gaughran, F., David, A. S., Dazzan, P., Pariante, C., Mondelli, V., Morgan, C., Vassos, E., Murray, R. M., & Fisher, H. L. (2016). Impact of childhood adversities on specific symptom dimensions in first-episode psychosis. Psychol. Med., 46, 317–326. doi:https://doi.org/10.1017/S0033291715001816.

Ajnakina, O., Trotta, A., Forti, M., Stilo, S.A., Kolliakou, A., Gardner-Sood, P., Lopez-Morinigo, J., Gaughran, F., David, A.S., Dazzan, P., Pariante, C., Mondelli, V., Murray, R.M., Fisher, H.L., 2018. Different types of childhood adversity and 5-year outcomes in a longitudinal cohort of first-episode psychosis patients. Psychiatry Res. 269, 199–206. https://doi.org/10.1016/j.psychres.2018.08.054.

Alameda, L., Ferrari, C., Baumann, P.S., Gholam-Rezaee, M., Do, K.Q., Conus, P., 2015. Childhood sexual and physical abuse: age at exposure modulates impact on functional outcome in early psychosis patients. Psychol. Med. 45 (13), 2727–2736. https://doi.org/10.1017/S0033291715000690.

Alameda, Luis, Golay, P., Baumann, P.S., Progin, P., Mebdouhi, N., Elowe, J., Ferrari, C., Do, K.Q., Conus, P., 2017. Mild depressive symptoms mediate the impact of childhood trauma on long-term functional outcome in early psychosis patients. Schizophr. Bull. 43 (5), 1027–1035. https://doi.org/10.1093/schbul/sbw163.

Alemany, S., Ayesa-Arriola, R., Arias, B., Fatjó-Vilas, M., Ibáñez, M.I., Ortet, G., Crespo-Facorro, B., Fañanás, L., 2015. Childhood abuse in the etiological continuum underlying psychosis from first-episode psychosis to psychotic experiences. Eur. Psychiatry 30 (1), 38–42. https://doi.org/10.1016/j.eurpsy.2014.08.005.

Alvárez, M.-J., Roura, P., Osés, A., Foguet, Q., Solà, J., Arrufat, F.X., 2011. Prevalence and clinical impact of childhood trauma in patients with severe mental disorders. J. Nerv. Ment. Dis. 199, 156–161. https://doi.org/10.1097/NMD.0b013e31820c751c.

Bae, H., Kim, D., Kim, J.H., Jeong, S.A., Oh, D.H., 2010. Childhood abuse and verbal intelligence among adults diagnosed with first-episode schizophrenia. Psychosis 2 (2), 154–162. https://doi.org/10.1080/17522430902964685.

Baudin, G., Szoke, A., Richard, J.R., Pelissolo, A., Leboyer, M., Schürhoff, F., 2017. Childhood trauma and psychosis: beyond the association. Child Abuse Negl. 72 (August), 227–235. https://doi.org/10.1016/j.chiabu.2017.08.003.

Bendall, S., Jackson, H.J., Hulbert, C.A., 2011. What self-generated speech is externally misattributed in psychosis? Testing three cognitive models in a first-episode sample. Schizophr. Res. 129, 36–41. https://doi.org/10.1016/j.schres.2011.03.028.

Bendall, S., Alvarez-Jimenez, M., Hulbert, C.A., McGorry, P.D., Jackson, H.J., 2012. Childhood trauma increases the risk of post-traumatic stress disorder in response to first-episode psychosis. Aust. N. Z. J. Psychiatry 46 (1), 35–39. https://doi.org/10.1177/0004867411430877.

Bendall, S., Hulbert, C.A., Alvarez-Jimenez, M., Allott, K., McGorry, P.D., Jackson, H.J., 2013. Testing a model of the relationship between childhood sexual abuse and psychosis in a first-episode psychosis group. J. Nerv. Ment. Dis. 201 (11), 941–947. https://doi.org/10.1097/NMD.0000000000000033.

Bentall, R.P., de Sousa, P., Varese, F., Wickham, S., Sitko, K., Haarmans, M., Read, J., 2014. From adversity to psychosis: pathways and mechanisms from specific adversities to specific symptoms. Soc. Psychiatry Psychiatr. Epidemiol. 49 (7), 1011–1022. https://doi.org/10.1007/s00127-014-0914-0.

Bernstein, D.P., Stein, J.A., Newcomb, M.D., Walker, E., Pogge, D., Ahluvalia, T., Stokes, J., Handelsman, L., Medrano, M., Desmond, D., Zule, W., 2003. Development and validation of a brief screening version of the childhood trauma questionnaire. Child Abuse Negl. 27, 169–190. https://doi.org/10.1016/S0145-2134(02)00541-0.

Bifulco, A., Brown, G.W., Harris, T.O., 1994. Childhood experience of care and abuse (CECA): a retrospective interview measure. J. Child Psychol. Psychiatry 35 (8), 1419–1435. https://doi.org/10.1111/j.1469-7610.1994.tb01284.x.

Braehler, C., Valiquette, L., Holowka, D., Malla, A.K., Joober, R., Ciampi, A., Pawliuk, N., King, S., 2013. Childhood trauma and dissociation in first-episode psychosis, chronic schizophrenia and community controls. Psychiatry Res. 210 (1). https://doi.org/10.1016/j.psychres.2013.05.033.

Bremner, J., Bolus, R., Mayer, E.A., 2007. Psychometric properties of the early trauma inventory-self report. J. Nerv. Ment. Dis. 195 (3), 211–218. https://doi.org/10.1097/01.nmd.0000243824.84651.6c.

Campbell, C., Barrett, S., Shannon, C., Hoy, K., Rushe, T., Cooper, S., Mulholland, C., 2013. The relationship between childhood trauma and neuropsychological functioning in first episode psychosis. Psychosis 5 (1), 48–59. https://doi.org/10.1080/17522439.2012.660982.

Catalan, A., Angosto, V., Díaz, A., Valverde, C., Gonzalez De Artaza, M., Sesma, E., Maruottolo, C., Galletero, I., Bustamante, S., Bilbao, A., van Os, J., Angel Gonzalez-Torres, M., 2017. Relation between psychotic symptoms, parental care and childhood trauma in severe mental disorders. Psychiatry Res. 251, 78–84. https://doi.org/10.1016/j.psychres.2017.02.017.

Catalan, A., Díaz, A., Angosto, V., Zamalloa, I., Martínez, N., Guede, D., ... Gonzalez-Torres, M.A., 2018. Can childhood trauma influence facial emotion recognition independently from a diagnosis of severe mental disorder? Revista de Psiquiatria Y Salud Mental. https://doi.org/10.1016/j.rpsm.2018.10.003.

Ciufolini, S., Gayer-Anderson, C., Fisher, H.L., Reis Marques, T., Taylor, H., di Forti, M., Zunszain, P., Morgan, C., Murray, R.M., Pariante, C.M., Dazzan, P., Mondelli, V., 2019. Cortisol awakening response is decreased in patients with first-episode psychosis and increased in healthy controls with a history of severe childhood abuse. Schizophr. Res. 205, 38–44. https://doi.org/10.1016/j.schres.2018.05.002.

Comacchio, C., Howard, L.M., Bonetto, C., lo Parrino, R., Furlato, K., Semrov, E., Preti, A., Mesiano, L., Neri, G., de Girolamo, G., de Santi, K., Miglietta, E., Tosato, S., Cristofalo, D., Lasalvia, A., Ruggeri, M., 2019. The impact of gender and childhood abuse on age of psychosis onset, psychopathology and needs for care in psychosis patients. Schizophr. Res. 210, 164–171. https://doi.org/10.1016/j.schres.2018.12.046.

Compton, M.T., Furman, A.C., Kaslow, N.J., 2004. Preliminary evidence of an association between childhood abuse and cannabis dependence among African American first-episode schizophrenia-spectrum disorder patients. Drug Alcohol Depend. 76, 311–316. https://doi.org/10.1016/j.drugalcdep.2004.05.005.

Conus, P., Cotton, S., Schimmelmann, B., McGorry, P., M., L., 2007. The first-episode psychosis outcome study: premorbid and baseline characteristics of an epidemiological cohort of 661 first-episode psychosis patients. Early Interv. Psychiatry 1, 191–200.
Conus, P., Cotton, S., Schimmelmann, B.G., Berk, M., Daglas, R., McGorry, P.D., Lambert, M., 2010a. Pretreatment and outcome correlates of past sexual and physical trauma in 118 bipolar I disorder patients with a first episode of psychotic mania. Bipolar Disord. 12 (3), 244–252. https://doi.org/10.1111/j.1399-5618.2010.00813.x.
Conus, P., Cotton, S., Schimmelmann, B.G., Mcgorry, P.D., Lambert, M., 2010b. Pretreatment and outcome correlates of sexual and physical trauma in an epidemiological cohort of first-episode psychosis patients. Schizophr. Bull. 36 (6), 1105–1114. https://doi.org/10.1093/schbul/sbp009.
Corsi-zuelli, F., Loureiro, C.M., Shuhama, R., Fachim, H.A., Menezes, P.R., Louzada-junior, P., Mondelli, V., Del-ben, C.M., 2019. Cytokine profile in first-episode psychosis, unaffected siblings and community-based controls: the effects of familial liability and childhood maltreatment. Psychol. Med. 8, 1–9. https://doi.org/10.1017/S0033291719001016.
Cotton, S.M., Lambert, M., Berk, M., Schimmelmann, B.G., Butselaar, F.J., Mcgorry, P.D., Conus, P., 2013. Gender differences in first episode psychotic mania. BMC Psychiatry 13 (82). https://doi.org/10.1186/1471-244X-13-82.
Doré-Gauthier, V., Côté, H., Jutras-Aswad, D., Ouellet-Plamondon, C., Abdel-Baki, A., 2019. How to help homeless youth suffering from first episode psychosis and substance use disorders? The creation of a new intensive outreach intervention team. Psychiatry Res. 273, 603–612. https://doi.org/10.1016/j.psychres.2019.01.076.
Dorji, N., Dunne, M., Deb, S., 2020. Adverse childhood experiences: association with physical and mental health conditions among older adults in Bhutan. Public Health 182, 173–178. https://doi.org/10.1016/j.puhe.2020.02.013.
Fisher, H., Morgan, C., Dazzan, P., Craig, T.K., Morgan, K., Hutchinson, G., Jones, P.B., Doody, G.A., Pariante, C., McGuffin, P., Murray, R.M., Left, J., Fearon, P., 2009. Gender differences in the association between childhood abuse and psychosis. Br. J. Psychiatry 194 (4), 319–325. https://doi.org/10.1192/bjp.bp.107.047985.
Fisher, H.L., Craig, T.K., Fearon, P., Morgan, K., Dazzan, P., Lappin, J., Hutchinson, G., Doody, G.A., Jones, P.B., Mcguffin, P., Murray, R.M., Leff, J., Morgan, C., 2011. Reliability and comparability of psychosis Patients' retrospective reports of childhood abuse. Schizophr. Bull. 37 (3), 546–553. https://doi.org/10.1093/schbul/sbp103.
Galletti, C., Paolini, E., Tortorella, A., Compton, M.T., 2017. Auditory and non-auditory hallucinations in first-episode psychosis: differential associations with diverse clinical features. Psychiatry Res. 254, 268–274. https://doi.org/10.1016/j.psychres.2017.04.056.
Garcia, M., Montalvo, I., Creus, M., Cabezas, Á., Solé, M., Algora, M.J., Moreno, I., Gutiérrez-Zotes, A., Labad, J., 2016. Sex differences in the effect of childhood trauma on the clinical expression of early psychosis. Compr. Psychiatry 68, 86–96. https://doi.org/10.1016/j.comppsych.2016.04.004.
Garety, P.A., Kuipers, E., Fowler, D., Freeman, D., Bebbington, P.E., 2001. A cognitive model of the positive symptoms of psychosis. Psychol. Med. 31 (2), 189–195. https://doi.org/10.1017/S0033291701003312.
Garno, J.L., Goldberg, P.M.R., Ritzler, B.A., 2005. Impact of childhood abuse on the clinical course of bipolar disorder. Br. J. Psychiatry 186, 121–125.
Gimenez-Donoso, S., Treen-Calvo, D., Setien-Suero, E., Tirapu-Ustarroz, J., Crespo-Facorro, B., Ayesa-Arriola, R., 2018. Evaluation of verbal inhibitory control with the Stroop test in early episodes of psychosis with the experience of traumatic events in infancy. Rev. Neurol. 67 (4), 115–120. http://www.ncbi.nlm.nih.gov/pubmed/30039838.
Goldberg, L.R., Freyd, J.J., 2006. Self-reports of potentially traumatic experiences in an adult community sample: gender differences and test-retest stabilities of the items in a brief betrayal-trauma survey. J. Trauma Dissociation 7 (3), 39–63. https://doi.org/10.1300/J229v07n03_04.
Goodman, L.A., Corcoran, C., Turner, K., Yuan, N., Green, B.L., 1998. Assessing traumatic event exposure: general issues and preliminary findings for the stressful life events screening questionnaire. J. Trauma. Stress. 11 (3), 521–542. https://doi.org/10.1023/A:1024456713321.
Greenfield, S.F., Strakowski, S.M., Tohen, M., Batson, S.C., Kolbrener, M.L., 1994. Childhood abuse in first-episode psychosis. Br. J. Psychiatry 164 (6), 831–834. https://doi.org/10.1192/bjp.164.6.831.
Haahr, U.H., Larsen, T.K., Simonsen, E., Rund, B.R., Joa, I., Rossberg, J.I., Johannessen, J.O., Langeveld, J., Evensen, J., Traulsen, A.M.H., Vaglum, P., Opjordsmoen, S., ten V. Hegelstad, W., Friis, S., McGlashan, T., Melle, I., 2018. Relation between premorbid adjustment, duration of untreated psychosis and close interpersonal trauma in first-episode psychosis. Early Interv. Psychiatry 01654 (2008001). https://doi.org/10.1111/eip.12315 n/a-n/a.
Hoy, K., Barrett, S., Shannon, C., Campbell, C., Watson, D., Rushe, T., Shevlin, M., Bai, F., Cooper, S., Mulholland, C., 2012. Childhood trauma and hippocampal and Amygdalar volumes in first-episode psychosis. Schizophr. Bull. 38 (6), 1162–1169. https://doi.org/10.1093/schbul/sbr085.
Hughes, K., Bellis, M.A., Hardcastle, K.A., Sethi, D., Butchart, A., Mikton, C., Jones, L., Dunne, M.P., 2017. The effect of multiple adverse childhood experiences on health: a systematic review and meta-analysis. Lancet Public Health 2 (8), 356–366. https://doi.org/10.1016/S2468-2667(17)30118-4.
Jansen, J.E., Pedersen, M.B., Traulsen, A.M., Lyse Nielsen, H.-G., Haahr, U.H., Simonsen, E., 2016. The experience of childhood trauma and its influence on the course of illness in first-episode psychosis. J. Nerv. Ment. Dis. 204 (3), 210–216. https://doi.org/10.1097/NMD.0000000000000449.
Jiménez, L., Menéndez Álvarez-Dardet, S., Hidalgo García, M.V., 2008. Un análisis de los acontecimientos vitales estresantes durante la adolescencia. Apuntes de Psicologia 26 (3), 427–440.
Kalmakis, K.A., Chandler, G.E., 2015. Health consequences of adverse childhood experiences: A systematic review. J. Am. Assoc. Nurse Pract. 27 (8), 457–465. https://doi.org/10.1002/2327-6924.12215.
Kilian, S., Asmal, L., Chiliza, B., Olivier, M.R., Phahladira, L., Scheffler, F., Seedat, S., Marder, S.R., Green, M.F., Emsley, R., 2017a. Childhood adversity and cognitive function in schizophrenia spectrum disorders and healthy controls: evidence for an association between neglect and social cognition. Psychol. Med. 48, 2186–2193. https://doi.org/10.1017/S0033291717003671.
Kilian, S., Burns, J.K., Seedat, S., Asmal, L., Chiliza, B., du Plessis, S., Olivier, M.R., Kidd, M., Emsley, R., 2017b. Factors moderating the relationship between childhood trauma and premorbid adjustment in first-episode schizophrenia. PLoS Med. 12 (1). https://doi.org/10.1371/journal.pone.0170178.
Lambert, M., Conus, P., Cotton, S., Robinson, J., McGorry, P.D., Schimmelmann, B.G., 2010. Prevalence, predictors, and consequences of long-term refusal of antipsychotic treatment in first-episode psychosis. J. Clin. Psychopharmacol. 30 (5), 565–572. https://doi.org/10.1097/JCP.0b013e3181f058a0.
Longden, E., House, A.O., Waterman, M.G., 2016. Associations between nonauditory hallucinations, dissociation, and childhood adversity in first-episode psychosis. J. Trauma Dissociation 17 (5), 545–560. https://doi.org/10.1080/15299732.2016.1155193.
López-Soler, C., 2008. Las reacciones postraumáticas en la infancia y adolescencia maltratada: el trauma complejo. Revista de Psicopatología y Psicología Clínica 13 (3), 159–174. https://doi.org/10.5944/rppc.vol.13.num.3.2008.4057.
Lysaker, P.H., LaRocco, V.A., 2008. The prevalence and correlates of trauma-related symptoms in schizophrenia spectrum disorder. Compr. Psychiatry 49 (4), 330–334. https://doi.org/10.1016/J.COMPPSYCH.2007.12.003.
Mesa-Gresa, P., Moya-Albiol, L., 2011. Neurobiology of child abuse: the 'cycle of violence'. Rev. Neurol. 52 (8), 489–503. http://www.ncbi.nlm.nih.gov/pubmed/21425102.
Michail, M., Birchwood, M., 2014. Social anxiety in first-episode psychosis: the role of childhood trauma and adult attachment. J. Affect. Disord. 163, 102–109. https://doi.org/10.1016/j.jad.2014.03.033.
Misiak, B., Moustafa, A.A., Kiejna, A., Frydecka, D., 2016. Childhood traumatic events and types of auditory verbal hallucinations in first-episode schizophrenia patients. Compr. Psychiatry 66, 17–22. https://doi.org/10.1016/j.comppsych.2015.12.003.
Mondelli, V., Dazzan, P., Hepgul, N., di Forti, M., Aas, M., Albenzio, A.D., di Nicola, M., Fisher, H., Handley, R., Marques, R., Morgan, C., Navari, S., Taylor, H., Papadopoulos, A., Aitchison, K.J., Murray, R.M., Pariante, C.M., 2010. Abnormal cortisol levels during the day and cortisol awakening response in first-episode psychosis: the role of stress and of antipsychotic treatment. Schizophr. Res. 116, 234–242. https://doi.org/10.1016/j.schres.2009.08.013.
Mondelli, V., Cattaneo, A., Murri, M.B., di Forti, M., Handley, R., Hepgul, N., Miorelli, A., Navari, S., Papadopoulos, A.S., Aitchison, K.J., Morgan, C., Murray, R.M., Dazzan, P., Pariante, C.M., 2011. Stress and inflammation reduce BDNF expression in first-episode psychosis: a pathway to smaller hippocampal volume. J. Clin. Psychiatry 72 (12), 1677–1684. https://doi.org/10.4088/JCP.10m06745.
Morrison, A.P., 2001. The interpretation of intrusions in psychosis: an integrative cognitive approach to hallucinations and delusions. Behav. Cogn. Psychother. 29 (3), 257–276. https://doi.org/10.1017/S1352465801003010.
Morrison, A.P., Frame, L., Larkin, W., 2003. Relationships between trauma and psychosis: A review and integration. Br. J. Clin. Psychol. 42 (4), 331–353. https://doi.org/10.1348/014466503322528892.
Nijenhuis, E.R.S., van der Hart, O., Kruger, K., 2002. The psychometric characteristics of the traumatic experiences checklist (TEC): first findings among psychiatric outpatients. Clin. Psychol. Psychother. 9 (3), 200–210. https://doi.org/10.1002/cpp.332.
Palmier-Claus, J., Berry, K., Darrell-Berry, H., Emsley, R., Parker, S., Drake, R., Bucci, S., 2016. Childhood adversity and social functioning in psychosis: exploring clinical and cognitive mediators. Psychiatry Res. 238, 25–32. https://doi.org/10.1016/j.psychres.2016.02.004.
Paolini, E., Moretti, P., Compton, M.T., 2016. Delusions in first-episode psychosis: principal component analysis of twelve types of delusions and demographic and clinical correlates of resulting domains. Psychiatry Res. 243, 5–13. https://doi.org/10.1016/j.psychres.2016.06.002.
Peach, N., Alvarez-Jimenez, M., Cropper, S.J., Sun, P., Bendall, S., 2019. Testing models of post-traumatic intrusions, trauma-related beliefs, hallucinations, and delusions in a first episode psychosis sample. Br. J. Clin. Psychol. 58 (2), 154–172. https://doi.org/10.1111/bjc.12206.
Phassouliotis, C., Garner, B.A., Phillips, L.J., Bendall, S., Yun, Y., Markulev, C., Kerr, M., McGorry, P.D., 2012. Enhanced cortisol suppression following administration of low-dose dexamethasone in first-episode psychosis patients. Aust. N. Z. J. Psychiatry 47 (4), 363–370. https://doi.org/10.1177/0004867412465125.
Pruessner, M., Cullen, A.E., Aas, M., Walker, E.F., 2017. The neural diathesis-stress model of schizophrenia revisited: an update on recent findings considering illness stage and neurobiological and methodological complexities. Neurosci. Biobehav. Rev. 73, 191–218. https://doi.org/10.1016/j.neubiorev.2016.12.013.
Pruessner, M., King, S., Vracotas, N., Abadi, S., Iyer, S., Malla, A.K., Shah, J., Joober, R., 2019. Gender differences in childhood trauma in first episode psychosis: association with symptom severity over two years. Schizophr. Res. 205, 30–37. https://doi.org/10.1016/j.schres.2018.06.043.
Ramsay, C.E., Flanagan, P., Gantt, S., Broussard, B., Compton, M.T., 2011. Clinical correlates of maltreatment and traumatic experiences in childhood and adolescence among predominantly African American, socially disadvantaged, hospitalized, first-episode psychosis patients. Psychiatry Res. 188 (3), 343–349. https://doi.org/10.1016/j.psychres.2011.05.019.
Reininghaus, U., Gayer-Anderson, C., Valmaggia, L., Kempton, M.J., Calem, M., Onyejiaka, A., Hubbard, K., Dazzan, P., Beards, S., Fisher, H.L., Mills, J.G., McGuire, P., Craig, T.K.J., Garety, P., van Os, J., Murray, R.M., Wykes, T., Myin-Germeys, I., Morgan, C., 2016. Psychological processes underlying the association between childhood trauma and psychosis in daily life: an experience sampling study. Psychol. Med. 46 (13), 2799–2813. https://doi.org/10.1017/S003329171600146X.
Robinson, J., Cotton, S., Conus, P., Graf Schimmelmann, B., McGorry, P., Lambert, M., 2009. Prevalence and predictors of suicide attempt in an incidence cohort of 661 young

people with first-episode psychosis. Aust. N. Z. J. Psychiatry 43 (2), 149–157. https://doi.org/10.1080/00048670802607162.
Şahin, S., Yüksel, Ç., Güler, J., Karadayı, G., Akturan, E., Göde, E., Özhan, A.A., Üçok, A., 2013. The history of childhood trauma among individuals with ultra high risk for psychosis is as common as among patients with first-episode schizophrenia. Early Interv. Psychiatry 7 (4), 414–420. https://doi.org/10.1111/eip.12022.
Schäfer, I., Morgan, C., Demjaha, A., MRCPsych, M., Morgan, K., Dazzan, P., Fearon, P., Jones, P. B., FMedSci, Frcp., Doody, G. A., Leff, J., Murray, R. M., & Fisher, H. L., 2011. Assessment of posttraumatic symptoms in patients with first-episode psychosis. J. Nerv. Ment. Dis. 199 (11), 896–898. https://doi.org/10.1097/NMD.0b013e318234a037.
Schenkel, L.S., Spaulding, W.D., Dilillo, D., Silverstein, S.M., 2005. Histories of childhood maltreatment in schizophrenia: relationships with premorbid functioning, symptomatology, and cognitive deficits. Schizophr. Res. 76, 273–286. https://doi.org/10.1016/j.schres.2005.03.003.
Seitz, R., Vracotas, N., Bechard-Evans, L., King, S., Abadi, S., Joober, R., Shah, J.L., Malla, A.K., Pruessner, M., 2019. The Trier social stress test in first episode psychosis patients: impact of perceived stress, protective factors and childhood trauma. Psychoneuroendocrinology 105, 155–163. https://doi.org/10.1016/j.psyneuen.2019.01.010.
Sideli, L., Fisher, H.L., Russo, M., Murray, R.M., Stilo, S.A., Wiffen, B.D.R., O'Connor, J.A., Aurora Falcone, M., Pintore, S.M., Ferraro, L., Mule', A., la Barbera, D., Morgan, C., & di Forti, M., 2014. Failure to find association between childhood abuse and cognition in first-episode psychosis patients. Eur. Psychiatry 29 (1), 32–35. https://doi.org/10.1016/j.eurpsy.2013.02.006.
Sideli, L., Fisher, H.L., Murray, R.M., Sallis, H., Russo, M., Stilo, S.A., Paparelli, A., Wiffen, B.D.R., O'Connor, J.A., Pintore, S., Ferraro, L., la Cascia, C., la Barbera, D., Morgan, C., di Forti, M., 2018. Interaction between cannabis consumption and childhood abuse in psychotic disorders: preliminary findings on the role of different patterns of cannabis use. Early Interv. Psychiatry 12 (2), 135–142. https://doi.org/10.1111/eip.12285.
Simpson, S., Phillips, L., Baksheev, G., Garner, B., Markulev, C., Phassouliotis, C., Alvarez-Jimenez, M., McGorry, P., Bendall, S., 2019. Stability of retrospective self-reports of childhood trauma in first-episode psychosis. Early Interv. Psychiatry 13 (4), 908–913. https://doi.org/10.1111/eip.12700.
Smith, N., Lam, D., Bifulco, A., Checkley, S., 2002. Childhood experience of care and abuse questionnaire (CECA.Q). Validation of a screening instrument for childhood adversity in clinical populations. Soc. Psychiatry Psychiatr. Epidemiol. 37 (12), 572–579. https://doi.org/10.1007/s00127-002-0589-9.
Solesvik, M., Joa, I., Larsen, T.K., Langeveld, J., Johannessen, J.O., Bjørnestad, J., Anda, L.G., Gisselgård, J., Hegelstad, W.T.V., Brønnick, K., 2016. Visual hallucinations in first-episode psychosis: association with childhood trauma. PLoS One 11 (5), e0153458. https://doi.org/10.1371/journal.pone.0153458.
Sonu, S., Post, S., Feinglass, J., 2019. Adverse childhood experiences and the onset of chronic disease in young adulthood ☆. Prev. Med. 123, 163–173. https://doi.org/10.1016/j.ypmed.2019.03.032.
Spidel, A., Lecomte, T., Greaves, C., Sahlstrom, K., Yuille, J.C., 2010. Early psychosis and aggression: predictors and prevalence of violent behaviour amongst individuals with early onset psychosis. Int. J. Law Psychiatry 33, 171–176. https://doi.org/10.1016/j.ijlp.2010.03.007.
Stain, H.J., Brønnick, K., Hegelstad, W.T.V., Joa, I., Johannessen, J.O., Langeveld, J., Mawn, L., Larsen, T.K., 2014. Impact of interpersonal trauma on the social functioning of adults with first-episode psychosis. Schizophr. Bull. 40 (6), 1491–1498. https://doi.org/10.1093/schbul/sbt166.
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? Compr. Psychiatry 84, 68–74. https://doi.org/10.1016/j.comppsych.2018.04.004.
Sun, P., Alvarez-Jimenez, M., Lawrence, K., Simpson, K., Peach, N., Bendall, S., 2019. Investigating the prevalence of dissociative disorders and severe dissociative symptoms in first episode psychosis. Early Interv. Psychiatry 13 (6), 1366–1372. https://doi.org/10.1111/eip.12773.
Theleritis, C., Fisher, H.L., Shäfer, I., Winters, L., Stahl, D., Morgan, C., Dazzan, P., Breedvelt, J., Sambath, I., Vitoratou, S., Russo, M., Reichenberg, A., Falcone, M.A., Mondelli, V., O'connor, J., David, A., Mcguire, P., Pariante, C., di Forti, M., Murray, R.M., Bonaccorso, S., 2014. Brain derived neurotropic factor (BDNF) is associated with childhood abuse but not cognitive domains in first episode psychosis. Schizophrenia Res. 159, 56–61. https://doi.org/10.1016/j.schres.2014.07.013.
Tomassi, S., Tosato, S., Mondelli, V., Faravelli, C., Lasalvia, A., Fioravanti, G., Bonetto, C., Fioritti, A., Cremonese, C., lo Parrino, R., de Santi, K., Meneghelli, A., Torresani, S., de Girolamo, G., Semrov, E., Pratelli, M., Cristofalo, D., Ruggeri, M., 2017. Influence of childhood trauma on diagnosis and substance use in first-episode psychosis. Br. J. Psychiatry 211 (3), 151–156. https://doi.org/10.1192/bjp.bp.116.194019.
Trauelsen, A.M., Bendall, S., Jansen, J.E., Nielsen, H.-G.L., Pedersen, M.B., Trier, C.H., Haahr, U.H., Simonsen, E., 2015. Childhood adversity specificity and dose-response effect in non-affective first-episode psychosis. Schizophr. Res. 165, 52–59. https://doi.org/10.1016/j.schres.2015.03.014.
Trauelsen, A.M., Gumley, A., Jansen, J.E., Pedersen, M.B., Nielsen, H.-G.L., Trier, C.H., Haahr, U.H., Simonsen, E., 2016. Metacognition in first-episode psychosis and its association with positive and negative symptom profiles $. Psychiatry Res. 238, 14–23. https://doi.org/10.1016/j.psychres.2016.02.003.
Trauelsen, A.M., Gumley, A., Jansen, J.E., Pedersen, M.B., Nielsen, H.-G.L., Haahr, U.H., Simonsen, E., 2019. Does childhood trauma predict poorer metacognitive abilities in people with first-episode psychosis? Psychiatry Res. 274. https://doi.org/10.1016/j.psychres.2019.01.018.
Trotta, A., Murray, R.M., David, A.S., Kolliakou, A., O'connor, J., di Forti, M., Dazzan, P., Mondelli, V., Morgan, C., Fisher, H.L., 2016. Impact of different childhood adversities on 1-year outcomes of psychotic disorder in the genetics and psychosis study. Schizophrenia Bulletin 42.
Trotta, A., Iyegbe, C., Yiend, J., Dazzan, P., David, A.S., Pariante, C., Mondelli, V., Colizzi, M., Murray, R.M., di Forti, M., Fisher, H.L., 2019. Interaction between childhood adversity and functional polymorphisms in the dopamine pathway on first-episode psychosis. Schizophr. Res. 205, 51–57. https://doi.org/10.1016/j.schres.2018.04.010.
United Nations Secretary-General, 2006. Report of the independent Expert for the United Nations Study on Violence against Children. Promotion and protection of the rights of children. United Nations General Assembly, Sixty-first session. A/61/299.
Valenzuela, M.J., Sachdev, P., 2007. Assessment of complex mental activity across the lifespan: development of the lifetime of experiences questionnaire (LEQ). Psychol. Med. 37 (7), 1015–1025. https://doi.org/10.1017/S003329170600938X.
Varese, F., Smeets, F., Drukker, M., Lieverse, R., Lataster, T., Viechtbauer, W., Read, J., van Os, J., Bentall, R.P., 2012. Childhood adversities increase the risk of psychosis: A meta-analysis of patient-control, prospective-and cross-sectional cohort studies. Schizophr. Bull. 38 (4), 661–671. https://doi.org/10.1093/schbul/sbs050.
Wolfe, J., Kimerling, R., Brown, P., Chrestman, K., & Levin, K. (1996). Psychometric review of the life stressor checklist-revised. In S. BH (Ed.), *Measurement of Stress, Trauma, and Adaptation.* (Pp. 198–201). Sidrian Press.
Zhuo-hui, H., Cai-lan, H., Ying-hua, H., Xiao-yan, H., Qian-wen, W., 2019. (2019). Individuals at high risk for psychosis experience more childhood trauma, life events and social support deficit in comparison to healthy controls. Psychiatry Res. 273, 296–302. https://doi.org/10.1016/j.psychres.2019.01.060.

4.2. Estudi 2

Objectiu 2. Analitzar els tipus d'experiències traumàtiques en la infància i la seva prevalença en una mostra de pacients amb un primer episodi psicòtic i comparar-ho amb un mostra de persones control sanes, i estudiar quines variables clíniques, psicosocials i sociodemogràfiques en l'inici d'un primer episodi psicòtic estaven relacionades amb haver patit alguna experiència traumàtica en la infància.

Article 2

Prevalence and types of childhood trauma in first episode psychosis patients. Relation with clinical onset variables.

Vila-Badia R, Del Cacho N, Butjosa A, Serra-Arumí C, Esteban Sanjusto M, Abella M, Cuevas-Esteban G, Morelló G, Pardo M, Muñoz-Samons D, PROFEP G, Usall J.

Journal of Psychiatric Research. 2022; 146:102-108.

Journal of Psychiatric Research 146 (2022) 102–108

Contents lists available at ScienceDirect

Journal of Psychiatric Research

journal homepage: www.elsevier.com/locate/jpsychires

Prevalence and types of childhood trauma in first episode psychosis patients. Relation with clinical onset variables

R. Vila-Badia [a,b,c,*], N. Del Cacho [a,b], A. Butjosa [a,d], C. Serra Arumí [a,b,c], M. Esteban Santjusto [a,b], M. Abella [a], J. Cuevas-Esteban [e,f], G. Morelló [a,b], M. Pardo [d], D. Muñoz-Samons [a,d], Group PROFEP[a,b], Judith Usall [a,b]

[a] Etiopatogènia i Tractament Dels Trastorns Mentals Greus (MERITT), Institut de Recerca Sant Joan de Déu, Esplugues de Llobregat, Spain
[b] Parc Sanitari Sant Joan de Déu, CIBERSAM, Doctor Antoni Pujadas, Sant Boi de Llobregat, Spain
[c] Universitat de Barcelona, Facultat de Medicina i Ciències de La Salut Barcelona, Barcelona, Spain
[d] Hospital Infanto-juvenil Sant Joan de Déu, Institut de Recerca Sant Joan de Déu, CIBERSAM, Esplugues de Llobregat, Spain
[e] Hospital Universitari Germans Trias i Pujol, CIBERSAM, Badalona, Spain
[f] Universitat Autònoma de Barcelona, Cerdanyola Del Vallès, Spain

ARTICLE INFO

Keywords:
Abuse
Childhood trauma
Gender
Neglect
Psychosis

ABSTRACT

Objective: To study the prevalence and the type of childhood trauma (CT) in a first-episode psychosis (FEP) cohort and in a healthy control (HC) sample. To study which clinical and sociodemographic variables in the onset of the FEP are related to having suffered some traumatic experience in childhood.
Method: 100 FEP patients and 94 HC participated in the study. The Childhood Traumatic Questionnaire (CTQ) was used to evaluate CT. The Positive and Negative Syndrome Scale (PANSS), the Personal and Social Performance (PSP), the Suicide Risk Scale of Plutchik (SRSP), and the Perceived Stress Scale (PSS) were also administered.
Results: 61% of FEP patients and 17% of HC reported having experienced some kind of CT. FEP showed more CT than controls in all subscales, except in sexual abuse. The most frequent CT was emotional abuse. For the FEP group, younger age, more years of education, have a first-degree family history, more positive and negative symptoms, more perceived stress and more personal and social functioning were the variables more influenced by having suffered some kind of CT.
Conclusions: There is a high prevalence of CT in FEP patients. Having a first-degree family history of mental illness, more positive symptoms, and more perception of stress at the time of hospital admission were related to having suffered CT. More research is needed to find out the best way to detect CT and its role in psychosis to be able to implement interventions to improve the evolution of these patients.

1. Introduction

The growing interest in the role of childhood traumatic experiences in mental health has revealed that people with mental health problems experience a higher prevalence of traumatic events (Goh and Agius, 2010; Van Os et al., 2010; Zannas and West, 2014), which is specially true for people suffering from psychosis (Barrigón et al., 2015:Misiak et al., 2017). In fact, a recent systematic review found that people who have experienced a first-episode of psychosis (FEP) have a prevalence of childhood traumatic experiences between 52 and 73% (Vila-Badia et al., 2021). However, these traumatic experiences in childhood are common in the general population (United Nations Secretary-General, 2006).

People with FEP and a history of childhood trauma tend to have more psychotic, worse social, higher risk of suicide, more post-traumatic stress symptoms, more time of untreated psychosis (DUP), a history of cannabis use, fewer years of education and early age of the onset of psychosis functioning (Aas et al., 2016; Conus et al., 2009; Kilian et al., 2017; Peach et al., 2019; Şahin et al., 2013; Trauelsen et al., 2016; Trotta et al., 2016; Zhuo-Hui et al., 2019). Of note, women more frequently experience traumatic events than males (Aas et al., 2011; Conus et al.,

* Corresponding author. Parc Sanitari Sant Joan de Déu, Centro de Investigación en Red en Salud Mental, Calle Antoni Pujades 42, CP 08830 Sant Boi de Llobregat, Barcelona, CIBERSAM, Spain.
E-mail address: r.vila@pssjd.org (R. Vila-Badia).

https://doi.org/10.1016/j.jpsychires.2021.12.033
Received 31 August 2021; Received in revised form 1 December 2021; Accepted 11 December 2021
Available online 15 December 2021

2010).

These results are not without controversy, since many others did not find any significant differences between patients with FEP that have experienced childhood trauma and those who have not. However, heterogeneity in the results may be due to different instruments to assess childhood trauma and differences in the control of confounding variables (Vila-Badia et al., 2021). These discrepancies in the results highlight the importance to continue studying the role of childhood trauma in the appearance of first-episode psychosis.

1.1. Aims of the study

The aims of the present work were: 1) to study the prevalence and the type of childhood trauma in a sample with first-episode psychosis and compare it with a sample of healthy controls, and 2) to study which clinical and sociodemographic variables in the onset of the first-episode psychosis were related to having suffered some traumatic experience in childhood.

2. Materials and methods

This study is part of the PROFEP study, a longitudinal study focusing on describing factors and variables that may influence the onset and the evolution of patients with FEP. Among the main objectives, the PROFEP study aims to investigate hormones and metabolic syndrome in FEP. To this aim, we need to detect baseline hormonal and metabolic levels. Therefore, patients that had been receiving medication for more than 15 days were excluded. However, this exclusion criteria concerns the study as a whole, but not the present work in particular.

2.1. Participants

The sample included 100 patients (30 women; 70 men) with a diagnosis of FEP who were patients in the Mental Health care sector of Parc Sanitari Sant Joan de Déu/Child and Maternal Hospital of Sant Joan de Déu. This center is part of a public network that assists more than 1 million people from the city of Barcelona and its metropolitan area. The inclusion criteria were patients that have had first-episode psychosis as defined by the presence of one of the following symptoms: delusional ideas, hallucinations, disorganized language, catatonic or disorganized behavior, and negative symptoms (alogia, aboulia, affective flattening) for at least one week and less than five years of development and aged between 13 and 55 years and that they have not been taking antipsychotic medication for more than 15 days. Patients diagnosed with intellectual disabilities (Premorbid IQ < 70), traumatic brain injury, well-known pathology of the CNS (tumor, HIV, radiotherapy, etc.) were excluded from the study. The healthy control group was formed by 94 participants (42 women; 52 men) who were volunteers without mental diseases and no family history of the psychotic spectrum recruited through the social networks of Parc Sanitari Sant Joan de Déu, as well as social networks of the research team.

2.2. Procedure

Patients were recruited from the acute psychiatric unit, the acute child and adolescent unit, and the community mental health service. Patients were referred to the study by mental health professionals. Mental Health professionals gave an overview of the study to possible participants. Those interested in taking part in the study agreed for the research team to give them further information. Patients who received information from the research team and decided to participate were given an information sheet and signed a written informed consent.

Psychiatrists assessed symptoms in the inpatient units to get a clear picture of the patients' symptoms at admission, before the participants responded to medication. The rest of the assessment took place when the referring clinical team considered that the participant was able to adequately respond to the questions and instruments of the study. The research team consisted of 3 psychologists, trained in the administration of the scales and questionnaires with a good inter-rater reliability.

At the end of the childhood trauma questionnaire, we added the following option for patients who wanted to report that they had experienced childhood trauma without the obligation to disclose their experiences: "I have experienced one/some stressful life events listed above, but I would rather not talk about it". Of the participants, 9 FEP and 1 HC answered "yes" to this question. These participants were excluded from the present study.

2.2.1. Ethical standards

This study was approved by the Research and Ethics Committee of Parc Sanitari Sant Joan de Déu and was carried out in accordance to the Declaration of Helsinki.

2.3. Instruments

A sociodemographic questionnaire was administered to collect data on age, gender, years of education, first-degree family history, and current cannabis use (THC). Duration of untreated psychosis (DUP) was provided by the psychiatrist based on information reported by patients and relatives. DUP was defined as the time between the onset of symptoms of psychosis to the start of antipsychotic medication. All participants were administered the following questionnaires.

- Spanish childhood trauma questionnaire (CTQ) (Bernstein et al., 2003; Hernandez et al., 2013). It is a 28 self-administered questionnaire that evaluates through 28 items 5 types of traumatic experiences in childhood: emotional, physical, and sexual abuse and emotional and physical neglect. Each item is scored from 1 (never true) to 5 (very often true). Numerical scores were used to study the level of childhood trauma. The cut-offs proposed by Bernstein and Fink (1998) and Üçok & Bikmaz (2007) were used to study the presence or absence of each trauma subtype: emotional abuse was defined as a score of $\geq$13, physical abuse as $\geq$10, sexual abuse as $\geq$8, emotional neglect as $\geq$15, and physical neglect as $\geq$10. The intern consistency for the total scores was a Cronbach's alpha of 0.98, and between 0.79 and 0.94 for the subscales. At the end of the questionnaire, we added the following question: "*I have experienced any of the stressful life events list above, but I don't want to say it*".
- Positive and Negative Syndrome Scale (PANSS) (Kay et al., 1987; Peralta and Cuesta, 1994). It is a semi-structured interview that assesses schizophrenic syndrome through 30 items scored from 1 (absent) to 7 (extreme). We used the five-factor structure according to Emsley et al. (2003) confirmed for FEP patients and that includes the following factors: negative, disorganized, positive, excited, and anxiety/depression. The Spanish instrument presented a Cronbach's Alfa value of 0.73, 0.83, and 0.87 for positive, negative, and general psychopathology scale, respectively.
- Personal and Social Performance scale (PSP) (Garcia-Portilla et al., 2011; Morosini et al., 2000). It is a semi-structured interview that evaluates 4 areas of the patient's functioning; self-care, habitual social activities, including work and study, personal and social relationships, and disruptive and aggressive behaviours. The score ranges from 0 (lack of autonomy for basic functioning) to 100 (excellent performance in the 4 main areas). The Spanish version of the PSP scale had good internal consistency (Cronbach's alpha value of 0.874).
- The Suicide Risk Scale of Plutchik (SRSP) (Plutchik et al., 1989; Rubio et al., 1998) is a self-administered questionnaire of 15 items with dichotomic answers (yes/no), in which all the "yes" answers yield the total score of SRSP, defined as suicidal behaviour. Item 13 and 15 measured suicidal ideation and suicide attempts, respectively. The Spanish version obtained a Cronbach's alpha value of 0.90.

- The Perceived Stress Scale (PSS) (Cohen et al., 1983; Remor, 2006) is a 14 self-administered questionnaire that assesses the level of perceived stress by the subject. Each item scored from 1 (never) to 4 (very often). Higher scores mean higher levels of perceived stress. The Spanish version has a Cronbach's alpha of 0.81.

2.4. Statistical analysis

The different analyses were performed using the statistical program SPSS version 20.0 (IBM Corp.; Armonk, NY). Statistical significance was established at $p < 0.05$. Categorical variables were described with contingency tables and analyzed using the Chi-square test. For categorical variables, the effect size is reported using Cramer's V. Continuous data were presented as means with standard deviations (SD) and means for independent samples (patients/controls) were compared with Student's t-tests. The effect size for continuous variables is reported in Cohen's d. Finally, to study the influence of clinical variables on each type of trauma and the trauma total score we used a lineal regression model using the backward method. Given the skewed distribution of the DUP, we transformed the data into a normal distribution using the natural logarithm. This allowed us to include it as an independent variable in the regression model. The dependent variables were each subscale and the total score of the childhood trauma questionnaire. The independent variables were symptoms, perceived stress, personal and social functioning, suicide risk, ln (DUP), age, sex, marital status, years of education, and first-degree family history.

3. Results

3.1. Description of the sample

The demographics and clinical features of the sample are shown in Table 1. There were no significant differences in marital status or age between patients and controls. On the contrary, patients had fewer years of education, more cannabis use and there were more men than women in the control's sample. In terms of clinical variables, patients showed more perceived stress and higher suicide risk than controls.

3.2. Comparison of the prevalence and types of childhood trauma between FEP and healthy controls

Table 2 shows the prevalence and the averages of the total and of each type of childhood trauma and the differences between FEP patients and healthy controls. FEP patients showed more childhood trauma than controls in all subscales, except in sexual abuse. Emotional abuse, followed by physical and emotional neglect were the most common types of childhood trauma in the FEP sample. In the case of controls, the most

Table 2
Prevalence and types of trauma and differences in childhood trauma between FEP and healthy controls.

		FEP (n = 100)	HC (n = 94)	Statistical difference (t)	p-value	Effect size (Cohen's d)
Emotional Abuse	N (%)	33 (33.0)	10 (10.6)	5.298	<0.001	0.725
	Mean (SD)	11.23 (5.00)	8.00 (3.38)			
Physical Abuse	N (%)	13 (13.0)	2 (2.1)	4.757	**<0.001**	0.667
	Mean (SD)	7.30 (3.53)	5.52 (1.20)			
Sexual Abuse	N (%)	19 (19.0)	8 (8.5)	1.995	0.052	0.279
	Mean (SD)	6.33 (2.74)	5.62 (2.33)			
Emotional Neglect	N (%)	20 (20.0)	4 (4.3)	4.545	**<0.001**	0.646
	Mean (SD)	10.84 (4.39)	8.37 (3.10)			
Physical Neglect	N (%)	22 (22.0)	1 (1.1)	6.064	**<0.001**	0.857
	Mean (SD)	7.77 (2.88)	5.76 (1.60)			
CTQ total score	N (%)	61 (58.75)	16 (17.1)	6.261	**<0.001**	0.891
	Mean (SD)	51.85 (13.72)	41.11 (9.99)			

Table 1
Sociodemographic and clinical characteristic of the sample.

	FEP		Controls				
	N	%	n	%	*Statistical difference (X^2)*	*p value*	*Effect size (Cramer's V)*
Sex					4.474	**.034**	.152
Male	70	70.0	52	55.3			
Female	30	30.0	42	44.7			
Marital Status					11.431	**.003**	.243
Single	91	91.0	70	74.5			
Married/Couple	7	7.0	23	24.5			
Divorced	2	2.0	1	1.1			
Years of education					36.657	**<.001**	.435
5-8	23	23.0	15	16.0			
9-12	55	55.0	19	20.2			
>12	22	22.0	60	63.8			
THC Consumptions					26.168	**<.001**	.367
Yes	56	56.0	19	20.2			
No	44	44.0	75	79.8			
	Mean (SD)	*Range*	*Mean (SD)*	*Range*	*Statistical difference (t)*	*p value*	*Effect size (Cohen's D)*
Age	23.51 (8.15)	13–33	24.31 (8.37)	13–39	−0.673	.502	-.010
Perceived Stress	30.59 (9.64)	8–49	23.12 (8.47)	4–40	5.411	**<.001**	.827
Suicide Risk	5.27 (2.92)	0–10	2.44 (2.22)	0–10	7.192	**<.001**	1.095
PANSS							
Negative	22.35 (8.48)	8–46	–	–	–	–	–
Disorganized	17.92 (6.90)	7–40	–	–	–	–	–
Positive	23.84 (5.76)	7–37	–	–	–	–	–
Exited	11.06 (5.16)	4–25	–	–	–	–	–
Anxiety/Depress	14.44 (5.31)	6–31	–	–	–	–	–
DUP (month)	9.36 (12.49)	0.1–60	–	–	–	–	–

common ones were emotional abuse followed by sexual abuse. The effect sizes indicated a large effect on physical neglect and total trauma, and a moderate effect on emotional and physical abuse and emotional neglect.

3.3. Clinical and sociodemographic variables associated with childhood trauma

The results of the linear regression analysis are reported in Table 3. All the data concern the group of participants with FEP.

Predictors for emotional abuse in childhood were: a younger age, having a first-degree family member with a mental-health problem, having more positive symptoms and more perceived stress. In the case of physical abuse, we found that predictors were: having more positive and negative symptoms, a family history of mental illness, and more personal and social functioning. Sexual abuse was predicted by fewer negative symptoms and more perceived stress. As for physical neglect, more excited symptoms and suicide risk emerged as the best predictors. Finally, having suffered more childhood trauma was predicted by a history of mental-health illness in a first-degree family member and more positive symptoms. We did not find any predictors for emotional neglect.

4. Discussion

In this work, we aimed to study the prevalence and the type of childhood trauma in a sample with FEP and compare it to HC.

Patients with FEP had a higher prevalence of traumàtic experiences in childhood than healthy controls. People with FEP had a prevalence of childhood trauma between 13 and 33%, which is similar to the previously reported in a recent systematic review (Vila-Badia et al., 2021). However, we found a lower prevalence for physical abuse in our sample compared to the one obtained in the aforementioned systematic review.

Patients with FEP reported significantly more traumatic experiences in childhood than healthy controls. Overall, this is consistent with previous research (Garcia et al., 2016; Gayer-Anderson et al., 2015; Lindgren et al., 2017; Simpson et al., 2019). Specifically, 59% of our participants with FEP had experienced some kind of traumatic event, which is similar to that reported by previous research (Aas et al., 2011; Bendall et al., 2011; Vila-Badia et al., 2021).

Focusing in specific childhood trauma, patients with FEP reported having suffered more physical, and emotional abuse, and more physical and emotional neglect than controls. These findings are consistent with previous literature Consistent with previous literature (Aas et al., 2016; Baudin et al., 2017; Reininghaus et al., 2016; Şahin et al., 2013; L Sideli et al., 2014), we found that patients with FEP have suffered more physical and emotional abuse, and more physical and emotional neglect than controls. While we did not find significant differences in sexual abuse, the effect size of the mean difference was close to 0.3, indicating a moderate effect. Although many studies have reported that sexual abuse is more frequent in patients with FEP, some studies have yielded percentages similar to those in the general population (Braehler et al., 2013; Fisher et al., 2009; Kilian et al., 2017). However, most research in FEP includes sexual abuse and physical abuse under the same umbrella. Furthermore, previous research has reported that victims of sexual abuse in childhood may be reluctant or unable to report their victimization, therefore letting the abuse go unnoticed and masking the true prevalence of its occurrence (National Children's Advocacy Center, 2014; Townsend, 2016). However, the high prevalence of sexual abuse that have suffered both patients and controls of our sample is noteworthy. Considering the impact of sexual abuse in childhood on mental health (Oram, 2019), the detection and implications of childhood trauma need to be further improved and understood.

In our study, we gave participants an opportunity to report they were victims of traumatic events without the obligation to disclose the details, what we believe may have allowed us to detect the true prevalence of each type of traumatic experience.

As a second objective, we explored which sociodemographic, functional and clinical variables may be related to having suffered childhood trauma.

We found that a younger age of onset and years of education were related to having experienced emotional abuse in childhood. This is an important finding because an earlier age of onset of psychosis is associated to more hospitalizations, more negative symptoms, more relapses, poorer functioning and worse global outcome (Immonen et al., 2017), as well as with worse predictors of functioning such as social cognition and neurocognition (Linke et al., 2015; Rajji et al., 2013). Given that emotional abuse may trigger the onset of psychosis at an earlier age, understanding the interplay between age, emotional abuse and prognosis may be crucial in directing efforts to prevent relapse and chronicity.

Interestingly, patients with more years of education reported having suffered more emotional abuse in childhood. Among the most common forms of emotional abuse are bullying (20%) and cyberbullying (16%) (Kann et al., 2016). Although we did not explore these specific kinds of abuse in this work, we speculate that spending more time in an educational environment may increase the probability of experiencing this kind of trauma or to experience it for a longer time. Because bullying causes adverse physical and mental health effects both in the short and in the long term (Dobry et al., 2013; Hensley, 2013; Wolke and Lereya, 2015), exploring whether people who have experienced bullying may be at prospective risk of psychosis may be key to prevent its onset.

Table 3
Effect of studied variables *(B standard; sig.)* on childhood trauma in FEP sample.

	Emotional Abuse			Physical Abuse			Sexual Abuse			Physical Neglect			Total Trauma		
	β	t	P	β	t	p	B	t	p	β	t	p	β	t	p
Age	-.380	−2.667	**.010**												
Years of education	.351	2.508	**.015**												
Marital Status															
THC Consumption															
DUP	.250	2.244	**.029**							.247	2.084	**.042**			
1st degree family history	.245	2.273	**.027**	.303	2.840	**.006**							.264	2.175	**.034**
Negative				.279	2.535	**.014**	-.306	−2.476	**.016**						
Disorganized															
Positive	.400	3.685	**.001**	.380	3.573	**.001**	-.241	−1.740	.088				.289	2.378	**.021**
Excited							.255	1.843	.071	.281	2.368	**.022**			
Anxiety															
Perceived Stress	.236	2.120	**.039**				.278	2.256	**.028**				.211	1.731	.089
PSP				.328	2.970	**.004**				.237	1.870	.067			
Suicide Risk										.357	2.887	**.006**			
F (model significance)	5.938 (<.001)			8.745 (<.001)			3.389 (.015)			4.902 (.002)			4.412 (.008)		
R2	.407			.393			.201			.266			.194		

A history of psychiatric illness in first-degree family members emerged as a significant predictor of childhood trauma, especially of emotional and physical abuse. Parental mental illness is considered a strong adverse experience (Marie-Mitchell and Kostolansky, 2019), and different studies have suggested that parents with mental illness have a reduced ability to keep their offspring safe, therefore increasing their vulnerability to neglect and abuse (Ayers et al., 2019; Marie-Mitchell and Kostolansky, 2019; Davis et al., 2011; Wiegand-Grefe et al., 2019).

Having suffered physical abuse in childhood was significantly associated with better scores in personal and social functioning. However, these results should be taken with caution (Vila-Badia et al., 2021) because very few studies have explored the relationship between physical abuse and outcomes, and those who have used heterogeneous measures of functioning and of trauma.

According to our results, it seems that the kind of trauma experienced in childhood may be associated to certain clinical features. For instance, a history of emotional and/or physical abuse were related to more positive symptoms, while having suffered physical abuse but not sexual abuse had more negative symptoms. Finally, excited symptoms had a relationship with physical neglect in childhood. We did not find further relationships between childhood trauma and psychotic symptoms. However, our results are consistent with previous research (Ajnakina et al., 2016; Catalan et al., 2017; Peach et al., 2019) that reported that childhood trauma may have a relevant role in the appearance of hallucinations and delusions.

We found that having suffered emotional and sexual abuse are linked to perceived stress. To our knowledge, this is the first work reporting data on this association. Stress has usually been measured through physiological measures, such as cortisol levels or heart rate. However, studies in adult population have confirmed higher levels of perceived stress in adults who experienced trauma in childhood (Betz et al., 2020; Bossé et al., 2018; Mc Elroy and Hevey, 2014). Our results are consistent with Lardinois et al., (2011), who suggested that people who suffer from psychosis and has a history of traumatic events in childhood may be more prone to experience greater emotional reactivity and stress in everyday situations.

Patients who reported having suffered from physical neglect had a higher risk of suicide. This result suggests that patients with FEP who avoid paying attention to their emotional needs or display an inadequate response to them have a higher risk of suicidal behaviour in adulthood. Previous literature found that the traumatic experiences in childhood more relevant to suicidal behaviour are sexual abuse and emotional abuse (Bani-Fatemi et al., 2019; Lee, 2015; Norman et al., 2012; Ventriglio et al., 2016). However, we did not find these relationships in our sample. Taken together, it seems that placing emphasis in detecting and treating childhood trauma in FEP patients may be crucial in preventing suicide, which is particularly high during this stage of illness (Austad et al., 2015; Chang et al., 2014).

Finally, our results suggest that patients with a longer duration of untreated psychosis were more likely to have suffered emotional abuse and physical neglect. Our results are in line with other studies that found that childhood trauma positively correlates with increased DUP (Broussard et al., 2013; Haahr et al., 2018; Haug et al., 2017). On the contrary, Fond et al. (2018) did not find any differences in childhood trauma between patients that had more or less than 2 years of DUP. However, there is a dearth of studies exploring the association of these two variables, and further research is needed. Since the physical neglect part of the CTQ scale focuses mostly in familial relationships, our interpretation is that suffering physical neglect in childhood may result in a lack of trust in figures of care that prevents from an early demand of medical help.

In conclusion, we found a high prevalence of childhood trauma in patients with FEP. Our results highlight possible causal links between childhood trauma and subsequent onset of psychosis. However, causal effects should be tested in longitudinal research.

The most predictive variables of childhood trauma were having a first-degree family member with a history of mental illness and experiencing more positive symptoms at the time of first hospital admission.

Considering our findings, exploring a history of childhood trauma should be considered when working with patients with FEP or at ultra-high risk of psychosis. Likewise, the possible role of childhood trauma as a key variable in the prevention and treatment of psychosis should be investigated further, especially in the context of childhood trauma being a risk factor for suicide.

Similarly, together with emotional abuse, stress may be responsible for suicide ideation and suicide risk. Therefore, strategies focusing in coping with stress may be a valuable tool to prevent the onset of psychosis.

4.1. Strengths, limitations and future research

Our findings must be interpreted in light of some limitations. First, our sample size was not large, although it was comparable to other studies (Misiak et al., 2016; Trauelsen et al., 2016). Men and women may experience a different prevalence of childhood trauma. However, the sex imbalance in our sample did not permit studying sex differences. The self-report bias and retrospective assessment of childhood trauma may pose significant a conflict in accurately evaluating trauma. However, to overcome this limitation, we added a question to eliminate cases that had not answered honestly. Finally, the case and control samples were not matched. This was due to a difficulty in recruiting male controls, but higher male participants in the FEP group.

These limitations notwithstanding, there are clinical implications to our work: the detection of childhood trauma and the promotion of new therapeutic strategies may be beneficial in improving the prognosis of the disease and improving quality of life. Future research should assess the impact of childhood trauma in clinical features through longitudinal studies and investigate the efficacy of interventions focusing on childhood trauma. Findings from this study may assist clinicians in their approach to engaging with people who have experienced childhood trauma and detecting childhood trauma, signposting them to the most appropriate psychological interventions.

Role of the funding source

This study was supported by the Spanish Ministry of Health Carlos III, research grant number PI17/00111 and a research personal grant number FI18/00028.

Author statement

We affirm that the manuscript is an honest, accurate, and transparent account of the study being reported; that no important aspects of the study have been omitted; and that any discrepancies of the study as planned and, if relevant, registered) have been explained.

All authors made substantial contributions to the conception and design of the work. RVB, NDC, AB and JU designed the study. RVB, NDC, AB, CSA, MES, MA, JC, GM, MP, DMS and JU were involved in the acquisition of the data, and RVB, NDC, and JU analyzed the data and interpreted the results.

RVB, NDC and JU created the first draft of the manuscript and all authors (RVB, NDC, AB, CSA, MES, MA, JC, GM, MP, DMS and JU) were involved in the revision and completion for the work.

Declaration of competing interest

The authors declare that there is no conflict of interest.

Acknowledgements

We thank all participants who took part in the study and their clinicians at the recruiting mental health centers.

References

Aas, M., Andreassen, O.A., Aminoff, S.R., Faerden, A., Romm, K.L., Nesvåg, R., Berg, A. O., Simonsen, C., Agartz, I., Melle, I., 2016. A history of childhood trauma is associated with slower improvement rates: findings from a one-year follow-up study of patients with a first-episode psychosis. BMC Psychiatr. 16 (126) https://doi.org/10.1186/s12888-016-0827-4.

Aas, M., Dazzan, P., Fisher, H.L., Morgan, C., Morgan, K., Reichenberg, A., Zanelli, J., Fearon, P., Jones, P.B., Murray, R.M., Pariante, C.M., 2011. Childhood trauma and cognitive function in first-episode affective and non-affective psychosis. Schizophr. Res. 129 (1), 12–19. https://doi.org/10.1016/j.schres.2011.03.017.

Ajnakina, O., Trotta, A., Oakley-Hannibal, E., Forti, M. Di, Stilo, S.A., Kolliakou, A., Gardner-Sood, P., Gaughran, F., David, A.S., Dazzan, P., Pariante, C., Mondelli, V., Morgan, C., Vassos, E., Murray, R.M., Fisher, H.L., 2016. Impact of childhood adversities on specific symptom dimensions in first-episode psychosis. Psychol. Med. 46, 317–326. https://doi.org/10.1017/S0033291715001816.

Austad, G., Joa, I., Johannessen, J.O., Larsen, T.K., 2015. Gender differences in suicidal behaviour in patients with first-episode psychosis. Early Intervention in Psychiatry 9 (4), 300–307. https://doi.org/10.1111/eip.12113.

Ayers, S., Bond, R., Webb, R., Miller, P., Bateson, K., 2019. Perinatal mental health and risk of child maltreatment: A systematic review and meta-analysis. Child Abuse Neglect 98, 104172. https://doi-org.sire.ub.edu/10.1016/j.chiabu.2019.104172.

Bani-Fatemi, A., Tasmim, S., Wang, K.Z., Warsh, J., Sibille, E., De Luca, V., 2019. No interaction between polygenic scores and childhood trauma in predicting suicide attempt in schizophrenia. Prog. Neuro Psychopharmacol. Biol. Psychiatr. 89, 169–173. https://doi.org/10.1016/j.pnpbp.2018.08.027.

Barrigón, M.L., Diaz, F.J., Gurpegui, M., Ferrin, M., Salcedo, M.D., Moreno-Granados, J., Cervilla, J.A., Ruiz-Veguilla, M., 2015. Childhood trauma as a risk factor for psychosis: a sib-pair study. J. Psychiatr. Res. 70, 130–136. https://doi-org.sire.ub.edu/10.1016/j.jpsychires.2015.08.017.

Baudin, G., Szoke, A., Richard, J.R., Pelissolo, A., Leboyer, M., Schürhoff, F., 2017. Childhood trauma and psychosis: beyond the association. Child Abuse and Neglect 72 (July), 227–235. https://doi.org/10.1016/j.chiabu.2017.08.003.

Bendall, S., Jackson, H.J., Hulbert, C.A., 2011. What self-generated speech is externally misattributed in psychosis? Testing three cognitive models in a fi rst-episode sample. Schizophr. Res. 129 (1), 36–41. https://doi.org/10.1016/j.schres.2011.03.028.

Bernstein, D.P., Fink, L., 1998. Childhood Trauma Questionnaire: A Retrospective Self-Report Manual San. The Psychological Corporation, Antonio, TX.

Bernstein, D.P., Stein, J.A., Newcomb, M.D., Walker, E., Pogge, D., Ahluvalia, T., Stokes, J., Handelsman, L., Medrano, M., Desmond, D., Zule, W., 2003. Development and validation of a brief screening version of the Childhood Trauma Questionnaire. Child Abuse and Neglect 27 (2), 169–190. https://doi.org/10.1016/S0145-2134(02)00541-0.

Betz, L.T., Penzel, N., Rosen, M., Kambeitz, J., 2020. Relationships between childhood trauma and perceived stress in the general population: a network perspective. Psychol. Med. https://doi.org/10.1017/S003329172000135X.

Bossé, S., Stalder, T., D'Antono, B., 2018. Childhood trauma, perceived stress, and hair cortisol in adults with and without cardiovascular disease. Psychosom. Med. 80 (4), 393–402. https://doi.org/10.1097/PSY.0000000000000569.

Braehler, C., Valiquette, L., Holowka, D., Malla, A.K., Joober, R., Ciampi, A., Pawliuk, N., King, S., 2013. Childhood trauma and dissociation in first-episode psychosis, chronic schizophrenia and community controls. Psychiatr. Res. 210 (1) https://doi.org/10.1016/j.psychres.2013.05.033.

Broussard, B., Kelley, M.E., Wan, C.R., Cristofaro, S.L., Crisafio, A., Haggard, P.J., Myers, N.L., Reed, T., Compton, M.T., 2013. Demographic, socio-environmental, and substance-related predictors of duration of untreated psychosis (DUP). Schizophr. Res. 148 (1–3), 93–98. https://doi-org.sire.ub.edu/10.1016/j.schres.2013.05.011.

Catalan, A., Angosto, V., Díaz, A., Valverde, C., de Artaza, M.G., Sesma, E., Maruottolo, C., Galletero, I., Bustamante, S., Bilbao, A., van Os, J., Gonzalez-Torres, M.A., 2017. Relation between psychotic symptoms, parental care and childhood trauma in severe mental disorders. Psychiatr. Res. 251 (February), 78–84. https://doi.org/10.1016/j.psychres.2017.02.017.

Chang, W.C., Chen, E.S.M., Hui, C.L.M., Chan, S.K.W., Lee, E.H.M., Chen, E.Y.H., 2014. The relationships of suicidal ideation with symptoms, neurocognitive function, and psychological factors in patients with first-episode psychosis. Schizophr. Res. 157 (1–3), 12–18. https://doi.org/10.1016/j.schres.2014.06.009.

Cohen, S., Kamarck, T., Mermelstein, R., 1983. A global measure of perceived stress. J. Health Soc. Behav. 24 (4), 385–396.

Conus, P., Cotton, S., Schimmelmann, B.G., Berk, M., Daglas, R., McGorry, P.D., Lambert, M., 2010. Pretreatment and outcome correlates of past sexual and physical trauma in 118 bipolar I disorder patients with a first episode of psychotic mania. Bipolar Disord. 12 (3), 244–252. https://doi.org/10.1111/j.1399-5618.2010.00813.x.

Conus, P., Cotton, S., Schimmelmann, B.G., Mcgorry, P.D., Lambert, M., 2009. Pretreatment and outcome correlates of sexual and physical trauma in an epidemiological cohort of first-episode psychosis patients. Schizophr. Bull. 36 (6) https://doi.org/10.1093/schbul/sbp009.

Davis, R.N., Davis, M.M., Freed, G.L., Clark, S.J., 2011. Fathers' depression related to positive and negative parenting behaviors with 1-year-old children. Pediatrics 127 (4), 612–618. https://doi-org.sire.ub.edu/10.1542/peds.2010-1779.

Dobry, Y., Braquehais, M.D., Sher, L., 2013. Bullying, psychiatric pathology and suicidal behavior. Int. J. Adolesc. Med. Health 25 (Issue 3), 295–299. https://doi.org/10.1515/ijamh-2013-0065. Int J Adolesc Med Health.

Emsley, R., Rabinowitz, J., Torreman, M., Schooler, N., Kapala, L., Davidson, M., McGory, P., 2003. The factor structure for the Positive and Negative Syndrome Scale (PANSS) in recent-onset psychosis. Schizophr. Res. 61 (1), 47–57. https://doi.org/10.1016/S0920-9964(02)00302-X.

Fisher, H., Morgan, C., Dazzan, P., Craig, T.K., Morgan, K., Hutchinson, G., Jones, P.B., Doody, G.A., Pariante, C., McGuffin, P., Murray, R.M., Left, J., Fearon, P., 2009. Gender differences in the association between childhood abuse and psychosis. Br. J. Psychiatry 194 (4), 319–325. https://doi.org/10.1192/bjp.bp.107.047985.

Fond, G., Boyer, L., Andrianarisoa, M., Godin, O., Brunel, L., Bulzacka, E., Coulon, N., Llorca, P.M., Berna, F., Aouizerate, B., Capdevielle, D., D'Amato, T., Dubertret, C., Dubreucq, J., Faget, C., Gabayet, F., Mallet, J., Misdrahi, D., Rey, R., Richieri, R., et al., 2018. Risk factors for increased duration of untreated psychosis. Results from the FACE-SZ dataset. Schizophr. Res. 195, 529–533. https://doi-org.sire.ub.edu/10.1016/j.schres.2017.08.058.

Garcia-Portilla, M.P., Saiz, P.A., Bousoño, M., Bascaran, M.T., Guzmán-Quilo, C., Bobes, J., 2011. Validación de la versión española de la escala de Funcionamiento Personal y Social en pacientes ambulatorios con esquizofrenia estable o inestable. Rev. Psiquiatía Salud Ment. 4 (1), 9–18. https://doi.org/10.1016/j.rpsm.2010.11.003.

Garcia, M., Montalvo, I., Creus, M., Cabezas, Á., Solé, M., Algora, M.J., Moreno, I., Gutiérrez-Zotes, A., Labad, J., 2016. Sex differences in the effect of childhood trauma on the clinical expression of early psychosis. Compr. Psychiatr. 68, 86–96. https://doi.org/10.1016/j.comppsych.2016.04.004.

Gayer-Anderson, C., Helen Fisher, B.L., Paul Fearon, B., Gerard Hutchinson, B., Kevin Morgan, B., Paola Dazzan, B., Jane Boydell, B., Gillian Doody, B.A., Peter Jones, B.B., Robin Murray, B.M., Thomas Craig, B.K., Craig Morgan, B., 2015. Gender differences in the association between childhood physical and sexual abuse, social support and psychosis. Soc. Psychiatr. Psychiatr. Epidemiol. 50, 1489–1500. https://doi.org/10.1007/s00127-015-1058-6.

Goh, C., Agius, M., 2010. The stress-vulnerability model how does stress impact on mental illness at the level of the brain and what are the consequences? Psychiatr. Danub. 22 (2), 198–202.

Haahr, U.H., Larsen, T.K., Simonsen, E., Rund, B.R., Joa, I., Rossberg, J.I., Johannessen, J.O., Langeveld, J., Evensen, J., Trauelsen, A., Vaglum, P., Opjordsmoen, S., Hegelstad, W., Friis, S., McGlashan, T., Melle, I., 2018. Relation between premorbid adjustment, duration of untreated psychosis and close interpersonal trauma in first-episode psychosis. Early Intervent. Psychiat. 12 (3), 316–323. https://doi-org.sire.ub.edu/10.1111/eip.12315.

Haug, E., Øie, M., Andreassen, O.A., Bratlien, U., Nelson, B., Melle, I., Møller, P., 2017. High levels of anomalous self-experience are associated with longer duration of untreated psychosis. Early Intervent. Psychiat. 11 (2), 133–138. https://doi-org.sire.ub.edu/10.1111/eip.12220.

Hensley, V., 2013. Childhood bullying. A review and implications for health care professionals. Nurs. Clin. 48 (Issue 2), 203–213. https://doi.org/10.1016/j.cnur.2013.01.014. Nurs Clin North Am.

Hernandez, A., Gallardo-Pujol, D., Pereda, N., Arntz, A., Bernstein, D.P., Gaviria, A.M., Labad, A., Valero, J., Gutiérrez-Zotes, J.A., 2013. Initial validation of the Spanish childhood trauma questionnaire-short form. J. Interpers Violence 28 (7), 1498–1518. https://doi.org/10.1177/0886260512468240.

Immonen, J., Jääskeläinen, E., Korpela, H., Miettunen, J., 2017. Age at onset and the outcomes of schizophrenia: a systematic review and meta-analysis. Early Intervent. Psychiat. 11 (6), 453–460. https://doi.org/10.1111/eip.12412. Blackwell Publishing.

Kann, L., McManus, T., Harris, W.A., Shanklin, S.L., Flint, K.H., Hawkins, J., et al., 2016. Youth risk behavior surveillance: United States, 2015. Morb. Mortal. Wkly. Rep. - Surveillance Summ. 65 (6), 1, 174.

Kay, S.R., Fiszbein, A., Opler, L.A., 1987. The positive and negative syndrome scale (PANSS) for schizophrenia. Schizophr. Bull. 13 (2), 261–276.

Kilian, S., Asmal, L., Chiliza, B., Olivier, M.R., Phahladira, L., Scheffler, F., Seedat, S., Marder, S.R., Green, M.F., Emsley, R., 2017a. Childhood adversity and cognitive function in schizophrenia spectrum disorders and healthy controls: evidence for an association between neglect and social cognition. Psychol. Med. 48 (13), 2186–2193. https://doi.org/10.1017/S0033291717003671.

Kilian, S., Burns, J.K., Seedat, S., Asmal, L., Chiliza, B., Du Plessis, S., Olivier, M.R., Kidd, M., Emsley, R., 2017b. Factors moderating the relationship between childhood trauma and premorbid adjustment in first-episode schizophrenia. PLoS One 12 (1), 1–14. https://doi.org/10.1371/journal.pone.0170178.

Lardinois, M., Lataster, T., Mengelers, R., Van Os, J., Myin-Germeys, I., 2011. Childhood trauma and increased stress sensitivity in psychosis. Acta Psychiatr. Scand. 123 (1), 28–35. https://doi-org.sire.ub.edu/10.1111/j.1600-0447.2010.01594.x.

Lee, M.A., 2015. Emotional abuse in childhood and suicidality: The mediating roles of re-victimization and depressive symptoms in adulthood. Child Abuse Neglect 44, 130–139. https://doi.org/10.1016/J.CHIABU.2015.03.016.

Lindgren, M., Mäntylä, T., Rikandi, E., Torniainen-Holm, M., Morales-Muñoz, I., Kieseppä, T., Mantere, O., Suvisaari, J., 2017. Childhood adversities and clinical symptomatology in first-episode psychosis. Psychiatr. Res. 258, 374–381. https://doi.org/10.1016/j.psychres.2017.08.070.

Linke, M., Jankowski, K.S., Ciołkiewicz, A., Jedrasik-Styła, M., Parnowska, D., Gruszka, A., Denisiuk, M., Jarema, M., Wichniak, A., 2015. Age or age at onset? Which of them really matters for neuro and social cognition in schizophrenia? Psychiatr. Res. 225 (1–2), 197–201. https://doi.org/10.1016/j.psychres.2014.11.024.

Marie-Mitchell, A., Kostolansky, R., 2019. A systematic review of trials to improve child outcomes associated with adverse childhood experiences. Am. J. Prev. Med. 56 (5), 756–764. https://doi-org.sire.ub.edu/10.1016/j.amepre.2018.11.030.

Mc Elroy, S., Hevey, D., 2014. Relationship between adverse early experiences, stressors, psychosocial resources and wellbeing. Child Abuse and Neglect 38 (1), 65–75. https://doi.org/10.1016/j.chiabu.2013.07.017.

Misiak, B., Krefft, M., Bielawski, T., Moustafa, A.A., Sąsiadek, M.M., Frydecka, D., 2017. Toward a unified theory of childhood trauma and psychosis: a comprehensive review of epidemiological, clinical, neuropsychological and biological findings. Neurosci. Biobehav. Rev. 75, 393–406.

Misiak, B., Moustafa, A.A., Kiejna, A., Frydecka, D., 2016. Childhood traumatic events and types of auditory verbal hallucinations in first-episode schizophrenia patients. Compr. Psychiatr. 66, 17–22. https://doi-org.sire.ub.edu/10.1016/j.comppsych.2015.12.003.

Morosini, P.L., Magliano, L., Brambilla, L., Ugolini, S., Pioli, R., 2000. Development, reliability and acceptability of a new version of the DSM- IV Social Occupational Functioning Assessment Scale (SOFAS) to assess routine social functioning. Acta Psychiatr. Scand. 101 (4), 323–329. https://doi.org/10.1034/j.1600-0447.2000.101004323.x.

National Children's Advocacy Center, 2014. Children's Testimony-Issues and Concerns: A Bibliography. Author, Huntsville, AL.

Norman, R.E., Byambaa, M., De, R., Butchart, A., Scott, J., Vos, T., 2012. The long-term health consequences of child physical abuse, emotional abuse, and neglect: a systematic review and meta-analysis. PLoS Med. 9. https://doi.org/10.1371/journal.pmed.1001349.

Oram, S., 2019. Sexual violence and mental health. Epidemiol. Psychiatr. Sci. 28 (6), 592–593. https://doi.org/10.1017/S2045796019000106.

Peach, N., Alvarez-Jimenez, M., Cropper, S.J., Sun, P., Bendall, S., 2019. Testing models of post-traumatic intrusions, trauma-related beliefs, hallucinations, and delusions in a first episode psychosis sample. Br. J. Clin. Psychol. 58 (2), 154–172. https://doi.org/10.1111/bjc.12206.

Peralta, V., Cuesta, M.J., 1994. Psychometric properties of the positive and negative syndrome scale (PANSS) in schizophrenia. Psychiatr. Res. 53 (1), 31–40.

Plutchik, R., van Praag, H.M., Conte, H.R., Picard, S., 1989. Correlates of suicide and violence risk 1: the suicide risk measure. Compr. Psychiatr. 30 (4), 296–302. https://doi.org/10.1016/0010-440X(89)90053-9.

Rajji, T.K., Voineskos, A.N., Butters, M.A., Miranda, D., Arenovich, T., Menon, M., Ismail, Z., Kern, R.S., Mulsant, B.H., 2013. Cognitive performance of individuals with schizophrenia across seven decades: a study using the MATRICS consensus cognitive battery. Am. J. Geriatr. Psychiatr. 21 (2), 108–118. https://doi.org/10.1016/j.jagp.2012.10.011.

Reininghaus, U., Kempton, M.J., Valmaggia, L., Craig, T.K.J., Garety, P., Onyejiaka, A., Gayer-Anderson, C., So, S.H., Hubbard, K., Beards, S., Dazzan, P., Pariante, C., Mondelli, V., Fisher, H.L., Mills, J.G., Viechtbauer, W., Mcguire, P., Van Os, J., Murray, R.M., Morgan, C., 2016. Stress sensitivity, aberrant salience, and threat anticipation in early psychosis: an experience sampling study. Schizophr. Bull. 42 (3), 712–722. https://doi.org/10.1093/schbul/sbv190.

Remor, E., 2006. Psychometric properties of a European Spanish version of the perceived stress scale (PSS). Spanish J. Psychol. 9, 86–93. https://doi.org/10.1017/S1138741600006004, 01.

Rubio, G., Montero, I., Jáuregui, J., Villanueva, R., Casado, M.A., Marín, J.J., Santo Domingo, J., 1998. Validación de la escala de riesgo suicida de Plutchik en población española. Arch. Neurobiol. 61 (2), 143–152.

Şahin, S., Yüksel, Ç., Güler, J., Karadayı, G., Akturan, E., Göde, E., Özhan, A.A., Üçok, A., 2013. The history of childhood trauma among individuals with ultra high risk for psychosis is as common as among patients with first-episode schizophrenia. Early Intervent. Psychiat. 7 (4), 414–420. https://doi.org/10.1111/eip.12022.

Sideli, L., Fisher, H.L., Russo, M., Murray, R.M., Stilo, S.A., Wiffen, B.D.R., O'Connor, J. A., Aurora Falcone, M., Pintore, S.M., Ferraro, L., Mule', A., La Barbera, D., Morgan, C., Di Forti, M., 2014. Failure to find association between childhood abuse and cognition in first-episode psychosis patients. Eur. Psychiatr. 29 (1), 32–35. https://doi.org/10.1016/j.eurpsy.2013.02.006.

Simpson, S., Phillips, L., Baksheev, G., Garner, B., Markulev, C., Phassouliotis, C., Alvarez-Jimenez, M., McGorry, P., Bendall, S., 2019. Stability of retrospective self-reports of childhood trauma in first-episode psychosis. Early Intervent. Psychiat. 13 (4), 908–913. https://doi.org/10.1111/eip.12700.

Townsend, C., 2016. Child Sexual Abuse Disclosure: what Practitioners Need to Know. Charleston, S.C., Darkness to Light. Retrieved from. www.D2L.org.

Trauelsen, A.M., Gumley, A., Jansen, J.E., Pedersen, M.B., Nielsen, H.-G.L., Trier, C.H., Haahr, U.H., Simonsen, E., 2016. Metacognition in first-episode psychosis and its association with positive and negative symptom profiles. Psychiatr. Res. 238, 14–23. https://doi.org/10.1016/j.psychres.2016.02.003.

Trotta, A., Murray, R.M., David, A.S., Kolliakou, A., O'Connor, J., Forti, M. Di, Dazzan, P., Mondelli, V., Morgan, C., Fisher, H.L., 2016. Impact of different childhood adversities on 1-year outcomes of psychotic disorder in the genetics and psychosis study. Schizophr. Bull. 42 (2), 464–475. https://doi.org/10.1093/schbul/sbv131.

Üçok, A., Bikmaz, S., 2007. The effects of childhood trauma in patients with first-episode schizophrenia. Acta Psychiatr. Scand. 116 (5), 371–377. https://doi.org/10.1111/j.1600-0447.2007.01079.x.

United Nations Secretary-General, 2006. Report of the Independent Expert for the United Nations Study on Violence against Children. Promotion and Protection of the Rights of Children. United Nations General Assembly. Sixty-first session. A/61/299.

Van Os, J., Kenis, G., Rutten, B.P.F., 2010. The environment and schizophrenia. Nature 468 (7321), 203–212. https://doi.org/10.1038/nature09563. Nature Publishing Group.

Ventriglio, A., Gentile, A., Bonfitto, I., Stella, E., Mari, M., Steardo, L., Bellomo, A., 2016. Suicide in the early stage of schizophrenia. Front. Psychiatr. 7 (JUN) https://doi.org/10.3389/fpsyt.2016.00116.

Vila-Badia, R., Butjosa, A., Del Cacho, N., Serra-Arumí, C., Esteban-Sanjusto, M., Ochoa, S., Usall, J., 2021. Types, prevalence and gender differences of childhood trauma in first-episode psychosis. What is the evidence that childhood trauma is related to symptoms and functional outcomes in first episode psychosis? A systematic review. In: Schizophrenia Research, vol. 228. Elsevier B.V, pp. 159–179. https://doi.org/10.1016/j.schres.2020.11.047.

Wiegand-Grefe, S., Sell, M., Filter, B., Plass-Christl, A., 2019. Family functioning and psychological health of children with mentally Ill parents. Int. J. Environ. Res. Publ. Health 16 (7), 1278. https://doi-org.sire.ub.edu/10.3390/ijerph16071278.

Wolke, D., Lereya, S.T., 2015. Long-term effects of bullying. Arch. Dis. Child. 100 (Issue 9), 879–885. https://doi.org/10.1136/archdischild-2014-306667. BMJ Publishing Group.

Zannas, A.S., West, A.A.E., 2014. Epigenetics and the regulation of stress vulnerability and resilience. Neuroscience 264, 157–170. https://doi.org/10.1016/j.neuroscience.2013.12.003.

Zhuo-Hui, H., Cai-Lan, H., Ying-Hua, H., Xiao-Yan, H., Qian-Wen, W., Xie, C., Zhong-Lei, W., Shi-Bin, W., Fu-Jun, J., 2019. Individuals at high risk for psychosis experience more childhood trauma, life events and social support deficit in comparison to healthy controls. Psychiatr. Res. 273, 296–302. https://doi.org/10.1016/j.psychres.2019.01.060.

4.3. Estudi 3

Objectiu 3. Analitzar la freqüència de la conducta suïcida en una mostra de pacients amb un primer episodi psicòtic i comparar-ho amb una mostra de persones control sanes, estudiar les diferències de sexe en les conductes suïcides en els i les pacients amb un primer episodi psicòtic i estudiar la relació entre les conductes suïcides i les variables sociodemogràfiques, clíniques i psicosocials a l'inici del primer episodi psicòtic.

Article 3

Suicidal behaviour in first-episode psychosis: The relevance of age, perceived stress and depressive symptoms.

Vila-Badia R, Del Cacho N, Butjosa A, Serra-Arumí C, Esteban Sanjusto M, Abella M, Cuevas-Esteban G, Morelló G, Pardo M, Muñoz-Samons D, PROFEP G, Usall J.

Clinical Psychology & Psychotherapy. 2022; 29(4): 1364–1373.

Received: 17 November 2021 | Revised: 24 January 2022 | Accepted: 25 January 2022

DOI: 10.1002/cpp.2716

RESEARCH ARTICLE

WILEY

Suicidal behaviour in first-episode psychosis: The relevance of age, perceived stress and depressive symptoms

Regina Vila-Badia[1,2,3] | Marcela Kaplan[4] | Anna Butjosa[1,5] | Núria Del Cacho[1,2] | Clara Serra-Arumí[1,2,3] | Alicia Colomer-Salvans[1,2] | Marina Esteban-Sanjusto[1,2] | Maria Iglesias-González[6] | Oriol Cuñat[1,2] | Blanca Del Hoyo-Buxo[1,2] | Group Profep[1,2] | Judith Usall[1,2]

[1]Etiopatogènia i tractament dels trastorns mentals greus (MERITT), Institut de Recerca Sant Joan de Déu, Barcelona, Spain

[2]Parc Sanitari Sant Joan de Déu, CIBERSAM, Sant Boi de Llobregat, Spain

[3]Facultat de Medicina i Ciències de la Salut Barcelona, Universitat de Barcelona, Barcelona, Spain

[4]Hospital Neuropsiquiátrico B.A.Moyano, Buenos Aires, Argentina

[5]Hospital Infanto-juvenil Sant Joan de Déu, Institut de Recerca Sant Joan de Déu, Esplugues de Llobregat, CIBERSAM, Barcelona, Spain

[6]Hospital Germans Trias i Pujol, Badalona, Spain

Correspondence
Regina Vila-Badia, Parc Sanitari Sant Joan de Déu, Centro de Investigación en Red en Salud Mental, CIBERSAM, Calle Antoni Pujades 42, CP 08830 Sant Boi de Llobregat, Barcelona, Spain.
Email: regina.vilab@sjd.es

Funding information
Spanish Ministry of Health Carlos III, Grant/Award Number: PI17/00111

Abstract

The onset of first episode psychosis (FEP) is a period of increased risk of suicide, which is 60% higher than in other stages of the disease. This work explored suicidal behaviour and its most relevant factors in a population with FEP and a healthy control (HC) sample. We used the Suicide Risk Scale of Plutchik (SRSP) to assess suicide behaviour, and Calgary Depression Scale for Schizophrenia (CDSS), Young Mania Rating Scale (YMRS), Personal and Social Performance Scale (PSP), Perceived Stress Scale (PSS) and Positive and Negative Syndrome Scale (PANSS) were administered to assess the severity of depression, mania, psychosocial functioning, perceived stress and psychopathology, respectively. Patients with FEP showed a higher prevalence in all measures of suicide behaviour than HC. Younger age and depressive symptoms were the most important predictors of suicide ideation and suicide attempt. More perceived stress and higher hopelessness were the most relevant predictors of suicide risk. Symptoms did not appear to be important factors in suicide behaviour. Younger age, perceived stress and depressive symptoms seem to be the most important factors in suicide behaviours in FEP.

KEYWORDS
age, depression, perceived stress, psychosis, suicidal behaviour

1 | INTRODUCTION

Patients with psychotic disorders, and especially those diagnosed with schizophrenia, have an increased risk of suicide compared to the general population (Hawton et al., 2005). Around 30%–40% of people with psychosis present suicidal ideation (Fenton et al., 1997; Fialko et al., 2006; Moe et al., 2021), between 20% and 40% have had at least a suicide attempt (Harkavy-Friedman, 2006), and it is estimated that between 4% and 13% will consummate a suicide attempt (De Hert et al., 2001; Simms et al., 2007). Currently, there is sufficient evidence that indicates that suicide is the leading cause of premature death in schizophrenia (Saha et al., 2007).

There is an increased risk of committing suicide during the early phases of the disorder, namely, during the first episode of psychosis (FEP) (Austad et al., 2015; Barrett et al., 2010; Chang et al., 2014). During this period, suicidal behaviour is 60% higher than in other stages of the disease (Dutta et al., 2010; Nordentoft et al., 2004; Pompili et al., 2011), which can be traced back to a history of self-harm prior to treatment in 1 out of 5 patients (Challis et al., 2013) and is maintained after FEP as suicidal ideation in 16%–40% of patients (Bornheimer, 2019; Pelizza et al., 2021; Salagre

Vila-Badia R. and Kaplan M. contributed equally to the development of this paper.

et al., 2021). Furthermore, a cohort study conducted in England and Scotland found that mortality from suicide was 12 times higher in the FEP sample than in the general population (Dutta et al., 2010), and the literature has found that suicide rate increases from 1% to 3% in the first 4–5 years (Bertelsen et al., 2007; Clarke et al., 2006; Lui, 2009).

Some risk factors associated with suicidal behaviour in FEP encompass the personal history of suicide attempts, depression, hopelessness (Austad et al., 2015; Bakst et al., 2010; Bornheimer, 2019; Chang et al., 2014; Pelizza et al., 2021), substance abuse (Challis et al., 2013) and long duration of untreated psychosis (DUP) (Challis et al., 2013; Clarke et al., 2006; Foley et al., 2008; Melle et al., 2006). A possible influence of symptoms in suicidal behaviour remains unclear. Although it seems that symptoms are not associated with an increased risk of deliberate self-harm before the FEP, negative—but not positive—symptoms before the onset of FEP are associated with self-harm (Challis et al., 2013).

Suicidal behaviour has different features in both genders. In the general population, males are more likely to die from suicide (Snowdon, 2016; Zhang et al., 2005) than females, but suicidal ideation and suicide attempts are more frequent in females (Canetto & Sakinofsky, 1998; Nock et al., 2008; Qin et al., 2000). This pattern seems to be similar in samples with ultra high-risk of psychosis, bipolar disorder, psychosis and schizophrenia (Fekete et al., 2005; Kelly et al., 2004; Salokangas et al., 2019; Schaefer et al., 2013; Waterreus et al., 2018). However, there is insufficient data concerning sex differences in suicidal behaviour in people with FEP (Barrett et al., 2010; Thorup et al., 2007). Austad et al. (2015) found that females with FEP had a higher rate of suicidal behaviour (78.3%) than males (64.2%), and being female and depressive symptoms were independently associated with both past and present suicidal behaviour.

Discrepancies in the literature may be rooted in the variety of instruments used to identify the risk of suicide. The most frequently used is the Plutchik's suicide risk scale. This scale is easy to understand and has the advantage of assessing the presence or absence of suicidal thoughts (item 13) and suicide attempts (item 15), which yields relevant data to evaluate a patient's current suicidal risk.

Given its relevance, furthering our understanding of suicidal behaviour in subjects with a first episode of psychosis is a first step towards the development of interventions targeted to reduce premature death.

With this study, we aim to (1) compare the frequency of suicidal behaviour [presence of suicidal ideation (SI), suicide attempts (SA) and total score of the Plutchik Suicide Risk Scale (RS)] between FEP patients and controls, (2) compare the suicidal behaviour in both genders, and (3) study the relationship between the suicidal behaviour and clinical and other risk factors on FEP.

Key Practitioner Message

- Interventions directed to reduce and manage stress could be effective in preventing suicide behaviours.
- Younger patients with FEP should be carefully screened for depressive symptoms as these individuals experience heightened risk for suicide.
- Mental health professionals should receive training in detecting and intervening on suicide behaviour.

2 | METHODS

We performed a descriptive, cross-sectional analysis. The sample was recruited as part of the PROFEP study, a longitudinal study focusing on describing factors and variables that may influence the onset and the evolution of patients with FEP. Among the main objectives, the PROFEP study aims to investigate hormones and metabolic syndrome in FEP. To this aim, we need to detect baseline hormonal and metabolic levels. Therefore, patients that had been receiving medication for more than 15 days were excluded. However, these exclusion criteria concern the study as a whole, but not the present work in particular.

2.1 | Participants

One hundred thirty-two patients (45 females and 87 males) with a diagnosis of FEP recruited at the Parc Sanitari Sant Joan de Déu were included in the study. The inclusion criteria for the patients were to be aged between 13 and 46 years old and to have suffered a first episode psychosis as defined by the presence of one of the following symptoms: delusional ideas, hallucinations, disorganized language, and catatonic or disorganized behaviour for at least 1 week and less than 5 years of development no less than 15 days of psychotic medication intake. These symptoms criteria include patients with the F20-F29 (except F21) diagnosis of the International Classification of Diseases (CIE, World Health Organization, 2004) and with affective psychosis (major depressive disorder, or bipolar disorder). Patients diagnosed with intellectual disabilities (Premorbid IQ < 70), traumatic brain injury, well-known pathology of the CNS (tumour, HIV, radiotherapy, etc.) were excluded from the study. The healthy control group (83 participants: 36 females and 47 males) were volunteers currently mentally healthy and with no family history of psychosis recruited through the social networks of Parc Sanitari Sant Joan de Déu, as well as social networks of the research team.

2.2 | Ethical standards

The study was approved by the Research and Ethics Committee of Parc Sanitari Sant Joan de Déu and was carried out following the Declaration of Helsinki. All participants signed an informed consent before their inclusion in the research project.

2.3 | Instruments

All participants completed a sociodemographic questionnaire. We collected data on age, gender, education, current cannabis consumption and duration of untreated psychosis. The duration of untreated psychosis (DUP) was provided by the referent psychiatrist of each patient and their relatives. DUP was defined as the time between the onset of full-blown psychotic symptoms and the start of antipsychotic medication (Crow et al., 1986).

The Suicide Risk Scale of Plutchik (SRSP; Plutchik et al., 1989; Rubio et al., 1998) is a self-administered questionnaire of 15 items with dichotomic answers (yes/no). Each affirmative answer adds up 1 point to a maximum of 15 points. Higher scores mean increased suicide risk. Suicidal ideation and suicide attempts were measured with items 13 (Have you ever thought about committing suicide?) and 15 (Have you ever tried to commit suicide?), respectively. We defined the total score of the scale, together with items 13 (suicidal ideation) and 15 (suicide attempts) as suicidal behaviour. The psychometric properties of the Spanish instrument show adequate data (Cronbach's alpha of 0.90) The Calgary Depression Scale for Schizophrenia (CDSS; Addington et al., 1990; Sarró et al., 2004) was used to measure the level of depression in patients with FEP through nine items rated from 0 to 3. Item 2 assesses hopelessness. The psychometric properties of the Spanish instrument showed adequate data, with a Cronbach's alpha of 0.83. The Positive and Negative Syndrome Scale (PANSS; Kay et al., 1987; Peralta & Cuesta, 1994) was used to assess positive, negative and general psychopathology. We used the five-factor structure according to Emsley et al. (2003) confirmed for FEP patients and that includes the following factors: negative, disorganized, positive, excited and anxiety/depression. Cronbach's alpha was 0.73, 0.83 and 0.87 for positive, negative and general psychopathology scales, respectively, in the Spanish instrument.

The Young Mania Rating Scale (YMRS) (Young et al., 1978) is a semi-structured interview that measures the intensity of manic symptoms.

The Personal and Social Performance scale (PSP) (Garcia-Portilla et al., 2011; Morosini et al., 2000) is a semi-structured interview that evaluates four areas of the patient's functioning (self-care, habitual social activities, personal and social relationships, and disruptive and aggressive behaviours).

The Perceived Stress Scale (PSS) (Cohen et al., 1983; Remor, 2006) is a 14 self-administered questionnaire that assesses the level of perceived stress.

2.4 | Statistical analysis

The different analyses were performed using the Statistical Package for Social Sciences (SPSS), version 22 (IBM Corp.; Armonk, NY). Statistical significance was established at $p < 0.05$. Sociodemographic categorical variables were described by contingency tables and analysed using the chi-square test. Continuous data were presented as means with standard deviations (SD) and analysed using Student's *t*-test and the Mann–Whitney *U* test. The normality assumption in numeric variables was tested using the Kolmogorov–Smirnov test. Mean differences for independent samples (patients/controls and women/men) were compared with the Student's *t*-test. Finally, we computed a linear regression model using the backward method to study the influence of significant variables in suicidal behaviour.

3 | RESULTS

3.1 | Sociodemographic and clinical characteristics

Sociodemographic and clinical characteristics are summarized in Table 1. With respect to controls, participants with FEP were more likely to be single or divorced, had fewer years of education and higher THC and tobacco consumption. Conversely, controls reported significantly more alcohol and coffee consumption.

3.2 | Comparison of suicidal behaviour between FEP and controls and between males and females

We found significant differences between FEP and controls in the presence of suicidal ideation, suicide attempts and total score of the Plutchik Suicide Risk Scale (Table 2). Specifically, in our sample, 47% of FEP patients had suicidal ideation and 16.7% had committed at least a suicide attempt.

We did not find significant sex differences neither in the control sample nor in the patient sample (Table 2).

3.3 | Differences between symptomatology and other clinical variables in suicidal behaviour in FEPs

Table 3 summarizes differences between patients who present suicidal ideation, history of suicidal attempts and suicide risk and those who do not in symptoms and clinical variables.

Positive, disorganized, excited and mania symptoms and duration of untreated psychosis did not show any relationship with suicidal behaviours. No relationship also was found between doses of THC and alcohol consumption and suicidal behaviours.

3.4 | Most important variables in the suicidal behaviours in FEPs

Finally, all risk factors that obtained a *p*-value of <0.100 in the mean differences test with suicidal behaviour were introduced in a linear regression model to determine which of them are the most relevant in each suicidal behaviour (Table 4). The analysis yielded a young age, more perceived stress and a higher score in the CDS as the most important factors in predicting suicidal ideation; young age and a higher score in the CDS in predicting suicide attempts.

TABLE 1 Sociodemographic characteristics of 132 patients with first-episode psychotic and 83 healthy controls

		FEP ($n = 132$)	HC ($n = 83$)	$\chi^2/F/t$	p-value
Gender	Females	45 (34.1%)	36 (43.4%)	1.870	0.171
	Males	87 (65.9%)	47 (56.6%)		
Marital status, *n* (%)	Single	98 (74.3%)	51 (61.4%)	11.287	0.004
	Married/couple	25 (18.9%)	31 (37.4%)		
	Divorced	9 (6.8%)	1 (1.2%)		
Years of education, *n* (%)	5–8	20 (15.2%)	0 (0%)	99.622	<0.001
	9–12	75 (56.8%)	2 (2.4%)		
	>12	37 (28.0%)	81 (97.6%)		
People who lives, *n* (%)	Own	17 (12.9%)	4 (4.8%)	8.150	0.148
	Couple	12 (9.1%)	11 (13.3%)		
	Family origin	73 (55.3%)	43 (51.8%)		
	Own family	9 (6.8%)	12 (14.4%)		
	Other relatives	6 (4.5%)	2 (2.4%)		
	Others	15 (11.4%)	11 (13.3%)		
Consumption, *n* (%)	Coffee	87[a] (70.2%)	73 (88.0%)	8.967	0.003
	Tabaco	84[b] (66.1%)	26 (31.3%)	24.394	<0.001
	Alcohol	72[c] (59.5%)	65 (78.3%)	11.299	0.010
	THC	76[b] (59.8%)	18 (21.7%)	29.710	<0.001
Aged, mean (SD)		28.49 (9.09)	27.29 (8.07)	1.013	0.312

[a]Total sample 124, 8 lost value.
[b]Total sample 127, 5 lost value.
[c]Total sample 121, 11 lost value.

Finally, more perceived stress and higher scores on hopelessness emerged as the most relevant factors in predicting suicide risk.

4 | DISCUSSION

As a first objective, we aimed to study differences between patients and controls in different dimensions of suicidal behaviour. Compared to healthy controls, patients presented more suicidal ideation, suicide attempts, more suicide risk and higher overall scores in the total Plutchik Suicide Risk Scale; which, overall, is congruent with previous research (Dutta et al., 2010; Falcone et al., 2010; Zhang et al., 2018). These results highlight the importance of implementing suicide prevention interventions in people with first episode psychosis (Pelizza et al., 2021).

Our second objective was to compare suicidal behaviour between males and females. We did not find differences in any of the suicidal dimensions in sample with FEP. Although our results support Zhang et al. (2018), they are inconsistent with other studies that have reported increased suicidal behaviour in females (Austad et al., 2015; Barrett et al., 2010). We did not find gender differences in the control sample either. This result is congruent with Challis et al. (2013), but, in contrast, a substantial corpus of studies has yielded differences in suicidal behaviour between sexes (Canetto, 1997; McLafferty et al., 2019; Nock et al., 2008; Weissman et al., 1999). Noteworthy, sex differences in the presentation and evolution of psychosis have been consistently reported (Ferrari et al., 2018; Irving et al., 2021; Rosen et al., 2020). It is then likely that sex differences in suicidal behaviour should be studied in the light of specific risk factors for suicide.

We found a relationship between depressive symptoms (CSD total score and hopelessness) and suicidal behaviour in FEP, which was an expected finding considering cumulative research reporting the same association (Austad et al., 2015; Bakst et al., 2010; Bornheimer, 2019; Chang et al., 2014; Hawton et al., 2005; Pelizza et al., 2020). Our results suggest that the hopelessness item has a significant weight in predicting suicide risk in patients with FEP, what had been reported by previous articles (Bakst et al., 2010; Bertelsen et al., 2007; Chang et al., 2014). Considering the available evidence, assessing and treating depression in people with FEP seem crucial to prevent suicide behaviour.

We found a positive relationship between the negative and anxiety/depressed Emsley factors and the presence of suicide attempts and suicide risk. However, this relationship lost significance when other variables were controlled for. Contrary to our results, a recent meta-analysis found small-to-moderate and moderate associations between sensitivity to anxiety, suicidal ideation and suicide risk (Stanley et al., 2018). Evidence supporting the link of negative symptoms and suicide behaviour is still unclear: while some studies yielded relationships between negative symptoms and suicide ideation and

TABLE 2 Differences between FEP and controls in suicidal phenomenon split by gender

	FEP				Controls				FEP vs. controls
Variables of interest	Men ($n = 87$)	Women ($n = 45$)	All ($n = 132$)	Women vs. men (t/χ^2; p-value)	Men ($n = 47$)	Women ($n = 36$)	All ($n = 83$)	Women vs. men (t/χ^2; p-value)	(t/χ^2; p-value)
Suicidal ideation, n (%)	45 (51.7%)	17 (37.8%)	62 (47.0%)	2.316 (0.128)	11 (23.4%)	6 (16.7%)	17 (20.5%)	0.568 (0.451)	15.382 (<0.001)
Suicidal attempt, n (%)	18 (20.7%)	4 (8.9%)	22 (16.7%)	2.974 (0.085)	1 (2.1%)	0 (0%)	1 (1.2%)	0.775 (3.79)	12.752 (<0.001)
Total score Plutchik suicide risk scale (RS), mean (SD)	4.92 (2.58)	4.24 (2.72)	4.69 (2.64)	1.397 (0.165)	2.43 (2.52)	2.06 (1.77)	2.27 (2.22)	0.750 (0.455)	7.236 (<0.001)
Suicide risk, yes (n, %)	34 (39.1%)	15 (33.3%)	49 (37.1%)	0.420 (0.517)	6 (12.8%)	4 (11.1%)	10 (12.0%)	0.053 (0.818)	16.089 (<0.001)

TABLE 3 Differences between symptomatology and other clinical and sociodemographical variables and suicidal behaviour in FEP population

	Suicidal ideation			Suicidal attempt			Suicide risk		
Variables of interest	No ($n = 70$)	Yes ($n = 62$)	(t/z; p-value)	No ($N = 110$)	Yes ($n = 22$)	(t/z; p-value)	No ($n = 83$)	Yes ($N = 49$)	(t/z; p-value)
Negative factor, mean (SD)	21.06 (9.33)	21.63 (8.25)	−.367 (0.714)	20.62 (8.93)	24.95 (7.29)	−2.509 (0.012)	20.16 (8.54)	23.27 (9.00)	−1.954 (0.053)
Disorganized factor	18.85 (7.39)	17.93 (6.20)	0.760 (0.449)	18.35 (7.3)	18.77 (4.01)	−0.266 (0.791)	18.81 (6.96)	17.75 (6.65)	0.854 (0.395)
Positive factor	24.68 (5.68)	25.51 (5.75)	−0.824 (0.412)	24.74 (5.72)	26.68 (5.46)	−1.461 (0.146)	25.34 (5.63)	24.60 (5.87)	0.710 (0.479)
Excited factor	11.57 (5.19)	12.62 (5.20)	−1.146 (0.254)	11.82 (5.27)	13.27 (4.75)	−1.196 (0.235)	12.36 (5.49)	11.58 (4.68)	0.817 (0.416)
Anxiety/depressed factor, mean (SD)	14.88 (5.42)	15.89 (4.80)	−1.108 (0.270)	14.81 (5.02)	18.00 (5.05)	2.725 (0.006)	14.57 (5.17)	16.69 (4.87)	−2.299 (0.023)
Hopelessness, mean (SD)	0.38 (0.62)	0.67 (0.90)	−2.105 (0.038)	0.42 (0.68)	1.00 (1.00)	−3.289 (0.001)	0.33 (0.59)	0.82 (0.93)	−3.318 (<0.001)
CDS, mean (SD)	2.91 (3.62)	5.40 (5.57)	−2.754 (0.006)	3.22 (3.84)	8.43 (6.56)	−3.931 (<0.001)	2.96 (3.94)	5.88 (5.46)	−3.761 (<0.001)
Young, mean (SD)	13.30 (12.25)	13.62 (12.27)	−0.143 (0.866)	13.96 (12.63)	10.90 (9.67)	1.025 (0.308)	13.80 (12.15)	12.89 (12.42)	0.396 (0.693)
DUP	9.54 (13.43)	11.23 (14.21)	−0.628 (0.496)	9.30 (12.55)	15.26 (18.02)	−1.477 (0.152)	9.03 (12.43)	12.54 (15.66)	−1.382 (0.170)
Age, mean (SD)	30.39 (9.68)	26.35 (7.91)	2.599 (0.010)	29.11 (9.26)	25.41 (7.63)	1.757 (0.081)	28.65 (9.05)	28.22 (9.23)	0.259 (0.796)
Years of education, mean (SD)	4.16 (0.673)	4.10 (0.620)	0.534 (0.594)	4.17 (0.66)	3.91 (0.53)	2.048 (0.048)	4.19 (0.671)	4.02 (0.595)	1.533 (0.128)
PSP, mean (SD)	52.52 (18.05)	46.88 (14.36)	1.935 (0.055)	51.15 (16.89)	43.43 (13.49)	1.967 (0.051)	52.03 (17.59)	46.26 (14.22)	1.901 (0.060)
PSS, mean (SD)	27.87 (9.27)	32.95 (7.77)	−2.886 (0.004)	29.75 (8.93)	33.11 (8.64)	−1.477 (0.142)	26.73 (7.78)	36.27 (7.48)	−5.555 (<0.001)

TABLE 4 Effect of studied variables (*B* standard; *sig.*) on suicidal phenomenon in FEP sample

		Suicidal ideation	Suicidal attempt	Suicide risk
Age	β	−0.250	−0.196	
	t	−2.820	−2.360	
	p	0.006	0.020	
Years of education	β		*	
	t			
	p			
PSP	β	*	*	*
	t			
	p			
PSS	β	0.228		0.488
	t	2.534		5.915
	p	0.013		0.001
CDS - hopelessness	β	*	*	0.196
	t			2.376
	p			0.019
CDS total score	β	0.226	0.423	*
	t	2.488	5.084	
	p	0.014	<0.001	
Negative Emsley factor	β		*	*
	t			
	p			
Anxiety/depressed Emsley factor	β		*	*
	t			
	p			
F (model significance)		7.736 (<0.001)	14.539 (<0.001)	24.095 (<0.001)
R^2		0.178	0.199	0.315

Note: Asterisks (*) are variables placed in the model, but finally excluded.

suicide attempts (Bornheimer, 2019; DeVylder & Hilimire, 2015; Kelleher et al., 2013; Koyanagi et al., 2015; Pelizza et al., 2021), other studies have found that less negative symptomatology would lead to more suicide attempts (Castelein et al., 2015; Zhang et al., 2018). According to other opposite results, the presence of negative symptoms would lead to more suicide ideation (Pelizza et al., 2020). It is possible that some of these discrepancies could be rooted in which variables have been controlled for in each study.

We found that other symptoms (positive, disorganized and exited symptoms) were not related with suicidal behaviours. Multiple studies have dismissed associations between suicidal behaviour and positive symptoms (Castelein et al., 2015; Fedyszyn et al., 2012; Pratt et al., 2010; Zhang et al., 2018). However, some studies have reported that a higher prevalence of positive symptoms is associated to more changes in suicide attempts (Bornheimer, 2019; Mitter et al., 2013; Nangle et al., 2006). With respect to disorganized and excited symptoms, D'angelo et al. (2017) studied the relationship between disorganized symptoms and suicidal behaviour and only found a relationship in one of the four items assessed. Consistent with our results, Lopez-Morinigo et al. (2019) did not find any differences in disorganized symptoms between participants that presented suicide attempts and those that did not.

Taken together, the relationship between suicidal behaviour and psychotic symptoms seems highly controversial and needs more studies to fully clarify it. However, establishing links would help develop specific interventions to reduce suicidal behaviour.

Age and perceived stress emerged as two of the most relevant variables related to suicidal behaviours. Age was related to suicidal ideation and suicidal attempt, what gives further support to the importance of suicide awareness in young populations (Barrett et al., 2010; Bertelsen et al., 2007; Moe et al., 2021; Pelizza et al., 2020; Pelizza et al., 2021; Suokas et al., 2010). Stress was linked to suicidal ideation and an increased presence of suicidal risk, as previous studies have reported (Abdollahi et al., 2015; Chen & Kuo, 2020; Klonsky et al., 2018). Adolescence and young adulthood are two developmental periods when most personal and social changes occur, what can lead to a high number and high impact of stressful life events (Holder & Blaustein, 2014; Spear, 2009; Van Doesela). In parallel, they are periods during which personality is still developing, what means that coping and emotional regulation

strategies are not fully consolidated. The interaction between several stressful life events and insufficient coping and regulating strategies may result in an increase of stressful situations, high perceived stress or decreased mood. Because these variables have been related to suicidal behaviour (Compas et al., 2017; Liu & Tein, 2005; McFeeters et al., 2015), vulnerable youth should receive preventive interventions.

As previous studies have reported, years of education (Zhang et al., 2018), DUP, and tobacco and alcohol consumption (Ayesa-Arriola et al., 2015, 2018; Lopez-Morinigo et al., 2019; Pelizza et al., 2020; Pelizza et al., 2021) were not related to suicidal behaviour.

As a conclusion, we found a higher rate of suicide risk in patients with FEP. Age and depression are well-known risk factors for suicide behaviour in patients with FEP, our broadens current knowledge in highlighting the important role of perceived stress.

Our study must be interpreted in the light of certain limitations: The Plutchik RS scale assesses whether a subject has a history of suicidal ideation, suicide attempts and the risk of committing a suicide attempt. Nevertheless, suicidal behaviour is a broad phenomenon and other dimensions of suicide, such as self-harm, suicide threats, self-harm ideation or self-harm without suicidal intent are not measured. It is then likely that current knowledge of suicidal behaviour in FEP would benefit from including a broader assessment. The Plutchik RS scale is a dichotomous scale (yes/no), what does not permit obtaining the number of suicide attempts or reasons associated with suicide, among others. There are other described risk factors that were not contemplated in the present work, such as a history of childhood trauma. Another limitation of our findings is that we compared sexes in relation to suicide behaviour, but we did not analyse further sex differences.

In this study, we have focused on the influence of certain risk factors in suicidal behaviour. However, other factors have been described, for instance, a history of childhood trauma. Another limitation of our findings is that we have analysed sex differences in suicidal behaviour. However, we have not analysed what variables influence suicidal behaviour in each sex. We included patients with both affective and non-affective psychosis, but given the few cases of affective psychosis we were unable to perform subgroup analyses. However, this is an important line of research for future studies, especially studying the interaction of sex, suicide behaviour and affective vs non-affective psychosis. Likewise, future research should assess the impact of suicide behaviour in clinical features through longitudinal studies and investigate the efficacy of interventions focusing on suicide prevention. Moreover, future research should include other possibly relevant factors in suicide behaviour, such as the effect of birth events, the role of childhood trauma and stressful life events in suicidal behaviour.

5 | CLINICAL IMPLICATIONS

Given the high prevalence of suicidal behaviour in patients with FEP, it is essential that suicidal behaviour is assessed routinely and considered as a central target of treatment. To this aim, mental health professionals should receive training in detecting and intervening on suicide behaviour.

We found that younger age and perceived stress are strong predictors of suicide behaviour in patients with FEP. In this sense, interventions directed to reduce and manage stress could be effective in preventing suicide. Finally, younger patients with FEP should be carefully screened for depressive symptoms as these individuals experience heightened risk for suicide.

ACKNOWLEDGEMENTS

We thank all participants who took part in the study and their clinicians at the recruiting mental health centres. We thank our statistician Daniel Cuadras for his technical assistance in the design of the statistical methodology of the study. This study was supported by the Spanish Ministry of Health Carlos III, research grant number PI17/00111.

CONFLICT OF INTEREST

None.

DATA AVAILABILITY STATEMENT

The corresponding author provides the dataset used in this study upon request.

REFERENCES

Abdollahi, A., Talib, M. A., Yaacob, S. N., & Ismail, Z. (2015). The role of hardiness in decreasing stress and suicidal ideation in a sample of undergraduate students. *Journal of Humanistic Psychology*, *55*, 202–222. https://doi.org/10.1177/0022167814543952

Addington, D., Addington, J., & Schissel, B. (1990). A depression rating scale for schizophrenics. *Schizophrenia Research*, *3*(4), 247–251. https://doi.org/10.1016/0920-9964(90)90005-R

Austad, G., Joa, I., Johannessen, J. O., & Larsen, T. K. (2015). Gender differences in suicidal behaviour in patients with first-episode psychosis. *Early Intervention in Psychiatry*, *9*(4), 300–307. https://doi.org/10.1111/eip.12113

Ayesa-Arriola, R., Alcaraz, E. G., Hernández, B. V., Pérez-Iglesias, R., López Moríñigo, J. D., Duta, R., David, A. S., Tabares-Seisdedos, R., & Crespo-Facorro, B. (2015). Suicidal behaviour in first-episode non-affective psychosis: Specific risk periods and stage-related factors. *European Neuropsychopharmacology*, *25*, 2278–2288. https://doi.org/10.1016/j.euroneuro.2015.09.008

Ayesa-Arriola, R., Terán, J., Moríñigo, J., Rivero, M. C., Setién-Suero, E., Al-Halabi, S., Cuesta, M. J., David, A. S., & Crespo-Facorro, B. (2018). The dynamic relationship between insight and suicidal behavior in first episode psychosis patients over 3-year follow-up. *European Neuropsychopharmacology*, *28*, 1161–1172. https://doi.org/10.1016/j.euroneuro.2018.05.005

Bakst, S., Rabinowitz, J., & Bromet, E. J. (2010). Antecedents and patterns of suicide behavior in first-admission psychosis. *Schizophrenia Bulletin*, *36*(4), 880–889. https://doi.org/10.1093/schbul/sbp001

Barrett, E. A., Sundet, K., Faerden, A., Nesvåg, R., Agartz, I., Fosse, R., Mork, E., Steen, N. E., Andreassen, O. A., & Melle, I. (2010). Suicidality before and in the early phases of first episode psychosis. *Schizophrenia Research*, *119*(1–3), 11–17. https://doi.org/10.1016/j.schres.2010.03.022

Bertelsen, M., Jeppesen, P., Petersen, L., Thorup, A., Øhlenschlaeger, J., le Quach, P., Christensen, T. Ø., Krarup, G., Jørgensen, P., &

Nordentoft, M. (2007). Suicidal behaviour and mortality in first-episode psychosis: The OPUS trial. *British Journal of Psychiatry*, *51s*, 140–146. https://doi.org/10.1192/bjp.191.51.s140

Bornheimer, L. A. (2019). Suicidal ideation in first-episode psychosis (FEP): Examination of symptoms of depression and psychosis among individuals in an early phase of treatment. *Suicide & Life-Threatening Behavior*, *49*(2), 423–431. https://doi.org/10.1111/sltb.12440

Canetto, S. S. (1997). Meanings of gender and suicidal behavior during adolescence. *Suicide & Life-Threatening Behavior*, *27*(4), 339–351. https://doi.org/10.1111/j.1943-278X.1997.tb00513.x

Canetto, S. S., & Sakinofsky, I. (1998). The gender paradox in suicide. *Suicide & Life-Threatening Behavior*, *28*(1), 1–23. https://doi.org/10.1111/j.1943-278X.1998.tb00622.x

Castelein, S., Liemburg, E. J., de Lange, J. S., van Es, F. D., Visser, E., Aleman, A., Bruggeman, R., & Knegtering, H. (2015). Suicide in recent onset psychosis revisited: Significant reduction of suicide rate over the last two decades—A replication study of a dutch incidence cohort. *PLoS ONE*, *10*(6), e0129263. https://doi.org/10.1371/journal.pone.0129263

Challis, S., Nielssen, O., Harris, A., & Large, M. (2013). Systematic meta-analysis of the risk factors for deliberate self-harm before and after treatment for first-episode psychosis. *Acta Psychiatrica Scandinavica*, *127*(6), 442–454. https://doi.org/10.1111/acps.12074

Chang, W. C., Chen, E. S. M., Hui, C. L. M., Chan, S. K. W., Lee, E. H. M., & Chen, E. Y. H. (2014). The relationships of suicidal ideation with symptoms, neurocognitive function, and psychological factors in patients with first-episode psychosis. *Schizophrenia Research*, *157*(1–3), 12–18. https://doi.org/10.1016/j.schres.2014.06.009

Chen, Y. L., & Kuo, P. H. (2020). Effects of perceived stress and resilience on suicidal behaviors in early adolescents. *European Child & Adolescent Psychiatry*, *29*(6), 861–870. https://doi.org/10.1007/s00787-019-01401-w

Clarke, M., Whitty, P., Browne, S., Mc Tigue, O., Kinsella, A., Waddington, J. L., Larkin, C., & O'Callaghan, E. (2006). Suicidality in first episode psychosis. *Schizophrenia Research*, *86*(1–3), 221–225. https://doi.org/10.1016/j.schres.2006.05.026

Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, *24*(4), 385–396. https://doi.org/10.2307/2136404

Compas, B. E., Jaser, S. S., Bettis, A. H., Watson, K. H., Gruhn, M. A., Dunbar, J. P., Williams, E., & Thigpen, J. C. (2017). Coping, emotion regulation, and psychopathology in childhood and adolescence: A meta-analysis and narrative review. *Psychological Bulletin*, *143*(9), 939–991. https://doi.org/10.1037/bul0000110

Crow, T. J., MacMillan, J. F., Johnson, A. L., & Johnstone, E. C. (1986). A randomised controlled trial of prophylactic neuroleptic treatment. *The British Journal of Psychiatry: The Journal of Mental Science*, *148*, 120–127. https://doi.org/10.1192/bjp.148.2.120

D'angelo, E. J., Lincoln, S. H., Morelli, N., Graber, K., Tembulkar, S., & Gonzalez-Heydrich, J. (2017). Suicidal behaviors and their relationship with psychotic-like symptoms in children and adolescents at clinical high risk for psychosis. *Comprehensive Psychiatry*, *78*, 31–37. https://doi.org/10.1016/j.comppsych.2017.07.008

De Hert, M., Mckenzie, K., & Peuskens, J. (2001). Risk factors for suicide in young people suffering from schizophrenia: A long-term follow-up study. *Schizophrenia Research*, *47*(2–3), 127–134. https://doi.org/10.1016/S0920-9964(00)00003-7

DeVylder, J. E., & Hilimire, M. R. (2015). Suicide risk, stress sensitivity, and self-esteem among young adults reporting auditory hallucinations. *Health & Social Work*, *40*(3), 175–181. https://doi.org/10.1093/hsw/hlv037

Dutta, R., Murray, R. M., Allardyce, J., Jones, P. B., & Boydell, J. (2010). Early risk factors for suicide in an epidemiological first episode psychosis cohort. *Schizophrenia Research*, *126*, 11–19. https://doi.org/10.1016/j.schres.2010.11.021

Emsley, R., Rabinowitz, J., Torreman, M., Schooler, N., Kapala, L., Davidson, M., & McGory, P. (2003). The factor structure for the Positive and Negative Syndrome Scale (PANSS) in recent-onset psychosis. *Schizophrenia Research*, *61*(1), 47–57. https://doi.org/10.1016/S0920-9964(02)00302-X

Falcone, T., Mishra, L., Carlton, E., Lee, C., Butler, R. S., Janigro, D., Simon, B., & Franco, K. (2010). Suicidal behavior in adolescents with first-episode psychosis. *Clinical Schizophrenia & Related Psychoses*, *4*(1), 34–40. https://doi.org/10.3371/CSRP.4.1.2

Fedyszyn, I. E., Robinson, J., Harris, M. G., Paxton, S. J., & Francey, S. (2012). Predictors of suicide-related behaviors during treatment following a first episode of psychosis: The contribution of baseline, past, and recent factors. *Schizophrenia Research*, *140*(1–3), 17–24. https://doi.org/10.1016/j.schres.2012.06.022

Fekete, S., Voros, V., & Osvath, P. (2005). Gender differences in suicide attempters in Hungary: Retrospective epidemiological study. *Croatian Medical Journal*, *46*(2), 288–293.

Fenton, W. S., McGlashan, T. H., Victor, B. J., & Blyler, C. R. (1997). Symptoms, subtype, and suicidality in patients with schizophrenia spectrum disorders. *American Journal of Psychiatry*, *154*(2), 199–204. https://doi.org/10.1176/ajp.154.2.199

Ferrari, M., Flora, N., Anderson, K. K., Haughton, A., Tuck, A., Archie, S., Kidd, S., McKenzie, K., & ACE Project Team. (2018). Gender differences in pathways to care for early psychosis. *Early Intervention in Psychiatry*, *12*(3), 355–361. https://doi.org/10.1111/eip.12324

Fialko, L., Freeman, D., Bebbington, P. E., Kuipers, E., Garety, P. A., Dunn, G., & Fowler, D. (2006). Understanding suicidal ideation in psychosis: Findings from the psychological prevention of relapse in psychosis (PRP) trial. *Acta Psychiatrica Scandinavica*, *114*(3), 177–186. https://doi.org/10.1111/j.1600-0447.2006.00849.x

Foley, S., Jackson, D., McWilliams, S., Renwick, L., Sutton, M., Turner, N., Kinsella, A., & O'Callaghan, E. (2008). Suicidality prior to presentation in first-episode psychosis. *Early Intervention in Psychiatry*, *2*(4), 242–246. https://doi.org/10.1111/j.1751-7893.2008.00084.x

Garcia-Portilla, M. P., Saiz, P. A., Bousoño, M., Bascaran, M. T., Guzmán-Quilo, C., & Bobes, J. (2011). Validation of the Spanish Personal and Social Performance scale (PSP) in outpatients with stable and unstable schizophrenia. *Revista de Psiquiatria Y Salud Mental*, *4*(1), 9–18. https://doi.org/10.1016/j.rpsm.2010.11.003

Harkavy-Friedman, J. M. (2006). Can early detection of psychosis prevent suicidal behavior? *American Journal of Psychiatry*, *163*(5), 768–770. https://doi.org/10.1176/ajp.2006.163.5.768

Hawton, K., Sutton, L., Haw, C., Sinclair, J., & Deeks, J. J. (2005). Schizophrenia and suicide: Systematic review of risk factors. *British Journal of Psychiatry*, *187*, 9–20. https://doi.org/10.1192/bjp.187.1.9

Holder, M. K., & Blaustein, J. D. (2014). Puberty and adolescence as a time of vulnerability to stressors that alter neurobehavioral processes. *Frontiers in Neuroendocrinology*, *35*(1), 89–110. https://doi.org/10.1016/j.yfrne.2013.10.004

Irving, J., Colling, C., Shetty, H., Pritchard, M., Stewart, R., Fusar-Poli, P., McGuire, P., & Patel, R. (2021). Gender differences in clinical presentation and illicit substance use during first episode psychosis: A natural language processing, electronic case register study. *BMJ Open*, *11*(4), e042949. https://doi-org.sire.ub.edu/10.1136/bmjopen-2020-042949

Kay, S. R., Fiszbein, A., & Opler, L. A. (1987). The positive and negative syndrome scale (PANSS) for schizophrenia. *Schizophrenia Bulletin*, *13*(2), 261–276. https://doi.org/10.1093/schbul/13.2.261

Kelleher, I., Keeley, H., Corcoran, P., Ramsay, H., Wasserman, C., Carli, V., Sarchiapone, M., Hoven, C., Wasserman, D., & Cannon, M. (2013). Childhood trauma and psychosis in a prospective cohort study: Cause, effect, and directionality. *The American Journal of Psychiatry*, *170*(7), 734–741. https://doi.org/10.1176/appi.ajp.2012.12091169

Kelly, D. L., Shim, J. C., Feldman, S. M., Yu, Y., & Conley, R. R. (2004). Lifetime psychiatric symptoms in persons with schizophrenia who died by

suicide compared to other means of death. *Journal of Psychiatric Research*, *38*(5), 531–536. https://doi.org/10.1016/j.jpsychires.2004.02.001

Klonsky, E. D., Saffer, B. Y., & Bryan, C. J. (2018). Ideation-to-action theories of suicide: A conceptual and empirical update. *Current Opinion in Psychology*, *22*, 38–43. https://doi.org/10.1016/j.copsyc.2017.07.020

Koyanagi, A., Stickley, A., & Haro, J. M. (2015). Subclinical psychosis and suicidal behavior in England: Findings from the 2007 adult psychiatric morbidity survey. *Schizophrenia Research*, *168*(1–2), 62–67. https://doi.org/10.1016/j.schres.2015.07.041

Liu, X., & Tein, J. Y. (2005). Life events, psychopathology, and suicidal behavior in Chinese adolescents. *Journal of Affective Disorders*, *86*(2–3), 195–203. https://doi.org/10.1016/j.jad.2005.01.016

Lopez-Morinigo, J. D., Di Forti, M., Ajnakina, O., Wiffen, B. D., Morgan, K., Doody, G. A., Jones, P. B., Ayesa-Arriola, R., Canal-Rivero, M., Crespo-Facorro, B., Murray, R. M., Dazzan, P., Morgan, C., Dutta, R., & David, A. S. (2019). Insight and risk of suicidal behaviour in two first-episode psychosis cohorts: Effects of previous suicide attempts and depression. *Schizophrenia Research*, *204*, 80–89. https://doi.org/10.1016/j.schres.2018.09.016

Lui, S. Y. (2009). Risk factors for deliberate self-harm and completed suicide in young Chinese people with schizophrenia. *The Australian and New Zealand Journal of Psychiatry*, *43*(3), 252–259. https://doi.org/10.1080/00048670802653265

McFeeters, D., Boyda, D., & O'Neill, S. (2015). Patterns of stressful life events: Distinguishing suicide ideators from suicide attempters. *Journal of Affective Disorders*, *175*, 192–198. https://doi.org/10.1016/j.jad.2014.12.034

McLafferty, M., Armour, C., Bunting, B., Ennis, E., Lapsley, C., Murray, E., & O'Neill, S. (2019). Coping, stress, and negative childhood experiences: The link to psychopathology, self-harm, and suicidal behavior. *PsyCh Journal*, *8*(3), 293–306. https://doi.org/10.1002/pchj.301

Melle, I., Johannesen, J. O., Friis, S., Haahr, U., Joa, I., Larsen, T. K., Opjordsmoen, S., Rund, B. R., Simonsen, E., Vaglum, P., & McGlashan, T. (2006). Early detection of the first episode of schizophrenia and suicidal behavior. *American Journal of Psychiatry*, *163*(5), 800–804. https://doi.org/10.1176/appi.ajp.163.5.800

Mitter, N., Subramaniam, M., Abdin, E., Poon, L. Y., & Verma, S. (2013). Predictors of suicide in Asian patients with first episode psychosis. *Schizophrenia Research*, *151*(1–3), 274–278. https://doi.org/10.1016/j.schres.2013.10.006

Moe, A. M., Llamocca, E., Wastler, H. M., Steelesmith, D. L., Brock, G., Bridge, J. A., & Fontanella, C. A. (2021). Risk factors for deliberate self-harm and suicide among adolescents and young adults with first-episode psychosis. *Schizophrenia Bulletin*, sbab123. Advance online publication. https://doi.org/10.1093/schbul/sbab123

Morosini, P. L., Magliano, L., Brambilla, L., Ugolini, S., & Pioli, R. (2000). Development, reliability and acceptability of a new version of the DSM-IV Social and Occupational Functioning Assessment Scale (SOFAS) to assess routine social functioning. *Acta Psychiatrica Scandinavica*, *101*(4), 323–329. https://doi.org/10.1111/j.1600-0447.2000.tb10933.x

Nangle, J. M., Clarke, S., Morris, D. W., Schwaiger, S., McGhee, K. A., Kenny, N., Murphy, K., Gill, M., Corvin, A., & Donohoe, G. (2006). Neurocognition and suicidal behaviour in an Irish population with major psychotic disorders. *Schizophrenia Research*, *85*(1–3), 196–200. https://doi.org/10.1016/j.schres.2006.03.035

Nock, M. K., Borges, G., Bromet, E., Alonso, J., Angermeyer, M., Beautrais, A., … Williams, D. R. (2008). Cross-national prevalence and risk factors for suicidal ideation, plans, and attempts. *British Journal of Psychiatry*, *192*, 98–105. https://doi.org/10.1038/jid.2014.371

Nordentoft, M., Laursen, T. M., Agerbo, E., Qin, P., Høyer, E. H., & Mortensen, P. B. (2004). Change in suicide rates for patients with schizophrenia in Denmark, 1981-97: Nested case-control study. *British Medical Journal*, *329*(7460), 261–264. https://doi.org/10.1136/bmj.38133.622488.63

Pelizza, L., Maestri, D., Leuci, E., Quattrone, E., Azzali, S., Paulillo, G., & Pellegrini, P. (2021). Individual psychotherapy can reduce suicidal ideation in first episode psychosis: Further findings from the 2-year follow-up of the 'Parma early Psychosis' programme. *Clinical Psychology & Psychotherapy*. https://doi.org/10.1002/cpp.2678 Advance online publication

Pelizza, L., Pellegrini, C., Quattrone, E., Azzali, S., Landi, G., Pellegrini, P., & Leuci, E. (2020). Suicidal Ideation in Patients Experiencing a First-episode Psychosis: Findings From the 2-Year Follow-up of the "Parma Early Psychosis" Program. *Suicide & life-threatening behavior*, *50*(4), 838–855. https://doi-org.sire.ub.edu/10.1111/sltb.12625

Peralta, V., & Cuesta, M. J. (1994). Psychometric properties of the positive and negative syndrome scale (PANSS) in schizophrenia. *Psychiatry Research*, *53*(1), 31–40. https://doi.org/10.1016/0165-1781(94)90093-0

Plutchik, R., van Praag, H. M., Conte, H. R., & Picard, S. (1989). Correlates of suicide and violence risk 1: The suicide risk measure. *Comprehensive Psychiatry*, *30*(4), 296–302. https://doi.org/10.1016/0010-440X(89)90053-9

Pompili, M., Serafini, G., Innamorati, M., Lester, D., Shrivastava, A., Girardi, P., & Nordentoft, M. (2011). Suicide risk in first episode psychosis: A selective review of the current literature. *Schizophrenia Research*, *129*(1), 1–11. https://doi.org/10.1016/j.schres.2011.03.008

Pratt, D., Gooding, P., Johnson, J., Taylor, P., & Tarrier, N. (2010). Suicide schemas in non-affective psychosis: An empirical investigation. *Behaviour Research and Therapy*, *48*(12), 1211–1220. https://doi.org/10.1016/j.brat.2010.08.005

Qin, P., Agerbo, E., Westergard-Nielsen, N., Eriksson, T., & Mortensen, P. B. (2000). Gender differences in risk factors for suicide in Denmark. *British Journal of Psychiatry*, *177*, 546–550. https://doi.org/10.1192/bjp.177.6.546

Remor, E. (2006). Psychometric properties of a European Spanish version of the perceived stress scale (PSS). *The Spanish Journal of Psychology*, *9*(1), 86–93. https://doi.org/10.1017/s1138741600006004

Rosen, M., Haidl, T. K., Ruhrmann, S., Vogeley, K., & Schultze-Lutter, F. (2020). Sex differences in symptomatology of psychosis-risk patients and in prediction of psychosis. *Archives of Women's Mental Health*, *23*(3), 339–349. https://doi.org/10.1007/s00737-019-01000-3

Rubio, G., Montero, I., Jáuregui, J., Villanueva, R., Casado, M. A., Marín, J. J., & Santo Domingo, J. (1998). Validación de la escala de riesgo suicida de Plutchik en población española. *Archivos de Neurobiologiá*, *61*(2), 143–152.

Saha, S., Chant, D., & McGrath, J. (2007). A systematic review of mortality in schizophrenia: Is the differential mortality gap worsening over time? *Archives of General Psychiatry*, *64*(10), 1123–1131. https://doi.org/10.1001/archpsyc.64.10.1123

Salagre, E., Grande, I., Jiménez, E., Mezquida, G., Cuesta, M. J., Llorente, C., Amoretti, S., Lobo, A., González-Pinto, A., Carballo, J. J., Corripio, I., Verdolini, N., Castro-Fornieles, J., Legido, T., Carvalho, A. F., Vieta, E., Bernardo, M., & PEPs Group. (2021). Trajectories of suicidal ideation after first-episode psychosis: A growth mixture modeling approach. *Acta Psychiatrica Scandinavica*, *143*(5), 418–433. https://doi.org/10.1111/acps.13279

Salokangas, R., Patterson, P., Hietala, J., Heinimaa, M., From, T., Ilonen, T., von Reventlow, H. G., Schultze-Lutter, F., Juckel, G., Linszen, D., Dingemans, P., Birchwood, M., Klosterkötter, J., Ruhrmann, S., & EPOS Group. (2019). Childhood adversity predicts persistence of suicidal thoughts differently in females and males at clinical high-risk patients of psychosis. Results of the EPOS project. *Early Intervention in Psychiatry*, *13*(4), 935–942. https://doi.org/10.1111/eip.12714

Sarró, S., Dueñas, R. M., Ramírez, N., Arranz, B., Martínez, R., Sánchez, J. M., González, J. M., Saló, L., Miralles, L., & San, L. (2004). Cross-cultural adaptation and validation of the Spanish version of the

Calgary depression scale for schizophrenia. *Schizophrenia Research*, *68*(2–3), 349–356. https://doi.org/10.1016/S0920-9964(02)00490-5

Schaefer, J., Giangrande, E., Weinberger, D. R., & Dickinson, D. (2013). The global cognitive impairment in schizophrenia: Consistent over decades and around the world. *Schizophrenia Research*, *150*(1), 42–50. https://doi.org/10.1016/j.schres.2013.07.009

Simms, J., McCormack, V., Anderson, R., & Mulholland, C. (2007). Correlates of self-harm behaviour in acutely ill patients with schizophrenia. *Psychology and Psychotherapy: Theory, Research and Practice*, *80*(1), 39–49. https://doi.org/10.1348/147608306X99386

Snowdon, J. (2016). Why have Australian suicide rates decreased? *Australian and New Zealand Journal of Psychiatry*, *50*(1), 13–15. https://doi.org/10.1177/0004867415590630

Spear, L. P. (2009). Heightened stress responsivity and emotional reactivity during pubertal maturation: Implications for psychopathology. *Development and Psychopathology*, *21*(1), 87–97. https://doi.org/10.1017/S0954579409000066

Stanley, I. H., Boffa, J. W., Rogers, M. L., Hom, M. A., Albanese, B. J., Chu, C., Capron, D. W., Schmidt, N. B., & Joiner, T. E. (2018). Anxiety sensitivity and suicidal ideation/suicide risk: A meta-analysis. *Journal of Consulting and Clinical Psychology*, *86*(11), 946–960. https://doi.org/10.1037/ccp0000342

Suokas, J. T., Perälä, J., Suominen, K., Saarni, S., Lönnqvist, J., & Suvisaari, J. M. (2010). Epidemiology of suicide attempts among persons with psychotic disorder in the general population. *Schizophrenia Research*, *124*, 22–28. https://doi.org/10.1016/j.schres.2010.09.009

Thorup, A., Petersen, L., Jeppesen, P., Ohlenschlaeger, J., Christensen, T., Krarup, G., Jorgensen, P., & Nordentoft, M. (2007). Gender differences in young adults with first-episode schizophrenia spectrum disorders at baseline in the Danish OPUS study. *The Journal of Nervous and Mental Disease*, *195*(5), 396–405. https://doi.org/10.1097/01.nmd.0000253784.59708.dd

Waterreus, A., Di Prinzio, P., Badcock, J. C., Martin-Iverson, M., Jablensky, A., & Morgan, V. A. (2018). Is cannabis a risk factor for suicide attempts in men and women with psychotic illness? *Psychopharmacology*, *235*, 2275–2285. https://doi.org/10.1007/s00213-018-4924-6

Weissman, M. M., Bland, R. C., Canino, G. J., Greenwald, S., Hwu, H. G., Joyce, P. R., Karam, E. G., Lee, C. K., Lellouch, J., Lepine, J. P., Newman, S. C., Rubio-Stipec, M., Wells, J. E., Wickramaratne, P. J., Wittchen, H. U., & Yeh, E. K. (1999). Prevalence of suicide ideation and suicide attempts in nine countries. *Psychological Medicine*, *29*(1), 9–17. https://doi.org/10.1017/S0033291798007867

World Health Organization. (Ed.) (2004). *ICD-10: international statistical classification of diseases and related health problems: Tenth revision* (2nd ed.). World Health Organization.

Young, R. C., Biggs, J. T., Ziegler, V. E., & Meyer, D. A. (1978). A rating scale for mania: Reliability, validity and sensitivity. *The British Journal of Psychiatry: the Journal of Mental Science*, *133*, 429–435. https://doi.org/10.1192/bjp.133.5.429

Zhang, J., Mckeown, R. E., Hussey, J. R., Thompson, S. J., & Woods, J. R. (2005). Gender differences in risk factors for attempted suicide among young adults: Findings from the Third National Health and Nutrition Examination Survey. *Annals of Epidemiology*, *15*(2), 167–174. https://doi.org/10.1016/j.annepidem.2004.07.095

Zhang, X. Y., Du, X., Yin, G., Zhang, Y., Chen, D., Xiu, M., Wang, C., Zhang, R., Cassidy, R. M., Ning, Y., Huang, X., & Soares, J. C. (2018). Prevalence and clinical correlates of and cognitive function at the time of suicide attempts in first-episode and drug-naive patients with schizophrenia. *The Journal of Clinical Psychiatry*, *79*(4), 17m11797. https://doi.org/10.4088/JCP.17m11797

How to cite this article: Vila-Badia, R., Kaplan, M., Butjosa, A., Del Cacho, N., Serra-Arumí, C., Colomer-Salvans, A., Esteban-Sanjusto, M., Iglesias-González, M., Cuñat, O., Del Hoyo-Buxo, B., Profep, G., & Usall, J. (2022). Suicidal behaviour in first-episode psychosis: The relevance of age, perceived stress and depressive symptoms. *Clinical Psychology & Psychotherapy*, 1–10. https://doi.org/10.1002/cpp.2716

4.4. Estudi 4

Objectiu 4. Estudiar l'impacte de les experiències traumàtiques en la infància en les conductes suïcides en pacients amb un PEP, controlant per variables sociodemogràfiques, clíniques i psicosocials rellevants per a les conductes suïcides.

Article 4

Emotional abuse and perceived stress: the most relevant factors in suicide behaviour in first-episode psychosis patients.

Diago M, Vila-Badia R, Serra Arumí C, Butjosa A, Del Cacho N, Esteban Santjusto M, Colomer-Salvans A, Sánchez L, Dolz M, Muñoz-Samons D, PROFEP G, Usall J

Psychiatry Research. 2022; 315, 114699.

Psychiatry Research 315 (2022) 114699

Contents lists available at ScienceDirect

Psychiatry Research

journal homepage: www.elsevier.com/locate/psychres

Emotional abuse and perceived stress: The most relevant factors in suicide behavior in first-episode psychosis patients

Marta Diago [a,b,1], Regina Vila-Badia [a,b,c,1], Clara Serra-Arumí [a,b,c], Anna Butjosa [a,d], Núria Del Cacho [a,b,c], Marina Esteban Sanjusto [a,b], Alicia Colomer-Salvans [a,b], Laura Sánchez [a,b], Montserrat Dolz [c], Daniel Muñoz-Samons [c], Group PROFEP [e], Judith Usall [a,b,*]

[a] Etiopatogènia i tractament dels trastorns mentals greus (MERITT), Institut de Recerca Sant Joan de Déu, Esplugues de Llobregat, Spain
[b] Parc Sanitari Sant Joan de Déu, CIBERSAM, Doctor Antoni Pujadas, Sant Boi de Llobregat, Spain
[c] Universitat de Barcelona, Facultat de Medicina i Ciències de la Salut Barcelona, Barcelona, Spain
[d] Hospital Infanto-juvenil Sant Joan de Déu, Institut de Recerca Sant Joan de Déu, CIBERSAM, Esplugues de Llobregat, Spain
[e] PROFEP GROUP: Abella M, Alcalde R, Alvarez M, Bañuelos M, Batllori M, Bogas JL, Bonilla R, Butjosa A, Camprodon E, Casado A, Casali T, Chavarria V, Coromina M, Cuautle A, Cuevas- Esteban J, Cunill R, Cuñat O, Del Cacho N, del Hoyo B, Diago M, Dolz M, Esteban-Santjusto M, Estrada X, Iglesias-González M, Jane C, López-Ortiz C, Membrive P, Molano A, Morelló G, Muñoz-Samons D, Nuñez M, Ochoa S, Pardo M, Pelaez T, Pla MM, Rodriguez A, Rodriguez MJ, Romans C, Rubio-Abadal E, Sanchez L, Santos A, Serra-Arumí C, Sibelo S, Teba S, Tena MC, Usall J, Vallejo G, Via E, Vila-Badia R, Vives L, Spain

ARTICLE INFO

Keywords:
Childhood trauma
Depression
Psychosis
Stress
Suicide

ABSTRACT

People with a mental disorder have a higher risk of suicidal behavior. Little research has examined the role of childhood trauma in suicide behavior, and even fewer studies have assessed the specific relevance of subtypes of childhood trauma and suicidal behavior in first-episode psychosis (FEP). The aims of the present study were: 1) to compare suicide behavior between FEP and HC; 2) to study the relationship between the five types of ChT and suicide risk in FEP controlling for confounding sociodemographic, clinical, and psychosocial variables. 95 patients diagnosed with FEP and 92 healthy control (HC) were recruited as a part of the PROFEP study. ChT was evaluated using The Childhood Trauma Questionnaire-Short Form (CTQ) and suicide behavior through The Suicide Risk Scale of Plutchik (SRSP). Our results showed that patients with FEP presented more suicide behavior (ideation, attempt, and suicide risk) than HC. Emotional abuse was the most relevant type of ChT in suicide ideation and suicide risk. After controlling for other relevant variables, perceived stress seemed to play an important role in suicide ideations, suicide attempt, and suicide risk. The results highlight the importance of assessing and considering in the clinical practice ChT and the perceived stress.

1. Introduction

Suicide is a major public health concern (Cui et al., 2020; Nordentoft et al., 2015). The population with the highest relative risk of suicide are those who suffer from mental disorders (Gili et al., 2019; Orri et al., 2020), and, among them, people diagnosed with schizophrenia and other psychotic disorders (Dutta et al., 2010; Harris and Barraclough, 1997; Mortensen et al., 2000; Qin and Nordentoft, 2005). During the first-episode of psychosis (FEP), the risk of suicidal behavior is 60% higher than in other stages of the disease (Dutta et al., 2010; Nordentoft et al., 2004; Pompili et al., 2011). This is of special concern because suicidal risk is especially prevalent in the adolescent population. A recent systematic review has estimated that the risk of attempted suicide in people with FEP is between 12.4% and 72% (Barbeito et al., 2021). In fact, the World Health Organization (2014) emphasized the importance of early identification and management of mental disorders and suicidal behavior to implement effective interventions.

Previous meta-analytic evidence identified several predictors of suicide risk in people with schizophrenia (Challis et al., 2013), such as shorter length of illness, a younger age, higher intelligence quotient, history of tobacco and alcohol use, being male, history of attempted suicide, feelings of worthlessness, hopelessness, and poor treatment

* Corresponding author at: Parc Sanitari Sant Joan de Déu, Centro de Investigación en Red en Salud Mental, Calle Antoni Pujades 42, CP 08830 Sant Boi de Llobregat, Barcelona, Spain. CIBERSAM.
E-mail address: judit.usall@sjd.es (J. Usall).
[1] These authors contributed equally to this work.

https://doi.org/10.1016/j.psychres.2022.114699
Received 19 January 2022; Received in revised form 23 June 2022; Accepted 25 June 2022
Available online 30 June 2022

adherence. However, studies that focused specifically on populations with FEP showed other relevant predictors, such as being single, a family history of death by suicide, social isolation and limited external support, more psychopathology, and substance use, perceived stress and depressed mood (Challis et al., 2013; Courtet, 2018; López-Navarro et al., 2018; Madsen and Nordentoft, 2012; Nordentoft et al., 2011; Pelizza et al., 2021; Rossau and Mortensen, 1997).

Childhood trauma (ChT) has recently become an important variable of study in the field of psychosis given its importance in the appearance of psychosis (Mittal and Walker, 2019; Stanton et al., 2020; Vila-Badia et al., 2021). Given its importance, a growing body in the literature is considering childhood trauma as a potential predictor of outcome. However, although the links between childhood trauma and suicide have been explored in samples of patients with schizophrenia and other psychotic disorders, it has rarely received attention in samples of first-episode psychosis. This is surprising given the alarming prevalence of suicide risk and the high rates of ChT in people with FEP. Another unexplored topic in the literature concerns the different types of childhood trauma and suicidal behavior. The few available studies have reported conflicting results: Mohammadzadeh et al. (2019) found that only emotional abuse and physical neglect were associated with suicidal ideation in people with schizophrenia, while (Schmidt et al., 2017) found that sexual abuse and emotional neglect were associated with suicide risk, but emotional abuse and neglect were associated with suicide ideation in participants at clinical high risk for psychosis. A possible reason for these discrepancies is that the measurement of both suicide risk and ChT are somewhat heterogeneous (Taylor et al., 2015; Vila-Badia et al., 2021) and tend to yield conflicting results (Kilicaslan et al., 2017; Togay et al., 2015).

Despite the alarming prevalence of suicide risk in people with FEP and the high rates of ChT in people with FEP, there is a dearth of studies exploring the relationship between the two variables in samples of a first-episode psychosis. Knowing the risk factors for suicidal behavior and the impact of childhood trauma on it, could point valuable strategies for intervention early at the FEP, while the window for recovery is wide. A prompt intervention could also be beneficial in improving the clinical course and prognosis of patients, and, moreover, in reducing suicidal behavior.

This study aims to: 1) compare suicide behavior between FEP and HC; 2) study the relationship between the five types of ChT and suicide risk in FEP controlling for confounding sociodemographic, clinical, and psychosocial variables.

2. Methods

We performed a descriptive, cross-sectional study. The sample was recruited as part of the PROFEP study, a longitudinal study that focuses in describing factors and variables that may influence the onset and the evolution of patients with FEP. Among the main objectives, the PROFEP study aims to investigate hormones and metabolic syndrome in FEP. To this aim, we need to detect baseline hormonal and metabolic levels. Therefore, patients that had been receiving medication for more than 15 days were excluded. Of note, this exclusion criteria concerns the whole PROFEP study, but not the present work in particular.

2.1. Participants

95 patients (29 females; 66 males) diagnosed with a FEP were recruited from the Mental Health care sector of Parc Sanitari Sant Joan de Déu and the Child and Maternal Hospital of Sant Joan de Déu. The inclusion criteria for the patients were: to be aged between 13 and 46 years old and to have suffered a FEP as defined by the presence of one of the next symptoms: delusional ideas, hallucinations, disorganized language, catatonic or disorganized behavior, and negative symptoms (alogia, aboulia, affective flattening) for at least one week and that they have not been taking antipsychotic medication for more than 15 days. Patients diagnosed with intellectual disabilities (Premorbid IQ<70), traumatic brain injury or a diagnosed pathology of the central nervous system (tumor, HIV, radiotherapy, etc.) were excluded from the study. The healthy control sample (HC) consisted of 92 (HC) volunteers were recruited (43 females; 49 males) from the social networks of Parc Sanitari Sant Joan de Déu. The exclusion criteria for HC were to have a current mental illness and to have a family history of psychosis.

2.2. Procedure

Patients were recruited from the acute adult psychiatric unit, the acute child and adolescent unit, and community mental health services. Patients were referred to the study by mental health professionals. Mental Health professionals gave an overview of the study to possible participants. Those interested in taking part in the study agreed for the research team to give them further information. Patients who received information from the research team and decided to participate were given an information sheet and signed a written informed consent.

A member of the research team assessed symptoms in the inpatient units to fully grasp positive symptoms before the antipsychotic medication took effect. The rest of the assessment took place when the assistance team considered that the patients were in conditions to understand the questions and were prepared to answer it. The research team consisted of 3 psychologists, trained in the administration of the scales and questionnaires with a good inter-rater reliability.

2.3. Ethical standards

The study was approved by the Research and Ethics Committee of Parc Sanitari Sant Joan de Déu and was carried out following the Declaration of Helsinki. All participants signed a written informed consent.

2.4. Instruments

All participants answered a sociodemographic questionnaire created. We collected data on age of onset, sex, marital status, years of education and current alcohol and cannabis (THC) use.

2.4.1. Primary outcomes

The Suicide Risk Scale of Plutchik (SRSP) (Plutchik et al., 1989; Rubio et al., 1998) is a self-report questionnaire of 15 questions with dichotomic answers (yes/no). A cut-off score of 6 determines whether there is suicidal risk. Suicide ideation was measured through item 13, and suicide attempt through item 15. Higher scores in the total scale indicate more risk of suicide behavior. The psychometric properties of the Spanish instrument have shown adequate internal consistency (Cronbach's alpha of 0.90).

The Childhood Trauma Questionnaire−Short Form (CTQ-SF) (Bernstein et al., 2003; Hernandez et al., 2013) is a 28-item self-administrated instrument for adults and adolescents that assesses child abuse and neglect restrospectively. The CTQ-SF assesses the following five types of child abuse: emotional, physical and sexual abuse, and emotional and physical neglect. Each scale is represented with five items that are scored on a 5-point Likert-type scale ranging from *never true to very often true.* The Spanish adaptation of the CTQ-SF showed adequate psychometric properties, with an internal consistency of each subscale ranging from 0.66 to 0.94.

2.4.2. Secondary outcomes

Assessments also included The Positive and Negative Syndrome Scale (PANSS) (Kay et al., 1987; Peralta and Cuesta, 1994), using the five-factor structure according to Emsley et al. (2003), the Personal and Social Performance scale (PSP) (Garcia-Portilla et al., 2011; Morosini et al., 2000), and Perceived Stress Scale (PSS) (Cohen et al., 1983; Remor, 2006).

Finally, a dichotomous variable was created to determine the presence of depression. We used the cut-off point of 5 on the Calgary Depression Scale for Schizophrenia scale (CDSS) (Addington et al., 1990; Sarró et al., 2004) in participants with FEP older than 17 years of age and a cut-off point of 19 on the scale of The Children Depression Inventory (CDI) (Del Barrio and Carrasco, 2004; Kovacs, 1992) for children and adolescents (<18 years).

Sex, age of onset of psychosis, years of education and cannabis and alcohol consumption were also used as secondary outcomes.

2.5. Statistical analysis

Statistical analyses were conducted through the Statistical Package for Social Sciences (SPSS), version 22 (IBM Corp.; Armonk, NY). Statistical significance was established at $p<0.05$. Sociodemographic and clinical categorical variables were described with contingency tables and analyzed using the chi-square test, while continuous variables were presented as means with standard deviations (SD) and analyzed using Student's *t*-test. The normality assumption for numeric variables was tested using the Kolmogorov-Smirnov test. Finally, we used hierarchical logistic regression to study the influence of ChT over suicidal behavior in FEP. As dependent variables we included: suicide ideation, suicide attempt and suicide risk. As predictors, we included each ChT subscale in the first block. In the second block, we included all the variables that the literature had identified as possible predictors of suicidal behavior: sex, age of onset of psychosis, years of education, psychotic and depressive symptoms, perceived stress, personal and social functioning, and cannabis and alcohol use.

3. Results

3.1. Sociodemographic, clinical, and psychosocial characteristics

Sociodemographic, clinical, and psychosocial characteristics of the sample are reported in Table 1. In terms of sociodemographic characteristics, the sample of patients with FEP consisted of more men, more single patients, and fewer years of education than healthy controls. Patients presented worse personal and social functioning, more consumption of alcohol and cannabis, and higher scores in perceived stress than healthy controls. Finally, patients with FEP presented more childhood trauma than HC.

FEP= first-episode psychosis; HC= healthy controls; X^2=Pearson chi-square test; *t*=Student's *t*-test; CTQ= childhood trauma questionnaire; PANSS= positive and negative syndrome scale

3.2. Suicidal behavior

Data on suicidal behavior is presented in Table 2. We observed significant differences in all the variables. Patients with FEP reported higher scores in suicidal ideation and scored higher in behaviors of suicide risk.

FEP= first-episode psychosis; HC= healthy controls; X^2=Pearson chi-square test; SRSP= Suicide Risk Scale of Plutchik

3.3. Relationship between suicide risk and ChT in FEP

Results of the hierarchical logistic regression analysis are reported in Table 3.

Emotional abuse emerged as the strongest predictor of suicide ideation and suicide risk. After controlling for sex, age of onset of psychosis, years of education, psychotic and depressive symptoms, perceived stress, personal and social functioning, and cannabis and alcohol use we found that perceived stress was a strong predictor of suicide ideation, suicide attempt and suicide risk. Depression did not have any effect in suicide behavior.

Table 2
Percentages and differences in suicidal behaviors between FEP and healthy controls.

	FEP (*N* = 95)	HC (*N* = 92)	X2/t (p-value)	Cramer's V /Cohen's D
Suicidal ideation, *yes (n,%)*	49 (51.6%)	26 (28.3%)	10.579 (**0.001**)	.238
Suicide attempt, *yes (n,%)*	17 (17.9%)	0 (0%)	18.109 (**<0.001**)	.311
Suicide risk, *yes (n,%)*	44 (46.3%)	14 (15.2%)	21.126 (**<0.001**)	.336
Total score SRSP, *Mean (SD)*	5.20 (2.875)	2.47 (2.226)	7.251 (**<0.001**)	1.060

Table 1
Sociodemographic characteristics of 95 patients with first-episode psychotic and 92 healthy controls.

			FEP (*N* = 95)	HC (*N* = 92)	X^2/t(p-value)	Cramers's V/ Cohen's d
Sex, n (%)		Females	29 (30.5%)	43 (46.7%)	5.188 (**0.023**)	.167
		Males	66 (69.5%)	49 (53.3%)		
Marital status, n (%)		Single	85 (89.5%)	70 (76.1%)	8.764 (**0.012**)	**.217**
		Married/Couple	7 (7.4%)	21 (22.8%)		
		Divorced	2 (2.1%)	1 (1.1%)		
Education (years), n (%)		5–8	20 (21%)	5 (5.4%)	48.531 (**<0.001**)	
		9–12	53 (55.8%)	19 (20.7%)		.509
		>12	22 (23.2%)	68 (73.9%)		
Drug consumption, n (%)		Alcohol (yes)	49 (51.6%)	67 (72.8%)	8.697 (**0.013**)	.218
		THC (yes)	54 (56.8%)	19 (20.6%)	27.817 (**<0.001**)	.389
Aged, Mean (SD)			23.19 (7.79)	23.95 (8.26)	-0.644 (0.520)	.094
Depression, *yes* n (%)			25 (26.3%)	5 (5.3%)	15.931 (**<0.001**)	.294
Perceived stress, *Mean (SD)*			30.53 (9.70)	23.52 (8.27)	5.178 (**<0.001**)	.778
Personal and social performance, Mean (SD)			48.88 (17.33)	93.82 (5.32)	-22.977 (**<0.001**)	-3.497
CTQ, Mean (SD)	Emotional abuse		11.11 (5.07)	8.05 (3.43)	4.794 (**<0.001**)	
	Physical abuse		7.20 (3.31)	5.53 (1.21)	4.570 (**<0.001**)	
	Sexual abuse		6.19 (2.45)	5.38 (1.13)	2.908 (**0.004**)	
	Emotional neglect		10.62 (4.43)	8.30 (3.11)	4.102 (**<0.001**)	
	Physical neglect		7.85 (2.95)	5.80 (1.67)	5.835 (**<0.001**)	
PANSS Emsley factors, Mean (SD)		Negative	21.46 (8.26)			
		Disorganized	17.92 (6.27)			
		Positive	24.29 (5.60)			
		Excited	11.34 (5.23)			
		Anxiety/depressed	14.13 (5.44)			

Table 3
Effect of studied variables (B standard; sig.) on suicidal behavior in FEP sample.

		Ideation	Attempt	Suicide Risk (si/no)	Suicide Risk (num.)
Step 1					
Emotional abuse	ß	.316		.303	.271
	t	2.518		2.402	2.122
	p	.015		.020	.038
F (model significance); p-value		6.341 (0.015)		5.769 (0.020)	4.502 (0.038)
R^2		.100		.092	.073
Step 2					
Emotional abuse	ß	.235		.154	.131
	t	1.838		1.337	1.098
	p	.071		.187	.277
Perceived Stress	ß	.275	.329	.501	.470
	t	2.159	2.633	4.341	3.940
	p	.035	.011	<0.001	<0.001
F (model significance); p-value		5.705 (0.006)	6.935 (0.011)	13.211 (<0.001)	10.585 (<0.001)
R^2		.169	.093	.321	.248

Notes: β=standardized regression coefficient; *t*=obtained t-value for each predictor variable; *p*=probability; *F*=obtained F-value for the regression model; R2 =proportion of variance explained.

4. Discussion

The first goal in the present study was to compare suicide behavior between people with FEP and HC. Consistent with previous literature (Dutta et al., 2010; Falcone et al., 2010; Zhang et al., 2018), people with FEP show higher scores in suicidal ideation, suicide attempts and suicide risk, as well as higher scores on the total Plutchik Suicide Risk Scale.

As a second objective, we aimed to study the relationship between the five types of ChT and suicide phenomena in FEP controlling for the following confounding variables: sex, age of onset of psychosis, years of education, psychotic and depressive symptoms, perceived stress, personal and social functioning, and alcohol and cannabis use. Our results indicate that emotional abuse was the most important childhood trauma related with suicide behavior, especially with suicide ideation and suicide risk. In this sense, previous literature has suggested a causal link between emotional abuse and suicide risk in the general population (Norman et al., 2012; de Araújo and Lara, 2016; Lee, 2015). Although the data on this association in patients with psychosis is scarce, our results are consistent with Mohammadzadeh et al. (2019), who also found a relationship between emotional abuse and suicide risk in a sample of patients with established psychosis, while Cui et al. (2020) found the same association in a sample of participants with FEP.

We did not find evidence that suggests that other types of traumatic events in childhood may predict suicidal behavior, what is discrepant with previous research (Bani-Fatemi et al., 2016; Cui et al., 2020; Mohammadzadeh et al., 2019). A possible explanation for this inconsistency with the literature is that we considered all types of child abuse, but most of the previous studies focused in a specific type of traumatic event.

Perceived stress emerged as a strong predictor of suicide risk at the onset of FEP. Higher levels of perceived stress were related with most aspects of suicide behavior, such as suicide attempt and suicide ideation. This was an expected finding since previous literature had already identified this association (Chen and Kuo, 2020; Klonsky et al., 2018). Interestingly, the effect of perceive stress removes the association between emotional abuse and suicidal behavior. This means that the stress suffered by a person at a particular moment is what makes the person to perform the suicidal act. Lardinois et al. (2011) suggested that people who suffer from psychosis and have been subjected to traumatic events during childhood are more vulnerable to experience greater emotional reactivity, what is perceived as stress in everyday situations.

Depression has been one of the most studied variables in relation to suicidal behavior, with great agreement on its impact on suicidal behavior(Challis et al., 2013; Coentre et al., 2017; Sher and Kahn, 2019). Therefore, the lack of association between depression and suicidal behavior in our sample was a surprising finding. Possibly, the discrepancies are rooted in that previous studies did not control for the same confounding variables as we did, and most of them did not take ChT into account. In particular, those studies did not control for perceived stress, which, according to our results, is a crucial variable in understanding suicidal behavior.

We found that age, sex, years of education, alcohol and cannabis consumption, psychotic symptoms and social and personal functioning were not relevant in explaining suicide behavior. The literature has shown controversial results in terms of the relationship between these variables (Barrett et al., 2010; Challis et al., 2013; Lopez-Morinigo et al., 2019; McLafferty et al., 2019; Zhang et al., 2018), although it is likely that these discrepancies are due to the confounding variables that each study controlled for.

In conclusion, our results suggest that emotional abuse is the traumatic event in childhood that most influences suicidal behavior, while the stress that the person experiences at the present moment, along with emotional abuse, explains an increase in suicidal ideation and risk. Finally, perceived stress emerged as the only predictor for suicide attempt.

4.1. Strength, limitations and future research

To our knowledge, this is the first study to analyze the impact of childhood trauma on suicidal behavior that controlled for multiple confounding variables in a sample with FEP.

This study has some limitations: First, the Suicide Risk Scale of Plutchik is a self-reported dichotomous scale, and does not collect specific and relevant information (e.g. number of suicide attempts, reasons associated with a suicide attempt, etc.).

Second, the self-report bias and retrospective assessment of childhood trauma may pose significant conflict in accurately evaluating trauma. Finally, the healthy control group was not matched with the patient group given that there is a higher prevalence of men with FEP and, at the same, we found difficulties in recruiting male controls.

Future research should assess the impact of childhood trauma in suicide behavior through longitudinal studies. Further, future studies should also consider possible protective factors, such as resilience and coping strategies. Finally, investigating the efficacy of interventions focusing on suicide and childhood trauma is encouraged.

4.2. Recommendations and clinical considerations

Clinicians should not only aim for primary prevention of suicide risk and behavior but have to incorporate the assessment and prevention of suicide and traumatic experiences as a common and recurring practice. Professionals who work with vulnerable people that have a high risk of suicide must be aware not to underestimate these phenomena, as they are often not spontaneously reported during clinical interviews. To this aim, it is essential that mental-health professionals receive training in exploring and intervening suicide risk and childhood trauma, as well as in the management of perceived stress and anxiety.

Author statement

RVB and MD conducted the literature review, collected data, assisted with the analysis, wrote the first draft of the manuscript and handled subsequent drafts after receiving coauthors feedback. CSA and JU assisted and reviewed the second draft of the manuscript. The rest of coauthors collected data and commented on drafts. PROFEP Group collected the data and revised the manuscript. All of the authors contributed to the final version of the paper.

Data availability statement

The corresponding author provides the dataset used in this study upon request.

Declaration of Competing Interest

None.

Acknowledgements

We thank all participants who took part in the study and their clinicians at the recruiting mental health centers. This study was supported by the Spanish Ministry of Health Carlos III, research grant number PI17/00111 and a research personal grant number FI18/00028.

References

Addington, D., Addington, J., Schissel, B., 1990. A depression rating scale for schizophrenics. Schizophr. Res. 3 (4), 247–251. https://doi.org/10.1016/0920-9964(90)90005-R.

Bani-Fatemi, A., Graff, A., Zai, C., Strauss, J., De Luca, V., 2016. GWAS analysis of suicide attempt in schizophrenia: main genetic effect and interaction with early life trauma. Neurosci. Lett. 622, 102–106. https://doi.org/10.1016/J.NEULET.2016.04.043.

Barbeito, S., Vega, P., Sánchez-Gutiérrez, T., Becerra, J.A., González-Pinto, A., Calvo, A., 2021. A systematic review of suicide and suicide attempts in adolescents with psychotic disorders. Schizophr. Res. 235, 80–90. https://doi.org/10.1016/j.schres.2021.07.029.

Barrett, E.A., Sundet, K., Faerden, A., Nesvåg, R., Agartz, I., Fosse, R., Mork, E., Steen, N. E., Andreassen, O.A., Melle, I., 2010. Suicidality before and in the early phases of first episode psychosis. Schizophr. Res. 119, 11–17. https://doi.org/10.1016/j.schres.2010.03.022.

Bernstein, D.P., Stein, J.A., Newcomb, M.D., Walker, E., Pogge, D., Ahluvalia, T., Stokes, J., Handelsman, L., Medrano, M., Desmond, D., Zule, W., 2003. Development and validation of a brief screening version of the Childhood Trauma Questionnaire. Child. Abuse Negl. 27, 169–190. https://doi.org/10.1016/S0145-2134(02)00541-0.

Challis, S., Nielssen, O., Harris, A., Large, M., 2013. Systematic meta-analysis of the risk factors for deliberate self-harm before and after treatment for first-episode psychosis. Acta Psychiatr. Scand. 127 (6), 442–454. https://doi.org/10.1111/acps.12074.

Chen, Y.L., Kuo, P.H., 2020. Effects of perceived stress and resilience on suicidal behaviors in early adolescents. Eur. Child. Adolesc. Psychiatry 29 (6), 861–870. https://doi.org/10.1007/S00787-019-01401-W.

Coentre, R., Talina, M.C., Góis, C., Figueira, M.L., 2017. Depressive symptoms and suicidal behavior after first-episode psychosis: a comprehensive systematic review. Psychiatry Res. 253, 240–248. https://doi.org/10.1016/J.PSYCHRES.2017.04.010.

Cohen, S., Kamarck, T., Mermelstein, R., 1983. A global measure of perceived stress. J. Health Soc. Behav. 24 (4), 385–396.

Zhang, X.Y., Du, X., Yin, G., Zhang, Y., Chen, D., Xiu, M., Wang, C., Zhang, R., Cassidy, R. M., Ning, Y., Huang, X., Soares, J.C., 2018. Prevalence and clinical correlates of and cognitive function at the time of suicide attempts in first-episode and drug-naive patients with Schizophrenia. J. Clin. Psychiatry. 79 (4), 17m11797 https://doi.org/10.4088/JCP.17m11797.

Courtet, P. (2018). Suicidal risk during the first psychotic episode. *L'Encephale*, 44(6S), S39–S43. Doi: 10.1016/S0013-7006(19)30078-8.

Cui, Y., Piao, Y.H., Kim, S.W., Lee, B.J., Kim, J.J., Yu, J.C., Lee, K.Y., Won, S.H., Lee, S.H., Kim, S.H., Kang, S.H., Kim, E., Kim, N., Chung, Y.C., 2020. Psychological factors intervening between childhood trauma and suicidality in first-episode psychosis. Psychiatry Res. 293 https://doi.org/10.1016/j.psychres.2020.113465.

de Araújo, R.M.F., Lara, D.R., 2016. More than words: the association of childhood emotional abuse and suicidal behavior. Eur. Psychiatry 37, 14–21. https://doi.org/10.1016/J.EURPSY.2016.04.002.

Del Barrio, V., & Carrasco, M. (2004). *CDI: inventario de Depresión Infantil.* (TEA Edicio).

Dutta, R., Murray, R.M., Allardyce, J., Jones, P.B., Boydell, J., 2010. Early risk factors for suicide in an epidemiological first episode psychosis cohort. Schizophr. Res. 126, 11–19. https://doi.org/10.1016/j.schres.2010.11.021.

Emsley, R., Rabinowitz, J., Torreman, M., RIS-INT-35 Early Psychosis Global Working Group, 2003. The factor structure for the Positive and Negative Syndrome Scale (PANSS) in recent-onset psychosis. Schizophr. Res. 61 (1), 47–57. https://doi.org/10.1016/s0920-9964(02)00302-x.

Falcone, T., Mishra, L., Carlton, E., Lee, C., Butler, R.S., Janigro, D., Simon, B., Franco, K., 2010. Suicidal behavior in adolescents with first-episode psychosis. Clin. Schizophr. Relat. Psychoses 4 (1), 34–40. https://doi.org/10.3371/CSRP.4.1.2.

Garcia-Portilla, M.P., Saiz, P.A., Bousoño, M., Bascaran, M.T., Guzmán-Quilo, C., Bobes, J., 2011. Validación de la versión española de la escala de Funcionamiento Personal y Social en pacientes ambulatorios con esquizofrenia estable o inestable. Rev. Psiquiatr. Salud. Ment. 4 (1), 9–18. https://doi.org/10.1016/j.rpsm.2010.11.003.

Gili, M., Castellví, P., Vives, M., de la Torre-Luque, A., Almenara, J., Blasco, M.J., Cebrià, A.I., Gabilondo, A., Pérez-Ara, M.A., Lagares, C., Parés-Badell, O., Piqueras, J.A., Rodríguez-Jiménez, T., Rodríguez-Marín, J., Soto-Sanz, V., Alonso, J., Roca, M., 2019. Mental disorders as risk factors for suicidal behavior in young people: a meta-analysis and systematic review of longitudinal studies. J. Affect. Disord. 245, 152–162. https://doi.org/10.1016/J.JAD.2018.10.115.

Harris, E.C., Barraclough, B., 1997. Suicide as an outcome for mental disorders. A meta-analysis. Brit. J. Psychiatry 170, 205–228. https://doi.org/10.1192/BJP.170.3.205.

Hernandez, A., Gallardo-Pujol, D., Pereda, N., Arntz, A., Bernstein, D.P., Gaviria, A.M., Labad, A., Valero, J., Gutiérrez-Zotes, J.A., 2013. Initial validation of the Spanish childhood trauma questionnaire-short form. J. Interpers. Viol. 28 (7), 1498–1518. https://doi.org/10.1177/0886260512468240.

Kay, S.R., Fiszbein, A., Opler, L.A., 1987. The positive and negative syndrome scale (PANSS) for schizophrenia. Schizophr. Bull. 13 (2), 261–276.

Kilicaslan, E., Esen, A., Kasal, M., Ozelci, E., Boysan, M., Gulec, M., 2017. Childhood trauma, depression, and sleep quality and their association with psychotic symptoms and suicidality in schizophrenia. Psychiatry Res. 258, 557–564. https://doi.org/10.1016/J.PSYCHRES.2017.08.081.

Klonsky, E.D., Saffer, B.Y., Bryan, C.J., 2018. Ideation-to-action theories of suicide: a conceptual and empirical update. Curr. Opin. Psychol. 22, 38–43. https://doi.org/10.1016/J.COPSYC.2017.07.020.

Kovacs, M. (1992). The Children's Depression Inventory (CDI) manual – ScienceOpen. In *Multi-Health Systems*.

Lardinois, M., Lataster, T., Mengelers, R., Van Os, J., Myin-Germeys, I., 2011. Childhood trauma and increased stress sensitivity in psychosis. Acta. Psychiatr. Scand. 123 (1), 28–35. https://doi.org/10.1111/J.1600-0447.2010.01594.X.

Lee, M.A., 2015. Emotional abuse in childhood and suicidality: the mediating roles of re-victimization and depressive symptoms in adulthood. Child. Abuse Negl. 44, 130–139. https://doi.org/10.1016/J.CHIABU.2015.03.016.

Lopez-Morinigo, J.D., Di Forti, M., Ajnakina, O., Wiffen, B.D., Morgan, K., Doody, G.A., Jones, P.B., Ayesa-Arriola, R., Canal-Rivero, M., Crespo-Facorro, B., Murray, R.M., Dazzan, P., Morgan, C., Dutta, R., David, A.S., 2019. Insight and risk of suicidal behaviour in two first-episode psychosis cohorts: effects of previous suicide attempts and depression. Schizophr. Res. 204, 80–89. https://doi.org/10.1016/J.SCHRES.2018.09.016.

López-Navarro, E., Del Canto, C., Mayol, A., Fernández-Alonso, O., Munar, E., 2018. Psychotic symptoms and quality of life: a mediation analysis of daily-life coping. Psychiatry Res. 262, 505–509. https://doi.org/10.1016/j.psychres.2017.09.034.

Madsen, T., Nordentoft, M., 2012. Suicidal changes in patients with first episode psychosis: clinical predictors of increasing suicidal tendency in the early treatment phase. Earl. Interv. Psychiatry 6 (3), 292–299. https://doi.org/10.1111/j.1751-7893.2011.00284.x.

McLafferty, M., Armour, C., Bunting, B., Ennis, E., Lapsley, C., Murray, E., O'Neill, S, 2019. Coping, stress, and negative childhood experiences: the link to psychopathology, self-harm, and suicidal behavior. Psych. J. 8 (3), 293–306. https://doi.org/10.1002/pchj.301.

Mittal, V.A., Walker, E.F., 2019. Advances in the neurobiology of stress and psychosis. Schizophr. Res. 213, 1–5. https://doi.org/10.1016/J.SCHRES.2019.08.030.

Mohammadzadeh, A., Azadi, S., King, S., Khosravani, V., Sharifi Bastan, F., 2019. Childhood trauma and the likelihood of increased suicidal risk in schizophrenia. Psychiatry Res. 275, 100–107. https://doi.org/10.1016/J.PSYCHRES.2019.03.023.

Morosini, P.L., Magliano, L., Brambilla, L., Ugolini, S., Pioli, R., 2000. Development, reliability and acceptability of a new version of the DSM- IV Social Occupational Functioning Assessment Scale (SOFAS) to assess routine social functioning. Acta Psychiatr. Scand. 101 (4), 323–329. https://doi.org/10.1034/j.1600-0447.2000.101004323.x.

Mortensen, P.B., Agerbo, E., Erikson, T., Qin, P., Westergaard-Nielsen, N., 2000. Psychiatric illness and risk factors for suicide in Denmark. Lancet 355 (9197), 9–12. https://doi.org/10.1016/S0140-6736(99)06376-X.

Nordentoft, M., Laursen, T.M., Agerbo, E., Qin, P., Høyer, E.H., Mortensen, P.B., 2004. Change in suicide rates for patients with schizophrenia in Denmark, 1981-97: nested case-control study. Br. Med. J. 329 (7460), 261–264. https://doi.org/10.1136/bmj.38133.622488.63.

Nordentoft, M., Madsen, T., Fedyszyn, I., 2015. Suicidal behavior and mortality in first-episode psychosis. J. Nerv. Ment. Dis. 203 (5), 387–392. https://doi.org/10.1097/NMD.0000000000000296.

Nordentoft, M., Mortensen, P.B., Pedersen, C.B., 2011. Absolute risk of suicide after first hospital contact in mental disorder. Arch. Gen. Psychiatry 68 (10), 1058–1064. https://doi.org/10.1001/ARCHGENPSYCHIATRY.2011.113.

Norman, R.E., Byambaa, M., De, R., Butchart, A., Scott, J., Vos, T., 2012. The long-term health consequences of child physical abuse, emotional abuse, and neglect: a systematic review and meta-analysis. PLoS Med. 9 https://doi.org/10.1371/journal.pmed.1001349.

Orri, M., Scardera, S., Perret, L.C., Bolanis, D., Temcheff, C., Séguin, J.R., Boivin, M., Turecki, G., Tremblay, R.E., Côté, S.M., Geoffroy, M.C., 2020. Mental health problems and risk of suicidal ideation and attempts in adolescents. Pediatrics 146 (1). https://doi.org/10.1542/PEDS.2019-3823.

Pelizza, L., Pompili, M., Azzali, S., Paterlini, F., Garlassi, S., Scazza, I., Chiri, L.R., Poletti, M., Pupo, S., Raballo, A., 2021. Suicidal thinking and behaviours in First Episode Psychosis: findings from a 3-year longitudinal study. Earl. Interv. Psychiatry 15 (3), 624–633. https://doi.org/10.1111/EIP.12994.

Peralta, V., Cuesta, M.J., 1994. Validation of positive and negative symptom scale (PANSS) in a sample of Spanish schizophrenic patients. Actas. Luso. Esp. Neurol. Psiquiatr. Cienc. Afines 22 (4), 171–177.

Plutchik, R., van Praag, H.M., Conte, H.R., Picard, S., 1989. Correlates of suicide and violence risk 1: the suicide risk measure. Compr. Psychiatry 30 (4), 296–302. https://doi.org/10.1016/0010-440X(89)90053-9.

Pompili, M., Serafini, G., Innamorati, M., Lester, D., Shrivastava, A., Girardi, P., Nordentoft, M., 2011. Suicide risk in first episode psychosis: a selective review of the

current literature. Schizophr. Res. 129 (1), 1–11. https://doi.org/10.1016/j.schres.2011.03.008.
Qin, P., Nordentoft, M., 2005. Suicide risk in relation to psychiatric hospitalization: evidence based on longitudinal registers. Arch. Gen. Psychiatry 62 (4), 427–432. https://doi.org/10.1001/ARCHPSYC.62.4.427.
Remor, E., 2006. Psychometric properties of a European Spanish version of the perceived stress scale (PSS). Span. J. Psychol. 9 (01), 86–93. https://doi.org/10.1017/S1138741600006004.
Rossau, C.D., & Mortensen, P.B. (1997). Risk factors for suicide in patients with schizophrenia: nested case-control study. *Brit. J. Psychiatry*, 171(OCT), 355–359. Doi: 10.1192/BJP.171.4.355.
Rubio, G., Montero, I., Jáuregui, J., Villanueva, R., Casado, M., Marín, J., Santo Domingo, J., 1998. Validación de la escala de riesgo suicida de Plutchik en población española. Archivos de Neurobiología 61 (2), 143–152.
Sarró, S., Dueñas, R.M., Ramírez, N., Arranz, B., Martínez, R., Sánchez, J.M., González, J. M., Saló, L., Miralles, L., San, L., 2004. Cross-cultural adaptation and validation of the Spanish version of the Calgary Depression Scale for Schizophrenia. Schizophr. Res. 68 (2–3), 349–356. https://doi.org/10.1016/S0920-9964(02)00490-5.
Schmidt, S.J., Schultze-Lutter, F., Bendall, S., Groth, N., Michel, C., Inderbitzin, N., Schimmelmann, B.G., Hubl, D., Nelson, B., 2017. Mediators linking childhood adversities and trauma to suicidality in individuals at risk for psychosis. Front. Psychiatry 8. https://doi.org/10.3389/FPSYT.2017.00242.
Sher, L., & Kahn, R.S. (2019). Suicide in schizophrenia: an educational overview. *Medicina (Kaunas)*, 55(7). Doi: 10.3390/MEDICINA55070361.
Stanton, K., Denietolis, B., Goodwin, B., Dvir, Y., 2020. Childhood trauma and psychosis: an updated review. Child. Adolesc. Psychiatr. Clin. N. Am. 29 (1), 115–129. https://doi.org/10.1016/J.CHC.2019.08.004.
Taylor, P.J., Hutton, P., Wood, L., 2015. Are people at risk of psychosis also at risk of suicide and self-harm? A systematic review and meta-analysis. Psychol. Med. 45 (5), 911–926. https://doi.org/10.1017/S0033291714002074.
Togay, B., Noyan, H., Tasdelen, R., Ucok, A., 2015. Clinical variables associated with suicide attempts in schizophrenia before and after the first episode. Psychiatry Res 229 (1–2), 252–256. https://doi.org/10.1016/j.psychres.2015.07.025.
Vila-Badia, R., Butjosa, A., Del Cacho, N., Serra-Arumí, C., Esteban-Sanjusto, M., Ochoa, S., Usall, J., 2021. Types, prevalence and gender differences of childhood trauma in first-episode psychosis. What is the evidence that childhood trauma is related to symptoms and functional outcomes in first episode psychosis? A systematic review. In: Schizophrenia Research, 228. Elsevier B.V., pp. 159–179. https://doi.org/10.1016/j.schres.2020.11.047
World Health Organization, 2014. Preventing suicide: A global Imperative. World Health Organization.

4. Discussió

Entendre el paper de les ETIs en l'aparició i evolució dels trastorns psicòtics pot ser clau per prevenir-los i alhora per promoure una millor qualitat de vida i recuperació de les persones que presenten un trastorn psicòtic.

Per altra banda, entendre els factors que poden ajudar a reduir les CS, ajudarà a evitar morts prematures, i alhora afavorirà el benestar emocional d'aquestes persones, i això es traduirà en una millora de la salut física i mental.

Tant les ETIs com les CS són dos variables que ens els últims anys han anat guanyat interès en el camp de la investigació de les persones que pateixin un PEP ja que tenen una important repercussió per a l'evolució, el pronòstic, la salut. Tot i així, encara queden preguntes obertes, sobretot en mostres específiques com és el cas de les persones que pateixen un PEP. Per aquest motiu, és necessari dur a terme més investigacions amb la finalitat de poder entendre el rol que tenen en els trastorns psicòtics i quins factors poden estar-hi relacionats. Sempre amb la única finalitat de millorar el tractament, el pronòstic i la qualitat de vida de les persones que pateixen un trastorn psicòtic.

5.1 Què en sabem del trauma infantil en els primer episodis psicòtics?

Un dels dos propòsits de la tesi va ser estudiar l'impacte de les ETIs en l'aparició d'un PEP, així com la relació d'haver patit una ETI amb les variables sociodemogràfiques, clíniques i funcionals a l'inici de la malaltia (estudi 2). Per aquest motiu, vàrem considerar rellevant la realització d'una revisió de tota la literatura científica prèvia sobre les ETIs i pacients amb un PEP (estudi 1). Això va permetre ampliar el nostre coneixement sobre aquesta temàtica i alhora, poder interpretar millor els nostres resultats.

5.1.1 Avaluació de les ETIs

La detecció i avaluació de les ETIs és el primer pas per poder tractar, intervenir i ajudar les persones que han patit una ETI, per aquest motiu és fonamental tenir unes bones eines i habilitats per dur a terme la detecció i avaluació.

En el nostre estudi es va decidir utilitzar el qüestionari CTQ-SF, una escala auto-administrada, que avaluava concretament les ETIs d'abús sexual, emocional i físic, i la negligència emocional i física.

La revisió sistemàtica (estudi 1) va mostrar que la majoria d'investigacions utilitzaven qüestionaris auto-administrats i que molt pocs utilitzaven entrevistes. De tots els qüestionaris el més utilitzat va ser la CTQ , concretament en 35 dels 68 articles inclosos en la revisió. En aquesta línia, Popovic i col·l., (155), van indicar que el camp de la investigació del trauma infantil és habitual avaluar aquestes experiències traumàtiques mitjançant qüestionaris autoinformats, i d'acord amb Viola i col·l., (156), on va afirmar que la CTQ era l'instrument més utilitzat per avaluar les ETIs. Això probablement es deu al fet que els qüestionaris són econòmics, pràctics, ràpids, escalables i menys sensibles al biaix investigador.

Algunes investigacions han posat de manifest que els resultats d'autoinformes retrospectius, com el CTQ-SF, poden estar influenciats per errors de memòria i per l'estat psicopatològic dels i les participants (157), qüestionant així la seva validesa. Per aquesta raó s'han realitzat estudis per donar resposta a aquest possible biaix. Aquests estudis van realitzar una prova re-test del CTQ-SF en pacients amb esquizofrènia administrant-lo en un període posterior de dos (157) a quatre setmanes (158), fins i tot 11 mesos després (159), i va mostrar una excel·lent fiabilitat. Per tant, l'ús de qüestionaris retrospectius pot ser una bona opció per avaluar les ETIs en pacients amb psicosi.

Per tant, la revisió sistemàtica va avalar l'ús de la CTQ per a l'avaluació de les ETIs en els articles de la present tesi.

Tot i així, a mesura que administràvem l'escala CTQ en el nostre estudi, ens vàrem adonar d'algunes dificultats que presentava el fet d'administrar un qüestionari auto-administrat i que ens vàrem portar a fer canvis tant en la pròpia escala com en el procediment de la seva administració. Per una banda, vam considerar important que durant la complementació de l'escala CTQ sempre hi hagués davant del o la participant personal investigador o clínic. Això va ser degut al fet que moltes persones varen explicar per primera vegada situacions d'ETIs a l'administrar l'escala. Per aquest motiu, vam considerar que era important repassar les respostes del qüestionari un cop complementat i demanar, en cas de reportar alguna ETI, si era la primera vegada que ho explicaven, i si en volien parlar. A més a més,

també es va animar que ho expliquessin al personal clínic referent. En alguns casos també ens varen demanar que fóssim nosaltres qui ho expliquéssim al o a la psiquiatra.

Per altra banda, una altra dificultat que ens vàrem trobar va ser que alguns i algunes de les participants deixaven en blanc o donaven respostes inconsistents als ítems que formaven l'escala d'abús sexual. Per evitar que es sentissin forçats i forçades a contestar ítems dels qüestionari, i alhora que les seves respostes poguessin suposar un biaix per a la investigació, es va decidir incorporar al final del qüestionari la següent pregunta: "He viscut alguna de les experiències anterior però no ho vull dir". D'aquesta manera, les respostes les persones que contestaven positivament a aquesta pregunta no s'incloïen en les anàlisis estadístiques. Cal destacar, que quan es feia la visita de seguiment de l'estudi, es tornava a administrar aquesta escala, per tal de mirar si el vincle establert amb el personal investigador ajudava a obtenir respostes vàlides al qüestionari.

No obstant, tot i que l'escala CTQ ha mostrat ser útil en la investigació de les ETIs en pacients amb un PEP, hem de tenir present que les entrevistes tenen com a avantatge l' obtenció de dades qualitatives, i que per tant, ens permeten aprofundir més en les ETIs, com ara preguntar per l'edat, sentiments i emocions previs i posterior a l'experiència, canvis en les relacions després d'haver patit la ETI... i alhora ens donen més flexibilitat per poder realitzar preguntes més focalitzades i que permetin fer sentir més còmoda a la persona. Així doncs, dependrà de l'objectiu d'estudi decidir quin és el millor mètode a utilitzar per a l'avaluació de les ETIs.

5.1.2.Prevalença i tipus de ETIs en PEP.

Els resultats de l'estudi 2, van mostrar que el 59% dels i les pacients amb un PEP de la nostra mostra van reportar haver experimentat alguna ETI, incloent com a experiències traumàtiques infantils: l'abús sexual, físic, i emocional i la negligència física i emocional Aquest percentatge va ser l'esperat, tenint present que en la revisió sistemàtica prèvia la mitjana dels estudis que la conformaven situaven les ETIs en persones amb un PEP entre el 52 i el 73%.

En aquest estudi també es va comparar les ETIs entre pacients amb un PEP i una mostra de persones control sanes. Els i les pacients amb un PEP, respecte a la mostra control, van

reportar de forma significativa haver experimentat més ETIs en general. Resultats congruents amb la revisió realitzada prèviament, on els diferents estudis trobaven major prevalença de ETIs en els i les pacients amb un PEP que en la mostra control (100,160–162). Aquesta troballa va donar suport al model de diàtesi-estrès neural que postula que la probabilitat de desenvolupar una malaltia mental dependrà tant d'una vulnerabilitat genètica com de la influència de l'estrès que ha d'afrontar un individu (163). Aquest model és coherent amb una metaanàlisi de Hughes i col·l., (164), que va concloure que les experiències traumàtiques són un dels factors de més risc per desenvolupar una malaltia mental. Tanmateix, viure un esdeveniment traumàtic té un impacte més elevat si es produeix durant la infància (62,63).

Centrant-nos en les ETIs de forma específica, l'estudi 2 va mostrar que els i les pacients amb un PEP van informar d'haver patit més abús físic i emocional, i més negligència física i emocional que les persones control, resultats congruents amb la literatura anterior (37,81,165–167). Tot i que no vam trobar diferències significatives en l'abús sexual, la mida de l'efecte de la diferència entre mitjanes va ser propera al 0.3, cosa que ens va indicar un efecte moderat. Tot i que molts estudis han informat que l'abús sexual és més freqüent en pacients amb un PEP, alguns estudis han donat percentatges similars als de la població general (168–170). Tanmateix, la majoria de la investigació amb un PEP inclou l'abús sexual i l'abús físic sota el mateix paraigua. A més, diverses investigacions han informat que les víctimes d'abús sexual durant la infància poden ser reticents a denunciar la seva victimització, i per tant, això fa que la seva prevalença i detecció estigui infravalorada i això fa que l'abús sexual passi desapercebut i s'emmascari d'aquesta manera, la veritable prevalença (171,172). No obstant això, cal destacar l'elevada prevalença d'abús sexual que han patit tant els i les pacients amb un PEP com la mostra control del nostre estudi. Tenint en compte l'impacte de l'abús sexual en la infància en la salut mental (173), s'ha de treballar per millorar la seva detecció i comprendre'n les seves implicacions. En el nostre estudi, vam donar als i les participants l'oportunitat d'informar que havien patit una ETI sense l'obligació de revelar els detalls, el que creiem que ens ha permès detectar i acostar-nos a la veritable prevalença de cada tipus d'ETIs.

5.1.3 Relació de les ETIs amb variables sociodemogràfiques, clíniques i funcionals en persones que han patit un PEP.

Els resultats de l'estudi 2, centrat en estudiar quines variables sociodemogràfiques, clíniques i psicosocials a l'inici del PEP es relacionaven amb el fet d'haver patit una ETI, van mostrar algunes relacions entre aquestes variables.

Tenint present les variables sociodemogràfiques recollides en el nostre estudi, es va trobar una relació entre el fet d'haver patit una ETI i els anys d'educació. Curiosament, els i les pacients amb més anys d'educació van reportar haver patit més abús emocional durant la infància. Entre les formes més comunes d'abús emocional es troben l'assetjament escolar (20%) i el ciberassetjament escolar (16%) (174). Tot i no haver explorat aquests tipus específics d'abús, pensem que passar més temps en un entorn educatiu pot augmentar la probabilitat d'experimentar aquests tipus d'abusos durant més temps. Com que l'assetjament escolar provoca efectes adversos tant per a la salut física com mental i tant a curt com a llarg termini (175–177), les persones que han patit assetjament escolar poden ser una mostra de risc per al desenvolupament d'una malaltia mental, entre aquestes, els trastorns psicòtics.

Una altra variable que va mostrar relació amb el fet d'haver patit una ETI va ser tenir un familiar de primer grau (pare o mare) amb una malaltia mental. Especialment es va relacionar amb les ETIs abús emocional i físic. La malaltia mental del pare i/o la mare es considera una experiència adversa forta (178), i diferents estudis han suggerit que els pares i mares que tenen una malaltia mental poden mostrar una capacitat reduïda per mantenir els seus fills i filles segures, augmentant per tant la seva vulnerabilitat a l'abandonament i a l'abús (178–181). Per aquest motiu, és important que es continuïn realitzant intervencions multi-familiars, on a través de la psicoeducació, de l'entrenament en habilitats i en tècniques de regulació emocional, entre d'altres, ajuden aquests pares i mares a obtenir les eines necessàries per donar cura i poder cobrir les necessitats bàsiques, ja siguin físiques i/o emocionals dels seus fills i filles (182).

Pel que fa a les variables clíniques del nostre estudi, una de les variables que va mostrar una relació amb haver patit alguna ETI va ser una edat més jove d'inici de la psicosi. Aquesta és una troballa important perquè una edat més primerenca d'inici de la psicosi s'associa a més hospitalitzacions, més símptomes negatius, més recaigudes, un pitjor funcionament

(183), així com amb pitjors predictors de funcionament, com la cognició social i la neurocognició (184,185).

En referència a la simptomatologia present a l'inici del PEP, haver experimentat una ETI es va relacionar amb la presència de més símptomes positius, negatius i d'excitació. En la revisió sistemàtica duta a terme prèviament només es va trobar una forta associació entre les ETIs i els símptomes positius, concretament en les al·lucinacions i els deliris (84,166,186–189). Els models cognitius han plantejat que certes ETIs culturalment inacceptables i les seves interpretacions són la base de les al·lucinacions i els deliris (190,191). Aquests resultats posen de manifest que haver viscut alguna ETI podria estar relacionat amb la presentació de determinada simptomatologia, i que per tant, la remissió d'aquesta podria estar associada a un bon abordatge terapèutic de les ETIs.

Una major percepció d'estrès per part dels i les pacients també es va relacionar amb el fet d'haver patit una ETI. L'estrès s'ha mesurat en la majoria d'investigacions a través de mesures fisiològiques, com els nivells de cortisol o la freqüència cardíaca i no amb qüestionaris. No obstant això, estudis en població adulta han confirmat nivells més alts d'estrès percebut en adults que han experimentar trauma durant la infància (192–194). Els nostres resultats són coherents amb Lardinois i col·l., (195), que van suggerir que les persones que pateixen psicosi i tenen antecedents d'esdeveniments traumàtics durant la infància poden ser més propenses a experimentar una major reactivitat emocional i un major nivell d'estrès en situacions quotidianes.

Una altra variable clínica relacionada amb el fet d'haver patit una ETI va ser l'obtenció de puntuacions més altes en l'escala SRSP que avalua el risc suïcida. Concretament es va relacionar amb la ETI negligència física, suggerint que els i les pacients amb un PEP que van tenir una mala supervisió de les persones cuidadores a l'hora de cobrir les seves necessitats físiques bàsiques com ara menjar, allotjament, roba, seguretat i atenció sanitària tenen un risc més elevat de conductes suïcides en l'adolescència i edat adulta(196–199). Són necessaris més estudis sobre les ETIs i el risc suïcida ja que prevenir el suïcidi és especialment important en aquests i aquestes pacients, ja que és especialment alt durant aquesta etapa de la malaltia (117,119).

Finalment, una durada més llarga de psicosi no tractada (DUP) també es va relacionar amb el fet d'haver patit una ETI, en concret amb la negligència física. Atès que la part de

negligència física de l'escala CTQ se centra principalment en les relacions familiars, la nostra interpretació és que patir negligència física en la infància pot provocar una falta de confiança en les figures més pròximes que poden prestar-te més atenció i que impedeix una demanda primerenca d'ajuda mèdica.

Els resultats del segon estudi, ens donen dos tipus d'informació sobre variables relacionades amb les ET. Per una banda, variables que són prèvies a l'aparició del PEP, com per exemple, tenir un familiar de primer grau amb un trastorn mental, tenir més anys d'educació, l'edat d'inici de la psicosi i la DUP. Aquesta informació ens posa de manifest poblacions de risc a les quals poder fer prevenció i detecció precoç de les ETIs. Per exemple, tal com s'ha comentat anteriorment és important realitzar intervencions en pares i mares amb un trastorn mental i els seus fills i filles per evitar que es donin situacions de risc per als infants, i seguir promovent i realitzant intervencions en les escoles, ja sigui als i les alumnes com al professorat, per detectar i prevenir l'abús emocional tant freqüent en aquests contextos. Per altra banda, també ens dona informació sobre variables més relacionades amb l'inici d'un PEP i que per tant, són importants per a la millora del curs i del benestar de les persones que han patit un PEP. Per exemple, crear abordatges específics dirigits a les persones que han patit una ETI en els centres de salut mental podria afavorir una millora de la simptomatologia psicòtica positiva, reduir les conductes suïcides i els nivells d'estrès percebut.

5. 2 Què en sabem de les conductes suïcides en els primer episodis psicòtics?

El suïcidi és un dels principals contribuents a la morbiditat i mortalitat dels trastorns psicòtics, especialment en pacients amb el primer episodi de psicosi (FEP) (200–202). Concretament, les taxes de suïcidi dels subjectes FEP són 2,7 vegades més altes que en les etapes cròniques de la malaltia (203). D'aquí la importància de detectar els primers pensaments suïcides en aquesta població d'alt risc i que les CS siguin una variable a tenir present en l'abordatge terapèutic d'aquests i aquestes pacients.

Per aquest motiu, en el tercer estudi d'aquesta tesi es va estudiar la prevalença de conductes suïcides en una mostra amb un PEP i es va comparar amb una mostra de persones sense cap malaltia mental. A més a més, es van estudiar les diferències de sexe i

quines variables sociodemogràfiques, clíniques i psicosocials influïen en aquestes conductes.

En comparació amb la mostra control, els i les pacients van presentar més CS (ideació, intent, més risc de suïcidi i puntuacions globals més altes a l'escala total de risc de suïcidi de Plutchik), resultats congruents amb investigacions anteriors (120,204,205). Concretament, el 47% dels i les pacients amb un PEP presentaven ideació suïcida i el 17% van realitzar algun intent de suïcidi al llarg de la seva vida.

Pel que fa a les diferències de sexe no es varen trobar diferències en les CS ni en la mostra amb un PEP ni en la mostra control. Tenint present que les diferències de sexe en la presentació i l'evolució de la psicosi han estat ben descrites (206–208) és probable que les diferències de sexe en les CS s'hagin d'estudiar a la llum dels factors de risc específics del suïcidi.

L'alta prevalença de CS trobada en la nostra mostra posa de manifest la importància d'implementar intervencions de prevenció del suïcidi en persones amb primer episodi de psicosi des del primer contacte amb els serveis de salut mental (124).

Pel que fa a l'avaluació de les CS, com s'ha comentat en la introducció gran part de les investigacions que es centren en estudiar el suïcidi en pacients amb un PEP, ho fan a través de puntuacions totals que mesuren el risc suïcida o bé estudiant específicament la ideació o els intent suïcides i a través de preguntes dicotòmiques. Molt poques investigacions utilitzen entrevistes. Per aquest motiu la utilització de l'escala de risc suïcida de Plutchik en els nostres estudis sembla útil per avaluar el suïcidi en aquests i aquestes pacients ja que ens aporta una puntuació total de risc per al suïcidi, i informació sobre si hi ha hagut o no ideació i intents suïcides.

5.2.1 Relació de les CS amb variables sociodemogràfiques, clíniques i funcionals en persones que han patit un PEP.

En el tercer estudi d'aquesta tesi es va voler estudiar quines variables sociodemogràfiques, clíniques i psicosocials influïen en les CS.

Pel que fa a la relació entre variables sociodemogràfiques i les CS, l'edat es va relacionar amb la ideació suïcida i amb l'intent de suïcidi, la qual cosa dona suport a la importància de

la conscienciació del suïcidi en les poblacions més joves i de la realització d'intervencions enfocades a la prevenció en escoles i instituts (111,118,124,209).

Pel que fa a les variables clíniques i les CS, els símptomes depressius (puntuació total de CSD i desesperança), i l'estrès percebut van ser les dues variables que van mostrar una relació i importància en les CS. Els resultats pel que fa a la depressió van ser una troballa esperada tenint en compte la investigació acumulada sobre la importància de la depressió en les CS (108,117,119,123,129,210). Per tant, avaluar i tractar la depressió en persones amb un PEP hauria de ser un dels objectius diana per tal de prevenir les CS. Pel que fa a l'estrès percebut es va relacionar amb la ideació suïcida i una major presència de risc de suïcidi, tal com van mostrar estudis anteriors (211–213). L'adolescència i la joventut són dos períodes de desenvolupament en què es produeixen la majoria dels canvis personals i socials, la qual cosa fa que es puguin donar un gran nombre d'esdeveniments vitals estressants que poden produir alts nivell d'estrès i causar un impacte emocional en la persona (214,215). Paral·lelament, són períodes en què la personalitat encara es desenvolupa, la qual cosa fa que les estratègies d'afrontament i de regulació emocional no estiguin del tot consolidades. La interacció entre diversos esdeveniments vitals estressants i estratègies d'afrontament i regulació insuficients poden provocar un augment de les situacions estressants, un alt estrès percebut o una disminució de l'estat d'ànim. Com que aquestes variables s'han relacionat amb la conducta suïcida (216–218), els i les joves poden ser molt vulnerables i són una diana clara on realitzar-se intervencions de prevenció del suïcidi.

5.3 Quina és la importància de les ETIs en les CS en els i les pacients amb un PEP?

Degut a la importància en la salut mental de les dues variables d'estudi d'aquesta tesi, i la relació trobada en l'estudi 2 entre les ETIs i la puntuació total de l'escala de risc suïcida, es va voler aprofundir més en l'estudi d'aquestes dos variables de forma conjunta. Per tant, en el quart estudi d'aquesta tesi es pretenia estudiar l'impacte de les ETIs en les CS.

Després de controlar per diferents variables de confusió, com el sexe, l'edat d'inici de la psicosi, els anys d'educació, els símptomes psicòtics i depressius, la funcionalitat, el consum d'alcohol i cànnabis i l'estrès percebut, els resultats van indicar que l'abús emocional va ser el trauma infantil més important relacionat amb les CS, concretament amb la ideació

suïcida i el risc de suïcidi. En aquest sentit, la literatura anterior ha suggerit una relació causal entre l'abús emocional i el risc de suïcidi tant en la població general (197,198,219), com en pacients amb psicosi (220) com en pacients amb un PEP (140).

L'estrès percebut va sorgir com un fort predictor de les CS a l'inici del PEP. Els nivells més alts d'estrès percebut es van relacionar amb totes les CS estudiades. L'efecte d'una major percepció d'estrès va fer que l'abús emocional deixés de ser una variable significativa en el model de predicció de les CS. Lardinois i col·l., (195) van suggerir que les persones que pateixen psicosi i han estat sotmeses a ETIs són més vulnerables a experimentar una major reactivitat emocional, el que es percep com a estrès en situacions quotidianes.

Comparant els resultats de l'article 3 i 4. Podem veure que la depressió que ha estat una de les variables més estudiades en relació a la conducta suïcida, amb un gran acord sobre el seu impacte en la conducta suïcida (130,221,222) deixa de mostrar relació amb aquestes quan s'incorpora les ETIs en el model. Possiblement, les discrepàncies són degudes que els estudis anteriors no controlaven les mateixes variables de confusió que nosaltres, i la majoria d'ells no tenien en compte les ETIs. En particular, aquests estudis no van controlar l'estrès percebut, que, segons els nostres resultats, és una variable crucial per entendre les conducta suïcida.

Vam trobar que l'edat, el sexe, els anys d'educació, el consum d'alcohol i cànnabis, els símptomes psicòtics i el funcionament social i personal van ser variables que no van explicar la conducta suïcida. La literatura ha mostrat resultats controvertits pel que fa a la relació entre aquestes variables (118,130,205,223,224), tot i que és probable que aquestes discrepàncies es deguin a les variables de confusió per les quals va controlar cada estudi. De fet en el tercer article d'aquesta tesi algunes d'aquestes variables si que mostren relació amb les conductes suïcides. Però com ja s'ha comentat, es deu al fet que no es tenia en compte les ETIs i també a les diferències metodològiques en les anàlisis estadístiques realitzades.

5. Limitacions

Hi ha algunes limitacions en el desenvolupament d'aquesta tesi doctoral que s'han de tenir en compte. Des d'un punt de vista general, cal esmentar les limitacions de l'avaluació i la detecció de les variables principals d'aquesta tesi, les ETIs i les CS.

Per a l'avaluació de les ETIs es va utilitzar l'escala CTQ que avalua l'abús físic, emocional o sexual i la negligència física i emocional. No es van incloure altres experiències traumàtiques en la infància com la pèrdua d'un progenitor, la separació dels progenitors o l'atenció institucional, entre d'altres. Per altra banda, cal destacar que l'escala CTQ és auto-administrada i l'avaluació es fa de forma retrospectiva i això pot suposar una dificultat significativa per avaluar amb precisió de les ETIs. No obstant això, aquesta és la manera com habitualment s'avaluen aquestes experiències. A més a més, les ETIs són un tema sensible i això pot fer que i les participants no se sentin còmodes al contestar el qüestionari o a voler-ho explicar. Per aquest motiu, es va afegir una pregunta al final del qüestionari CTQ per tal d'eliminar els casos que no havien respost.

Pel que fa a l'avaluació de les CS, l'escala Plutchik RS avalua si un subjecte té antecedents d'ideació suïcida, intents de suïcidi i el risc de realitzar un intent de suïcidi. La conducta suïcida és un fenomen ampli i amb aquesta escala no es mesuren altres dimensions del suïcidi, com ara les autolesions, les amenaces de suïcidi, la idea d'autolesió o l'autolesió sense intenció suïcida.

Una altra limitació és que no hem considerat aspectes ambientals com diferents circumstàncies culturals, socioeconòmiques, familiars i ètniques que poden influir en la percepció de l'estrès i en l'avaluació i vivència de les ETIs. També, com en gran part dels estudis, hi ha el biaix de selecció: els subjectes disposats a participar en un estudi poden ser diferents dels subjectes que es neguen a participar en la recerca. Finalment, no es van poder aparellar les mostres de casos i controls ni analitzar les diferències de sexe. Això es va deure per una banda, a la dificultat per reclutar controls masculins, i a l'alta prevalença d'homes en comparació amb les dones amb un PEP.

6. Perspectives clíniques

La present tesi posa de manifest la importància de la detecció per una banda de les ETIs i per l'altra de les CS.

Per que fa a les ETIs, la tesi ha posat de manifest la importància d'abordar les ETIs des de la prevenció primària amb l'objectiu de reduir o eliminar que nens, nens i adolescent pateixin aquestes experiències.

Les campanyes adreçades a la població en general, però sobretot a infants, professorat i personal assistencial, podrien ser beneficioses per sensibilitzar i donar estratègies de detecció. De la mateixa manera, els programes de prevenció secundària podrien ajudar els nens, nenes i adolescents que han viscut una ETI a reduir les probabilitats de desenvolupar un trastorn mental, com un trastorn psicòtic, inclús ajudar en la millora de la salut mental en general. Una aproximació necessària a les ETIs és crear més intervencions dirigides als nens i nenes i adolescents que han viscut una ETI i a les seves famílies. Aquestes intervencions han de tenir com a objectiu principals reduir el seu malestar i millorar la seva qualitat de vida i la seva salut física i emocional.

Finalment, és clau que tots i totes les professionals que tracten amb pacients amb un PEP rebin una formació especialitzada en l'avaluació i la detecció de les ETIs. Això permetrà derivar aquestes persones cap a les intervencions psicològiques més adequades.

Pel que fa a les CS, i atesa l'alta prevalença d'aquestes conductes en les mostres de pacients amb un PEP, és essencial que les CS s'avaluï rutinàriament i es considerin com un objectiu central del tractament. D'aquesta manera, considero rellevant també que les i els professionals assistencials que tracten amb persones amb un PEP rebin formació per detectar i intervenir en les CS.

En definitiva, tant les ETIs com les CS, són fenòmens que sovint no s'expliquen de forma espontània a les entrevistes clíniques. Per aquest motiu, és fonamental que els i les professionals de la salut mental rebin formació en l'exploració i intervenció del risc de suïcidi i el trauma infantil, així com de la gestió de l'estrès i percebut.

En els nostres estudis, l'estrès percebut ha estat una de les variables més relacionades tant amb les ETIs com en les CS, i això apunta que s'hagi de tenir en compte en les intervencions terapèutica. En aquest sentit, les intervencions dirigides a reduir i gestionar l'estrès podrien ser efectives per prevenir les CS i per millorar la clínica dels i les pacient que han patit una ETI.

7. Reptes i línies futures d'investigació

Algunes de les limitacions anteriors ens poden proporcionar recomanacions per a treballs futurs en relació amb les ETIs i les CS.

En primer lloc, futurs estudis haurien d'incloure i tenir present diferents aspectes culturals, socioeconòmics, familiars i ètnics que podrien influir en la percepció de l'estrès i en l'avaluació de les ETIs i les CS. La influència cultural en les principals variables d'estudi d'aquesta tesi i l'estigma associat a aquestes pot ser clau en la interiorització i expressió de les experiències, la gestió de les emocions i la culpabilitat, l'afrontament a noves situacions...podent exterioritzar diferents símptomes clínics i/o subclínics.

L'augment de la mostra i l'aparellament de casos amb controls permetria poder realitzar anàlisis més específiques i poder establir diferències de sexe. D'aquesta manera es podria realitzar un bon abordatge de les ETIs i les CS amb perspectiva de gènere i donant el tractament més específic i beneficiós per a cada persona.

En tercer lloc, és important realitzar estudis longitudinals per determinar l'impacte de les ETIs en el pronòstic i l'evolució de la malaltia. Així com estudiar les CS de forma longitudinal amb l'objectiu de conèixer factors de risc i protecció per ajudar a la prevenció del suïcidi i a millorar la qualitat de vida d'aquests i aquestes pacients al llarg del trastorn.

En quart lloc, és important tenir present el paper de possibles factors protectors, com ara la resiliència, el suport social, la personalitat, l'aferrament i les estratègies d'afrontament, entre d'altres, en les ETIs, les CS i l'aparició d'un PEP. Futurs estudis haurien de contemplar aquests factors protectors com a mediadors entre les ETI, les CS i el PEP.

Finalment, seria interessant estudiar les ETIs i les CS en diferents poblacions (clíniques, subclíniques i general) amb l'objectiu de poder crear intervencions preventives per a tota la població, e inclús poder crear tractaments trans-diagnòstics amb l'objectiu de minimitzar recursos, tant assistencials com econòmics. Es fonamental realitzar estudis on s'avaluï l'efectivitat de tractaments específics en les ETIs i les CS.

8. Conclusions

The main conclusions of the 3 empirical articles that compose the present doctoral dissertation are:

1) Patients with FEP experience a higher prevalence of traumatic experiences in childhood than healthy controls. The best predictors of a history of traumatic experiences in childhood were having a first-degree relative with mental illness, reporting more severe positive symptoms and greater perceived stress at the time of the first hospital admission.

2) The prevalence of suicidal behaviors is higher in patients with FEP than in healthy controls. The risk factors for suicidal behaviors in FEP were an earlier age of onset of psychosis, more perceived stress and the presence of depressive symptoms.

3) Emotional abuse is the traumatic event in childhood that most influences suicidal behaviors in patients with FEP, together with greater perceived stress.

9. Referències

1. Asociación Americana de Psiquiatría. Manual diagnóstico y estadístico de los trastornos mentales (DSM-5). Barcelona: Masson; 2013.

2. Schrimpf LA, Aggarwal A, Lauriello J. Psychosis. Contin (Minneap Minn). 2018;24(3):845-60.

3. Ochoa S, Usall J, Jes´ J, Cobo J, Labad X, Kulkarni J. Gender Differences in Schizophrenia and First-Episode Psychosis: A Comprehensive Literature Review. Schizophr Res Treat. 2012; 2012, 916198.

4. Perälä J, Suvisaari J, Saarni SI, Kuoppasalmi K, Isometsä E, Pirkola S, et al. Lifetime prevalence of psychotic and bipolar I disorders in a general population. Arch Gen Psychiatry. 2007;64(1):19-28.

5. Lehman AF, Lieberman JA, Dixon LB, McGlashan TH, Miller AL, Perkins DO, et al. Practice guideline for the treatment of patients with schizophrenia, second edition. Am J Psychiatry. 2004;161(2 Suppl):1-56.

6. Bighelli I, Rodolico A, García-Mieres H, Pitschel-Walz G, Hansen WP, Schneider-Thoma J, et al. Psychosocial and psychological interventions for relapse prevention in schizophrenia: a systematic review and network meta-analysis. Lancet Psychiatry. 2021;8(11):969-80.

7. Kurtz MM, Mueser KT. A meta-analysis of controlled research on social skills training for schizophrenia. J Consult Clin Psychol. 2008;76(3):491-504.

8. Breitborde NJK, Srihari VH, Woods SW. Review of the operational definition for first-episode psychosiseip HHS Public Access. Early Interv Psychiatry. 2009;3(4):259-65.

9. Marder SR, Galderisi S. The current conceptualization of negative symptoms in schizophrenia. World Psychiatry Off J World Psychiatr Assoc WPA. 2017;16(1):14-24.

10. Karpov B, Kieseppä T, Lindgren M, Wegelius A, Suvisaari J. Anxiety symptoms in first-episode psychosis. Early Interv Psychiatry. 2021;15(3):569-76.

11. Upthegrove R, Lalousis P, Mallikarjun P, Chisholm K, Griffiths SL, Iqbal M, et al. The Psychopathology and Neuroanatomical Markers of Depression in Early Psychosis. Schizophr Bull. 2021;47(1):249-58.

12. Wilson RS, Yung AR, Morrison AP. Comorbidity rates of depression and anxiety in first episode psychosis: A systematic review and meta-analysis. Schizophr Res. 2020;216:322-9.

13. Birnbaum R, Weinberger DR. Genetic insights into the neurodevelopmental origins of schizophrenia. Nat Rev Neurosci. 2017;18(12):727-40.

14. Chang WC, Hui CLM, Tang JYM, Wong GHY, Chan SKW, Lee EHM, et al. Impacts of duration of untreated psychosis on cognition and negative symptoms in first-episode schizophrenia: a 3-year prospective follow-up study. Psychol Med. 2013;43:1883-93.

15. Macbeth A, Gumley A, Schwannauer M, Carcione A, Fisher R, Mcleod HJ, et al. Metacognition, symptoms and premorbid functioning in a First Episode Psychosis sample. Compr Psychiatry. 2014;55:268-73.

16. Riecher-Rössler A, Aston J, Borgwardt S, Bugra H, Fuhr P, Gschwandtner U, et al. Vorhersage von Psychosen durch stufenweise Mehrebenenabklärung - Das Basler FePsy(Früherkennung von Psychosen)-Projekt. Fortschritte Neurol · Psychiatr. 2013;81(05):265-75.

17. Brohan E, Elgie R, Sartorius N, Thornicroft G. Self-stigma, empowerment and perceived discrimination among people with schizophrenia in 14 European countries: The GAMIAN-Europe study. Schizophr Res. 2010;122:232-8.

18. Eliasson ET, McNamee L, Swanson L, Lawrie SM, Schwannauer M. Unpacking stigma: Meta-analyses of correlates and moderators of personal stigma in psychosis. Clin Psychol Rev. 2021;89:102077.

19. Ruiz MÁ, Montes JM, Lauffer JC, Álvarez C, Mauriño J, Perrino CDD. Opiniones y creencias sobre las enfermedades mentales graves (esquizofrenia y trastorno bipolar) en la sociedad española. Rev Psiquiatr Salud Ment. 2012;5(2):98-106.

20. David AS. Insight and psychosis: the next 30 years. Br J Psychiatry J Ment Sci. 2020;217(3):521-3.

21. Jacob KS. Insight in psychosis: A critical review of the contemporary confusion. Asian J Psychiatry. 2020;48:101921.

22. Gaebel W, Zielasek J. Focus on psychosis. Dialogues Clin Neurosci. 2015;17(1):9-18.

23. Norman RM, Malla AK. Duration of untreated psychosis: a critical examination of the concept and its importance. Psychol Med. 2001;31(3):381-400.

24. Bennett D, Rosenheck R. Socioeconomic status and the effectiveness of treatment for first-episode psychosis. Health Serv Res. 2021;56(3):409-17.

25. Jabar LSA, Sørensen HJ, Nordentoft M, Hjorthøj C, Albert N. Associations between duration of untreated psychosis and domains of positive and negative symptoms persist after 10 years of follow-up: A secondary analysis from the OPUS trial. Schizophr Res. 2021;228:575-80.

26. Miglietta E, Lasalvia A, Bonetto C, Comacchio C, Cristofalo D, Tosato S, et al. Pathways to care, DUP, and types of interventions over 5 years following psychosis onset: findings from a naturalistic study conducted in routine generalist mental health services. Soc Psychiatry Psychiatr Epidemiol. 2020;55(2):175-86.

27. Ran MS, Xiao Y, Chui CHK, Hu XZ, Yu YH, Peng MM, et al. Duration of untreated psychosis (DUP) and outcome of people with schizophrenia in rural China: 14-year follow-up study. Psychiatry Res. 2018;267:340-5.

28. Nuechterlein KH, Dawson ME. A heuristic vulnerability/stress model of schizophrenic episodes. Schizophr Bull. 1984;10(2):300-12.

29. Zubin J, Spring B. Vulnerability–a new view of schizophrenia. J Abnorm Psychol. 1977;86(2):103-26.

30. Goh C, Agius M. The stress-vulnerability model how does stress impact on mental illness at the level of the brain and what are the consequences? Psychiatr Danub. 2010;22(2):198-202.

31. van Os J, Kenis G, Rutten BPF. The environment and schizophrenia. Nature. 2010;468(7321):203-12.

32. Zannas AS, West AAE. Epigenetics and the regulation of stress vulnerability and resilience. Neuroscience. 2014;264:157-70.

33. Ingram RE, Luxton DD. Vulnerability-Stress Models. En: Hankin BL, Abela JRZ. Development of psychopathology: A vulnerability-stress perspective. Thousand Oaks, CA, US: Sage Publications, Inc; 2005. p.32-46.

34. Beards S, Gayer-Anderson C, Borges S, Dewey ME, Fisher HL, Morgan C. Life events and psychosis: A review and meta-analysis. Schizophr Bull. 2013;39(4):740-7.

35. Lahera G, Freund N, Sáiz-Ruiz J. Salience and dysregulation of the dopaminergic system. Rev Psiquiatr Salud Ment. 2013;6(1):45-51.

36. Vargas ML, Lahera G. A proposal for translating the english term «Salience» into Spanish. Actas Esp Psiquiatr. 2011;39(4):271-2.

37. Reininghaus U, Gayer-Anderson C, Valmaggia L, Kempton MJ, Calem M, Onyejiaka A, et al. Psychological processes underlying the association between childhood trauma and psychosis in daily life: an experience sampling study. Psychol Med. 2016;46(13):2799-813.

38. Radua J, Ramella-Cravaro V, Ioannidis JPA, Reichenberg A, Phiphopthatsanee N, Amir T, et al. What causes psychosis? An umbrella review of risk and protective factors. World Psychiatry Off J World Psychiatr Assoc WPA. 2018;17(1):49-66.

39. Ioannidis JPA, Munafò MR, Fusar-Poli P, Nosek BA, David SP. Publication and other reporting biases in cognitive sciences: detection, prevalence, and prevention. Trends Cogn Sci. 2014;18(5):235-41.

40. Riley M. Critical review of the evidence base regarding theories conceptualising the aetiology of psychosis. Br J Nurs Mark Allen Publ. 2020;29(17):1030-7.

41. van Os J, Rutten BP, Poulton R. Gene-environment interactions in schizophrenia: review of epidemiological findings and future directions. Schizophr Bull. 2008;34(6):1066-82.

42. Cardno AG, Marshall EJ, Coid B, Macdonald AM, Ribchester TR, Davies NJ, et al. Heritability estimates for psychotic disorders: the Maudsley twin psychosis series. Arch Gen Psychiatry. 1999;56(2):162-8.

43. Hilker R, Helenius D, Fagerlund B, Skytthe A, Christensen K, Werge TM, et al. Heritability of Schizophrenia and Schizophrenia Spectrum Based on the Nationwide Danish Twin Register. Biol Psychiatry. 2018;83(6):492-8.

44. Lichtenstein P, Yip BH, Björk C, Pawitan Y, Cannon TD, Sullivan PF, et al. Common genetic determinants of schizophrenia and bipolar disorder in Swedish families: a population-based study. Lancet Lond Engl. 2009;373(9659):234-9.

45. van Os J, Kapur S. Schizophrenia. Lancet Lond Engl. 2009;374(9690):635-45.

46. Kamiya A, Kubo K ichiro, Tomoda T, Takaki M, Youn R, Ozeki Y, et al. A schizophrenia-associated mutation of DISC1 perturbs cerebral cortex development. Nat Cell Biol. 2005;7(12):1167-78.

47. Munafò MR, Thiselton DL, Clark TG, Flint J. Association of the NRG1 gene and schizophrenia: a meta-analysis. Mol Psychiatry. 2006;11(6):539-46.

48. Tan HY, Nicodemus KK, Chen Q, Li Z, Brooke JK, Honea R, et al. Genetic variation in AKT1 is linked to dopamine-associated prefrontal cortical structure and function in humans. J Clin Invest. 2008;118(6):2200-8.

49. Kushima I, Aleksic B, Nakatochi M, Shimamura T, Okada T, Uno Y, et al. Comparative Analyses of Copy-Number Variation in Autism Spectrum Disorder and Schizophrenia Reveal Etiological Overlap and Biological Insights. Cell Rep. 2018;24(11):2838-56.

50. Marshall CR, Howrigan DP, Merico D, Thiruvahindrapuram B, Wu W, Greer DS, et al. Contribution of copy number variants to schizophrenia from a genome-wide study of 41,321 subjects. Nat Genet. 2017;49(1):27-35.

51. Sriretnakumar V, Zai CC, Wasim S, Barsanti-Innes B, Kennedy JL, So J. Copy number variant syndromes are frequent in schizophrenia: Progressing towards a CNV-schizophrenia model. Schizophr Res. 2019;209:171-8.

52. Khamker N. First episode schizophrenia. South Afr Fam Pract. 2015;57(5):29-33.

53. Abrahamyan Empson L, Baumann PS, Söderström O, Codeluppi Z, Söderström D, Conus P. Urbanicity: The need for new avenues to explore the link between urban living and psychosis. Early Interv Psychiatry. 2020;14(4):398-409.

54. Padhy SK, Sarkar S, Davuluri T, Patra BN. Urban living and psychosis--an overview. Asian J Psychiatry. 2014;12:17-22.

55. Vassos E, Pedersen CB, Murray RM, Collier DA, Lewis CM. Meta-analysis of the association of urbanicity with schizophrenia. Schizophr Bull. 2012;38(6):1118-23.

56. Coid JW, Zhang Y, Li T. Urbanicity and Psychosis. JAMA Psychiatry. 2018;75(12):1301.

57. DeVylder JE, Kelleher I, Koyanagi A. Urbanicity and Psychosis-Reply. JAMA Psychiatry. 12018;75(12):1301-2.

58. Fett AKJ, Lemmers-Jansen ILJ, Krabbendam L. Psychosis and urbanicity: a review of the recent literature from epidemiology to neurourbanism. Curr Opin Psychiatry. 2019;32(3):232-41.

59. Shah S, Mackinnon A, Galletly C, Carr V, Mcgrath JJ, Stain HJ, et al. Prevalence and impact of childhood abuse in people with a psychotic illness. Data from the second Australian national survey of psychosis. Schizophr Res. 2014;159:20-6.

60. Hasan A, von Keller R, Friemel CM, Hall W, Schneider M, Koethe D, et al. Cannabis use and psychosis: a review of reviews. Eur Arch Psychiatry Clin Neurosci. 2020;270(4):403-12.

61. Davies C, Segre G, Estradé A, Radua J, De Micheli A, Provenzani U, et al. Prenatal and perinatal risk and protective factors for psychosis: a systematic review and meta-analysis. Lancet Psychiatry. 2020;7(5):399-410.

62. López-Soler C. Las reacciones postraumáticas en la infancia y adolescencia maltratada: el trauma complejo. Rev Psicopatología Psicol Clínica. 2008;13(3):159-74.

63. Mesa-Gresa P, Moya-Albiol L. Neurobiología del maltrato infantil: el "ciclo de la violencia". Rev Neurol. 2011;52(8):489-503.

64. Hart H, Rubia K. Neuroimaging of child abuse: a critical review. Front Hum Neurosci. 2012;6:52.

65. Moreno JM. Estudio sobre las consecuencias del maltrato infantil en el desarrollo del lenguaje. An Psicol. 2005;21(2):224-30.

66. Butjosa A. Acontecimientos vitales estresantes y primer episodio psicótico Stressful life events and first-episode psychosis. Barcelona: Universidad de Barcelona; 2017. Recuperada a partir de: http://diposit.ub.edu/dspace/bitstream/2445/119905/1/ABM_PhD_THESIS.pdf

67. Cornes JM. El apoyo social: Su relevancia en la práctica psiquiátrica. Rev Psiquiatr Fac Med Barna. 1994;21(6):147-54.

68. Holmes TH, Rahe RH. The Social Readjustment Rating Scale. J Psychosom Res. 1967;11(2):213-8.

69. Cohen S, Kamarck T, Mermelstein R. A global Measure of Perceived Stress. J Health Soc Behav. 1983;24(4):385-96.

70. Lazarus RS, Folkman S. Stress, Appraisal, and Coping . New York: Springer; 1984.

71. Bernstein DP, Stein JA, Newcomb MD, Walker E, Pogge D, Ahluvalia T, et al. Development and validation of a brief screening version of the Childhood Trauma Questionnaire. Child Abuse Negl. 2003;27(2):169-90.

72. Alarcón LC, Araujo PA, Godoy AP, Vera ME. Childhood maltreatment and the long term consequences. MedUnab. 2010;13:103-15.

73. Barrigón ML, Diaz FJ, Gurpegui M, Ferrin M, Salcedo MD, Moreno-Granados J, et al. Childhood trauma as a risk factor for psychosis: A sib-pair study. J Psychiatr Res. 2015;70:130-6.

74. Bentall RP, Sousa PD, Varese F, Wickham S, Sitko K, Haarmans M, et al. From adversity to psychosis: pathways and mechanisms from specific adversities to specific symptoms. Soc Psychiatry Psychiatr Epidemiol. 2014;49(7):1011-22.

75. Varese F, Smeets F, Drukker M, Lieverse R, Lataster T, Viechtbauer W, et al. Childhood adversities increase the risk of psychosis: A meta-analysis of patient-control, prospective- and cross-sectional cohort studies. Schizophr Bull. 2012;38(4):661-71.

76. Gawęda Ł, Pionke R, Krężołek M, Prochwicz K, Kłosowska J, Frydecka D, et al. Self-disturbances, cognitive biases and insecure attachment as mechanisms of the relationship

between traumatic life events and psychotic-like experiences in non-clinical adults-A path analysis. Psychiatry Res. 2017;259:571-8.

77. Ajnakina O, Trotta A, Forti MD, Stilo SA, Kolliakou A, Gardner-Sood P, et al. Different types of childhood adversity and 5-year outcomes in a longitudinal cohort of first-episode psychosis patients. Psychiatry Res. 2018;269:199-206.

78. Pruessner M, King S, Vracotas N, Abadi S, Iyer S, Malla AK, et al. Gender differences in childhood trauma in first episode psychosis: Association with symptom severity over two years. Schizophr Res. 2019;205:30-7.

79. Sun P, Alvarez-Jimenez M, Lawrence K, Simpson K, Peach N, Bendall S. Investigating the prevalence of dissociative disorders and severe dissociative symptoms in first episode psychosis. Early Interv Psychiatry. 2019;13(6):1366-72.

80. Trotta A, Murray RM, David AS, Kolliakou A, O'connor J, Forti MD, et al. Impact of Different Childhood Adversities on 1-Year Outcomes of Psychotic Disorder in the Genetics and Psychosis Study. Schizophr Bull. 2016;42(2):464-75.

81. Aas M, Andreassen OA, Aminoff SR, Faerden A, Romm KL, Nesvåg R, et al. A history of childhood trauma is associated with slower improvement rates: Findings from a one-year follow-up study of patients with a first-episode psychosis. BMC Psychiatry. 2016;16(126).

82. Conus P, Cotton S, Schimmelmann BG, Mcgorry PD, Lambert M. Pretreatment and Outcome Correlates of Sexual and Physical Trauma in an Epidemiological Cohort of First-Episode Psychosis Patients. Schizophr Bull. 2009;36(6).

83. Kilian S, Burns JK, Seedat S, Asmal L, Chiliza B, Plessis SD, et al. Factors moderating the relationship between childhood trauma and premorbid adjustment in first-episode schizophrenia. PLoS ONE. 2017;12(1):1-14.

84. Peach N, Alvarez-Jimenez M, Cropper SJ, Sun P, Bendall S. Testing models of post-traumatic intrusions, trauma-related beliefs, hallucinations, and delusions in a first episode psychosis sample. Br J Clin Psychol. 2019;58(2):154-72.

85. Şahin S, Yüksel Ç, Güler J, Karadayı G, Akturan E, Göde E, et al. The history of childhood trauma among individuals with ultra high risk for psychosis is as common as among patients with first-episode schizophrenia. Early Interv Psychiatry. 2013;7(4):414-20.

86. Trauelsen AM, Gumley A, Jansen JE, Pedersen MB, Nielsen HGL, Trier CH, et al. Metacognition in first-episode psychosis and its association with positive and negative symptom profiles $. Psychiatry Res. 2016;238:14-23.

87. Zhuo-hui H, Cai-lan H, Ying-hua H, Xiao-yan H, Qian-wen W. Individuals at high risk for psychosis experience more childhood trauma , life events and social support de fi cit in comparison to healthy controls. Psychiatry Res. 2019;273:296-302.

88. Aas M, Navari S, Gibbs A, Mondelli V, Fisher HL, Morgan C, et al. Is there a link between childhood trauma , cognition , and amygdala and hippocampus volume in fi rst-episode psychosis?. Schizophr Res. 2012;137(1-3):73-9.

89. Ayesa-Arriola R, Setién-Suero E, Marques-Feixa L, Neergaard K, Butjosa A, Vázquez-Bourgon J, et al. The synergetic effect of childhood trauma and recent stressful events in psychosis: associated neurocognitive dysfunction. Acta Psychiatr Scand. 2020;141(1):43-51.

90. Bae H, Kim D, Kim JH, Jeong SA, Oh DH. Childhood abuse and verbal intelligence among adults diagnosed with first-episode schizophrenia. Psychosis. 2010;2(2):154-62.

91. Bifulco A, Brown GW, Harris TO. Childhood Experience of Care and Abuse (CECA): A Retrospective Interview Measure. J Child Psychol Psychiatry. 1994;35(8):1419-35.

92. Bremner JD, Bolus R, Mayer EA. Psychometric Properties of the Early Trauma Inventory-Self Report. J Nerv Ment Dis. 2007;195(3):211-8.

93. Goldberg LR, Freyd JJ. Self-reports of potentially traumatic experiences in an adult community sample: Gender differences and test-retest stabilities of the items in a brief betrayal-trauma survey. J Trauma Dissociation. 2006;7(3):39-63.

94. Smith N, Lam D, Bifulco A, Checkley S. Childhood Experience of Care and Abuse Questionnaire (CECA.Q). Validation of a screening instrument for childhood adversity in clinical populations. Soc Psychiatry Psychiatr Epidemiol. 2002;37(12):572-9.

95. Hernandez A, Gallardo-Pujol D, Pereda N, Arntz A, Bernstein DP, Gaviria AM, et al. Initial validation of the Spanish childhood trauma questionnaire-short form: factor structure, reliability and association with parenting. J Interpers Violence. 2013;28(7):1498-518.

96. Bernstein D, Fink L. Childhood Trauma Questionnaire: a retrospective self-report manual. The Psychological Corporation: San Antonio, TX; 1998.

97. Üçok A, Bikmaz S. The effects of childhood trauma in patients with first-episode schizophrenia. Acta Psychiatr Scand. 2007;116(5):371-7.

98. Nijenhuis ERS, Hart OV der, Kruger K. The psychometric characteristics of the traumatic experiences checklist (TEC): First findings among psychiatric outpatients. Clin Psychol Psychother. 2002;9(3):200-10.

99. Jansen JE, Pedersen MB, Trauelsen AM, Nielsen HGL, Haahr UH, Simonsen E. The Experience of Childhood Trauma and Its Influence on the Course of Illness in First-Episode Psychosis. J Nerv Ment Dis. 2016;204(3):210-6.

100. Simpson S, Phillips L, Baksheev G, Garner B, Markulev C, Phassouliotis C, et al. Stability of retrospective self-reports of childhood trauma in first-episode psychosis. Early Interv Psychiatry. 2019;13(4):908-13.

101. Bachmann S. Epidemiology of Suicide and the Psychiatric Perspective. Int J Environ Res Public Health. 2018;15(7):1425.

102. Oexle N, Mayer L, Rüsch N. [Suicide stigma and suicide prevention]. Nervenarzt. 2020;91(9):779-84.

103. Weissman MM, Bland RC, Canino GJ, Greenwald S, Hwu HG, Joyce PR, et al. Prevalence of suicide ideation and suicide attempts in nine countries. Psychol Med. 1999;29(1):9-17.

104. Mental Health and Substance Use. Suicide worldwide in 2019. Geneva: World Health Organization; 2021.

105. Fundación Española para la prevención del suicidio. Observatorio del Suicidio en España 2020. FSME. 2020. Disponible: https://www.fsme.es/observatorio-del-suicidio-2020/

106. Klonsky ED, May AM, Saffer BY. Suicide, Suicide Attempts, and Suicidal Ideation. Annu Rev Clin Psychol. 2016;12:307-30.

107. Nordentoft M, Mortensen PB, Pedersen CB. Absolute risk of suicide after first hospital contact in mental disorder. Arch Gen Psychiatry. 2011;68(10):1058-64.

108. Hawton K, Sutton L, Haw C, Sinclair J, Deeks JJ. Schizophrenia and suicide: systematic review of risk factors. Br J Psychiatry J Ment Sci. 2005;187:9-20.

109. Fenton WS, McGlashan TH, Victor BJ, Blyler CR. Symptoms, subtype, and suicidality in patients with schizophrenia spectrum disorders. Am J Psychiatry. 1997;154(2):199-204.

110. Fialko L, Freeman D, Bebbington PE, Kuipers E, Garety PA, Dunn G, et al. Understanding suicidal ideation in psychosis: findings from the Psychological Prevention of Relapse in Psychosis (PRP) trial. Acta Psychiatr Scand. 2006;114(3):177-86.

111. Moe AM, Llamocca E, Wastler HM, Steelesmith DL, Brock G, Bridge JA, et al. Risk Factors for Deliberate Self-harm and Suicide Among Adolescents and Young Adults With First-Episode Psychosis. Schizophr Bull. 2021;48(2):414-424

112. Harkavy-Friedman JM. Can Early Detection of Psychosis Prevent Suicidal Behavior? Am J Psychiatry. 2006;163(5):768-70.

113. Hert MD, Mckenzie K, Peuskens J. Risk factors for suicide in young people suffering from schizophrenia: a long-term follow-up study. Schizophr Res. 2001;47(2-3):127-34.

114. Simms J, McCormack V, Anderson R, Mulholland C. Correlates of self-harm behaviour in acutely ill patients with schizophrenia. Psychol Psychother Theory Res Pract. 2007;80(1):39-49.

115. Saha S, Chant D, McGrath J. A systematic review of mortality in schizophrenia: is the differential mortality gap worsening over time? Arch Gen Psychiatry. 2007;64(10):1123-31.

116. White J, Gray R, Jones M. The development of the serious mental illness physical Health Improvement Profile. J Psychiatr Ment Health Nurs. 2009;16(5):493-8.

117. Austad G, Joa I, Johannessen JO, Larsen TK. Gender differences in suicidal behaviour in patients with first-episode psychosis. Early Interv Psychiatry. 2015;9(4):300-7.

118. Barrett EA, Sundet K, Faerden A, Nesvåg R, Agartz I, Fosse R, et al. Suicidality before and in the early phases of first episode psychosis. Schizophr Res. 2010;119:11-7.

119. Chang WC, Chen ESM, Hui CLM, Chan SKW, Lee EHM, Chen EYH. The relationships of suicidal ideation with symptoms, neurocognitive function, and psychological factors in patients with first-episode psychosis. Schizophr Res. 2014;157(1-3):12-8.

120. Dutta R, Murray RM, Allardyce J, Jones PB, Boydell J. Early risk factors for suicide in an epidemiological first episode psychosis cohort. Schizophr Res. 2010;126:11-9.

121. Nordentoft M, Laursen TM, Agerbo E, Qin P, Høyer EH, Mortensen PB. Change in suicide rates for patients with schizophrenia in Denmark, 1981-97: Nested case-control study. Br Med J. 2004;329(7460):261-4.

122. Pompili M, Serafini G, Innamorati M, Lester D, Shrivastava A, Girardi P, et al. Suicide risk in first episode psychosis: a selective review of the current literature. Schizophr Res. 2011;129(1):1-11.

123. Bornheimer LA. Suicidal Ideation in First-Episode Psychosis (FEP): Examination of Symptoms of Depression and Psychosis Among Individuals in an Early Phase of Treatment. Suicide Life Threat Behav. 2019;49(2):423-31.

124. Pelizza L, Pompili M, Azzali S, Paterlini F, Garlassi S, Scazza I, et al. Suicidal thinking and behaviours in First Episode Psychosis: Findings from a 3-year longitudinal study. Early Interv Psychiatry. 2021;15(3):624-33.

125. Salagre E, Grande I, Jiménez E, Mezquida G, Cuesta MJ, Llorente C, et al. Trajectories of suicidal ideation after first-episode psychosis: a growth mixture modeling approach. Acta Psychiatr Scand. 2021;143(5):418-33.

126. Bertelsen M, Jeppesen P, Petersen L, Thorup A, Øhlenschlæger J, Quach PL, et al. Suicidal behaviour and mortality in first-episode psychosis: The OPUS trial. Br J Psychiatry. 2007;51:140-6.

127. Clarke M, Whitty P, Browne S, Tigue OM, Kinsella A, Waddington JL, et al. Suicidality in first episode psychosis. Schizophr Res. 2006;86(1-3):221-5.

128. Lui SY. Risk factors for deliberate self-harm and completed suicide in young Chinese people with schizophrenia. Aust N Z J Psychiatry. 2009;43(3):252-9.

129. Bakst S, Rabinowitz J, Bromet EJ. Antecedents and Patterns of Suicide Behavior in First-Admission Psychosis. Schizophr Bull. 2010;36(4):880-9.

130. Challis S, Nielssen O, Harris A, Large M. Systematic meta-analysis of the risk factors for deliberate self-harm before and after treatment for first-episode psychosis. Acta Psychiatr Scand. 2013;127(6):442-54.

131. Foley S, Jackson D, McWilliams S, Renwick L, Sutton M, Turner N, et al. Suicidality prior to presentation in first-episode psychosis. Early Interv Psychiatry. 2008;2(4):242-6.

132. Melle I, Larsen TK, Haahr U, Friis S, Johannesen JO, Opjordsmoen S, et al. Prevention of Negative Symptom Psychopathologies in First-Episode Schizophrenia. Arch Gen Psychiatry. 2008;65(6):634.

133. Kawohl W, Nordt C. COVID-19, unemployment, and suicide. Lancet Psychiatry. 2020;7(5):389-90.

134. Sher L. COVID-19, anxiety, sleep disturbances and suicide. Sleep Med. 2020;70:124.

135. Sicotte R, Iyer SN, Kiepura B, Abdel-Baki A. A systematic review of longitudinal studies of suicidal thoughts and behaviors in first-episode psychosis: course and associated factors. Soc Psychiatry Psychiatr Epidemiol. 2021;56(12):2117-54.

136. Fedyszyn IE, Robinson J, Harris MG, Paxton SJ, Francey S. Predictors of suicide-related behaviors during treatment following a first episode of psychosis: The contribution of baseline, past, and recent factors. Schizophr Res. 2012;140(1-3):17-24.

137. Anderson AM, Happ MB. The Three-Step Theory of Suicide: Analysis and Evaluation. ANS Adv Nurs Sci. 2021;44(1):89-100.

138. Bornheimer LA, Wojtalik J, Li J, Cobia D, Smith MJ. Suicidal ideation in first-episode psychosis: Considerations for depression, positive symptoms, clinical insight, and cognition. Schizophr Res. 2021;228:298-304.

139. Breitborde NJK, Wastler H, Pine JG, Moe AM. Suicidality and social problem-solving skills among individuals with first-episode psychosis participating in Coordinated Specialty Care. Early Interv Psychiatry. 2021;15(3):497-504.

140. Cui Y, Piao YH, Kim SW, Lee BJ, Kim JJ, Yu JC, et al. Psychological factors intervening between childhood trauma and suicidality in first-episode psychosis. Psychiatry Res. 2020;293:113465.

141. Grattan RE, Lara N, Botello RM, Tryon VL, Maguire AM, Carter CS, et al. A History of Trauma is Associated with Aggression, Depression, Non-Suicidal Self-Injury Behavior, and Suicide Ideation in First-Episode Psychosis. J Clin Med. 23 juliol 2019;8(7):E1082.

142. Wastler HM, Moe AM, Pine JG, Breitborde NJK. Perceived burdensomeness, thwarted belongingness and suicidal ideation among individuals with first-episode psychosis. Early Interv Psychiatry. 2021;15(4):1033-7.

143. Canal-Rivero M, López-Moríñigo JD, Setién-Suero E, Ruiz-Veguilla M, Ayuso-Mateos JL, Ayesa-Arriola R, et al. Predicting suicidal behaviour after first episode of non-affective psychosis: The role of neurocognitive functioning. Eur Psychiatry. 2018;53:52-7.

144. Li H, Huang Y, Wu F, Lang X, Zhang XY. Prevalence and related factors of suicide attempts in first-episode and untreated Chinese Han outpatients with psychotic major depression. J Affect Disord. 2020;270:108-13.

145. Rubio G, Montero I, Jáuregui J, Villanueva R, Casado MA, Marín JJ, et al. Validación de la escala de riesgo suicida de Plutchik en población española. Arch Neurobiol. 1998;61(2):143-52.

146. Schmitt DP, Long AE, McPhearson A, O'Brien K, Remmert B, Shah SH. Personality and gender differences in global perspective. Int J Psychol. 2017;52:45-56.

147. Piccinelli M, Simon G. Gender and cross-cultural differences in somatic symptoms associated with emotional distress. An international study in primary care. Psychol Med. 1997;27(2):433-44.

148. Riecher-Rössler A. Sex and gender differences in mental disorders. Lancet Psychiatry. 2017;4(1):8-9.

149. Boyd A, Velde SVD, Vilagut G, Graaf RD, O'Neill S, Florescu S, et al. Gender differences in mental disorders and suicidality in Europe: results from a large cross-sectional population-based study. J Affect Disord. 2015;173:245-54.

150. Leo D de, Kõlves K. Suicide at Very Advanced Age - The Extremes of the Gender Paradox. Crisis. 2017;38(6):363-6.

151. Steel Z, Marnane C, Iranpour C, Chey T, Jackson JW, Patel V, et al. The global prevalence of common mental disorders: a systematic review and meta-analysis 1980-2013. Int J Epidemiol. 2014;43(2):476-93.

152. Riecher-Rössler A, Butler S, Kulkarni J. Sex and gender differences in schizophrenic psychoses-a critical review. Arch Womens Ment Health. 2018;21(6):627-48.

153. Pinheiro PS. World Report on Violence against Children. Geneva: Naciones Unidas; 2006. p.37

154. Sanmartín J. Maltrato infantil en la familia en España Informe del Centro Reina Sofía. Madrid: Ministerio de Sanidad, Política Social e Igualdad; 2011.

155. Popovic D, Schmitt A, Kaurani L, Senner F, Papiol S, Malchow B, et al. Childhood Trauma in Schizophrenia: Current Findings and Research Perspectives. Front Neurosci. 2019;13:274.

156. Viola TW, Salum GA, Kluwe-Schiavon B, Sanvicente-Vieira B, Levandowski ML, Grassi-Oliveira R. The influence of geographical and economic factors in estimates of childhood abuse and neglect using the Childhood Trauma Questionnaire: A worldwide meta-regression analysis. Child Abuse Negl. 2016;51:1-11.

157. Jiang WJ, Zhong BL, Liu LZ, Zhou YJ, Hu XH, Li Y. Reliability and validity of the Chinese version of the Childhood Trauma Questionnaire-Short Form for inpatients with schizophrenia. PloS One. 2018;13(12):e0208779.

158. Kim D, Bae H, Han C, Oh HY, Macdonald K. Psychometric properties of the Childhood Trauma Questionnaire-Short Form (CTQ-SF) in Korean patients with schizophrenia. Schizophr Res. 2013;144(1-3):93-8.

159. Xiang Z, Liu Z, Cao H, Wu Z, Long Y. Evaluation on Long-Term Test-Retest Reliability of the Short-Form Childhood Trauma Questionnaire in Patients with Schizophrenia. Psychol Res Behav Manag. 2021;14:1033-40.

160. Garcia M, Montalvo I, Creus M, Cabezas Á, Solé M, Algora MJ, et al. Sex differences in the effect of childhood trauma on the clinical expression of early psychosis. Compr Psychiatry. 2016;68:86-96.

161. Gayer-Anderson C, Fisher BLH, Fearon BP, Hutchinson BG, Morgan BK, Dazzan BP, et al. Gender differences in the association between childhood physical and sexual abuse, social support and psychosis. Soc Psychiatry Psychiatr Epidemiol. 2015;50:1489-500.

162. Lindgren M, Mäntylä T, Rikandi E, Torniainen-Holm M, Morales-Muñoz I, Kieseppä T, et al. Childhood adversities and clinical symptomatology in first-episode psychosis. Psychiatry Res. 2017;258:374-81.

163. Pruessner M, Cullen AE, Aas M, Walker EF. The neural diathesis-stress model of schizophrenia revisited: An update on recent findings considering illness stage and neurobiological and methodological complexities. Neurosci Biobehav Rev. 2017;73:191-218.

164. Hughes K, Bellis MA, Hardcastle KA, Sethi D, Butchart A, Mikton C, et al. The effect of multiple adverse childhood experiences on health: a systematic review and meta-analysis. Lancet Public Health. 2017;2(8):356-66.

165. Baudin G, Szoke A, Richard JR, Pelissolo A, Leboyer M, Schürhoff F. Childhood trauma and psychosis: Beyond the association. Child Abuse Negl. 2017;72:227-35.

166. Şahin S, Yüksel Ç, Güler J, Karadayı G, Akturan E, Göde E, et al. The history of childhood trauma among individuals with ultra high risk for psychosis is as common as among patients with first-episode schizophrenia. Early Interv Psychiatry. 2013;7(4):414-20.

167. Sideli L, Fisher HL, Murray RM, Sallis H, Russo M, Stilo SA, et al. Interaction between cannabis consumption and childhood abuse in psychotic disorders: preliminary findings on the role of different patterns of cannabis use. Early Interv Psychiatry. 2018;12(2):135-42.

168. Braehler C, Valiquette L, Holowka D, Malla AK, Joober R, Ciampi A, et al. Childhood trauma and dissociation in first-episode psychosis, chronic schizophrenia and community controls. Psychiatry Res. 2013;210(1):36-42.

169. Kilian S, Asmal L, Chiliza B, Olivier MR, Phahladira L, Scheffler F, et al. Childhood adversity and cognitive function in schizophrenia spectrum disorders and healthy controls: evidence for an association between neglect and social cognition. Psychol Med. 2017;48:2186-93.

170. Fisher H, Morgan C, Dazzan P, Craig TK, Morgan K, Hutchinson G, et al. Gender differences in the association between childhood abuse and psychosis. Br J Psychiatry J Ment Sci. 2009;194(4):319-25.

171. Townsend C. Child Sexual Abuse Disclosure: What Practitioners Need to Know. Charleston, S.C., Darkness to Light. 2016. Disponible a: www.D2L.org.

172. National Children's Advocacy Center.Children's Testimony-Issues and Concerns: A Bibliography. Huntsville, AL: Author; 2014.

173. Oram S. Sexual violence and mental health. Epidemiol Psychiatr Sci. 2019;28(6):592-3.

174. Kann L, McManus T, Harris WA, Shanklin SL, Flint KH, Hawkins J, et al. Youth Risk Behavior Surveillance - United States, 2015. Morb Mortal Wkly Rep Surveill Summ Wash DC 2002. 2016;65(6):1-174.

175. Dobry Y, Braquehais MD, Sher L. Bullying, psychiatric pathology and suicidal behavior. Int J Adolesc Med Health. 2013;25(3):295-9.

176. Hensley V. Childhood bullying: a review and implications for health care professionals. Nurs Clin North Am. 2013;48(2):203-13.

177. Wolke D, Lereya ST. Long-term effects of bullying. Arch Dis Child. 2015;100(9):879-85.

178. Marie-Mitchell A, Kostolansky R. A Systematic Review of Trials to Improve Child Outcomes Associated With Adverse Childhood Experiences. Am J Prev Med. 2019;56(5):756-64.

179. Ayers S, Bond R, Webb R, Miller P, Bateson K. Perinatal mental health and risk of child maltreatment: A systematic review and meta-analysis. Child Abuse Negl. 2019;98:104172.

180. Davis RN, Davis MM, Freed GL, Clark SJ. Fathers' depression related to positive and negative parenting behaviors with 1-year-old children. Pediatrics. 2011;127(4):612-8.

181. Wiegand-Grefe S, Sell M, Filter B, Plass-Christl A. Family functioning and psychological health of children with mentally ill parents. Int J Environ Res Public Health. 2019;16(7):1278.

182. Tapias E, Coromina M, Grases N, Ochoa S. Psychological Treatments with Children of Parents with Mental Illness: A Systematic Review. Child Youth Care Forum. 2021;50(6):1107-30.

183. Immonen J, Jääskeläinen E, Korpela H, Miettunen J. Age at onset and the outcomes of schizophrenia: A systematic review and meta-analysis. Early Interv Psychiatry. 2017;11(6):453-60.

184. Linke M, Jankowski KS, Ciołkiewicz A, Jedrasik-Styła M, Parnowska D, Gruszka A, et al. Age or age at onset? Which of them really matters for neuro and social cognition in schizophrenia? Psychiatry Res. 2015;225(1-2):197-201.

185. Rajji TK, Voineskos AN, Butters MA, Miranda D, Arenovich T, Menon M, et al. Cognitive performance of individuals with schizophrenia across seven decades: A study using the MATRICS consensus cognitive battery. Am J Geriatr Psychiatry. 2013;21(2):108-18.

186. Bendall S, Hulbert CA, Alvarez-Jimenez M, Allott K, McGorry PD, Jackson HJ. Testing a Model of the Relationship Between Childhood Sexual Abuse and Psychosis in a First-Episode Psychosis Group. J Nerv Ment Dis. 2013;201(11):941-7.

187. Misiak B, Moustafa AA, Kiejna A, Frydecka D. Childhood traumatic events and types of auditory verbal hallucinations in first-episode schizophrenia patients. Compr Psychiatry. 2016;66:17-22.

188. Solesvik M, Joa I, Larsen TK, Langeveld J, Johannessen JO, Bjørnestad J, et al. Visual Hallucinations in First-Episode Psychosis: Association with Childhood Trauma. PLoS One. 2016;11(5).

189. Sun P, Alvarez-Jimenez M, Simpson K, Lawrence K, Peach N, Bendall S. Does dissociation mediate the relationship between childhood trauma and hallucinations, delusions in first episode psychosis? Compr Psychiatry. 2018;84:68-74.

190. Garety PA, Kuipers E, Fowler D, Freeman D, Bebbington PE. A cognitive model of the positive symptoms of psychosis. Psychol Med. 2001;31(2):189-95.

191. Morrison AP. The interpretation of intrusions in psychosis: An integrative cognitive approach to hallucinations and delusions. Behav Cogn Psychother. 2001;29(3):257-76.

192. Betz LT, Penzel N, Rosen M, Kambeitz J. Relationships between childhood trauma and perceived stress in the general population: A network perspective. Psychol Med. 2020;51(15):2696-2706.

193. Bossé S, Stalder T, D'Antono B. Childhood Trauma, Perceived Stress, and Hair Cortisol in Adults with and Without Cardiovascular Disease. Psychosom Med. 2018;80(4):393-402.

194. Elroy SM, Hevey D. Relationship between adverse early experiences, stressors, psychosocial resources and wellbeing. Child Abuse Negl. 2014;38(1):65-75.

195. Lardinois M, Lataster T, Mengelers R, Os JV, Myin-Germeys I. Childhood trauma and increased stress sensitivity in psychosis. Acta Psychiatr Scand. 2011;123(1):28-35.

196. Bani-Fatemi A, Tasmim S, Wang KZ, Warsh J, Sibille E, Luca VD. No interaction between polygenic scores and childhood trauma in predicting suicide attempt in schizophrenia. Prog Neuropsychopharmacol Biol Psychiatry. 2019;89:169-73.

197. Lee MA. Emotional abuse in childhood and suicidality: The mediating roles of re-victimization and depressive symptoms in adulthood. Child Abuse Negl. 2015;44:130-9.

198. Norman RE, Byambaa M, De R, Butchart A, Scott J, Vos T. The Long-Term Health Consequences of Child Physical Abuse, Emotional Abuse, and Neglect: A Systematic Review and Meta-Analysis. PLoS Med. 2012;9(11):e1001349.

199. Ventriglio A, Gentile A, Bonfitto I, Stella E, Mari M, Steardo L, et al. Suicide in the early stage of schizophrenia. Front Psychiatry. 2016;7:116.

200. Sartorius N, Jablensky A, Korten A, Ernberg G, Anker M, Cooper JE, et al. Early manifestations and first-contact incidence of schizophrenia in different cultures. A preliminary report on the initial evaluation phase of the WHO Collaborative Study on determinants of outcome of severe mental disorders. Psychol Med. 1986;16(4):909-28.

201. Brown S. Excess mortality of schizophrenia. A meta-analysis. Br J Psychiatry J Ment Sci. 1997;171:502-8.

202. Caldwell CB, Gottesman II. Schizophrenia--a high-risk factor for suicide: clues to risk reduction. Suicide Life Threat Behav. 1992;22(4):479-93.

203. Barbeito S, Vega P, Sánchez-Gutiérrez T, Becerra JA, González-Pinto A, Calvo A. A systematic review of suicide and suicide attempts in adolescents with psychotic disorders. Schizophr Res. 2021;235:80-90.

204. Falcone T, Mishra L, Carlton E, Lee C, Butler RS, Janigro D, et al. Suicidal Behavior in Adolescents with First-Episode Psychosis. Clin Schizophr Relat Psychoses. 2010;4(1):34-40.

205. Zhang XY, Du X, Yin G, Zhang Y, Chen D, Xiu M, et al. Prevalence and Clinical Correlates of and Cognitive Function at the Time of Suicide Attempts in First-Episode and Drug-Naive Patients With Schizophrenia. J Clin Psychiatry. 2018;79(4).

206. Ferrari M, Flora N, Anderson KK, Haughton A, Tuck A, Archie S, et al. Gender differences in pathways to care for early psychosis. Early Interv Psychiatry. 2018;12(3):355-61.

207. Irving J, Colling C, Shetty H, Pritchard M, Stewart R, Fusar-Poli P, et al. Gender differences in clinical presentation and illicit substance use during first episode psychosis: a natural language processing, electronic case register study. BMJ Open. 2021;11(4):e042949.

208. Rosen M, Haidl TK, Ruhrmann S, Vogeley K, Schultze-Lutter F. Sex differences in symptomatology of psychosis-risk patients and in prediction of psychosis. Arch Womens Ment Health. 2020;23(3):339-49.

209. Suokas JT, Perälä J, Suominen K, Saarni S, Lönnqvist J, Suvisaari JM. Epidemiology of suicide attempts among persons with psychotic disorder in the general population. Schizophr Res. 2010;124:22-8.

210. Pelizza L, Pellegrini C, Quattrone E, Azzali S, Landi G, Pellegrini P, et al. Suicidal Ideation in Patients Experiencing a First-episode Psychosis: Findings From the 2-Year Follow-up of the "Parma Early Psychosis" Program. Suicide Life Threat Behav. 2020;50(4):838-55.

211. Klonsky ED, Saffer BY, Bryan CJ. Ideation-to-action theories of suicide: a conceptual and empirical update. Curr Opin Psychol. 2018;22:38-43.

212. Abdollahi A, Carlbring P, Khanbani M, Ghahfarokhi SA. Emotional intelligence moderates perceived stress and suicidal ideation among depressed adolescent inpatients. Personal Individ Differ. 2016;102:223-8.

213. Chen YL, Kuo PH. Effects of perceived stress and resilience on suicidal behaviors in early adolescents. Eur Child Adolesc Psychiatry. 2020;29(6):861-70.

214. Holder MK, Blaustein JD. Puberty and adolescence as a time of vulnerability to stressors that alter neurobehavioral processes. Front Neuroendocrinol. 2014;35(1):89-110.

215. Spear LP. Heightened stress responsivity and emotional reactivity during pubertal maturation: Implications for psychopathology. Dev Psychopathol. 2009;21(1):87-97.

216. Compas BE, Jaser SS, Bettis AH, Watson KH, Gruhn MA, Dunbar JP, et al. Coping, emotion regulation, and psychopathology in childhood and adolescence: A meta-analysis and narrative review. Psychol Bull. 2017;143(9):939-91.

217. Liu X, Tein JY. Life events, psychopathology, and suicidal behavior in Chinese adolescents. J Affect Disord. 2005;86(2-3):195-203.

218. McFeeters D, Boyda D, O'Neill S. Patterns of stressful life events: distinguishing suicide ideators from suicide attempters. J Affect Disord. 2015;175:192-8.

219. Araújo RMF de, Lara DR. More than words: The association of childhood emotional abuse and suicidal behavior. Eur Psychiatry J Assoc Eur Psychiatr. 2016;37:14-21.

220. Mohammadzadeh A, Azadi S, King S, Khosravani V, Bastan FS. Childhood trauma and the likelihood of increased suicidal risk in schizophrenia. Psychiatry Res. 2019;275:100-7.

221. Coentre R, Talina MC, Góis C, Figueira ML. Depressive symptoms and suicidal behavior after first-episode psychosis: A comprehensive systematic review. Psychiatry Res. 2017;253:240-8.

222. Sher L, Kahn RS. Suicide in Schizophrenia: An Educational Overview. Med Kaunas Lith. 2019;55(7):361.

223. Lopez-Morinigo JD, Forti MD, Ajnakina O, Wiffen BD, Morgan K, Doody GA, et al. Insight and risk of suicidal behaviour in two first-episode psychosis cohorts: Effects of previous suicide attempts and depression. Schizophr Res. 2019;204:80-9.

224. McLafferty M, Armour C, Bunting B, Ennis E, Lapsley C, Murray E, et al. Coping, stress, and negative childhood experiences: The link to psychopathology, self-harm, and suicidal behavior. PsyCh J. 2019;8(3):293-306.