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AN EXPLORATION INTO THE ROLE OF DEVELOPMENTAL TIMING OF ADVERSE CHILDHOOD EXPERIENCES IN PSYCHOTIC-LIKE EXPERIENCES IN ADULTHOOD.

Section A: What Does the Current Literature Tell us About the Importance of the Developmental Timing of Adverse Childhood Experiences for the Development of Later Psychotic-like Experiences?
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Section B: What do the Life Stories of People who Experienced Childhood Adversity and Subsequent Psychotic-Like Experiences Tell us About the Developmental Timing of Such Adversity and how They Managed These Experiences?
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Summary

Section A: This is a textual narrative review exploring the role of developmental timing of adverse childhood experiences (ACEs) on psychotic-like experiences (PLE) in adulthood. A systematic review of 13 papers was conducted and quality was assessed using the Joanna Briggs Institute (JBI) checklist. A textual narrative review of the results was presented. All findings were varied and did not indicate a pattern, where some studies found adversities in childhood more strongly associated, and others found exposure to adversity in adolescence to be more likely to lead to PLEs. Limitations and future implications of the review were presented.

Section B: This narrative analysis study explored the experiences of nine people who experienced ACEs and PLEs in childhood. As previous research has used a quantitative method, this study took a narrative approach, this study aimed to explore the life stories of individuals' experience of ACEs and subsequent PLEs with an interest in the developmental timing of adversity and how they are managed. The main findings were that participants generally told their stories in chronological structure; however, positives were shared later. Most participants experienced a realisation in adulthood where the meaning of their ACEs changed. Emotional regulation strategies were used to manage experiences of adversity. The meaning of ACEs and PLEs was important to how people respond, and this can be influenced by wider society. Turning points described by participants were different to those found through narratives. Several implications are raised, including recommendations for clinical assessment and future research.

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Section A: What Does the Current Literature Tell us About the Importance of the Developmental Timing of Adverse Childhood Experiences for the Development of Later Psychotic-like Experiences?

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Abstract

This review introduced psychotic-like experiences (PLE), adverse childhood experiences (ACE) and provided an overview of how ACEs have been defined and measured over time. The impact of the developmental timing of ACEs on PLEs is discussed and possible explanations of the mechanisms behind the role of timing are presented. A systematic review of 13 papers was conducted and quality assessed using the Joanna Briggs Institute (JBI) checklist. A textual narrative review of results was presented. All findings were varied and did not indicate a pattern, where some studies found adversities in childhood more strongly associated, others found exposure to adversity in adolescence to be more likely to lead to PLEs. Limitations and future implications of the review were presented.

Introduction

Psychotic-Like Experiences

The term “psychosis” is used to describe a range of experiences that can include difficulty organising and expressing thoughts; holding unusual beliefs; periods of detachment from reality; mistrusting thoughts; and hearing voices or having visions that others do not perceive (Cooke, 2017). Traditional definitions of “psychosis” suggest that they are the result of a biological illness of the brain (Kraepelin, 1899; APA, 2013). This medical model claimed there are distinct categories of those who are “normal” and those who experience “psychosis”. “Psychotic-like experiences” were initially used as an umbrella term for all experiences that resembled “psychosis” as defined by Cooke (2017) and conceptualised as a continuum of intensity of experiences (Strauss, 1969). However, as the understanding of psychosis has evolved, the term PLE has taken on many different meanings (Seiler et al., 2020). Recently, it has been widely considered as a phenomenon that is experienced by people in the general population in the absence of a clinical diagnosis (Kelleher & Cannon, 2011). Others have also used the term when the researchers doubt the validity of someone’s experience or the validity of an assessment (Hinterbuchinger & Mossaheb, 2021).

To include people who experience voices, visions and unusual experiences in the absence of a clinical label, this review defines “psychotic-like experiences” as any experiences that may be related to the idea of “psychosis” outlined by Cooke (2017; Table 1) disregarding the concept of clinical and non-clinical categories.

Table 1

“Psychosis” Outlined by Cooke (2017)

Types of experiences can include
Hearing, seeing, tasting, smelling or feeling things that other people do not.

Holding strong beliefs that other people do not share.

Difficulty with thinking and concentrating.

Feeling overwhelmed by experiences and coping by withdrawing or having low energy.

Adverse Childhood Experiences

The term “adverse childhood experience” was coined by Felitti et al. (1998) in their seminal paper on the role of traumatic events in childhood on adult physical health risks (Strompolis et al., 2017). The “ACEs study” sought to investigate why people made poor decisions in physical health (Felitti et al., 1998). The researchers asked people attending a primary health clinic about eight categories of adverse experiences: psychological, physical and sexual abuse; violence against a mother; living with a household member who experienced substance misuse, mental health difficulties or experienced imprisonment and parental separation (Afifi, 2020). Questions in emotional and physical neglect domains were added in the second wave of the study (Afifi, 2020). The original study found that the more ACEs people experienced, the higher their physical health risks (Felitti et al., 1998). Whilst it had been known in clinical and academic fields that maltreatment in childhood led to negative outcomes, Felitti et al.’s (1998) study was one of the largest investigations of childhood adversities. It made ACEs and their impact on adult physical and mental health, life expectancy and social functioning known to the wider public (Hambrick et al., 2019). Therefore, the domains of adversity research in Felitti et al.’s (1998) study became known as the original ten ACEs, which have been employed in an expanding area of research over the last 20 years.

Despite the continued use of Felitti et al.’s (1998) ACEs measure in clinical and academic fields, there have been criticisms about the construction and contents of the questionnaire (Kelly-Irving & Delpierre, 2019). The domains in the original study were selected to measure outcomes in a sample of predominantly white middle-class people and a

rationale was not provided for the selection of adverse experiences (Karatekin & Hill, 2019). Additionally, whilst Felitti et al. (1998) did not intend to create an exhaustive list of ACEs, by limiting the definition of ACEs to maltreatment and household dysfunction, the tool has been criticised for excluding other types of adversities outside the home, which can also disproportionately limit interventions to those focused upon only experiences within the house and parenting practices.

Following the ACEs study, there has been much development to expand and improve measures used to screen for childhood adversity. The Philadelphia ACE Study (Cronholm et al., 2015) noted the lack of socio-economic diversity in the original study's population which led to an oversight of certain types of adversity. They added community-level adversities: witnessing violence, discrimination concerning race or ethnicity, adverse neighbourhood experiences, bullying, and living in foster care. The Maltreatment and Abuse Chronology of Exposure scale (MACE; Teicher & Parigger, 2015) covered exposure to experiences of peer-instigated mistreatment, as well as witnessing violence towards siblings. The Juvenile Victimisation Questionnaire (JVQ; Hamby et al., 2004) was created as a measure for both current experiences of childhood adversity and a retrospective questionnaire for adults who had experienced childhood victimisation. The JVQ also aimed to ask questions unique to childhood and events that can occur at any time of life, including assault and theft. The World Health Organisation (WHO) created the Adverse Childhood Experiences International Questionnaire (ACE-IQ; WHO, 2011), which was intended to be a measure that could be used in any country. The main differences from the original ACEs questionnaire were a change in wording and the additions of young and non-consensual marriage, parental death, peer violence, witnessing community violence, and exposure to war (WHO, 2018).

In addition to the various questionnaires used to measure ACEs, there has also been a lack of consistency in the definition of ACEs across the literature (Liming & Grube, 2018).

Many studies use the terms trauma, adversity, and abuse interchangeably (Afifi, 2020), and despite studies setting out to research ACEs, they may only measure childhood maltreatment (Afifi et al., 2008). These inconsistencies in the definition can pose further limitations in building on existing research as comparisons and conclusions across studies were difficult to make (Hughes et al., 2017).

ACEs and Trauma-Informed Approaches

Despite the lack of consensus on how ACEs should be defined and measured, one of the main advantages of the wider awareness of ACEs has been their contribution to the trauma-informed understanding of mental health (Hambrick et al., 2019). Historically, psychotic-like experiences were viewed to be outward signs of an illness and the result of neurological differences and genetics (Byrne et al., 2010). As such, treatment and research were focused on psychiatry, and medication to alleviate distressing experiences (Read & Williams, 2019). However, following the increasing awareness of the significance of ACEs on mental health, there has been a paradigm shift towards trauma-informed understanding and practices (Byrne et al., 2010). The Power Threat Meaning Framework (PTMF) views PLEs as understandable responses to threats (Johnstone & Boyle, 2018) and complex trauma experiences (Read et al., 2014). The PTMF posited that the meanings people make of their experiences inform their responses (Johnstone & Boyle, 2018). Unprocessed memories of traumatic events may be thought of as true or internalised and become part of voices or visions; and unusual beliefs are representations of themes related to trauma (Peach et al., 2020).

ACEs and Adult Mental Health

The association between ACEs and PLEs is well documented (Karcher et al., 2020). One meta-analysis found that 87% of people who experience PLEs have reported at least one ACE (Kraan et al., 2015). Much of the research into ACEs has been focused on the type and

number of ACEs (Hawes et al., 2021). A cumulative effect has been found, where the more ACEs people experience, the higher the risk of having PLEs (Hawes et al., 2021). In comparison, there has been less interest in the role timing of ACEs on PLEs (Hawes et al., 2021). Many questionnaires do not include a measure of age of exposure to adversity, with the MACE being one of the few to include age as part of the standard protocol (Teicher & Parigger, 2015). Emerging research into the timing of ACEs in managing difficult emotions found that adults who were first exposed to childhood maltreatment or interpersonal violence during middle childhood found it more difficult to manage emotions relative to those first exposed during other developmental stages (Dunn et al., 2018). The researchers hypothesised that middle childhood is a time for cognitive and emotional development, which requires social relationships and secure attachment with caregivers (Fields & Prinz, 1997). Disruptions at the crucial time of development could particularly negatively impact people's ability to manage intense emotions (Dunn et al., 2018). Additionally, McCutcheon et al. (2010) found that neglect, sexual and physical abuse in childhood, were a stronger predictor of the trauma responses of flashbacks, nightmares and hypervigilance than the same events occurring in adolescence.

Protective Factors of ACEs

It is important to remember that not every child who experiences ACEs develops long-term negative health problems (Bethell et al., 2016). Therefore, there has been much research into protective factors that may contribute to people's resilience against ACEs. One framework is the protective factors model, which suggests resilience can be impacted by the presence of assets and resources, which can then mediate the relationship between ACEs and long-term outcomes (Zimmerman, 2014). Certain protective factors have been found to moderate the risks of ACEs, including the presence of an adult that makes a child feel safe (Walker et al., 2011) or provides social support (Mcelroy and Hevey, 2014) and living in a

safe neighbourhood (Moore & Ramirez, 2016). Greene (2008) found that the positive effect can be lifelong and therefore argued that it may be particularly important for individuals who have experienced multiple ACEs.

Protective factors of ACEs for PLEs

In comparison to risk factors, there has been less research and interest in the area of protective factors for psychosis (Brasso et al., 2021). However, some studies have found that family support and caregiver warmth were associated with the improvement of functioning in adolescents who experienced PLEs (Cotter et al., 2014). Additionally, research into protective factors for the effect of ACEs and PLEs is even more limited, with no studies investigating the interaction between protective factors and the role of cumulative and severity of ACEs on PLEs. Gayer-Anderson et al. (2015) found that experiencing social support significantly reduced the effect of physical abuse on people with first episode of psychosis (FEP). Another study found that a supportive parent-child relationship mediated the relationship between adversity and PLEs (Dhondt et al., 2019).

The Role of Timing in Trauma

There have been various explanations as to why the timing of exposure to ACEs on mental health may be important. Erikson's (1958) lifespan theory of psychosocial development categorises child development into eight stages. Whilst there were no specific age ranges to Erikson's theory, each phase was associated with a general period of life. Syed and McLean (2017) described the stages as developmental tasks that are present throughout life but may be more salient at different points in life due to age-related circumstances. Each developmental task consists of a "negative" and "positive" element and achieving a sense of balance between these is integral to developing the ability to manage challenges in life (Syed and McLean, 2017). Although Erikson's stages ranged across the life span, many of the stages are in childhood, and therefore any adverse experiences during any stage may cause

difficulties in achieving a successful resolution of the opposing sides at each stage (eg. identity vs confusion at adolescence).

Another hypothesis of the role of timing has been the physical impact of trauma on the brain (Bremner, 2006). Throughout the lifespan, the brain develops and undergoes many changes in structure and function (Bremner, 2006). In the first five years of life, the brain volume increases in terms of grey and white matter structures (Giedd et al., 1999). From ages seven to adulthood, there continues to be significant development of the frontal cortex and pruning of neurons based on social environment and experiences (Mustard, 2006). Therefore, it has been suggested that childhood trauma may affect the brain functionality. The developmental traumatology model is focused on the biological effects of trauma (De Bellis & Zisk, 2014). Studies looking at the duration and age of onset of specific trauma found that children living in orphanages before adolescence had different cortisol production than those in orphanages during adolescence (Gunnar & Vazquez, 2001). Additionally, children who experienced physical and sexual abuse in the first five years of life had differences in the limbic-hypothalamic-pituitary-adrenal (LHPA) axis regulation in comparison to those who experienced neglect or emotional abuse and those where the abuse occurred after age five (Cicchetti et al., 2010). Therefore, it appears that the age of onset of trauma and the type of trauma can impact how the brain develops and functions.

Aims of the Review

To the author's knowledge, there has not been a previous review of the literature about the timing of ACEs on later PLEs. Much of the literature is focused on the type and cumulative effect of ACEs, and research into the role of timing is still very much in its infancy. Therefore, this review aims to explore what current literature tells us about the importance of the developmental timing of ACEs for the development of later PLEs.

Method

A systematic search was conducted using five electronic databases in October 2023. The search comprised of Applied Social Sciences Index and Abstracts (ASSIA), Medline, PsychInfo, PubMed and Web of Science (Figure 1). The same search terms were used across all databases, searching titles and abstracts and comprised of terms relating to ACEs, timing and psychotic-like experiences (Table 2), no date limits were used.

Table 2

Search terms used in database search

Terms related to Adverse Childhood Experiences		Terms related to Timing		Terms related to Psychotic-like Experiences
ACE OR ACES OR “Adverse Childhood Experience*” OR “Adverse Childhood” OR “Childhood Adversity” OR “Childhood Trauma*” OR “Childhood Abuse” OR “Childhood Sexual Abuse” OR “Childhood Physical Abuse” OR “Childhood Emotional Abuse” OR “Child* Mistreatment” OR “Traumatic Childhood” OR “Childhood Psychological Abuse” OR “Childhood Traumatic Stress” OR “Negative Childhood Experience*” OR “Adverse Family Experience*” OR “Childhood Maltreatment”	AND	“Development* Tim*” OR “Development* Stage*” OR “Development* Phase*” OR “Cognitive Stage*” OR “Cognitive Phase*” OR “Life Stage*” OR “Development* Period*” OR “Critical Period*” OR “Sensitive Period*” OR timing OR “Life phase*” OR “Age of Exposure” OR “Critical Phase*” OR “Critical Stage*” OR “Sensitive Stage*” OR “Sensitive Phase*” OR “Life stage*” OR “Middle Childhood” OR “Early Childhood” OR “Late Childhood” OR “Trauma Onset” OR “Exposure Age” OR “Age at Exposure”	AND	Psychosis OR Psychotic OR “Unusual Experience*” OR Schizophrenia OR Schizoaffective OR “Unshared Experience*” OR Voice* OR Vision* OR Delusion* OR Hallucination* OR Hallucinatory OR “Unusual Belief*” OR “Unshared Belief*” OR PLE

A total of 708 papers were retrieved from the electronic database search. A manual search of Google Scholar was completed, and an additional three papers were included in the

screening. The titles and abstracts of 711 papers were screened following the inclusion and exclusion criteria (Table 3), and 13 remaining papers were taken to the full-text review to assess eligibility. A Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram (Page et al., 2021) outlines the full search process in Figure 1.

Table 3

Inclusion and Exclusion Criteria

Inclusion Criteria
• Articles written in the English language. • Non-English language articles with full English translation. • Articles that were empirical and published in peer-reviewed journals. • Articles where participants experience PLEs following Cooke's (2017) definition (Table 1). • Articles with participants over the age of 14. • Articles using quantitative and qualitative methods. • Articles where the main aim was investigating the timing of ACEs. • Articles where the main aim was not the timing of ACES, but a separate analysis was conducted on the timing of ACEs.
Exclusion Criteria
• Articles where PLEs occurred before the age of 14. • Articles that focused on the biological impact or non-psychotic-like psychological experiences (e.g. low mood or dissociation). • Articles with animals as participants.

In operationalising the inclusion criteria, the methodology of the articles was considered. As each paper defined the age of childhood differently, this review followed the inclusion criteria for referrals for Early Intervention for Psychosis services (EIPs) in the UK (National Health Service (NHS) Long Term Plan, 2019). As research into the role of developmental timing of ACEs is still in its infancy to increase the scope of the review, articles using quantitative and qualitative methods were included. Additionally, the timing of

ACEs was often not the focus of the research paper, therefore papers were included even if the main focus was not on timing, provided that a separate analysis was conducted on the timing of ACEs.

Quality Appraisal

All studies included in the full review were quantitative in design, they were quality-assessed using the Joanna Briggs Institute (JBI) checklists for cross-sectional, cohort and case-control studies (Moola et al., 2020; Appendix A, B, C). The checklist used was selected based on each paper's study design, all checklists aimed to critique the objectives, design, methods, conduct and analyses of papers. The JBI checklists' items were assessed and answered with *yes, no, unclear* or *not applicable*.

Review Methodology

Following guidance from Xiao et al. (2019) on systematic reviews, as studies in this area are still in their infancy, a "describe" review was conducted. This review takes guidance from the textual narrative synthesis of Popay et al. (2006) and Lucas et al. (2007). Standard data extraction was carried out to take the study characteristics of each paper. A quality appraisal of design methodology and operationalisation of factors were considered. Studies were then organised into more homogenous subgroups (childhood and adolescence) and similarities and differences were compared and summarised.

Results

Overview

Thirteen quantitative studies were included in this review (Table 3). All studies looked at the timing of adverse experiences as part of their aims. However, all studies also investigated the type of ACE as well as the accumulation and duration of ACES. All studies investigated the risk of PLEs, except for one (Schalinski et al., 2019) which examined the intensity of PLEs.

Figure 1

PRISMA Flow Diagram (Page et al., 2021) *of the Search Process*

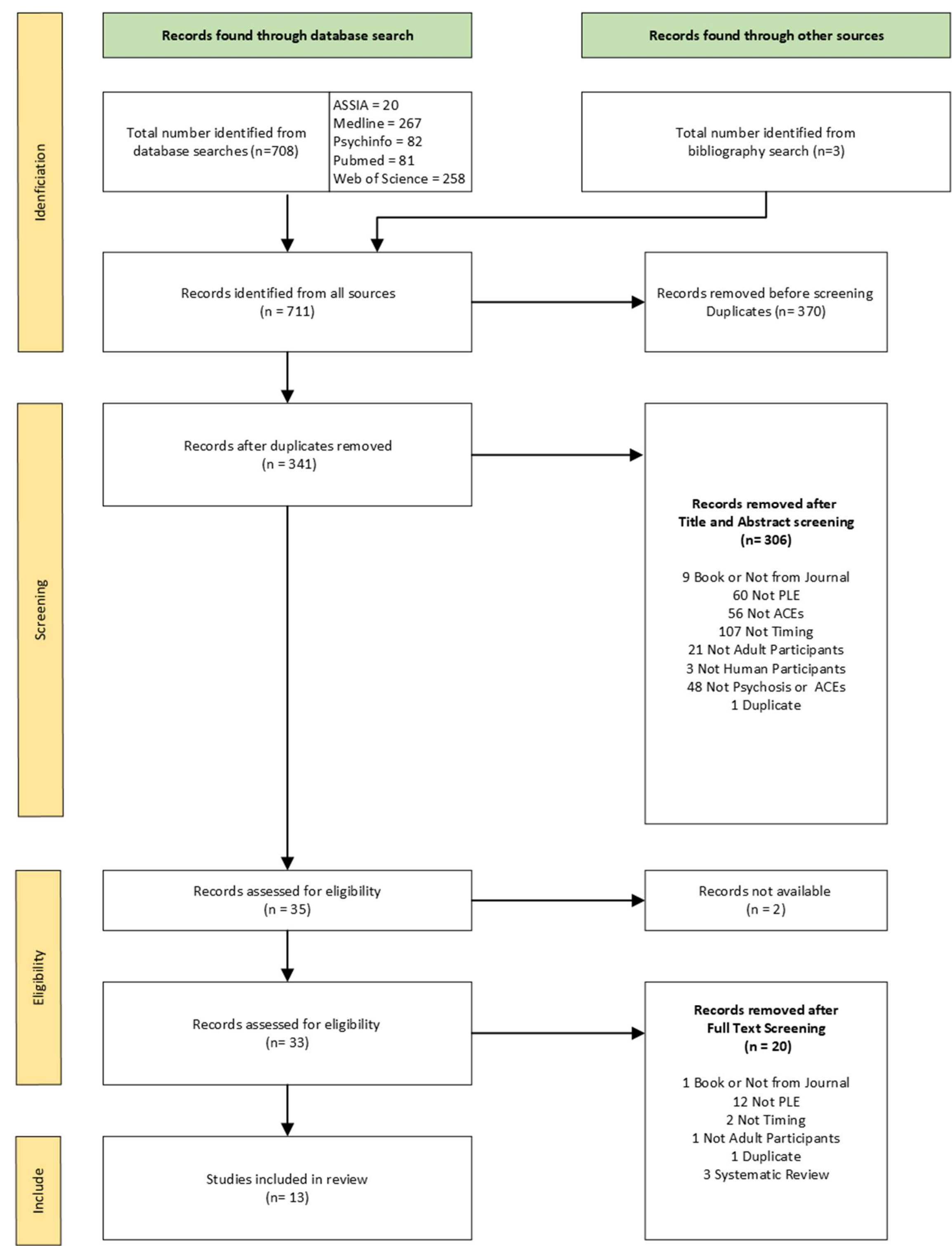

Table 4
Study Characteristics Table

Study	Aim	Sample	Study Design and Methodology	Measures (references in table notes)	Analysis	Key Findings
Alameda et al. (2016) Switzerland	To examine the impact of timing of childhood trauma on PLE	196 Participants (M= 24.06, ±4.85) 29.1% Female All participants were recruited for an early intervention for psychosis programme Ethnicity -No Socio-economic - YES	Cross-Sectional Developmental period of ACEs: Early Trauma (0-11), late trauma (12-16)	ACE: - Interview PLE: -PANSS	A Two-level Regression model was used to compare PLEs between early and late trauma groups.	Those exposed to early trauma (0-11) had more PLEs than the late trauma group (11-17).
Bórquez-Infante et al. (2022) Chile	To examine the association between different types of ACEs at various developmental stages and lifetime PLE in patients with SUD in Chile.	399 participants Age (M=39.2, ±10.6) 32.3% Female 220 participants reported PLE, 179 participants reported no PLE All were recruited through a	Case-Control study Developmental Period of ACEs: Childhood (0-12), Adolescence (13-17)	ACE: - Collected via interview with clinical psychologists, categorised into 12 domains PLE: - CIDI (Spanish version) Other:	Univariate and multivariate logistic regressions to analyse the association between PLE and the developmental period	A statistically significant association between PLE and sexual abuse during childhood. A statistically significant association between PLE and arrests during adolescence.

		substance misuse service. Ethnicity -No Socio-economic - No		- MINI (Spanish version) - Social network quality index via interview		
Croft et al. (2018) UK	Aimed to investigate whether the age of exposure or specific trauma types are differently associated with the risk of developing psychotic experiences.	3758 Participants 56.2% Female All were recruited as part of the ALSPAC cohort study. Ethnicity -YES Socio-economic - Yes	Prospective Cohort Developmental Period of ACEs: - Early childhood (0-4.9) - Middle childhood (5-10.9) - Adolescence (11-17)	ACE: - 121 questions about traumatic events PLE: - PLIKSi	Logistic regression was used to calculate the odds ratios of PLE with exposure to trauma.	Found that trauma at any stage was associated with an increased likelihood of PLE. Trauma during adolescence was the most strongly associated with PLE.
Fisher et al. (2010) UK	Aimed to investigate the differences in age of exposure to adversity in people with PLEs.	428 Participants PLE Group: (N= 182) (M= 31, ±11.3) Recruited from people who presented to mental health services for the first time with PLE. No PLE Group: (N=246) (M= 39, ±12.7)	Case-Control Developmental period of ACEs: Childhood (0-11), Adolescence (12-16)	ACE: - CECA.Q PLE: - Diagnosis of schizophrenia following ICD-10 - PSQ (for controls)	Logistic regression was used to test association between timing of adversity and PLE.	Maternal physical abuse during childhood was associated with PLEs in comparison to occurrence in adolescence.

		-Recruited from the same geographical area population Ethnicity -YES Socio-economic -YES (Parental occupations)				
Hjern et al. (2021) Sweden	Aimed to investigate the risk of young refugees and international adoptees in Sweden in developing PLE. And whether this risk is influenced by early childhood adversity, operationalised as age at adoption/residency	1,674,580 Participants - Adoptee group (N= 21,615) - 38.3% Female - Born outside of Europe and adopted between 0-15 - Refugee group (N = 42,732) 49.9% Female - Born outside of Europe and settled in Sweden between 0-15 -Swedish born group (N=1,610,233) - 48.4% Female -Born in Sweden with a Swedish-	Cross-Sectional study Developmental Period of ACEs: Adoption: 0yr, 1yr, 2-4yrs, 5-14yrs Refugees: 0-4yrs, 5-9yrs. 10-14yrs	ACE: - Adoption or Refugee status on national register PLE: - Hospitalisation for PLE	Cox proportional hazards model was used to estimate the hazard ratio of PLEs. Comparing across developmental period that participants were adopted and settled in Sweden.	Adoption: - Hazard ratios for PLE increased with age of adoption. Refugees: - No difference in hazard ratios for age of residency

		born mother in the same cohort. Ethnicity- Yes Socio-economic - Yes				
Kirkbride et al. (2017) UK	To examine differences in PLEs in first-generation immigration in childhood vs adolescence	687 Participants 43.2% Female All participants were recruited for an early intervention for psychosis programme Ethnicity -YES Socio-economic - YES	Cross-Sectional Developmental period of ACEs: Infancy (0-4yrs), childhood (5-12), adolescence (13-19)	ACE: - Interview PLE: -OPCRIT	Likelihood Ratio Test	Found that those who immigrated during childhood (5-12) had elevated rates of PLE compared to UK born group. Some participants were age 16-18, meaning that they were still children at the time of study, which could affect the analysis of age at immigration. As adolescence was 13-19.
Morgan et al. (2020) UK	Aimed to test the hypothesis: odds of psychotic disorder are greatest for those who report early adversity (0-11)	675 participants - PLE group (M= 28.9, ±8.9) - 38.3% Female - recruited through Mental health service and General Practitioner with concerns of FEP - No PLE group (M=35.3, ±12.3) 49.9% Female	Case-Control study Developmental Period of ACEs: Childhood (0-11), Adolescence (12-16)	ACE: - CECA - Bullying Questionnaire PLE: - SCAN - OPCRIT	Logistic regression to estimate odds ratios of PLE across different developmental periods in each domain of ACE.	Higher odds ratio of PLE when sexual abuse, physical abuse and bullying occurred in adolescent, compared to the same ACE in childhood. Odds ratios of PLE were similar across developmental periods for household discord and psychological abuse.

		- Recruited from same geographical location, and matched for gender, age and ethnicity Ethnicity -Yes Socio-economic - Yes				
Paksarian et al. (2015) Denmark	Aimed to investigate the role of separation from parents in childhood and PLEs.	985, 055 participants Ethnicity -No Socio-economic - No	Cohort Developmental period of ACEs: Age when separated was categorised as each year of childhood (1-15)	ACE: - Records of residential addresses PLE: - Diagnosis of schizophrenia following ICD-10	Log-linear Poisson regression was used to estimate relative risks of PLE across the age of separation.	Relative risks of PLE increased with the age of separation from both parents. Paternal separation at 14 had a higher risk. Maternal separation: risks of PLE increased with age.
Park et al. (2020) USA	To investigate the effect of number, type and timing of adverse experiences on PLEs in people with bipolar diagnosis	2675 Participants (M= 44.1, ±13.0) 63.7% Female All participants were recruited as part of a large-scale genome-wide association study. Ethnicity -YES 80.9 White 19.1 Other Socio-economic - No	Cross-sectional Developmental period of ACEs: Childhood (0-12yrs), Post-childhood (after 12yrs)	ACE: - CLES PLE: - DIGS	A multivariate regression analysis and logistic regression was used to investigate the timing of adverse experiences with PLEs.	Found when comparing PLE outcomes for people who experienced ACEs vs post-childhood and no ACEs. The odds ratio for PLEs was highest for childhood physical abuse compared to post-childhood physical abuse.

Pietrek et al. (2013) Germany	To investigate whether there are any patterns of different types of adversity at different age groups in experiences of PLEs.	245 Participants PLE Group: (N= 33) (M= 33, ±9.2) - Recruited from 160 in hospital for mental health difficulties No PLE Group: (N= 85) (M= 38.3, ±14.1) - Recruited from the community -Recruited from the same geographical area population Ethnicity -YES Socio-economic - YES (Parental occupations)	Case-Control Developmental period of ACEs: Preschool (3-5), (6-8), Prepubescent (9-10), Pubertal (11-13), Adolescent (14-16)	ACE: - ETI PLE: - Diagnosis of schizophrenia	AN Omnibus ANOVA was used to compare the interaction between PLEs and the timing of ACEs.	Found a trend between sexual abuse between ages 6-8 and PLEs.
Rutkowski et al. (2016) Poland	To investigate the influence of time of experiences of political persecution on the development of PLEs.	327 Participants (M= 68) 70% Female All participants were people who had experienced	Cross-Sectional Developmental period of ACEs: Childhood (0-5), After (5+)	ACE: - Interview PLE: - MMPI – 2 (Schizophrenia sub-scale)	Chi-square test, Student's t-test, and the Mann–Whitney U was used to compare the two	Found that scores of PLE was higher for people who experienced trauma before age 5, than trauma after age 5.

		political persecution. Ethnicity -NO Socio-economic - NO			developmental timing groups.	
Schalinski et al. (2019) Germany	Aimed to compare the age of exposure to adversities in people with PLE and people without PLE.	250 Participants - PLE group (N= 180 (M= 28.6, ±8.8) - 31.7% Female - No PLE group (M=25.8, ±7.1) 49.9% Female - Recruited from the community Ethnicity -No Socio-economic - No	Case-Control study Developmental Period of ACEs: - Each year of childhood (0-18)	ACE: - LEC - KERF PLE: - PANSS	Conditioned random forest regression was used to detect the main predictors from a large set of predictors: 18 neglect and 18 abuse variables for each year from age 1 to 18 were chosen from the MACE.	Neglect at age 10 was found to be a significant predictor for the severity of PLE.
Zhang et al. (2021) China	Investigated whether the number and age of first house move are differently associated with the risk of experiencing PLEs.	39, 531 Participants - (M= 18.71, ±2.14) - 49.5% Female All participants were recruited from a university in China as part of a	Cross Sectional Developmental period of ACEs: 0–5, 6–10 and 11–15 years.	ACE: - Moves of residence survey PLE: - SCL-90-R	Stratification and interaction analyses to test associations of age at first move and PLE.	A significant association between PLEs and more than 1 house move between 0-5yrs old, but not any other age period.

		wider study on mental health. Ethnicity -No Socio-economic - No				

Notes: CIDI = Composite International Diagnostic Interview V7.1 (Kessler and Üstün, 2004), MINI= Mini-International Neuropsychiatric Interview (Bobes, 1998), CECA = Childhood Experience of Care and Abuse (Bifulco et al., 1994), Bullying Questionnaire (Arseneault et al., 2006), SCAN = Schedules for Clinical Assessment in Neuropsychiatry (WHO, X), OPCRIT = Operational Criteria Checklist for Psychotic and Affective Disorders (Craddock et al., 1999), LEC = Life events checklist (Gray et al., 2004), KERF = Instrument zur umfassenden Ermittlung belastender Kindheitserfahrungen, German version of MACE (Isele et al., 2014), PANSS = Positive and Negative Syndrome Scale (Kay et al., 1987), PLIKSi = Psychosis-like symptoms semi structured interview (Horwood et al., 2008), Moves of residence survey (Mortensen et al., 1999), SCL-90-R = Symptom Checklist-90-Revised (Derogatis, 1983), CECA.Q = Childhood Experience of Care Abuse Questionnaire (Bifulco et al., 2005), PSQ = Psychosis Screening Questionnaire (Bebbington & Nayani, 1995), ETI = Early Trauma Interview (Bremner et al., 2007), MMPI – 2 = Minnesota Multiphasic Personality Inventory (Polish version) (Nichols, 2011), CLES = Childhood Life Events Scale (Anand et al., 2015), DIGS = Diagnostic Interview for Genetic Studies (Nurnberger et al., 1994).

Quality Appraisal

Case-Control Studies

Five studies used a case-control study design and were assessed using the JBI case-control checklist (Table 5). All studies met the criteria of measuring exposure to ACEs and the outcome of PLEs in a standardised and valid way. All studies also identified and adjusted for confounding variables with appropriate statistical analysis. However, only Fisher et al. (2010) gave evidence of matching participants in the cases group with controls. Fisher et al.'s (2010) study recruited the control group from the same geographical area as the cases group and purposefully over-sampled from the Black-Caribbean population to match the proportion of people of Black-Caribbean ethnicity in the cases group.

Table 5

Table of Quality Appraisal for Case-Control Studies

	Bórquez-Infante et al. (2022)	Fisher et al. (2010)	Morgan et al. (2020)	Pietrek et al. (2013)	Schalinski et al. (2019)
1. Were the groups comparable other than the presence of disease in cases or the absence of disease in controls?	No	Yes	Yes	Yes	Unclear
2. Were cases and controls matched appropriately?	N/A	Yes	Unclear	No	No
3. Were the same criteria used for identification of cases and controls?	Yes	Unclear	Unclear	Yes	Yes
4. Was exposure measured in a standard, valid and reliable way?	Yes	Yes	Yes	Yes	Yes
5. Was exposure measured in the same way for cases and controls?	Yes	No	Yes	No	N/A

6. Were confounding factors identified?	Yes	Yes	Yes	Yes	Yes
7. Were strategies to deal with confounding factors stated?	Yes	Yes	Yes	Yes	Yes
8. Were outcomes assessed in a standard, valid and reliable way for cases and controls?	Yes	Yes	Yes	Yes	Yes
9. Was the exposure period of interest long enough to be meaningful?	N/A	Yes	Yes	Yes	Yes
10. Was appropriate statistical analysis used?	Yes	Yes	Yes	Yes	Yes

Cross-Sectional Studies

Six studies implemented a cross-sectional study design and were quality assessed using the JBI cross-sectional checklist, (Table 6). With the exception of Park et al. (2020), all studies defined and described the inclusion criteria, participants and setting of the study. Park et al.'s study (2020) was part of a larger genome project and did not provide details of the study within this paper. Three papers (Alameda et al., 2016; Park et al., 2020; Rutkowski et al., 2016) also did not give evidence of identifying and controlling for confounding variables.

Table 6

Table of Quality Appraisal for Cross-Sectional Studies

	Alameda et al. (2016)	Hjern et al. (2021)	Kirkbride et al. (2017)	Park et al. (2020)	Rutkowski et al. (2016)	Zhang et al. (2021)
1. Were the criteria for inclusion in the sample clearly defined?	Yes	Yes	Yes	No	Yes	Yes
2. Were the study subjects and the setting described in detail?	Yes	Yes	Yes	No	Yes	Yes

3. Was the exposure measured in a valid and reliable way?	No	Yes	No	No	Yes	Yes
4. Were objective, standard criteria used for measurement of the condition?	Yes	Yes	Yes	Yes	No	N/A
5. Were confounding factors identified?	No	Yes	Yes	No	No	Yes
6. Were strategies to deal with confounding factors stated?	No	Yes	Yes	No	No	Yes
7. Were the outcomes measured in a valid and reliable way?	Yes	Yes	Yes	Yes	Yes	Yes
8. Was appropriate statistical analysis used?	Yes	Yes	Yes	Yes	Yes	Yes

Cohort Studies

Two papers used a cohort design and the JBI cohort checklist was used to complete the quality appraisal, this checklist had 11 questions (Table 7). Croft et al. (2018) met all the quality criteria except for the validity and reliability of the measure of ACEs. The researchers measured participants' ACEs by asking participants or parents 121 questions about traumatic events. Although the questionnaire was extensive, the questions had been created by the researchers and had not been replicated or validated prior to use in this study. Paksarian et al.'s (2015) study did not specify the onset of PLEs; therefore, it is unclear if *participants were free of the outcome at the moment of exposure*. This is important as one of the main purposes of a cohort study is to investigate causality, and if researchers have not identified the onset outcome, then causal associations cannot be made (Song & Chung, 2010).

Table 7

Table of Quality Appraisal for Cohort Studies

	Croft et al. (2018)	Paksarian et al. (2015)
1. Were the two groups similar and recruited from the same population?	Yes	Yes

2. Were the exposures measured similarly to assign people to both exposed and unexposed groups?	Yes	Yes
3. Was the exposure measured in a valid and reliable way?	No	Yes
4. Were confounding factors identified?	Yes	Yes
5. Were strategies to deal with confounding factors stated?	Yes	Yes
6. Were the groups/participants free of the outcome at the start of the study (or at the moment of exposure)?	Yes	Unclear
7. Were the outcomes measured in a valid and reliable way?	Yes	Yes
8. Was the follow up time reported and sufficient to be long enough for outcomes to occur?	Yes	Yes
9. Was follow up complete, and if not, were the reasons to loss to follow up described and explored?	Yes	No
10. Were strategies to address incomplete follow up utilized?	Yes	Unclear
11. Was appropriate statistical analysis used?	Yes	Yes

Following the quality appraisal, the study methodology of each paper were examined to consider the samples, design and measures and a summary of findings were categorized into childhood, adolescence, role of timing and protective factors.

Sample

The studies were conducted in a range of countries: four studies took place in the United Kingdom (UK), two in Germany and one in Chile, China, Denmark, Poland, Sweden, Switzerland, and the United States of America (USA). All studies included demographic information of the participants' age and gender, with participants ranging from ages 15-68. However, there also appeared to be missing demographic information, particularly, ethnicity and socio-economic status (SES), which is a main limitation as these are known risk factors of an increased reporting of PLE. Only one study looked at the relationship between ethnicity and PLE (Kirkbride et al., 2017).

The size and type of sample of the studies varied, with eight studies ranging from 33 participants to 2675, and five studies that used data from registers or large epidemiology

studies. The largest sample was Hjern et al.'s (2023) study of 1,674,580, comparing Swedish-born people with adoptees and refugees. One study recruited from a university population in China (Zhang et al., 2021) and investigated the impact of the timing of house moves on university students' experiences of PLEs. Pietrek et al. (2013) recruited from an inpatient population and had a small sample of 33 who experienced PLEs. Two studies sampled from the general population and community mental health services, for people reporting first experiences of PLEs (Croft, 2018; Morgan et al., 2020).

Design and Measures

All studies addressed a clear research question, and the study designs seemed appropriate to the aims of each of the studies.

Six studies used a cross-sectional design (Alameda et al., 2016; Hjern et al., 2021; Kirkbride et al., 2017; Park et al. 2020; Rukowski et al., 2016; Zhang et al., 2021) and examined associations between the timing of ACEs and PLEs. Cross-sectional studies are a common study design due to their efficient and cost-effective nature, however, they do not explain a causal relationship (Wang & Cheng, 2020). Five studies adopted a case-control design (Bórquez-Infante et al., 2022; Fisher et al., 2010; Morgan et al., 2020; Pietrek et al., 2013; Schalinski et al., 2019), comparing people who experienced PLEs to people who did not report. Compared to cross-sectional, these studies allowed the possibility of understanding why some people who experience ACEs develop PLEs and others do not. However, case-control studies are limited as they cannot provide information about causation. A limitation of case-control is selection bias, many studies did not provide sufficient information about the recruitment of controls. Schalinski et al. (2019) reported that they recruited from a community population but did not indicate that they attempted to match controls and demographic information of gender and mean age were slightly different. This

study also did not measure PLEs within the control group; therefore, it can be hard to conclude if the control group were similar and different enough for the results to be valid. Two studies used a cohort design, which follows a group of individuals over time to observe the experience of childhood adversities. This study design can be helpful as it allows the possibility of understanding the causation of the adversity on later experiences of PLE (Song & Chung, 2010). Paksarian et al. (2019) used registry data to investigate the impact of parent separation on PLEs after the age of 15, whilst this study had advantages in its large sample, it also did not provide information about strategies to address incomplete follow-up. Additionally, whilst researchers controlled for confounding variables of urbanicity at birth, parental age and family history of PLE, they did not measure other experiences of adversity that could also impact the likelihood of experiencing PLEs.

Operationalisation of ACES

As discussed, there has been a lot of variation in the definition and measurement of ACEs, and this can also be seen in the studies included in this review. ACEs are typically defined as highly stressful and potentially traumatic experiences that occur before the age of 18 (Crouch et al. 2019). Eight papers investigated the effects of a range of ACEs, and collectively they measured 31 different types of ACEs. All papers had an item measuring physical abuse, and all except Park et al. (2020), measured sexual abuse. Bórquez-Infante et al. (2022) categorised ACEs into three domains: privative; harmful or threatening; and complex experiences. However, within these categories, the researchers did not include many other commonly included ACEs, such as neglect or bullying. Schalinski et al. (2019) measured the widest range of 14 ACEs through two measures, the LEC and KERF. Despite the well-known impact of chronic illness and parental death in childhood, only Park et al. (2020) included these ACEs in their study.

Five papers focussed on a singular type of childhood adversity, focusing on the impact of individual experiences such as house moves (Zhang et al., 2021) and parental separation (Paksarian et al., 2015) and generational traumas such as immigration (Kirkbride et al., 2017), adoption and refugee status (Hjern et al., 2021) and be part of a community that is experiencing political harm (Rutkowki et al., 2016).

Operationalisation of Developmental Time Periods

Table 8

Depiction of developmental time periods in all papers

Papers[a]	Age (Years)																			
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
A. (2016)	●	—	—	—	—	—	—	—	—	—	—	●	●	—	—	—	●			
B-I. (2022)	●	—	—	—	—	—	—	—	—	—	—	—	●	●	—	—	—	●		
C. (2018)	●	—	—	—	●	●	—	—	—	—	●	●	—	—	—	—	●			
F. (2010)	●	—	—	—	—	—	—	—	—	—	—	●	●	—	—	—	●			
H. (2021)[b]	●	●	●	—	●	●	—	—	—	—	—	—	—	—	●					
H. (2021)[c]	●	—	—	—	●	●	—	—	—	●	●	—	—	—	●					
K. 2017)	●	—	—	—	●	●	—	—	—	—	—	—	●	●	—	—	—	—	—	●
M. (2020)	●	—	—	—	—	—	—	—	—	—	●		●	—	—	—	●			
P. (2015)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				
P. (2020)	●	—	—	—	—	—	—	—	—	—	—	—	●	●	—	—	—	—	●	
P. (2013)				●	—	●	●	—	●	●	●	●	—	●	●	—	●			
R.2016)	●	—	—	—	—	●●	—	—	—	—	—	—	—	—	—	—	—	—	—	►
S. 2019)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Z. (2021)	●	—	—	—	—	●	●	—	—	—	●	●	—	—	—	●				

[a] Initial of the first author and year has been used to reference each paper in this table for ease of reading.

[b] adoption group in Hjern et al. 2020

[c] refugee group in Hjern et al. 2020

All papers defined, labelled and divided developmental ranges in varied ways (Table 8). Papers also varied in the cut-off age for the measurement of ACEs. Hjern et al. (2021) set the youngest cut-off age and only measured refugee and adoptee status up until the age of 14. Four studies measured ACEs that occurred before the age of 16, which was the most common among the studies in this review (Alameda et al., 2016; Fisher et al., 2010; Morgan et al.,

2020; Pietrek et al., 2013). Kirkbride et al. (2017) had the oldest cut-off age and measured any ACEs that had occurred before 19 years. Two studies did not specify a cut-off age, Park et al. (2020) defined post-childhood as after age 12 and Rutkowski et al. (2016) operationalised after-childhood after age 5. Whilst all studies measured all ACEs from birth, Pietrek et al. (2013) did not measure ACEs before age three, and Bórquez-Infante et al. (2022) also did not measure ACEs in the first year of life.

The distribution and age ranges also varied between studies, six papers divided the ages into two categories (Alameda et al., 2016; Bórquez-Infante et al., 2022; Fisher et al., 2010; Morgan et al., 2020; Park et al., 2020). Two studies categorised age periods into three groups (Croft et al., 2019; Hjern et al., 2023; Zhang et al., 2021). Pietrek et al. (2013) divided age ranges into five evenly proportioned three-year age groups ranging from 3-16 years, as informed by previous research into the effect of sexual abuse and stress on brain development (Anderson et al., 2008). Even within studies, researchers had to implement different age ranges as constrained by the data, Hjern et al. (2020) used data from a national register and the age categories for adoptees and refugees were different. In contrast, Schalinski et al. (2019) and Paksarian et al. (2015) did not use age ranges and measured ACEs by year of childhood rather than categorised into ranges.

Operationalisation of PLEs

Due to differences in study design and aims, and the broad understanding of PLEs this review is positioned in, the studies in this review varied in the conceptualisation of PLEs. Five papers investigated the presence of any PLEs, and inclusion criteria were not based on diagnosis (Bórquez-Infante et al., 2022; Croft et al., 2019; Park et al., 2020; Rutkowski et al. 2016; Zhang et al., 2021), many of these papers used self-reporting measures of PLEs and recruited from the general population and across different mental health difficulties.

The other studies took a more stringent approach and defined PLEs based on diagnosis. Fisher et al. (2010) and Morgan et al. (2020) had an inclusion criterion for cases to be people who were categorised as seeking help with FEP as defined by the ICD-10 (WHO, 1993). Alameda et al. (2016) conceptualised PLEs as those in the “ultra-high risk” (UHR) of FEP. The remaining five studies all conceptualised PLEs as having received a diagnosis of “schizophrenia” or a “psychotic-related disorder” defined by ICD-10 and DSM-V (APA, 2013; Hjern et al., 2023; Kirkbride et al., 2017; Paksarian et al., 2015; Pietrek et al., 2013; Schalinski et al., 2019). These papers used clinician observation and interviews to inform the presence of diagnosis, however, Schalinski et al. (2019) also used the self-report and clinician observations measure, Positive and Negative Syndrome Scale (PANSS; Kay et al., 1987) to measure the severity of PLEs.

As the studies within this review include participants who have sought help for their PLEs and people who have not, it can be argued that this provides a variation in experiences of distress of PLEs. Therefore, this may offer more insight into the less researched area of PLEs outside of a clinical population and perhaps give credence to the continuum understanding of PLEs. Unfortunately, the variation in the operationalisation of PLEs can also make it more difficult to compare and be confident when drawing conclusions between papers.

Summary of Findings

Childhood

Nine studies found outcomes that indicated adversity in early childhood were related to experiences of PLE in adulthood. In relation to trauma in general, Alameda et al. (2016) found that those who were exposed to early trauma (0-11 years) experienced more PLEs than the late trauma group (12-16 years) and non-trauma group. Two studies had findings regarding the role of sexual trauma, Bórquez-Infante et al. (2022) found a significant

association between PLE and sexual abuse during childhood (0-12 years) and Pietrek et al. (2013) found a trend that sexual abuse was more prevalent in the 6-8 age group for people who experienced PLE. However, this was not statistically significant and a small sample (n = 33). One study looked at physical abuse and found that maternal physical abuse during childhood (0-11 years) was associated with PLEs, but not if the abuse occurred during adolescence (Fisher et al., 2010). Schalinski et al. (2019) found that neglect at age 10 was a significant predictor of the severity of PLEs. Three studies explored the role of disrupted environments during childhood, Zhang et al. (2021) found a significant association with PLEs people who had moved more than once between ages 0-5. Rutkowski et al. (2016) found that scores for PLEs were higher in people who had experienced war-related political persecution before the age of 5, than those after the age of 5. Kirkbride et al. (2017) found that those who immigrated to the UK during childhood (5-12 years) had higher rates of people experiencing PLE compared to people born in the UK. Park et al. (2020) also found that the odds ratio for PLEs was higher if physical abuse occurred in childhood (0-12 years) than post-childhood.

Adolescence

Five studies provided an outcome relating to the impact of adversity experienced in adolescence on later experiences of PLE. Two studies looking at several traumatic experiences found that exposure to sexual abuse, physical abuse and bullying during adolescence (12-16 years) caused a higher odds ratio for PLEs (Morgan et al., 2020), and Croft et al. (2018) found trauma in adolescence (11-17 years) was the most strongly associated with PLEs. Concerning disruption and changes in parental figures, two studies focussed on adoption and parental separation. Hjern et al. (2023) found the older the age of adoption, the higher the hazard ratio for PLEs. Paksarian et al. (2015) found that the likelihood of experiencing PLEs increased with the age of separation from both parents. For

age at first separation, paternal separation at 14 had a higher risk, whereas maternal separation increased with age. One study also looked at the impact of adolescent criminal behaviour, Bórquez-Infante et al. (2022) found a significant association between PLE and arrests during adolescence (13-17 years).

Role of Timing

Five studies in this review made conclusions that the role of timing was linked to changes in brain structure during development (Alameda et al., 2016; Croft et al., 2019; Paksarian et al., 2015; Pietrek et al., 2013; Schalinski et al., 2019). In contrast, two papers suggested a psychological explanation of the role of timing (Kirkbride et al., 2017; Morgan et al., 2020). Six papers did not supply conclusions about the role of timing of ACEs, despite finding associations between differences in age of ACE on PLEs (Bórquez-Infante et al., 2022; Fisher et al., 2010; Hjern et al., 2023; Park et al., 2020; Rutkowski et al., 2016; Zhang et al., 2021).

Additionally, all papers investigated the role of the timing of ACEs on the presence or absence of PLEs. Schalinski et al. (2019) was the only paper that investigated the role of the timing of ACEs on the intensity of PLEs. Four studies also found associations between the developmental timing of a specific type of adversity and PLEs, but no associations with other types of adversity (Bórquez-Infante et al., 2022; Fisher et al., 2010; Morgan et al., 2020; Schalinski et al., 2019)

Protective Factors

Zero studies in this review actively sought to investigate the role of protective factors, and only three papers made reference to the role of protective factors or resilience. Hjern et al. (2021) found that the risk of PLEs in refugees was reduced for those who had higher disposable income data at age 17. Zhang et al. (2021) referred to the protective factor of

greater financial support from families within their limitations. Kirkbride et al. (2017) commented within their implications on of the importance of promoting social support in critical periods of childhood.

Conclusion of Findings

To conclude, whilst the timing of exposure to ACEs has been found to have a role in the later experiences of PLEs, the reviewed papers' findings showed a lack of consensus as to which timings are most important. Additionally, it can be seen that studies varied in their approach to the investigations and the meanings that were derived from these findings.

Discussion

As the research into the role of the timing of ACEs on PLEs is emerging, there is a lack of consensus in the research design and methodology. However, the variation of locations of studies can be an advantage as it allows for greater generalisability and representation of people with experiences labelled as "psychosis." Additionally, it can minimise the possibility of geographical bias of a specific region and is a departure from Western-centric research (Petticrew & Roberts, 2008).

Sample sizes also varied, some studies used large samples through register data, and whilst register studies have been applauded for greater generalisability; they also depend on the accuracy of the registers. Register studies have often been criticised for the lack of transparency of data collection and quality of the data (Thygesen & Ersbøll, 2014). Another large sample used university data (Zhang et al., 2021), however, it is important to acknowledge it may be difficult to generalise outside the university population and provide less information about the long-term impact. Additionally, as students are likely from a higher socio-economic background than non-university students (Hanel & Vione, 2016), for Zhang

et al.'s (2021) study, there may be differences in the role of house moves in a non-university population.

Within this review, there was also variation in recruitment from community and inpatient populations. This can be beneficial to provide insight into the impact of ACEs across the intensity of experiences of PLEs (Loughland et al., 2004). However, there has been some criticism that individuals in an inpatient setting are more likely to experience more distress at the time of participation, which could impact on the content of information collected (Bell et al., 1992).

The review found much variation in the operationalisation of developmental time periods, as childhood stages are often debated (Woodhead, 2009). Additionally, as the studies were conducted across nine countries, this may be the result of cultural differences in the conceptualisation of childhood and adulthood (Arnett-Jensen, 2003). Whilst most studies used pre-determined age ranges, others also measured by year. This approach can be argued to allow a more inductive interpretation of the data rather than imposing a pre-determined range of ages. However, this could also cause the timing of experiences to be viewed as singular events unrelated to developmental stages. This can also be a concern as many developmental theories argue that there are no clear-cut age ranges for developmental periods (Syed & McLean, 2017).

Many studies did not provide a rationale for the division of developmental timing of exposure to ACEs (Bórquez-Infante et al., 2022; Croft et al., 2019; Kirkbride et al., 2017; Morgan et al., 2020; Paksarian et al., 2015). And whilst Zhang et al. (2021) did follow precedence (Lederbogen et al., 2011) for the cut-off age of 15 years, they did not provide a rationale for the distribution. Alameda et al. (2016) and Fisher et al. (2010) defined developmental periods using the same conventions (Thornberry et al., 2001; Widom et al.,

2008). Pietrek et al. (2013) and Rutkowski et al. (2016) based their categories on existing literature about children's responses to stress (Anderson et al., 2008) and consciousness of external threat and recall (Winnicott, 2011). Two studies' categorisation was informed by the measures used (Park et al., 2020; Schalinski et al., 2019). Overall, the diverse definitions and operationalisation can make it more difficult to draw conclusions and comparisons between papers and limit the development of this area of research.

Despite the acknowledgement that the role of ACEs on adult mental and physical health is more complicated than the cumulative effect, there has been a lack of research dedicated to the role of timing of ACEs, therefore, highlighting a gap in the research. The current review aimed to synthesise the existing literature on the role of the developmental timing of ACEs on PLEs to see any similarities and differences across individual studies and to find possible areas to guide future research. Whilst ACE research has facilitated a growing interest and supported the trauma-informed understanding of "Psychosis", much of the research appears to continue to explain PLEs as the result of changes in the brain. Alameda et al. (2016) and Schalinski et al. (2019) hypothesised that the gene-environment model could help explain their findings. The gene-environment interaction posits that individuals may be genetically predisposed to be more vulnerable to environmental stressors. As the rate of development of brain regions and circuits differ throughout childhood and adolescence, the parts of the brain affected depend on the timing of the stressor, during which both the structure and function of certain areas are affected, such as the hypothalamic-pituitary-adrenal axis. Research into the biological differences between people with mental health difficulties found that people with PLEs have differences in the frontal lobe, amygdala, and hippocampus in comparison to people who did not report PLEs. Schalinski et al. (2019) posited that age 10 is a crucial time for the development of the frontal cortex and therefore,

could be why experiencing neglect at this time leads to more PLEs. Similarly, Paksarian et al. (2015) also hypothesised that adolescence is a time of rapid brain development, particularly the frontal cortex and may be more sensitive to stressors at this time (Lupien et al. 2009), thus paternal separation in adolescence had more impact. However, when taking these findings together, there are inconsistencies in the developmental timing of brain areas, therefore, it can be argued that this is not a complete explanation for the role of timing in ACEs. Additionally, a critique of the biological understanding of mental health and "psychosis" is that a causal relationship has not been determined, also the brain is known to be plastic and changes depending on the environment, but this does not automatically mean it is the cause of PLEs.

In contrast, Kirkbride et al. (2017) adopted a hypothesis from the socio-cognitive model. Early childhood is well known to be a critical period for the development of Theory of Mind, communication skills and creating social relationships (Milligan et al., 2007). Therefore, disruptions in the environment, such as migration, during this time would understandably affect the development of these skills. As a result, children may also avoid connecting socially which has been found to have an association with later experiences of PLEs. Morgan et al. (2020) proposed that adolescence is a time when beliefs about the self and world are established. If people are exposed to adverse experiences during this time, this could impact on cognitive biases and the experience and expression of emotions, which may directly relate to PLEs, such as mistrusting thoughts and unusual beliefs (Freeman et al., 2016). Additionally, they posit an indirect effect, where these mistrusting thoughts cause further avoidance of fundamental experiences during these formative years, which can increase the risk of exposure to additional threats or barriers to protective factors. Therefore, despite the consensus that developmental timing of ACEs was found to impact PLEs, the mechanism behind the reasons why, still requires more research.

Other Mechanisms

Croft et al. (2020) proposed that the temporal proximity of the ACE could be more important than the developmental timing of exposure. Whereby the more time that passes following the exposure to the ACE, the less of an impact the ACE has on people's experience of PLEs. A similar effect can be seen in people who experience trauma in adulthood, where the people who reported that more time had passed since their worst trauma, had a lower stress response to threatening stimuli than those who reported less time had passed since their worst trauma (Ganzel et al., 2007). Therefore, it may be important to consider how much time has passed from ACE to measurement.

Although other studies used measures that accounted for distress and intensity of PLEs, such as the SCL-90-R (Zhang et al., 2021), Schalinski et al. (2019) implemented the use of the PANSS questionnaire, which has seven items measuring PLEs and a seven-point rating scale ranging from *absence* to *extreme* experience of PLEs, thus allowing for the measurement of the intensity of PLEs. The researchers found that experiencing neglect at age 10 was a predictor of stronger and more persistent PLEs. Therefore, suggesting there may be more nuances to the role of timing of ACEs. Where in addition to the association between the developmental timing of ACEs with the presence or absence of PLEs, experiencing ACEs at particular times may also impact on the intensity of PLEs.

Existing literature has found that the type of adversity experienced can have a differential impact on mental health difficulties (Cutajar et al., 2010). Supporting the findings of many studies within the current review of associations between the developmental timing of a specific type of adversity and PLEs (Bórquez-Infante et al., 2022; Fisher et al., 2010; Morgan et al., 2020; Schalinski et al., 2019). Suggesting, that the type of ACE is important in the role of the developmental timing of the ACE on PLEs. This is supported by another study

on childhood PLEs, which found that those experiencing bullying and maltreatment between 5-12 years, had an increased likelihood of childhood PLEs in comparison to those who experienced accidents during the same age range (Arseneault et al., 2006). Morgan et al. (2020) also suggested that adversities in the domain of threat, hostility, and violence, during specific developmental stages may be important to PLEs. Therefore, in addition to the developmental timing of ACEs, the domain of the ACE may also be important to consider in future research.

Strengths and Limitations of the Review

A strength of this review is that there is diversity in the location of the studies carried out. One of the limitations of this review is the variation in measures used by the studies, making it difficult to compare between studies. As researchers did not use the same measures and the division of developmental stages differed it can make it difficult to conclude that studies were measuring the same construct. Therefore the varying definitions and understandings of ACEs across the literature highlight the practical need to standardise the meaning of ACEs.

Four studies used only self-report questionnaires, bringing to question the possibility of response bias. The recall of traumatic events is often avoided, or memories can be hard to reach due to post-traumatic stress responses. Interviews with prompts and guidance have been found to reduce memory bias and increase accuracy retrieval (Pietrek et al., 2013). Therefore, it can be argued that for the studies that only used a self-report measure, there could be a high chance of memory and response bias in comparison to the interview studies.

Research Implications and Future Directions

The impact of ACEs on mental and physical health is widely acknowledged and well-researched, however, this review has highlighted the lack of dedicated research into the role

of developmental timing of ACEs and indicates that more research is needed. The current review also identified the lack of consensus in the operationalisation of an adverse childhood experience within the ACEs field. Future research could address the diversity in the measures of ACEs and how developmental timing is distributed and measured. As studies used different measures and definitions of ACEs, it can be difficult to know if the research papers are investigating the same concept. The lack of homogeneity within the methodology can limit the possibility of making wider comparisons and extending knowledge in this field further. Therefore, it would be helpful for research to have a standardised ACE measure that incorporates developmental timings.

Extending the findings from Schalinski et al. (2019), future studies could focus on the intensity and individual experiences of PLEs in relation to the timing of ACEs. Research into the cumulative effect of ACEs has found that increased childhood adversities were associated with increased intensity of PLEs (Hirt et al., 2019). Therefore, this suggests that only looking at the presence or absence of PLEs could lead to an oversight of a more nuanced role of the developmental timings of ACEs.

This review has also highlighted the lack of qualitative approaches in the research of ACEs, particularly this review found no papers using qualitative methods to research the role of developmental timing in ACEs and PLEs. Although there are advantages to quantitative research, in that it is often more replicable, results can be more generalisable and have historically been favoured in psychological research (Gelo et al., 2008). As the studies were all quantitative, the data collected were focused on the presence or absence of ACEs that had been predetermined as an adversity by researchers. Perhaps to understand the mechanisms, future research could move away from narrow descriptions of ACEs, which could be reductionist, and potentially miss adversities outside of the researchers' awareness.

Additionally, people's experiences of trauma are often directly linked to their PLEs, such as hearing the voice of the person who abused them (Corstens & Longden, 2013), therefore by gathering qualitative data about a person's experience of ACEs and the context that which it happened, a better understanding may be gained of the mechanisms by which developmental timing of ACEs may impact PLEs.

Clinical Implications

As prevalence and evidence of the importance of ACEs continue to be found across cultures (Bethell et al., 2019), many researchers have argued for the identification of ACEs to be part of routine assessments of physical and mental health (Goldstein et al., 2017). Despite this, the clinical use of ACEs is not well known, and there is a lack of knowledge of ACEs among frontline professionals and an avoidance of discussing trauma (Ford et al., 2019). Conversely, research has also shown that routine ACEs screening is not recommended (McLennan et al., 2019) due to the likelihood of false positives and screening without sufficient training and knowledge of ACEs can be more harmful than beneficial. Therefore, a clinical implication could be to recommend further training for mental health services about ACEs including the knowledge of the impact of developmental timing.

Conclusion

This review was the first to bring together all studies investigating the role of the timing of ACEs on PLEs in adulthood. All studies included in this review found some evidence that the timing of exposure to ACEs had an impact on PLEs. However, all findings were varied and did not indicate a pattern, where some studies found adversities in childhood more strongly associated, other studies found exposure to adversity in adolescence to be more likely to lead to PLEs. As all studies used different measures, more research is needed to understand the mechanisms behind this. Additionally, it may be beneficial for qualitative

methods to be applied to gain an understanding of people's experiences of ACEs and PLEs. Given the importance of ACEs in public health and trauma-informed practice, this suggests that it would be important to gain a more nuanced understanding of the role of ACEs, including the type and timing of ACEs.

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Section B: What do the Life Stories of People who Experienced Childhood Adversity and Subsequent Psychotic-like Experiences Tell us About the Developmental Timing of Such Adversity and how They Managed These Experiences?

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Abstract

Introduction

The relationship between adverse childhood experiences (ACE) and psychotic-like experiences (PLE) has been well-researched and established in the literature and across cultures. More recently, there has been research into the role of developmental timing of ACEs and PLEs, however much of the research is quantitative and investigates the presence or likelihood of PLEs rather than individual experiences. Therefore, taking a narrative approach, this study aimed to explore the life stories of individuals' experience of ACEs and subsequent PLEs with an interest in the developmental timing of adversity and how they are managed.

Methods

Nine participants were recruited through social media, the local university and experts by experience (EBE). Participants' life stories were analysed using a narrative analysis methodology.

Results

From participants' narratives, the main findings were that participants generally told their stories in chronological structure; however, positives were shared later. Most participants experienced a realisation in adulthood where the meaning of their ACEs changed. Emotional regulation strategies were used to manage experiences of adversity. The meaning of ACEs and PLEs were important to how people respond, and this can be influenced by wider society. Turning points described by participants were different to those found through narratives. Several implications are raised, including recommendations for pre-therapy interventions, clinical assessment and future research.

Keywords: Psychosis, ACE, Life Story, Developmental Timing, Turning Point

Introduction

The relationship between adverse childhood experiences (ACE) and psychotic-like experiences (PLE) has been a consistent finding in the literature (Sheffler et al., 2020). Varese et al. (2012) found that people who had experienced childhood adversities were three times more likely to experience PLEs than people who did not. This study extends beyond the 10 ACEs proposed in the initial ACEs study (Felitti et al., 1998) including all experiences before the age of 18 that were considered by the individual to be distressing. The current study uses the term PLEs to describe experiences commonly described as "psychosis" outlined by Cooke (2017).

ACEs and PLEs

There has been much research into the different types of ACEs and PLEs, including, but not limited to; child abuse (sexual, physical, emotional), neglect and parental death, (Fisher et al., 2010); immigration and fleeing from war (Kirkbride et al., 2017), violence in the community (Buchanan et al., 2019), poverty (Morgan & Gayer-Anderson, 2016), discrimination (Karcher et al., 2022) and bullying (Strauss, G. P. et al., 2018). Further research has focused on the cumulative effect of ACEs in relation to PLEs (Hawes et al., 2021). Additionally, guided by this author's critical review, research on the role of developmental timing of ACEs is beginning to emerge. However, current studies have exclusively used quantitative methods and have not delved into individuals' experiences. Schiff (2017) argued that there is a longstanding misconception that quantitative research can generate a greater understanding of phenomena and research is preoccupied with the generalisability of findings. Schiff (2017) continued that conversely, qualitative research is better able to provide the opportunity to understand individual experiences of distress.

Narrative Approach and Trauma

The Power Threat Meaning Framework (PTMF) offers a trauma-informed understanding of PLEs, where they are conceptualised as understandable responses to threats (Johnstone & Boyle, 2018) and complex trauma experiences (Read et al., 2014). Common PLEs such as visions and voices, are related to the unprocessed memories of traumatic events, and unusual beliefs are representations of themes related to trauma (Peach et al., 2020). A core tenet of PTMF was to ask the question "what happened to you" and empower people to create narratives about adversities experienced, providing an alternative to diagnoses that focus on symptoms which can be reductionist (Mildorf et al., 2023). These narratives also hold the meanings that people make of their experiences, which directly translates to their responses (Johnstone & Boyle, 2018).

Narrative Timeline

There are multiple understandings of the term "life story". Rosenthal (1993) emphasised the difference between the "lived life", often referred to as the "life history", and the "narrated life" that was a "life story." Therefore, life stories are interested in the way the story is told (Bar-On, 2006). Through considering the narrative timelines, both the story and the lived life can be captured, allowing exploration of how the story relates to the events and how a person makes meaning (Mildorf et al., 2023).

Developmental Timing

There is emerging evidence that the developmental timing of exposure to ACEs impacts the likelihood of experiencing PLEs (Fisher et al., 2010; Morgan et al., 2020; Schalinski et al., 2019). Whilst many of these studies hypothesised that the role of timing was linked to neurological changes during development (Alameda et al., 2016; Croft et al., 2019). Other studies also suggested that as beliefs about the self and identity are developed and

created in childhood and adolescence, adversity during these critical periods would understandably impact these constructs (Morgan et al., 2020). As the meaning-making of experiences was important to how people view themselves and the world, it would be helpful to explore the meanings people made throughout their development.

Managing

Managing and coping after trauma is often considered part of the research into resilience, as resilience has been defined as the ability to cope with change (Friedberg & Malefakis, 2022). As a result, these terms have often been used interchangeably and there has not been a consensus on what it means to "cope" or "manage". Skinner et al.'s (2003) research into the structure of coping found that there were at least 100 ways to define and categorise "coping" across the literature. Despite this lack of agreement, coping strategies research has found that how individuals manage after experiencing adversity and trauma to be an important mediating factor to "recovery" (Freeman & Fowler, 2009). Within these multiple understandings of coping, Lazarus (1993) proposed two different, but complementary strategies: emotion-focussed and problem-focussed. Ways of managing have also been categorised into strategies that are helpful and unhelpful, where unhelpful strategies contribute to the maintenance of distress following adversity (Beierl et al., 2020).

Turning Points

The term, turning points has been used in many different domains. Within story writing and the literary field, turning points are narrative moments from which the plot takes a different direction (Papalampidi et al., 2019) Within sociology, Life Course Theory (LCT) understands turning points to be events that have a lasting change in the life course trajectory (Hutchison, 2019). Rutter (1996) proposed three types of turning points: events that open or close opportunities, events that create a lasting change on a person's environment and events

that change a person's view or belief. Importantly, within this framework, a turning point is dependent on the individual's interpretation of the life event (Hutchison, 2005).

Similar to Hutchison (2005), Clausen (1998) defined a psychological turning point as a period or point in time when a person has undergone a major transformation in their views about themself, positive or negative. In line with this definition is Tedeschi and Calhoun's (2004) concept of post-traumatic growth (PTG), the key tenets are a changed view of the self, a new life philosophy and enhanced relationships. Within physical health, there has been extensive research into the turning points in people's recovery journey of cancer, diabetes and substance use (Easton et al., 2015). However, there has been less research into the turning points in the journeys of people who have experienced childhood abuse (Easton et al., 2015). Therefore, this study will take forward this understanding of a psychological turning point to explore the participants' narratives.

Research Aims

Existing research into the developmental timing of ACEs and PLEs has been exclusively quantitative. Studies have focused on the presence or absence of ACEs, rather than the people's lived experience of the adversity. Narrative studies have been found to be a helpful way to examine the personal experiences of those from marginalised populations (Lima, 2023), therefore the present study aimed to explore the personal stories of people who experienced childhood adversity and subsequent psychotic-like experiences with a view to answering four questions:

1. What is the narrative timeline within people's personal life stories of exposure to childhood adversity and the subsequent experience of psychotic-like experiences?
2. What do the narratives tell us about developmental timings of exposure to childhood adversity?

3. Do the narratives depict how the person managed adverse childhood experiences and psychosis-like experiences? If so, how?
4. Do the narratives describe a turning point: a moment of transformation in views about themselves?

Method

Theoretical Framework

The underlying theoretical positioning of this study was critical realist (CR). CR was the combination of a realist ontology and a relativistic epistemology (Stutchbury, 2021). Where whilst there is a reality, it also acknowledged that people come to know things in different ways (Stutchbury, 2021). Therefore, CR views adversity and trauma as existing in reality, but this reality is constantly evolving and influenced by both the observer and social context (Johnstone and Boyle, 2018).

Design

A qualitative approach employing narrative analysis was used in this study. Unstructured narrative interviews were used to record the life stories of participants. Narrative analysis acknowledges that stories have a role in how humans make meaning and the construction of identity (Riessman, 2008). The act of storytelling is important, as people choose what to include, how and when they want to share with the audience. As life stories are typically created in a chronological structure, interspersed with commentary from the present time (Freeman, 2010), narrative analysis can provide insight into how people's sense-making has changed over time.

Participants

Recruitment Sources

Purposive sampling was employed in this study. Eighty-three Hearing Voices Groups were identified via the Hearing Voices Network (HVN) website database and contacted individually by email or phone to ask facilitators to share the study in their group meetings. National Paranoia Network agreed to include the research advert (Appendix D) in their monthly newsletter. The following social media platforms were used to advertise the study: Facebook, Instagram, X, Reddit. A request for permission to advertise the study was submitted to the Mental Health Forum, however, permission was not obtained due to the forum's limited resources. The study also was posted on the Call for Participants research study advertising website. Additionally, the advert was shared with psychology undergraduate students via their university virtual learning environment, and with the Salomon's Advisory Group of Experts by Experience (SAGE).

Participants Selection

Seventeen people expressed interest in the study. One participant signed up but did not meet the inclusion criteria of experiencing at least one PLE in adulthood. Two participants completed the pre-interview phone call, but contact was lost after they reported forgetting about the interview so did not attend. Five participants did not respond after the initial expression of interest. Nine participants completed the study (Table 1). Inclusion and exclusion criteria are provided in table 2.

Table 1

Participant demographics

Participants [a]	Gender Identity (Self-identified)[b]	Age range	Ethnicity (Self-defined)	Platform of Recruitment
Barry	Male	35-44	White Italian, Brazilian	Word of mouth
Billie	Female	18-24	White British	University
Debbie	Female	25-34	White British	University
Earth	Non-binary	45-54	White Canadian/British	Reddit
Holly	Female	35-44	White British	HVN
Jessica	Female	35-44	White British	NHS EBE
Lindsey	Female	25-34	White American	Reddit
Rachel	Female	18-24	White British	University
Stephen	Male	75-84	White British	HVN

[a] Names have been changed to protect anonymity.

[b] "Gender identity" was self-identified to stay true to the inductive approach of narrative analysis. Following the CR approach, where biology and gender are both taken to be real and assume intransitive and transitive components to both (Summersell, 2018).

Table 2

Inclusion and Exclusion Criteria

Inclusion Criteria
Age 18 and over
English speaking
Experienced at least one adverse experience before the age 18 as defined in introduction
Experienced at least one psychotic-like experience in adulthood as defined by Cook et al. (2017)

Currently self-define as managing well
Exclusion Criteria
Under the age of 18
No experiences of psychotic-like experiences as defined by Cook et al. (2017)
No adverse experiences before the age 18
Unable to provide an oral account of their life story

Ethics

All information shown to participants was reviewed by an expert by experience consultant. Ethical approval was granted by the Salomon's Institute for Applied Psychology, Canterbury Christ Church University, ethics panel on 13 July 2023 (Appendix E).

Following expressing interest in taking part, participants were provided with the participant information sheet (Appendix F) and given time to decide whether to take part and contact the researcher if they had any questions. During the pre-interview phone call, an individual protocol was developed in the event that participants experienced distress during the interviews. For most participants they agreed to inform the researcher of any distress, the recording would be paused, and participants could take a break, before a discussion about if the participant would like to continue. The researcher also offered to guide participants through grounding and relaxation exercises if needed. Participants were made aware of the right to terminate the interview at any point and the right to withdraw from the study up to one week following completing the interview. At the conclusion of the interview, participants were debriefed which included a verbal assessment of their well-being and a discussion of their experience of the narrative interview, this was not recorded or transcribed.

Procedure

Pre-interview phone call

A pre-interview phone call was completed to gather demographic information and assess eligibility to take part in the study. All phone calls lasted up to 30 minutes and were completed via telephone or Microsoft Teams and followed an interview schedule (Appendix G).

Narrative Interview

Participants signed consent forms prior to the narrative interview (Appendix H). All interviews were completed via the video meeting platform, Microsoft Teams. All interviews had a duration between 43 – 108 minutes (mean = 78 minutes) and were completed in one sitting. Interviews were recorded and transcribed verbatim using the Microsoft Teams transcription software and manually reviewed by the researcher to include utterances and non-verbal information. After each interview, initial reflections were recorded in a research diary (Appendix I).

Following the narrative methodology used by Thornhill et al. (2004), participants were asked one initial question to prompt participants to tell their life story uninterrupted: “Please tell me your life story”. This method allowed the participant to control the direction, content and pace of the interview (Anderson & Kirkpatrick, 2016). Throughout the participants’ accounts, the interviewer did not interject with questions but continued to give visual and verbal cues of engagement and emotional attentiveness (Reissman, 2008). Follow-up questions were also asked to explore areas of interest related to research questions, e.g. “Can you tell me about how you have managed the difficulties in your life that you have told me?” (Appendix J).

Analysis

Narrative analysis encompasses a range of methods for interpreting stories (Reissman, 2008) and does not dictate a specific or singular right way to conduct analysis (Murray, 2003). The analysis undertaken was informed by Murray's (2015) two-phase process of description and interpretations, using a circular, rather than linear, process of analysis. As such, the descriptive and interpretative phases were not taken to be distinct phases. Narratives were repeatedly revisited throughout the analysis process, which allowed the opportunity to increase reflexivity and to consider the stories from different perspectives as the researcher moved between narratives.

During the descriptive phases, the life stories were read and listened to multiple times for immersion (McCormack, 2004). The researcher attended to "what" was being shared (Reissman, 2008), noticing the main events, patterns, and emotional and intellectual responses elicited by the stories (Murray, 2009). A summary of each narrative was constructed, preserving the narrative timeline.

In the interpretative phase, researchers focused on "how" and "why" narratives were shared, focusing on the choice of language, and possible social and psychological functions of the stories (McCormack, 2004; Silver, 2013). The influence of dominant discourses and power in the construction of narratives (Reissman, 2008) was attended to. The researcher also focused on the "when" certain parts of the narrative were shared, and what might have been omitted from the narrative, through focus on the structure of the narratives (Labov & Waletsky, 1967). Appendix K shows a full transcript with the initial analysis.

Reflexivity and Validity

The nature of storytelling is a co-construction between the narrator and the audience (Brannen, 2013). The chosen story shared by narrators is influenced by assumptions of the

audience’s prior knowledge and stance. Therefore, it was important to consider that the audience in this study held multiple roles, including those of researcher, trainee psychologist, and individual. As the main purpose of the narratives was research, this would have shaped the type of story the participants wanted to share. Considering the role of trainee psychologist, participants may have had experience with mental health services that could have influenced what they felt comfortable sharing. On an individual level, I am from an ethnically minoritised background and all participants in this study self-defined as White. As stories of adversity are likely to include accounts of power and marginalisation, it was important to attend to the influence of ethnic differences on narratives shared. Researchers are often considered “outsiders” to the group that participants perceive themselves to belong to (Kerstetter, 2012). And whilst the participants may not view me as sharing the same experiences of marginalisation, my experiences of being ethnically minoritized could soften the divide. Alternatively, participants could also be more cautious in sharing particular experiences around discrimination.

To increase the validity of the narrative approach, member checking of the narratives was completed (Madill & Sullivan, 2018). All participants were given the opportunity to review and give feedback on their summaries, this feedback was considered and applied to the summaries (Appendix L). Where possible, direct quotes were included within this report to illustrate the participants’ stories and intent.

Results

Narrative Summaries

A synopsis of each participant’s narrative was created to illustrate their life stories (Table 3).

Table 3

Synopsis of participants' life-stories

Barry	Barry's narrative started with his mum. When Barry was born, she had "developed really acute symptoms of mental illness" that had never "shown itself" before and was in hospital for the first "six months of my life. Although Barry did not have memories of this, he felt that this "would have had an effect on me in some way". Barry did not remember a lot of his childhood, but described one of his brother's earliest memories were of pulling their mum "away from her bedroom window" and "believed that if he wasn't there, she would have jumped out". There were also times where his mum would be "unaware of anything" or be "kitten" or "child". So, Barry and his brothers grew up in an "environment" of "feeling responsible for her life". Barry spoke of his parent's divorce when he was nine, and although at the time he thought it was "irrelevant" to him and even now does not "count it" as an ACE. He remembers the feeling of responsibility for his mum "intensify" and recalls his behaviour as "disruptive and confrontational and defiant around that time". Barry's story spoke a lot about identity and belonging. Where his mother implied that something was "really wrong with my dad's family" and this made Barry question his own identity as a "good person". Barry also spoke of growing up with a [name of faith] that became a "formative" part of his childhood. Where he would attend faith events that were "really moving…amazing and powerful", but "normal life" was a "total disconnect". So, decided to "unenroll" from the [name of faith]. Barry spoke of school being a "really hostile place". And that he became just as "hostile as my environment". It was during the start of secondary school that Barry first remembered having the "suicidal ideation" of "blowing my brains out". But at first, it wasn't connected with "negative feelings" and more like a response to "the universe and how vast it is". Barry told of his "cheerful" "long-term plan…to become a hermit" and "eventually…kill myself" and now felt that this represented his "relationship with the world". It was only as he grew up that these thoughts became more like "defence mechanisms". Barry spoke of struggling to "form an identity" in sixth form and when he and his friends "didn't fit into any of the groups",

	to "insulate" themselves, they "became increasingly hostile towards the world in general". Alongside this came a "really profound emptiness and sadness and depression". Barry carried this "misanthropic worldview" and "hatred for humanity" throughout university and into adulthood. Barry spoke of "wanting violence" and would find ways to "give me a reason to fight" people. Despite this, Barry had times when he wanted to tell his friend that "something was really wrong," but felt he could not because his friend "could not connect with people on a lot". Instead, Barry turned to online chat rooms. It was during one conversation that his vision "blacked out" and he saw two armies of "green people…clash together and just fight until they…were completely wiped out". Barry spoke of feeling "relieved" and that it was "an externalisation of the all the conflict…inside me" and that it had "reached its resolution". From here, things change, Barry decided to tell his brother that "every single day" he was "dominated by suicidal ideation". Barry also decided to venture out of his isolation and went on holiday to India, then New York to meet a girl he had been dating online. Barry spoke of the realisation that she and other people were "an individual person…who is of equal reality to me". And this realisation raised a "tonne of questions" that led Barry to his "second much more profound psychotic-like experience". Barry spoke of seeing a tower of "glowing green stones" and knew that the "tower was me". When the tower started to crumble and fall until "just one block left", it was "absolutely terrifying" but he also knew that "it needed to happen." Through this experience, Barry's "worldview" was "scrapped", he "no longer had any of the armour" and realised that everyone was "as real as me". Barry's narrative is one of discovery. His story came "full circle" as he talked about finding the [name of faith] again and enrolling as an adult. Barry spoke of rebuilding his worldview "now grounded in love for humanity, instead of hatred of humanity". Barry also spoke realising his childhood experience were "adverse" and "starting to process those as trauma".
Billie	Billie started her story before her birth. She came into a world where her parents' relationship was "rocky", and her mum was struggling with postnatal depression. She contrasted this to her older sister's entry into the world, who was very much a

	"planned and wanted baby". She felt this translated into the treatment from her parents. Where her sister had many baby photos and videos, one of Billie's was taped over with a football match. Billie moved on to talk about her experiences at school. She was bullied nearly every day by an older boy on the bus. She felt this led to other children avoiding her, as they did not want to be targeted. Billie told me that she "felt quite isolated throughout school" and therefore made friends with adults instead. She ended up becoming close enough to call one a dinner lady "nan". Despite this, Billie was also very aware of the type of friends she spent time with. When she noticed that she started to say "things just to be funny" she took herself away from the popular kids concerned they made her "a not very nice kid". Throughout schooling, Billie talked about wanting a "normal experience" and to "feel normal". Billie spoke about her home life that was "equally as chaotic as school", both her parents were performing musicians and lived an unconventional life of "drugs, sex and rock 'n' roll". Billie remembers spending a lot of time either bored in pubs or being babysat by neighbours, where often she was not given food or drink. She was also bullied by her sister. During this time Billie felt a pressure to secrecy. Her parents would warn her about telling people about their home lives and drug use. This led to her feeling very anxious and "paranoid". Billie described a particularly terrifying experience during her GSCEs. When her parents and sister were away on holiday, she started to become more and more anxious. Then she saw a "demon face" out of the window in the dark. She nailed sheets onto the window frames to stop seeing it again. She described struggling with knowing it was not real, but it "doesn't matter if you're the most rational person in the universe, it's still terrifying". Almost as an aside, Billie also mentioned other traumatic experiences. Her dad suffered from multiple heart attacks whilst on holiday in Belgium. Billie was taken to Belgium to "say goodbye" and, whilst her dad "luckily" survived, Billie herself ended up with "severe strep throat" and had to be treated in a hospital, in an unfamiliar country, unable to understand the language. Towards the end of her story, Billie said she had experienced a sexual assault at age six. She had "blocked" the memory for years and it only resurfaced when she was

	sexually assaulted again at age 15. Billie didn't know if she had "dreamt it up" or if was real, but with the help of a rape crisis service, Billie was able to gain the courage to talk to her friend and mum about it. Billie's kindness shone throughout her narrative, each time someone had hurt her, she still tried to understand them. Despite experiencing so much adversity at such a young age, Billie spoke of so much reflection to understand her experiences, and kindness even to those who had harmed her, trying to understand the motivations and empathise with others. Billie passionately wanted to use her experiences in the field of psychology and help "another little Billie" in the future and "make her feel a bit less alone and scared".
Debbie	At first, Debbie told me a very shortened account of her life story and felt that she "probably missed out loads", but together, we created a richer and fuller narrative. Debbie did not remember much when she was little. Her earliest memories were when her mum and dad split up when she was "eight or nine". Debbie spoke about moving home multiple times. Her mum, along with Debbie and her brothers moved in with her boyfriend, who "wasn't a very nice person" and "was quite abusive, mainly towards my mum". However, she added as a side note that "he did throw a doll's house at me once". Debbie spoke of spending a few weeks in a women's refuge when she was 11. But again, moved in with another one of her mum's boyfriends. This time he was "really abusive and he used to "beat mum up a lot". It was at this house that Debbie became "mum's parent", despite still being a child. She remembered situations where her mum would be outside screaming, and she would have to go and "pick my mum up off the ground and bring her home" and also be responsible for her brother and "try and keep him safe". Because of how "nasty" things were at home, Debbie spent as much time as possible out of the house. At age 11, she "just ended up going downhill". Every weekend would be spent "drinking and smoking at the park". Debbie "ended up getting close to the next-door neighbour" who at first "was normal and fine" but "then he ended up, grooming me and got me pregnant". Debbie spoke about how at the time she "just thought that was normal and that he was looking after me".

	One memory that stayed with Debbie was when she had a miscarriage at 14. Debbie "vividly" remembers taking a shower in the hospital and "the drain being blocked up with all the miscarriage" and she had "to scoop the miscarriage up and put it in the bin". At the same time as the miscarriage, Debbie became homeless. She spoke of finding shelter in a "derelict" house, sleeping on a "random mattress" and having to get her food out of the shop bins every evening when the shops shut. On top of this, Debbie was also kicked out of school. But during this time, Debbie never felt her life was in "crisis" and continued life as normal, she would spend the day with friends and then, at night, go and find somewhere to sleep, "hiding from the world". When she was 16, Debbie went to the council and asked to be housed. From there, she "sorted my life out". She booked herself into college, completed an access course and attended university. However, her life changed again when she became pregnant again. So, after just one term at university, she decided to drop out and went back to live with her mum, who was no longer with her husband and living alone. Debbie decided she did not want to have a baby with her mum around, so visited the council again and waited for a privately rented property. She has now lived in this home for 10 years, and was "very settled", and her children have a "stable home" that she never had. When Debbie was living through all these experiences, "it was just normal", and "it was just my life". But this feeling changed when she had her first son. All of a sudden, she had a realisation of "what had really happened to" her, that she was "just a child" and that she "should have been looked after properly". This was when "it all hit" and she "got really depressed…had major anxiety…hearing voices". But she was "really proactive", going to counselling, "went on meds" and "research and research trauma" and "I got better on my own". Debbie admitted that she still felt anxious and was probably "over-over-protective" of her children. She also emphasised that "I've never had trust" and "I am not attached to anybody… I'm very independent". Above all, Debbie spoke of strength, determination and "independence" to overcome all the barriers in her way. Debbie finished her story by talking about the "stable

	home" she created for her children, how her mattress was "the best thing", and she was finally back on track and studying at uni.
Earth	Earth's story started with their first experience of visions. They recounted the story of having a "very strong fever" around two years old and seeing animals all over their room. After this, they continued to see "many imaginary friends, mostly animals" and an "imaginary sister". It was at this time that Earth' mum noticed that these "imaginary friends" shared names with "passed loved ones", and that Earth had a "gift" for seeing "spirits". However, Earth only had the shocking realisation that they "see something other people don't" later in childhood. Earth moved across the world and they spoke of the sense of "desperation" to go back and "not connecting to the land". So, in order to "understand emotionally", Earth took to creating a "whole world in my mind" where they were a "fairy princess" captive in the strange new world. When Earth was eight years old, they decided that they "can't trust anybody". They told of a "big traumatic moment" where they were home alone with their brother, and someone phoned threatening to kill their mother if Earth didn't do "sexual things". From this moment on, Earth "stopped interacting with humans". Instead, "animals and trees became my protectors, became my family". Almost as an aside, Earth mentioned that they had been bullied in school and "manipulated because of the autism". But felt that their "trauma has allowed me these gifts" to read people and be a "chameleon" and "act like everybody else". Earth spoke of their journey through spirituality. The first "big shift" was witnessing a medicine ceremony with an Indigenous community, and hearing them talk about their connection to the earth, myths and legend as reality. Coming to lean into their spirituality, Earth connected with their late grandmother "in the ethers", who taught them to read palms and heal. But then they became "scared" of the "power" in them and "walked away" from spirituality for 20 years. Almost as an afterthought, and distinctly separate from their life story, Earth shared the later realisation of how their mother "crushed" anything that brought "me joy".

	Earth also spoke of their “huge breakthrough” that their whole family “use alcohol to numb their emotions”. And realised that “I’m not the messed up one in the family”. Earth’s narrative spoke of a journey of trying to force themselves to follow the norms of society and “what life should look like” but realising that something was “missing” in this “perfect life”. So instead, Earth decided to “surrender” and learn that “we don’t control anything” and instead connect to a certain energy and “it just takes you exactly where you need to go.”
Holly	Holly started her story by introducing her parents. She grew up in a house with an older Dad she did not see very often, as he worked nights, and a very “hands-on” mum, who she spent a lot of time with, going to museums and galleries in London. In primary school, Holly was a happy child and felt like she had a comforting childhood. She described herself as a “tomboy” and had a best friend. However, all this changed when she went to secondary school. The boys who were once her friends “suddenly switched”, were very mean and bullied her because of her appearance, she wasn’t a “girly girl” the bullying started to make Holly “turn in on myself”. To cope, she started self-harming and stopped going to school. She was worried her parents and teachers would “agree with the bullies”, so did not talk about the bullying until much later. As no one knew her reason for refusing to go to school, Holly was “put into an exclusion centre”, which “felt like I was being punished”. Holly told her journey in discovering that she was gay and at first keeping this a secret from her parents. Then after a break-up that left her “really distraught” Holly wanted to talk to her mum about it and decided to come out. Holly spoke of the unexpected reaction “no, you’re not” from her mum, but assured me that both parents have been “very supportive”. Holly described suddenly, in the middle of the night, a thought “just came into my mind” that “my partner is going to kill me” and “it was like I was spiralling into kind of the psychosis”. After calling the police herself and being taken to hospital, Holly developed a “kind of delusion” that her “partner had tried to poison me”. Feeling “very distressed”, Holly “ran away from the hospital”. This led to a “traumatic” situation where police came and “handcuffed me and put me in the back of the van” and she was sectioned.

	The core of Holly’s narrative was finding identity and accepting herself. She also spoke about overcoming a “self-hatred” that had been the result of the bullying “I was just made to feel like I wasn’t…human”. In more recent years, Holly spoke about the impact of “having somebody that loves you” and learning to “like myself a lot more than I used to”. Holly was also proud to say that she has been successful in getting a job as a peer support worker and having the opportunity to “give back.”
Jessica	Jessica took her story “right back to when I was in my mum’s tummy. As Jessica had to be “pulled out” with forceps and initially “wasn’t breathing”. Despite this “traumatic” start to life, Jessica’s first years of childhood were “really happy”, and she had “fond memories”. It was only when Jessica was five years old that her parents, “who had their own mental health problems”, “split up”. But as they “continued to live in the same house”, the house was “filled with arguments… anger and stress”. Jessica also recounted her confusion about her parent’s relationship. She recalled catching her parents one time “in the bed together” and felt that “it wasn’t right. They shouldn’t be together”. In response, she remembered “feeling like I wanted to die”, so she “got a knife” and contemplated “stabbing myself”. “On top of this”, Jessica spoke of being the more “well-behaved” child, but always getting “less attention” than her younger sister, and “getting really told off”. Here, Jessica also told the story of her mum’s alcoholism. This got worse with the grief of losing Jessica’s grandparents a day apart. Jessica spoke of her mum’s grief as being “very hard to deal with” and when drunk would be “mean and spiteful, completely opposite to her character”. Jessica spoke of being “very, very, very shy” in school, and bullied for “being weird and different”. And despite “working very hard”. Jessica always “struggled with learning.” This led to Jessica looking for friends outside of school. She spoke of starting to “smoke weed at 13”. Although Jessica acknowledged that weed was a “constant issue throughout my life”, it was also how she met a friend who became a “massive part to how I became confident” and help her regain “social connections”. During college, Jessica moved in with her boyfriend, who was a “31-year-old man who was actually married”. She spoke of how each term she would “go down in terms of depression” and “substance misuse”. After breaking up, Jessica “felt like an

	absolute failure" and could not move back to the "toxic environment at home". So, she ended up staying on a friend's sofa which led her to the "rave scene". Where, for the first time she was accepted and popular. Going to raves also introduced Jessica to ecstasy, which unfortunately led to her first "psychotic episode", and she was "sectioned". Jessica spoke of ups and downs. Periods where she would be doing well at work and get "promoted" or feeling like "I had purpose". As well as meeting her first girlfriend and "came out as being bisexual". But then she would also experience "super stressful" times which would lead to another "episode". Jessica's second "psychotic episode" was "massive" where she "thought I am Jesus again" and "jumped out of a third-floor window" and suffered from a "broken back". Jessica shared the grief of losing her mum to cancer and another psychotic episode before it finally "clicked" that weed was not "good" for her. Jessica's narrative was one of learning. She spoke of learning to be "true to myself" and how it was a "big deal" to come out as bisexual. Through the psychosis, she learned "how to talk…how to share…how to cry" and was able to tell her family "so many things I couldn't say" to "rebuild" her family and "feel loved".
Lindsey	Lindsey started her story by explaining that her memory of the past was "blurry" and felt like she did not remember a lot of her childhood. However, what she did remember were not good memories. Lindsey did not go into details about these memories but felt that "it was sad" that one of her earliest memories was being "molested" at the age of two and a half. She also remembered being in "two really bad storms" and had thought "I'm not going to make it". Lindsey told of a home life that was "not normal" as her mother was "very abusive" and used "German dog training commands to get me to obey". Although Lindsey had little memory of her father, she spoke of being told by others that he "apparently yelled at me a lot". Lindsey's time at school "wasn't fun" and most of her memories were of being bullied for being "LGBT" and getting into fights as a teenager. Despite being "very

	bright" and making friends, Lindsey started "withdrawing" and "grooming myself less". Lindsey spoke of her first unusual experience in college where she saw "spirits" and "had a roommate that I thought was trying to kill me". Following this, Lindsey was faced with a "hard life". She spoke of "frequently getting hospitalised". And later was kicked out by her parents and "made homeless". All this ended up with Lindsey feeling "very depressed" and "in 2019, I had a major suicide attempt". Lindsey described the memory of buying a firearm and "had it loaded…in my mouth, even with my hand on the trigger", but ultimately "decided not to go through with it." She talked about the times when she "fell into alcohol abuse", but that she was able to pull herself out of it after transitioning and had something to "look forward to" and a drive to "become the person that I want to become." Despite all of these "limitations…disabilities and history", this year has been a major turning point for Lindsey. She has been able to recognise achievements both academically and in life. Lindsey attributed her friends and "tenacity" for life as the reasons for her resilience. She ended the interview by saying "I have peace about my life" and "you don't need to have a happy life to have one that you can be proud of."
Rachel	Rachel's story began before her birth, she told of the difficult family dynamic of being born to parents who were young and "still learning" how to be parents. Her childhood was filled with constant conflict between her parents and Rachel would often hear "crashes, the screaming, the shouting". Rachel always felt "shocked" every time and felt the need to "go to my mum" because her mum was "in a state". Anger seemed to be prominent throughout her narrative. Rachel spoke of times when her dad would get "too angry" towards her and her brothers. And whilst "hidings" were considered normal where Rachel grew up, Rachel remembered several incidences where she "got really, really scared" when her dad "whipped" her, and it did not feel like discipline. Rachel tearfully spoke about times when she would get "really angry." She remembered the shock and disbelief she had the first time she had a "blind rage",

	where she described her "hands around my brother's head and throat and … wanted to…crush it". Rachel spent much of her childhood moving schools, homes, and even countries, sometimes multiple times in one year. Making it difficult to "keep different friendships". During high school, Rachel was even sent to a boarding school in a different country. Adapting to new schools was often "really hard at the start", having to learn each school's individual culture and unique practices. She spoke of the desire to be "known" and "loved…like everyone else" and "wanted to be better just…show my parents…students…teachers". After talking about education and friends, Rachel returned to the topic of her parents. Where throughout her childhood there "were times they did split" and "got back together". Rachel described feeling "bad" because she "enjoyed" it at times, and also responsible for her parent's relationship and always reminding her mum "you know dad's still there." At the end of her story, almost separate from the rest of the narrative, Rachel shared a "sad" part of her story. She spoke of a break-up with a boyfriend and experiencing, for the first time, an "enemy" voice telling her to "end it". Rachel remembered feeling "terrified" as she "could have ended everything and wouldn't have regretted it." Rachel's story was one of not feeling seen, heard or known both in the family and at school, which would lead to "blind rages". Through her connection to the "holy spirit", and spending time at a "missionary group", she was able to "learn patience to huge degrees" and "learn how to forgive all over again".
Stephen	Stephen started his story with an introduction of who he is now: a lived experience practitioner and volunteer. But went on to say from a very young age, "bad things happened to me". At only 15 months, Stephen was "hit" by his father. It started because he was "15 months and still in nappies", but the abuse continued "for no apparent reason". Stephen described himself as "a very independent little boy", which he credited to his "helpful voice" who would "console me every time I was beaten" and "tell me things would get better". At the age of three, Stephen was "getting three buses to visit his

	grandmother". The voice had been "instrumental in teaching me to read", so Stephen was able to read the newspaper. Despite Stephen's advanced reading abilities, he was initially thought to have learning difficulties, and he had to prove his abilities to the head teacher. Stephen described his primary school as a "dreadful place" and remembered being "savagely caned" for the "slightest infringement". During this time, the physical abuse from his father had stopped, and sexual abuse took its place. Stephen spoke of his father's "tariff" system, where men would come to the flat and "paid my parents money for the use of my body". As the abusers were all men, Stephen decided from a young age that he "would no longer have any male friends" and this was a rule he lived by until his late into adulthood. Stephen spoke of being "sexually abused again" at age 14 when he was "seduced" by a 28-year-old woman. A couple who were unable to conceive asked him to provide them with a child, so he "helped them". After the little girl was born, "they took the child away to some unknown address". Stephen had to live without knowing "anything else about them", except the baby's name. He wondered about the possible "grandchildren and maybe even great-grandchildren" he had out there. Stephen described a "weird and curious life", hearing "bad voices" throughout, constantly telling him he's "worthless" and to kill himself. As a result, Stephen was "incarcerated" in a hospital multiple times for concerns of suicide. Stephen spoke about never telling that he heard voices, as he feared being "locked up and the key thrown away". Eventually, he was able to overcome this and talked with a clinical psychologist. Later, he was able to get "on the road to recovery". Stephen spoke of battles between his determination and the constant barrage of abuse from the voices he hears. A battle between the disadvantage and sexual abuse he was subject to in childhood and a need to rise above and not let this define him. And a battle between repeated underestimation of his intelligence and abilities and a need to prove himself worthy. Interwoven in his story, Stephen talked about his success in his job where he was tasked with managing a "£700 million budget" and his later achievements in his voluntary work, "giving talks and teaching".

Research Question 1: What is the Narrative Timeline Within Peoples' Personal Life Stories of Exposure to Childhood Adversity and the Subsequent Experience of Psychotic-Like Experiences?

Main themes, patterns and assumptions were identified in participants' narrative timelines and could be categorised into five headings (Appendix M). The focus of narratives, narratives different to lived timeline, narratives told as lived timeline, positive experiences, and changes within the narrative journey.

Focus of Narratives

Throughout participants' telling of their stories, participants commented on what they chose to include in their stories. Earth expressed that "I haven't told that story often" as it "seems really crazy" after sharing their father's passing and "seeing firefly trying to get into the moon." Barry mentioned that "there's probably a lot of things that I haven't forgiven myself for, or … maybe even that I feel are unforgivable," that he actively decided not to share. Therefore, suggesting that participants have acceptable or appropriate stories and untold stories.

In addition to focusing on the stories participants chose to share, it was important to notice the parts of stories that were mentioned, but not further elaborated. It seemed that when adversity involved one parent, the other was often less prominent in stories. Stephen who had shared mainly the abuse and relationship with his father, commented "my mother, I didn't have a great deal to do with."

The majority of participants focused on ACEs rather than PLEs. Rachel only mentioned of "definitely heard a voice and it was not mine", after she was asked to "share anything that did not fit in the timeline". There was also a pattern of participants spending more time retelling their first experiences of PLEs and later PLEs were less descriptive.

Jessica merely said, “and then surprise, surprise, I had another psychotic episode.” Suggesting that some experiences were more important to share than others.

Narratives Different to Lived Timeline

People mostly told their stories chronologically, starting from birth till the present day. However, in some incidences, experiences and important topics were shared outside of their life stories, or much later than the lived experience.

Some ACEs were mentioned outside of the timeline. Despite sharing a lot of details about her relationship with her father throughout her life, Billie shared her father’s near-death experience much later in the interview. Barry’s narrative focused on his experiences in school and his relationship with his mother. In contrast, his father’s violent behaviour was not mentioned until much later: “he could be quite…violently angry at times…I probably should have described this as an adverse childhood experience as well”. Similarly, throughout their narrative, Earth had mainly talked about the supportive relationship with their parents, and only shared later “my dad and I had a very complicated relationship because when I was, I want to say 10 or 12, my mom told my dad that he wasn't allowed to touch me anymore.” Rachel also chose to wait till the end to disclose her experiences of suicide, introducing her experience as “one thing, but it’s really, really quick and it’s going to sound like really sad.”

There was also a pattern to how siblings were introduced in the narratives. For many, siblings were absent from life stories despite growing up together. Stephen didn’t mention that he had three younger siblings until 55 minutes into the interview. When siblings appeared earlier in stories, it was often in relation to ACEs. Billie’s older sister had a role in “bullying” Billie, and she was introduced along with her parents, “my sister’s nearly six years older than me and she didn’t struggle with post-partum depression after having my sister.”

Similarly, Jessica also described being treated differently from her younger sister in the early part of her story, where despite Jessica being more "well behaved than she was…I felt that she got the most attention and I felt sometimes I wasn't."

Narratives Told as Experienced

In contrast, some participants also told parts of their stories in sequence to how it was experienced. Debbie spoke of being groomed by a neighbour in a way that mirrored her experience of not realising it at the time. Debbie did not provide an abstract (Labov & Waletsky, 1967), but instead started the story with "I ended up getting close to the next-door neighbour" and spoke of how he supported her before revealing that "he ended up, grooming me and got me pregnant," allowing the interviewer to experience the realisation as she had. Similarly, the way that Holly spoke of her father's passing seemed to reflect her own experiential journey. Holly first mentioned briefly "my dad passed away um in 2018," as part of a story about her coming out. The brief mention appears to mirror her "delayed grief over my dad passing away," which was the lead-up to her final stay in hospital for PLEs.

Positive Experiences

Participants' narratives were mainly focused on experiences of childhood adversity and PLEs. For most participants, they also had some positive experiences, however, these were often not shared until much later in the interview or outside of their life story (Earth, Jessica, Rachel and Stephen). For Jessica, she actively paused in her storytelling: "hold on a minute. I've forgotten to tell you about Michael Jackson…I really looked up to… he actually is a huge influence" and then proceeded to sing "Jump for Joy" before returning to the main story. Rachel had described in detail her difficult experiences as a teenager in school with teachers and other students. And it was only when she was prompted to talk about earlier

experiences that she talked about “one teacher…the kindest person ever”, which led her to also talk about memories of “one best friend...we always go to each other’s houses…it was great. It was really sweet.”

Positive experiences were also often understated (Barry, Holly and Jessica). Some through their use of restrained language: Barry who spoke a lot about his best friend where they “fed each other's unhappiness and dissatisfaction and kind of hostility towards the world,” and only briefly mentioned another friend who was “really accepting and whatever”. Holly also used restrained language when describing college and university as “wasn’t too bad. I made a few friends”. Jessica, on the other hand, did not talk about her positive experiences until asked the prompt “was there anything you wanted to add?” Jessica then revealed that this was a “massive protective factor for me and like belief in…angels protecting me.”

There was also a pattern of following positive experiences with something negative. After talking about the joys of reading to her daughter, Stephen immediately followed with: “But all the time, as I keep saying, there's always these endless voices telling me bad things.” Rachel also talked about school being “really great. But when at home…Dad got really upset.” Holly started to speak about making friends with “one lad and he was really nice” who asked to keep in touch with Holly, however, Holly felt regretful, “I remember really well what I said… ‘oh, well that’s not likely to happen though is it?’ Because I think I didn’t wanna be hurt?”. Similarly, Jessica started to talk about an “amazing friend” who was “a massive part to how I became confident,”, but this was immediately followed with the disadvantage “that’s when I…started smoking weed. And weed has been a constant issued throughout my life.”

Changes During Retelling

During the telling of their stories, people spoke of changes in their meaning-making and appeared to have realisations at the same time as they shared. Earth paused from sharing the adversity and stress they had experienced to comment, “even as I'm telling you this, I'm like oh my God, no wonder I had a nervous breakdown.” And, although Barry’s narrative included both his and his mother’s PLEs, towards the end of the interview, he seemed to experience amazement, “it's interesting, I've never actually thought, never actually really thought of mine and my mum's in the same sentence.” Rachel also appeared to experience a change in how she made sense of her “blind rages,” at first saying: “I wouldn't say it's a voice, it's kind of like a-a feeling.” But after sharing the story of the “enemy voice” telling her to end her life, Rachel realised: “It’s not me…It was a different voice” during the blind rages towards her brother saying, “he deserves it, he deserves it”.

Research Question 2: What do the Narratives Tell us About Developmental Timings of Exposure to Childhood Adversity?

Ways in which developmental timing emerged in people’s narratives were conceptualised into two headings, importance to their story and later realisation of the impact of ACEs (Appendix N).

Importance to Their Story

With all participant’s narratives, the age and situation in which they experienced adversity were included. However, for some, it appeared more central to their story-telling than others. Stephen emphasised developmental timing using both years and age to time stamp his story, “at the age of 20 months, I was very late in learning how to walk…It was September 1948.” In contrast, some participants did not have a clear recollection of the timings of events, Lindsey said that most of her memory was “really blurry” and

throughout her telling of the story went back to correct herself “actually, probably around like 16 or 17” years. Whilst specific timing was neither ignored nor central to Debbie’s narrative, the developmental timing that she was a “child” appeared to be important. Debbie added “as a child” to many sentences throughout her narrative, communicating that this was important to her story.

Later Realisation of the Impact of ACEs

A central motif to people's stories was a change in meaning or a realisation of the impact of childhood experiences. Debbie and Jessica had experienced being groomed in adolescence. “He kind of just groomed me a bit, I guess looking back” (Jessica). Barry spoke of recently realising that he was neglected as a child, “I never thought of it before as a trauma, because she was always the victim” and now finds it “difficult to be with mum”.

It appears that the developmental timing of realisations was important. Debbie reflected that at the time, “I just thought it was normal” and after having her own son, she realised “That’s not right, that’s a child, I was a child”. Similarly, Earth shared “I am realising now that my whole entire childhood was me being manipulated by others.” In contrast, Holly was the only participant who described having a “happy” childhood before 11, and she appeared to recognise her experiences as adverse when it happened, “it was when I went to secondary school that…things happened that kind of, umm caused quite a bit of trauma I suppose.”

Research Question 3: Do the Narratives Depict how the Person Managed Adverse Childhood Experiences and Psychosis-Like Experiences? If so, how?

It could be seen that there were differences in the way people managed ACEs and PLEs. Therefore, it was more helpful to synthesise results into management of ACES, management of PLEs, and then consider managing overall.

Management of ACEs

Four main domains were identified and conceptualised: emotional detachment, understating severity of ACEs, meaning making of ACEs, and relationships. (Appendix O).

Emotional Detachment. Many of the participants presented their stories with the defence of emotional detachment. Some used a matter-of-fact tone and did not feel the need to censor when speaking about their childhood experiences. Jessica stated, “contemplating slitting my wrists or stabbing myself” and Stephen explained that his father “didn’t want to spoil the goods” when referring to himself. There was also a pattern of people’s stories including more facts and actions than emotional experience. In answer to a prompt about the story of her getting a home after being homeless, Debbie said “I stayed in bed for three months.” This was mirrored in some participants’ want to work out the facts of ACEs, Billie “recounted what exactly had happened to me because I was worried…I’d misremember” which seemed to be an indirect way to avoid connecting with their emotions.

For most participants, the detachment from emotions was not mentioned in the content of the narratives. With the exception of Debbie and Stephen, they commented on their lack of feelings during childhood. Debbie reflected on her experiences of being homeless, “at the time…I had no feelings, it was my normal.” Stephen commented as he stood up to his abusive father “I wouldn’t say I was angry, because anger is the emotion I rarely have.” At times, people seemed more connected to emotions when telling stories not directly related to their main ACE. Stephen admitted “it sounds pathetic and stupid, but nobody ever went out of their way to help me,” disclosing more emotions and the feeling of shame when talking about unfair treatment from his colleagues, in comparison to his childhood.

Understating Severity of ACEs. Within the narratives, most participants appeared to understate the severity of their ACEs, which can be seen as a way to manage. One way this was identified was through language choice. Debbie talked about her mother's abusive partner as "wasn't a very nice person," Lindsey labelled the sexual abuse as "an event that was not very fun." And many used words such as "just" and "whatever" (Billie) to downplay or communicate indifference. There was also a pattern of assuring the audience that the experience could have been worse. Barry shared his father's acts of physical aggression and followed it immediately by saying "I don't think it even happened that much, like it was kind of a threat." And Billie assured that the bullying she experienced "wasn't much physical bullying."

In addition to understating severity through how they spoke about the ACEs, a recurring theme was a reluctance to criticise the people responsible for childhood adversity, often parents. Billie's father had been abusive and neglectful, however, she described him as "isn't the best, like in terms…of being a responsible parent." Stephen emphasised the minimal acts of care from his abusive father and absent mother, "I was always fed properly, so in a sense, they did care in a way." Rachel took this further and seemed to try to compensate for her father's anger and aggression by introducing him as "my dad, he was an amazing person. He was a great father." Some participants explained that they felt unable to blame their parents, Jessica shared "I hate saying it because I love my dad," and instead would, in turn, take on the responsibility themselves, "but also…I was a teenager. Sometimes I was doing things I shouldn't be doing." These emotions appeared to be displaced into other places. Speaking about her homelessness after being "kicked out" by her parents, Debbie placed her anger towards saying "I'm really not sure why social services failed me so much."

Billie attributed her parents' "volatile" behaviour to alcohol, expressing "I really resented alcohol."

It was also noticed how societal narratives worked to understate ACEs. Rachel spoke of growing up in a culture where children were "disciplined with…we call it hidings; we get smacked and that the way we learn". Therefore, experiences of physical abuse were viewed more as a norm for Rachel.

Meanings of ACEs. Another way that people's narratives spoke to how they have managed was the meaning attributed to ACEs. Towards the end of people's narratives, there seemed to be a shift towards talking about current perceptions of ACEs. In general, there was a recurring motif of feeling "grateful" (Debbie) and wanting to make experiences "worth it" (Billie). Billie expressed her desire to help others and that "if I can turn it into a purpose then it means the suffering…it's not just for no reason". Earth and Jessica were different to the other participants as they had conceptualised their experiences to have good outcomes. Earth explained that "my trauma has allowed me these gifts" and Jessica reflected that "the fact that I've been through this really helped to repair my relationship with my family…and showed me how much they loved me."

Relationships. People's life stories also spoke to people's approach towards relationships and appeared to be important to how people have managed. Despite families and parents being mainly responsible for participant's experiences of adversity, the majority of people maintained close contact with their families. Billie expressed that although "my home life wasn't the best. I didn't want to be taken away from my mum." Stephen spoke of a sense of responsibility and "in her later years, you know, I used to make sure I visited her when she was unwell". Rachel also mentioned what was needed to maintain these

relationships, as she lived in another country from her family "having that distance, it's more of a loving…family, because I feel like I can imagine it in my head." In contrast, Debbie responded to her adversity by not attaching to others, stating that "I don't do trust at all. I don't even do trust now."

Managing PLEs

Overall, participants focused less on PLEs within their narratives in comparison to ACEs. Considering how participants managed PLEs, the life stories were analysed and synthesised into three headings: conceptualised as helpful, conceptualised as difficult and responses to PLEs (Appendix P).

Conceptualised as Helpful. Participants' narratives spoke of how they made sense of their PLEs, some participants considered their PLEs as helpful. Holly considered the PLE as "my brain was…trying to protect me." Similarly, Earth shared "I think my mind started creating all these things just to bring me the security of not having family." Stephen thought of some of his voices as "good" and "consoling me every time I was beaten and telling me things would get better." Some participants considered their PLEs in relation to spirituality. Both Earth and Rachel had experienced an upbringing related to spirituality and religion. Earth in talking about seeing visions and their late grandmother said "I connected with her in the ethers and she started teaching me things." Rachel spoke of "the Holy Spirit was there for me…speaking to me and kind of guiding me."

Conceptualised as Difficult. Another way in which participants' narratives spoke to managing PLEs, was to conceptualise them as difficult. Many participants thought of their PLEs as dangerous. Stephen was concerned that if he revealed he heard voices "I'd have been locked up somewhere and they'd have thrown away the key." When Holly had the thought

that “my partner is going to kill me”, she “ended up calling the police and saying that I was having a psychotic episode.”

Many life stories also appeared to indicate the role of societal dominant narratives of what is “normal.” Billie indicated that her PLEs could not be understood with a rational mind and explained that “you can be the most rational person in the world, but...it’s terrifying.” Billie also felt that “I think I would go loopy as well” if “I can’t tell what’s real…24/7”. Despite hearing a voice that “was positive that looked like helping me”, Debbie still felt “it was horrible, it was scary. Thought I was going insane”. Indicating that it was not the content but the presence of a voice that scared her.

Other narratives spoke of considering PLEs as a traumatic experience. Holly described her getting “completely lost in Glastonbury” where “I ended up having a psychotic episode…that was really traumatic.” Jessica who had experienced “horror movie dreams and I was awake” felt that current experiences were “almost like a flashback” and “how I feel when I’m psychotic, even though I’m not psychotic.”

Response to PLEs. Participants’ narratives also spoke of other people’s reactions the first time participants shared their PLEs. Stephen had confided in his “kind uncle” about the voices he heard and was warned to “keep that to yourself Stephen, people will not understand.” And Billie’s “dad was trying to, like, show me that there wasn’t and stuff,” when she had told him about seeing spiders. Whilst both Stephen and Billie's families intended to be supportive, they also informed the way that they managed, as Stephen said even in a psychiatric hospital “I didn't tell them I heard voices, 'cause I thought if I did that, that would seal my fate forever.” In contrast, Earth, who saw visions of a “floor was full of snakes” and “passed loved ones” had a mother who decided that since Earth was “getting some joy from

it…I'm not gonna tell it's scary". Earth was grateful their mother "just allowed it" and "the most significant things in my life that I never questioned."

Participants' life stories also spoke to whether things had changed as a result of PLEs, and this seemed important to how they managed. Barry who had visions said "I sort of came out of it and felt really relieved" and after experiencing the vision "what it had then led to, which was so positive". Similarly, as a result of being in the hospital for PLEs, Jessica shared how "my dad basically fought really hard and somehow managed to get them to not section me," which showed Jessica that she was loved.

Managing Overall

The following headings were derived from participants' narratives relating to the ways that participants have managed in life and ways that they manage both PLEs and ACEs: feeling the need to prove oneself, linking ACEs and PLEs, and self-identified management (Appendix Q).

Feeling the Need to Prove Oneself. Many participants often included a self-praising statement about their own skills or abilities. Lindsey spoke of scoring a high IQ and that "I had potential for a very superior performance." Debbie stated, "I've always been really intelligent," and Jessica spoke of being "very popular. I was very well known." Giving the sense that they felt the need to prove to the interviewer that they do have qualities or skills that are admirable. Often participants spoke about being undervalued, at school Stephen's teachers initially "wanted to send me to what was called in those days, a backwards school, for people who had learning difficulties". And due to their adverse childhoods and PLEs, many were not able to follow the conventional path Debbie spoke about her intelligence was "obviously wasted on me though, but like I'm only… doing my degree now that I'm in my

30s. Therefore, perhaps a way to manage these feelings was to prove to others and themselves their self-worth. Whilst other participants did not speak of this way of managing directly, Rachel did speak of the feeling of “I wanted to be better just to…show my parents…students…teacher,” “I wanted to be known…to be loved”.

Linking ACEs and PLEs. Within their narratives, some participants spoke of trying to understand their PLEs and make sense of their PLEs in relation to ACEs. Holly spoke of hearing voices of “people staying stuff about me” and has thought “that goes back to the bullying at school because I think I internalised a lot…of that.” Similarly, Jessica’s PLEs were always following drug use, however, she thought of her PLEs as “I feel like I’ve had all my life, and actually the drugs just brought out um, the trauma that I experienced.” Therefore, one of the ways that Jessica and Holly managed appeared to be to understand their PLEs as a result of their childhood experiences.

For Stephen, his voices were a way to manage the abuse he experienced. Stephen thought of his voices in “good” and “bad” categories, where the good voice would be “consoling me every time I was beaten” and the bad voices “telling me I was worthless.” Despite these categories, Stephen understood both types of voices as helpful for managing his ACEs, as whilst “nobody wants to be told they're worthless. But if you're worthless, then abuse doesn't matter.”

Self-identified Management. In answer to the prompt question, “Can you tell me about how you have managed with the difficulties in your life?” participants often answered with practical ways of managing. Jessica spoke of “positive affirmations” and “walking.” Billie, Earth and Holly spoke of using skills and realisations in therapy. However, the practical strategies appear to be secondary, and participants’ narratives show what they really

want known are the changes in meaning and transformation of views about themselves. Which can be seen in other participants' answers where they also attributed the way they have managed to personality traits, Stephen spoke of "determination…to carry on", Earth stated, "I'm still gonna persist, 'cause it's worth it" and Debbie said "I think it's my independence."

Research Question 4: Do the Narratives Describe a Turning Point: a Moment of Transformation in Views About Themselves?

Main findings about turning points from participants' life stories have been brought together into four headings. The headings were: self-identified turning point, being true oneself, finding purpose and finding freedom (Appendix R).

Self-Identified Turning Point

Within their narratives, some participants spoke of moments that they felt were the turning point. Debbie spoke of "how it turned around" when she was homeless and asked the councils "can you give me somewhere to stay?" Holly spoke about going back to work was how "I know that I feel better about myself". Turning points identified by participants were practical and visible to the participants themselves, however, there appeared to be a difference between the named turning points and the ones depicted through their narrative. There also seemed to be multiple turning points within participants' narratives.

Being True to Oneself

Some participants spoke about being true to themselves and this being a point where things changed. Earth had tried "doing all of the normal things that normal people should do" and felt "miserable and I didn't feel like myself at all", but when they began to accept their "gifts" and "hear what the whispers of the universe are trying to tell you. And then that's when my life just got incredibly magic." Lindsey spoke about a similar turning point in her

gender transition, which allowed her to "actually give a shit about myself now, like I have something going to look forward," and was able to quit using alcohol.

Realisation of Oneself

Many participants had been either told or made to feel different or less important: "I was just made to feel like I wasn't like human," (Holly). Therefore, some participants' narratives spoke about the realisation that these were not true. Stephen spoke about his experience of the birth of his children and "that was a wonderful tear-jerking experience, I felt normal," which challenged "often being told 'you're a nutso, you're a head case.'" Earth described a similar realisation where they were the "youngest kid with autism undiagnosed" and "my brother was treated like the golden child…he could do no wrong." But, after visiting family recently Earth described "a huge realization that I'm not the messed up one in my family," as they had been "doing the healing" and their family were still "numbing themselves" with alcohol.

Finding Purpose

For many participants, turning points were about finding a sense of purpose, after life had led them "off track," (Debbie). Lindsey described "I have a life I'm proud of," and "I've accomplished things" academically, but even more so "I helped a young girl…escape an abusive household." Many participants spoke about getting to a place where they can now "give back" (Holly), "share the message of hope" (Jessica), and "help out another little Billie who is scared" (Billie). Debbie spoke about finding purpose and meaning in a new identity, when she got pregnant, she realised "I am going to be a mum," and "that's when I stopped drinking…I stopped going out" and "I moved to be closer to all my family."

Finding Freedom

Many participants' narratives spoke of not having choice and control in their own lives, where things were done to them. Debbie spoke of "I got kicked out and put back on the streets," and Stephen spoke of "incarceration" in hospital. Therefore, for some participants, gaining back freedom and choice appeared to be an important turning point. Earth spoke about not being confined by norms "learning over my lifetime is we don't control anything" and finding freedom in surrendering. In contrast, Debbie gained freedom by buying her own flat and creating a "safe house," and Rachel by moving countries, away from her family, "having that distance, it's more of a loving friendship and loving family relationship."

Discussion

The main aim of the present study was to explore the life stories of people who experienced childhood adversity and subsequent psychotic-like experiences. This was achieved through the exploration of narrative timelines and developmental timings of adversity, as well as participants' stories about managing ACEs and PLEs and how they describe turning points in their lives. The main findings in relation to existing research, implications and limitations are presented below.

Research Question 1: What is the Narrative Timeline Within People's Personal Life Stories of Exposure to Childhood Adversity and the Subsequent Experience of Psychotic-Like Experiences?

Areas that emerged about narrative timelines, were focused on narratives, narratives different to the lived timeline, narratives told as timelines and positive experiences.

For all the narratives, participants had specific stories that they shared and stories that they did not describe in detail. For some participants, they made comments that evidenced a conscious decision, however for others, this may have been a less conscious choice. White

(2004) posits that when people have experienced trauma, they often represent life as being single-storied, which can lead to the denial of other knowledges of life that enable stories to be more multi-dimensional. Within this understanding, what participants have shared may be a "thin story" and any gaps could represent how people can access the stories of their lives. When thinking about how both Earth and Barry actively chose what to include and what to leave out, this may be related to how narratives can be influenced and restrained by the dominant cultural narrative (Hunter, 2010).

Although life stories are chronological in nature, trauma memories are inherently resistant to the chronological narrative nature (Yang et al., 2023). This is supported by the basis of trauma therapy to construct a coherent narrative (de Arellano et al., 2014). This can be seen to a degree in the participants' narratives where some narrative episodes that would be assumed to be important were included almost as an after-thought. Bluck and Levine (1998) posited that in the reconstruction of life stories, the selection and interpretation of certain memories happens. This process privileges experiences that are considered self-defining whilst simultaneously downgrading others. Additionally, emotionally rich memories are often remembered more prominently (McAdams, 2001). Therefore, stories shared outside of the timeline, such as memories of their siblings and memories of Billie and Barry's fathers, could indicate that these were less self-defining parts of their childhood, or memories that were less emotionally charged. Alternatively, memories not selected could be too difficult to talk about (Kvedaraite et al., 2021).

Research Question 2: What do the Narratives Tell us About Developmental Timings of Exposure to Childhood Adversity?

Research into the developmental timing of ACEs is still very new, however, it has been found that timing of exposure is important in relation to people who experience PLEs in

adulthood. This study appears to be the first to investigate the role of developmental timing of ACEs and PLEs using a qualitative method. Despite the role of timing of ACE exposure being important, few participants mentioned ages in their stories, with the exception of Stephen. Suggesting that perhaps the developmental timing of ACES is not important to how people tell and make meaning of their ACEs.

In contrast, throughout all narratives, participants made reference to a later realisation that what they experienced was adverse and “not normal” (Lindsey). Often children do not recognise their upbringing and experiences as traumatic, Alaggia (2010) talked about how children may need to go through a developmental period in order to comprehend what was experienced was adverse. Therefore, the timing to which people realise their experiences of adversity may also be important.

Research Question 3: Do the Narratives Depict how the Person Managed Adverse Childhood Experiences and Psychosis-Like Experiences? If so, how?

Participants’ narratives were found to depict different ways of managing ACEs and PLEs, such as emotional detachment, understatement of severity, and making sense of ACEs and PLEs. All of these are in line with Lazarus’ (1993) definition of emotional coping strategies, which are directed toward regulating emotional response to a problem. Lazarus (1993) posited that people use these strategies particularly when the challenging environment or problem is perceived to be unchangeable.

Although only two participants specifically referred to feeling a lack of emotions, many participants displayed emotional detachment and avoidance in their stories. Emotional detachment is a common coping strategy for adversity and there is some evidence of links to post-traumatic growth (London, Mercer, & Lilly, 2017). Alternatively, there has also been research into the link between avoidance and numbing as a key trauma-related psychological

mechanism involved in psychosis (Hardy, 2017). Lincoln et al., (2017) also found that in general, emotional regulation may contribute to the translation of childhood trauma into distressing PLEs.

Another management strategy that emerged from the narratives, was understating the severity of ACEs, through the participants' use of language and their reluctance to criticise the people responsible for their adversity and sometimes taking on the blame themselves. Research into trauma-related blame found that self-blame can empower individuals who have experienced trauma (Unthank, 2019). Related to this is the decrease of blame on the "perpetrator". As participants' ACEs were often related to parents, the understatement of ACEs can also be understood as a way to maintain relationships. Research into parent-child relationships for children who experienced neglect found that it is common to describe abusive parents positively (Baker & Schneider, 2015) or remain bound to carry out filial responsibilities of care to ageing parents (Kong & Moorman, 2015). Baker and Schneider (2015) posited that parent-child relationships can be a complex combination of "good" and "bad" experiences, but also that people may maintain relationships, seeking attachment relationships to compensate for unmet needs from childhood.

Also, in line with Lazarus (1993), participants' narratives about managing spoke of the meaning-making of ACEs and PLEs. Many participants had talked about wanting to make their experiences "worth it" (Billie) and had understood their PLEs as either helpful or as difficult. Participants' conceptualisation of PLEs was also linked to dominant narratives within the wider culture (Saravanan et al., 2005). Therefore, linking back to the PTMF, where the meanings that people make of their experience directly translate to their response (Johnstone & Boyle, 2018). Some participants also made sense of their PLEs in relation to

their ACEs, in line with previous research into links between voice hearing and trauma (Morrison et al., 2003).

In contrast, participants' self-identified ways of managing appeared in line with Lazarus' (1993) problem-focused strategies that are employed when people perceive change to be possible. The conceptualisation of two ways of coping can explain why participants' self-identified management differed from those heard through their narratives. Within this framework, emotion regulation strategies appear to be unconscious responses in times of stagnancy, whereas problem-focused strategies appear to be conscious decisions to make a change. Thus, participants were conscious of these strategies but may have been less aware of emotion regulation strategies. Alternatively, the differences could be due to perspectives, as research has also found that clinician and patient perspectives can differ on what is helpful in managing after trauma (Simiola et al., 2015).

In answer to how they managed, participants also spoke of personal qualities of "determination" and "independence." This is in line with the conceptualisation of resilience as a personality trait (Block & Block, 2014) that allows for success in the face of stress (Ween, Keogn & Borkowski, 2006).

Research Question 4: Do the Narratives Describe a Turning Point: a Moment of Transformation in Views about Themselves?

Previous research into post-traumatic growth (Tedeshi & Calhourn, 1996) posit that major life crises can be catalysts for positive change. They suggested five domains which PTG can develop that can map onto many of the turning points depicted in participants' narratives. Finding freedom and purpose fit into the PTG domains of new possibilities of life and appreciation of life. Being true to self and realisation of oneself was in line with personal strength from PTG.

It was observed that participants' narratives described multiple turning points. Existing research generally focused on singular turning points after trauma, and whilst some studies have also noted that people report multiple turning points, further research is needed (Easton et al., 2015). A study investigating turning points in the decision to leave abusive relationships, defined turning points as changes in people's perception that can lead to action-taking. They found that in complex situations, multiple turning points are needed for permanent change (Murray et al., 2015)

Research Implications

Despite the consensus on the link between ACEs and PLE, considerations of trauma for people who experience PLEs are still often not prioritised (Read et al., 2018). Within research, as found in this author's critical review, this study is the first to explore developmental timing using a narrative approach. Research also focused on the presence and absence of PLEs and not on people's experiences. This study found that participants were likely to experience changes in the meanings they made about ACEs and PLEs, and this seemed to impact how they managed their experiences. In future studies it may be helpful to focus on recruiting participants from different ethnic, cultural and religious backgrounds than this study's sample, as in line with previous research, these differences are important to people's life stories about ACEs and PLEs.

Additionally, this study found that many participants experienced a meaning change, where their adverse experiences were initially "normal" and then changed to be understood as adverse or "traumatic." Future research could explore the stories of a later realisation in relation to developmental timing.

Clinical Implications

Many participants expressed that they had not shared experiences in this way before, and experienced realisation and meaning change during the telling of their story. This was in line with literature where storytelling can change meaning and develop resilience (East et al., 2010). This has also been found outside of therapeutic contexts, in Indigenous communities, narratives are used to share the wisdom of resilience and healing following trauma and an integral part of building a community (Weaver, 2019). Similarly, informal community storytelling through oral traditions or ceremonies can provide children with the opportunity to see their experiences in the context of a larger narrative (Denbourough, 2008). Therefore, a clinical implication could be to guide children to share their experiences of adversity through storytelling pre-therapy, particularly as Brewster (2022) emphasises that anyone can tell stories and the healing power of storytelling does not necessarily need to happen in a therapeutic setting.

Narratives are often part of therapeutic interventions for individuals who have experienced traumatic events, such as TF-CBT and narrative exposure therapy (Grech & Grech, 2020). In addition to the benefits of meaning-making that telling stories provides, through hearing narratives, listeners can gain an understanding of the narrator that differs from an interview format (Bamberg, 2004). Therefore, in addition to therapeutic interventions, it may be helpful to encourage life stories to be told during the assessment process of mental health support, as this would allow assessors to understand new clients in a different way from traditional assessments.

Strengths and Limitations

A limitation of this study was that the sample lacked diversity in terms of race and ethnicity, as all participants identified as White, this is particularly important as people from

ethnically minoritised backgrounds are more likely to have experiences labelled as PLEs (Keating & Robertson, 2002). Whilst this study's sample may not be able to speak to experiences of marginalisation of race and ethnicity, the participants can represent other forms of marginalisation, such as religious differences, gender identity and sexual orientation, which are also found to be an increased likelihood of experiencing PLEs (Jacob et al., 2021).

As with all research that uses self-reporting data, there is the critique that retrospective accounts from people who have experienced ACEs or PLES are inaccurate and an unreliable data set to draw conclusions from (Halverson Jr, 1988). However, Fisher et al.'s (2009) study on the reliability of accounts of childhood abuse found that reports spanning years were stable. They also appeared to produce similar results when tested using different questionnaires and when compared to clinical case notes. Additionally, within this study, all stories are important, factually accurate or not, and forgotten memories also serve as important insight into their stories.

Conclusion

Through a narrative analytic approach, the study aimed to address the gap in the literature by exploring the relationship between the developmental timing of ACEs and PLEs through individual life stories. In exploring the narrative timelines, participants generally told their stories chronologically, however, stories told out of timeline or not mentioned appeared to share something about the meanings they made. Participants' stories also told of a change in the meaning-making of ACEs from childhood to adulthood and experienced a later realisation. Explorations into how people managed found emotional regulation and meaning-making of ACEs and PLEs to have an important role in narratives. Lastly, participants' self-identified turning points were different to those understood from narratives. Several future

implications were raised, including recommendations for the use of life stories outside therapeutic interventions, in clinical assessments and future directions for research.

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Section C: Appendices

Appendix A: JBI Case-Control Quality Appraisal Tool

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Appendix B: JBI Cross-Sectional Quality Appraisal Tool

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Appendix C: JBI Cohort Quality Appraisal Tool

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Appendix D: Research Study Advert

CHILDHOOD ADVERSITY AND UNUSUAL EXPERIENCES RESEARCH STUDY

OVERVIEW

We hope to learn more about the effect of the timing of childhood adversities on people's later experiences of unusual experiences or psychotic-like experiences.

WHAT WILL I HAVETO DO?

1. **Phone call:**
   - To estabilish eligibility for the study
   - To get more information
2. **Virtual Interview:**
   - 60-90 minute virtual interview where you will be asked to tell your life story.
   - In the interview you will be asked to share difficult experiences in childhood and psychotic-like experiences

WHO CAN TAKE PART?

- Aged 18 +
- English as a first language
- People who have faced adversity in childhood (before 18 years)

AND

- Also experienced voices and visions, unusual and unshared beliefs (sometimes referred to as 'psychosis' or psychotic-like experiences) in adulthood

CONTACT DETAILS

If you are interested and would like to know more please get in touch:
yl96@canterbury.ac.uk

Or click the link in the description box

If you take part you can opt in to a prize draw to win 1 of 2 £50 vouchers

Appendix E: Ethical Approval

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Appendix F: Participants Information Sheet

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Appendix G: Pre-Interview Phone Call Interview Schedule

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Appendix H: Consent Form

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Appendix I: Abridged Research Diary

Research Diary

After Getting Ethics Approval

Can't believe I've finally got approval, now have to start recruiting. I'm slightly worried about it as I don't know how it will go, but hopefully get some interest!

Recruitment

I've been having difficulty with recruitment, got some feedback from a HVN person and reddit that I need to change my exclusion criteria. I think I will speak to Susie about it in supervision.

After Earth's Interview

I felt very motivated and uplifted to make change in my own life. It almost felt like attending a motivational talk in comparison to other interviews.
As this was such a different type of interview, particularly as they had a positive experience of PLE. Also, it was interesting to hear from someone with different type of ACE, as Earth had more complex life events and family dynamics rather than abuse.
Although the interview was more performative than others, the participant held themselves as more collaborative and felt more equal distribution of power than holding me as a researcher.
The word that comes to mind is surrendering, a sense about not fighting anymore rather than giving up, and more about freedom than creating barriers. This also makes me think about societal narratives.

After Stephen's Interview

I found this participant's trauma to be very sad and emotive. For the first time in a while, hearing someone's trauma caused me to have a strong emotional reaction. I felt anger and physical sensation of nausea.
I noticed the differences between participants and the difference between being a researcher and therapist. I found myself wanting to offer interpretations and different viewpoints.
At times, I also felt annoyed of the way he was sharing, perhaps I was noticing a barrier being put up?

After Barry's Interview

I felt a sense of wanting to know more, particularly as he had said that this was one of the most "boring" retellings of his story. This was also I think the longest interview due to me wanting to know more.
It was interesting how the experiences he talked about felt so out of reach to how he presented. He didn't seem like a person that at one time really hated everyone in the world.
I was left thinking that I was glad to have a very different narrative and a different approach to PLEs and ACEs.

After Rachel's interview
I found the interview really rich and full, but recognised throughout the interview I was worried about this participant not fulfilling the inclusion criteria of having experienced PLE. I noticed that I asked more specific questions about PLE than I would have with other participants. Even at the end, after she asked about hearing the "enemy" voice, I was still unsure and decided I will discuss with MRP supervisor.

After Lindsey's Interview
I was very grateful that Lindsey was able to take time out to complete the interview. But I noticed the differences between how she was in the pre-interview phone and now. She was more distracted and tired and I could tell towards the end how it was taking a toll on her energy, even though she said she was fine.

After Holly's Interview
This was the shortest interview so far. I felt worried about not having a rich or long enough interview and so I ended up asking more questions. But then I felt bad for pressuring and didn't want her to feel the need to share more than she wanted. In the end, I decided to end the interview before one hour as any more felt like it would be insensitive.

Initial reading and listening of Debbie's narrative.
It was interesting how at the time of the interview. I didn't have the emotional response of sadness, but more shock and feeling impressed at her resilience and strength. At the time of reading however, I was tearful and felt very about the trauma that happened to the young girl.

Initial reading and listening of Billie's narrative.
I was left with feeling amazed at her kindness and how Billie really wanted to try and understand the reasons behind people's actions. Even those that had harmed her.

Initial reading and listening of Jessica's narrative.
After initially reading back though Jessica's narrative, it made me think of how many young people start using drugs at a young age and how for some this leads to PLEs like Jessica. Also, a sense of not feeling loved at the time and needing to realise that she was loved. Seems to have brought the problem to herself.

After narrative workshop with Susie and other trainees
It was interesting to hear other people's studies and topics of interest. Also was helpful to hear other's questions are similar to mine.

After analysis of first interview

I went back and forth deciding on the best way to set out my analysis. I tried Nvivo and also doing it by hand, but ultimately decided to use word. Although I had assumed that it would take a long time, I really had not anticipated the length one analysis would be. My first one took over 4 days to complete, which although was not continuous, it is concerning if all will take this long.

After 3 interviews
Thankfully, analysis is slightly quicker as I get used to it. But I am dining a lot of theme and thoughts about the interviews.

Starting to bring together results
Although I have a good understanding of the narratives individually, it has been hard to bring them together. I also sometimes found it hard to find a quote that would describe the tone and emotion of the whole narrative. And felt that this was simplifying the narrative journey.

Submitting a draft
My supervisor suggested that I go for the December deadline. I understand it would be unwise to submit the MRP without the supervisor reading it, but at this point I really don't want to go for the December deadline after putting in so much work to get it to this stage.

Getting Extension
Feeling a sense of relief that I have the extension and it being more possible to hand in a piece of work.

Appendix J: Narrative Interview Structure and Prompt Questions

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Appendix K: Holly's Transcript with Analysis Annotations

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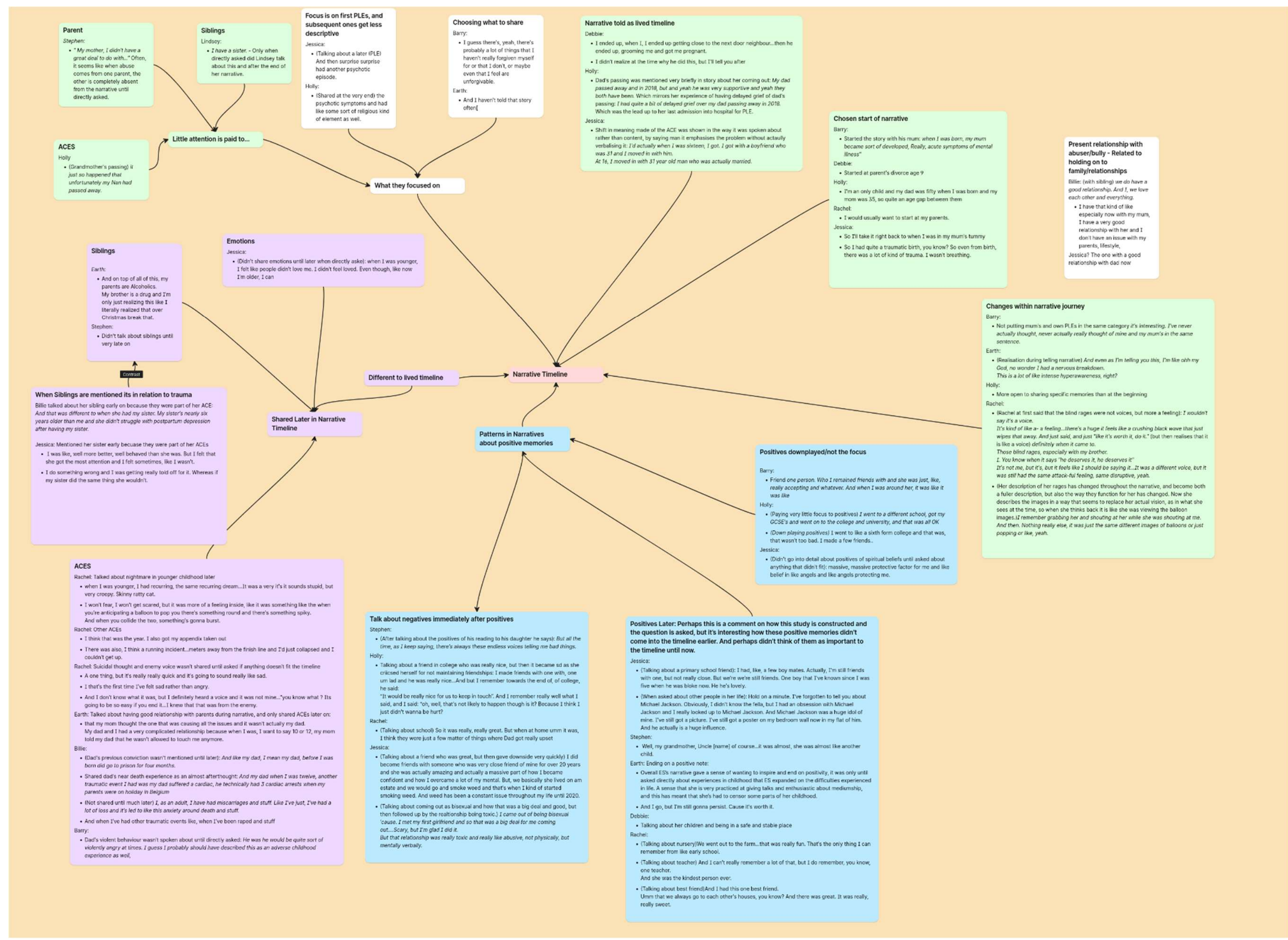
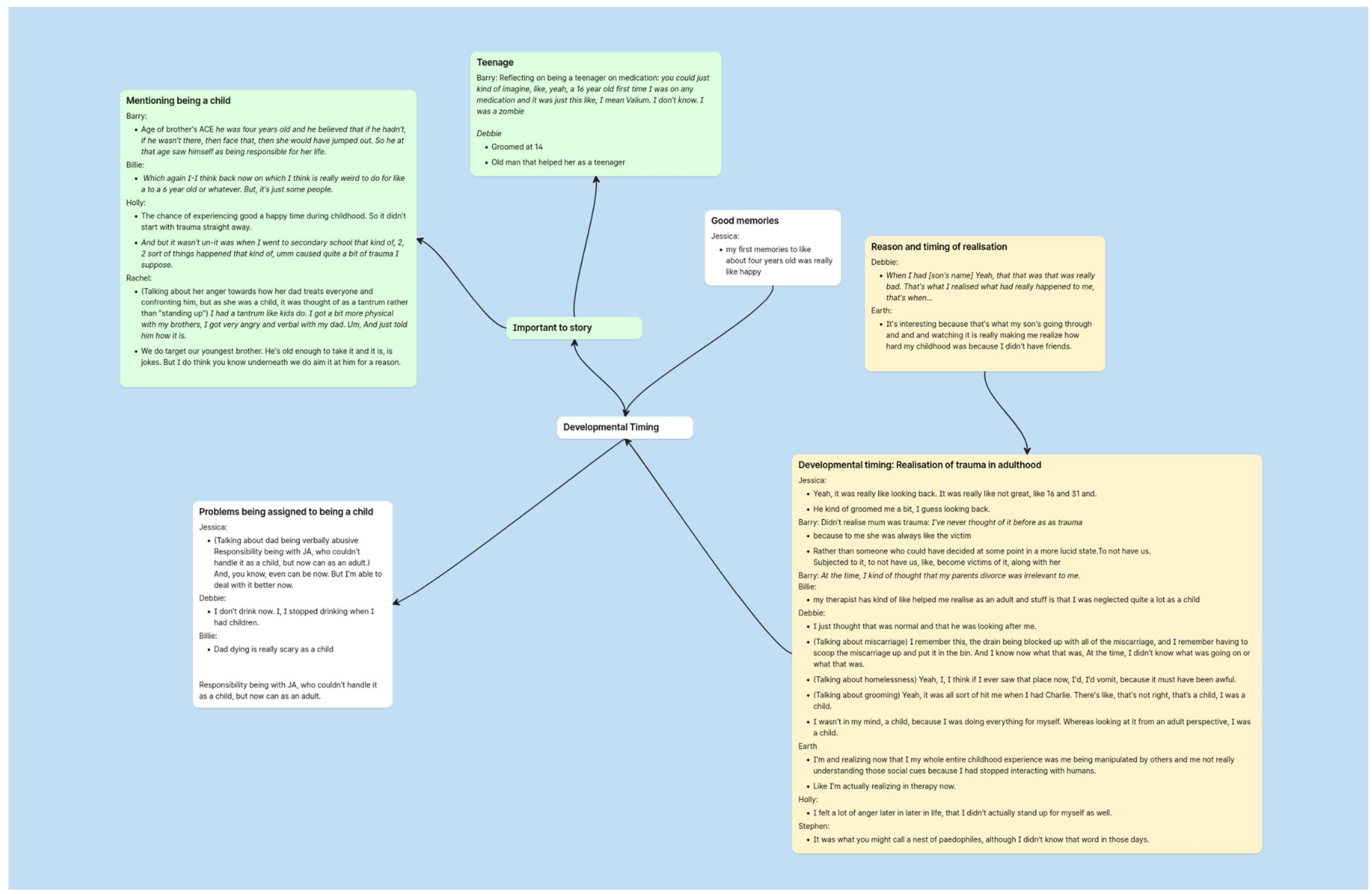
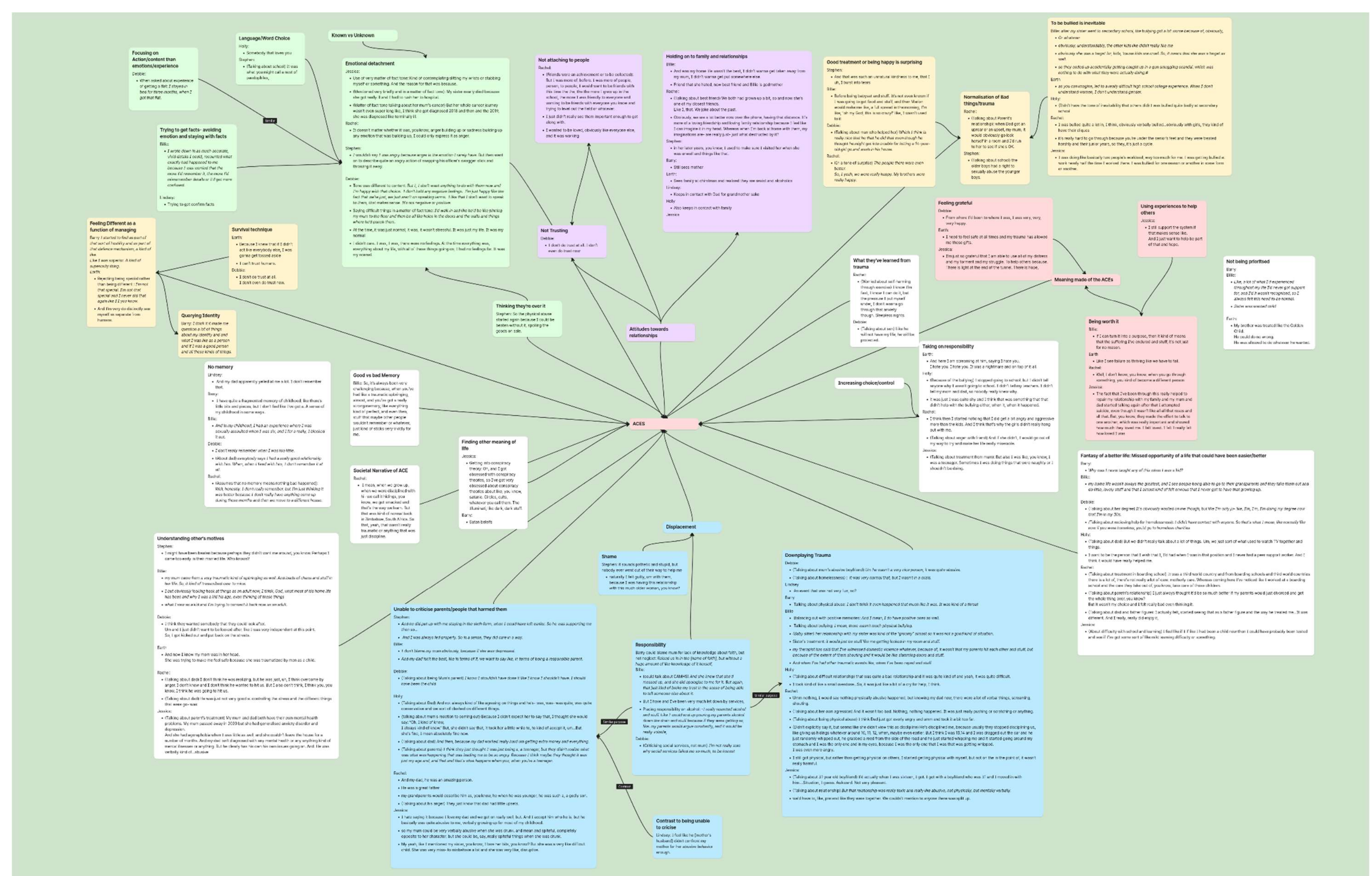
Appendix L: Narrative Timeline Analysis



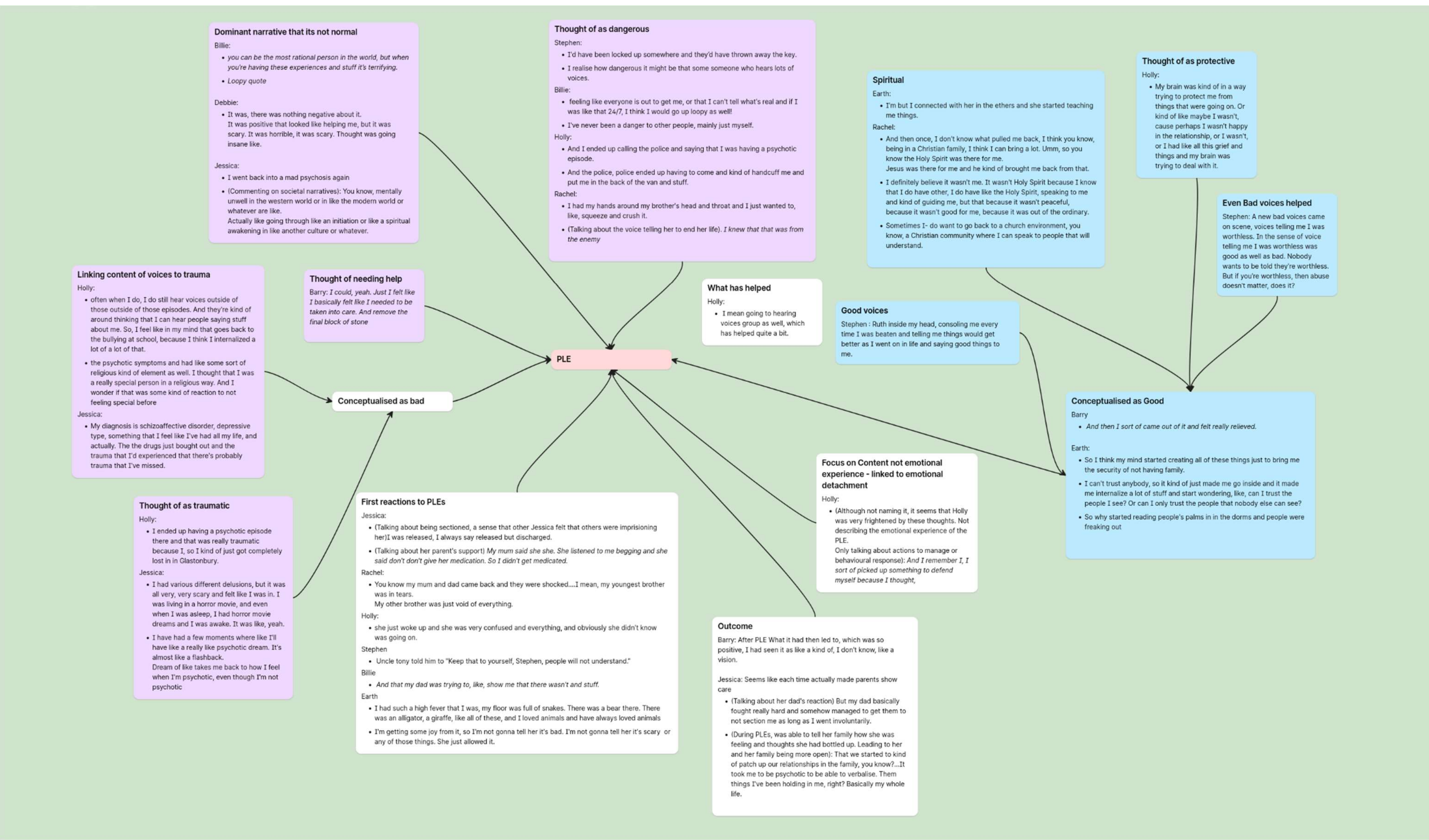
Appendix M: Developmental Timing Analysis



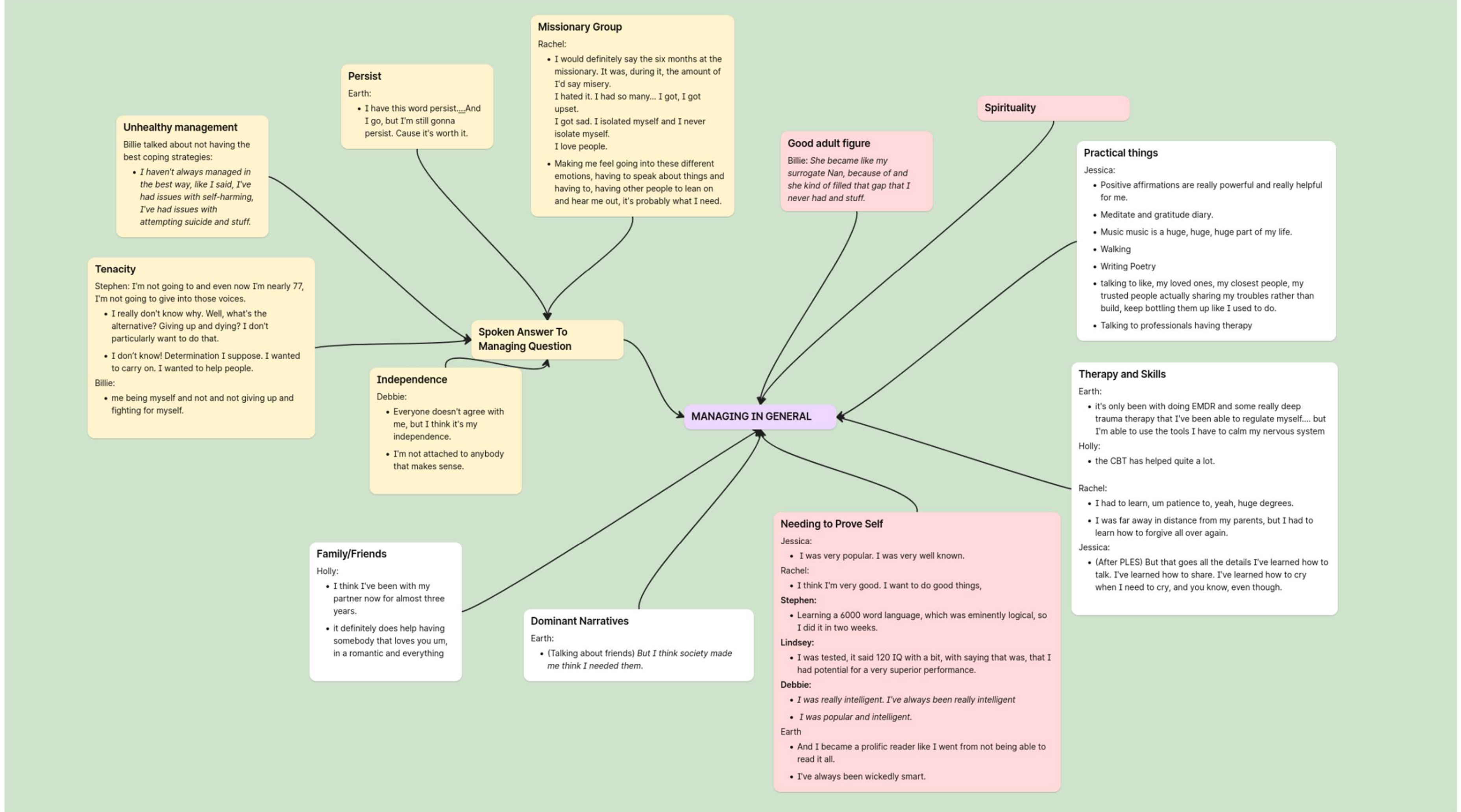
Appendix N: Managing ACEs Analysis



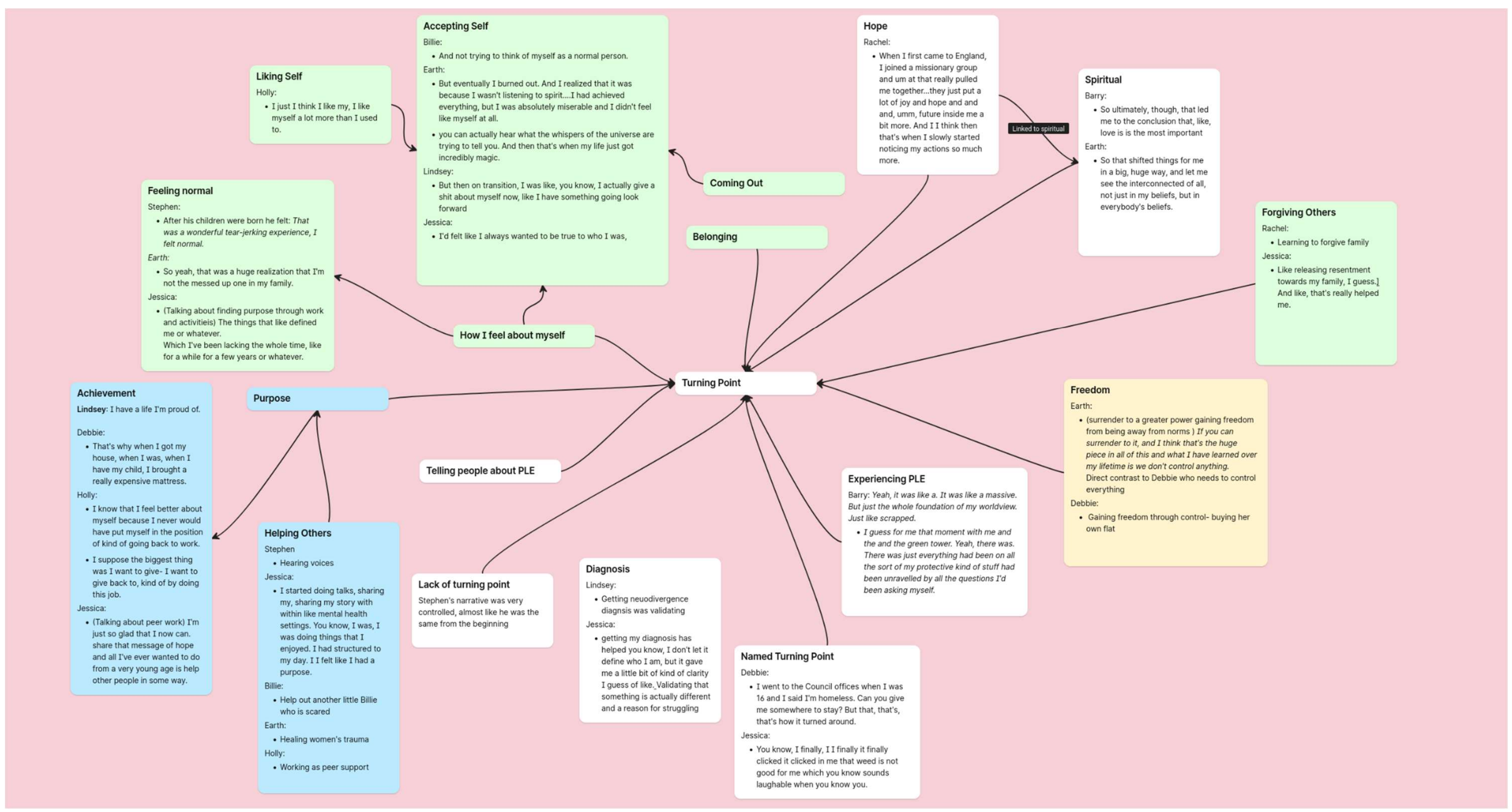
Appendix O: Managing PLEs Analysis



Appendix P: Managing Overall Analysis



Appendix Q: Turning Point Analysis



Appendix R: Feedback from Member Checking

Stephen

I am glad that I was able to help and thank you for sending the initial summary which does, indeed, capture my story. I wish you well.

Holly

Thank you for your email. I have read the summary and it accurately reflects my experience. There is nothing I want omitted. Thank you again for this valuable experience.

Barry

I hope you're well. Thanks for sending the summary over. There were only a couple of points I wanted to mention. Firstly, this sentence: "Despite this, Barry had times where he wanted to tell his friend that "something was really wrong" but felt he could not because his friend "could connect with people"." I think it's meant to say "couldn't connect well with people", by which I mean that he had his own mental health challenges and at times seemed to lack the empathy needed to respond to what I needed to say. The other point is that in mentioning the XXX Faith I think it makes me quite definitively identifiable, given that the community in the UK is only in its thousands. I'm not sure what to do about that exactly, as the religious dimension of the story is obviously very central, but maybe if it was just referred to as "my faith" it leaves enough ambiguity. What would your thoughts be on this?

Earth

I'm so happy I got to be a part of your study and I was able to speak my truth in a way that would be recorded. I know now that this is what our connections were about.
My journey is supposed to be documented. And I'm here to help awaken people to the truth when you combine science and Magick.
And the fact that you chose "Earth" as my name is pure perfection as I was told by the trees that I am "Earths Healing Channel".