Early risk and protective factors and young adult outcomes in a longitudinal sample of young people with a history of psychotic-like experiences

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Running Title: Risk and protective factors in youth with PEs

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ABSTRACT

Background: Early adverse experiences are associated with psychotic-like experiences (PEs) and psychopathology. However, these relationships are not deterministic. Few studies have looked at the interrelationships between early risk and protective factors and young adult outcomes among young people with PEs.

Aims: To examine and compare patterns of early adverse and protective factors and young adult outcomes in a sample of young people with a history of PEs.

Method: Longitudinal qualitative data spanning nine years were collected from a general population sample of seventeen young adults who had reported PEs in early adolescence. A qualitative comparative case study design was used to explore patterns of early life experiences and young adult outcomes.

Results: Four archetypal profiles of early life experiences and later outcomes were identified. Qualitative differences in early adverse experiences and the presence or absence of secure attachment relationships were dominant discriminating factors between low risk and at risk/high risk archetypes for poor young adult outcomes. Experiencing multiple adversities that included childhood trauma in the absence of secure attachment relationships was associated with the poorest outcomes. The presence of secure attachment relationships was protective, even among individuals who had experienced adversity.

Discussion: Not all young people who report PEs have high levels of adversity. Those who experience multiple adversities and childhood trauma in the absence of secure attachment relationships are at highest risk for reoccurring PEs and poor young adult outcomes. Supporting young people to nurture trusted attachment relationships and promoting opportunities to engage in corrective experiences may promote positive young adult outcomes in youth with PEs.

INTRODUCTION

Recent evidence has raised questions about the clinicopathological significance of hallucinatory and delusion-like experiences that occur in the absence of a psychotic disorder (Kelleher, Keeley et al. 2012). Although transient for most people who experience them (Van Os, Linscott et al. 2009), in adolescent populations these psychotic-like experiences (PEs) have been associated with psychopathology and an increased risk of mental disorder and poorer functioning in adulthood (Healy, Campbell et al. , Allen, Coyne et al. 1997, Poulton, Caspi et al. 2000, Yung, Buckby et al. 2005, Varghese, Scott et al. 2009, Kelleher, Keeley et al. 2012, Fisher, Caspi et al. 2013, Fusar-Poli, Bechdolf et al. 2013, Kelleher, Corcoran et al. 2013, Fusar-Poli, Nelson et al. 2014, Sullivan, Wiles et al. 2014).

Experiences of early adversity, such as child abuse, violence, traumatic deaths, institutional care, living in poverty parental mental ill-health and peer victimisation are known risk factors for PEs (Kelleher, Harley et al. 2008, Longden, Madill et al. 2012, Kelleher, Keeley et al. 2013, Dolphin, Dooley et al. 2015, McCarthy-Jones and Longden 2015, Trotta, Murray et al. 2015, Coughlan and Cannon 2017, Croft, Heron et al. 2019). These early adversities are also associated with a wide range of psychopathological outcomes (Kessler, McLaughlin et al. 2010), including depressive (Heim, Newport et al. 2008, Upthegrove, Chard et al. 2015), anxiety (Heim and Nemeroff 2001), psychotic (Varese, Smeets et al. 2012, Bentall, de Sousa et al. 2014, Longden, Sampson et al. 2015, Ajnakina, Trotta et al. 2016) and personality disorders (Afifi, Mather et al. 2011, Klein, Roniger et al. 2015). For both PEs and psychopathology, those at highest risk are individuals exposed to multiple adversities over time (Fergusson and Horwood 2003, Shevlin, Houston et al. 2008, Mitchell, Tynes et al. 2015, Crush, Arseneault et al. 2018, Croft, Heron et al. 2019).

Although early adversity is associated with both psychopathology and with PEs, these relationships are not deterministic. For example, using data from a large representative sample in the UK, Crush and colleagues (Crush, Arseneault et al. 2018, 2018) found that higher IQ, positive home environment, good social supports and living in cohesive communities were all protective against PEs in adolescents who had experienced multiple forms of early adversity. Furthermore, longitudinal research has demonstrated that, even among individuals exposed to early adversity who report mental health and coping difficulties in adolescence, many will overcome those difficulties by midlife (Werner 2004). A number of protective factors have been identified that influence positive outcomes among young people who experience early adversity (Fergusson and Horwood 2003, Beutel, Tibubos et al. 2017). They include an easy-going temperament, good problem-solving skills, secure parental attachments, close relational

bonds with secure and trusted adult figures who can meet a child's needs, positive peer relationships and strong community connections (Fergusson and Horwood 2003, Werner 2005).

Although studies that have examined risk or protective factors separately have offered important insights into both psychopathology and PEs, refining our understanding the dynamic interplay between risk and protective factors and later outcomes in young people with PEs is essential if we are to improve our ability to identify young people with PEs who are at greatest risk for poor outcomes during their adult years. Additionally, while existing quantitative studies have demonstrated statistically significant associations between early adversity, PEs, psychopathology and compromised functioning, they are not without their limitations. They are often cross-sectional; they frequently test linear associations between exposures and outcomes; they are unable to account for outliers; and many have overlooked the role of protective factors in the lives of young people who report PEs. This study addresses some of these limitations. Using longitudinal data collected over a 9-year period, a novel qualitative case comparison method was used to explore early risk and protective factors and young adult outcomes (specifically, educational, vocational and social functioning, peer and family relationships, mental health, subjective well-being and perceived life satisfaction) in a sample of seventeen young people who reported PEs in early adolescence.

METHODS

Study Sample

Participants were a sub-sample (N=17) of young people from the Adolescent Brain Development (ABD) study, a longitudinal study that has been examining psychopathology and PEs in the general population since 2007 (for full details see Kelleher, Murtagh et al. 2012, Coughlan, Tiedt et al. 2014). For the current study, longitudinal data from three waves of the study were analysed (see Figure 1).

Briefly, participants were recruited from a representative sample of primary schools in North County Dublin and County Kildare in Ireland. At baseline (T1), 212 adolescents aged 11-13 years attended for clinical interview and neurocognitive assessment. Psychopathology was assessed through participant and parent interviews using the Schedule for Affective Disorders and Schizophrenia (K-SADS-PL) (Kaufman, Birmaher et al. 1997). To determine PEs, all data on hallucinatory and delusion-like experiences were reviewed and rated by two psychiatrists and one psychologist from the study team. Firstly, each rater rated the data independently, after which a consensus meeting was held and participants were classified as having PEs only in cases where all three raters agreed on this rating. At

T1, 53 of the interview sample met criteria for lifetime PEs, none of whom had a diagnosis of psychotic disorder. A subsample of 100 participants who had completed a brain imaging protocol at T1 were invited to attend for follow-up assessment (T2) when they were 14-16 years old. Of those 86 attended. At T2, psychopathology was again assessed using the K-SADS-PL and rates of PEs were determined using the same consensus rating protocol used at T1. Within the T2 sample, 22 participants had met lifetime criteria for PEs, two of whom had not previously met PE criteria at T1.

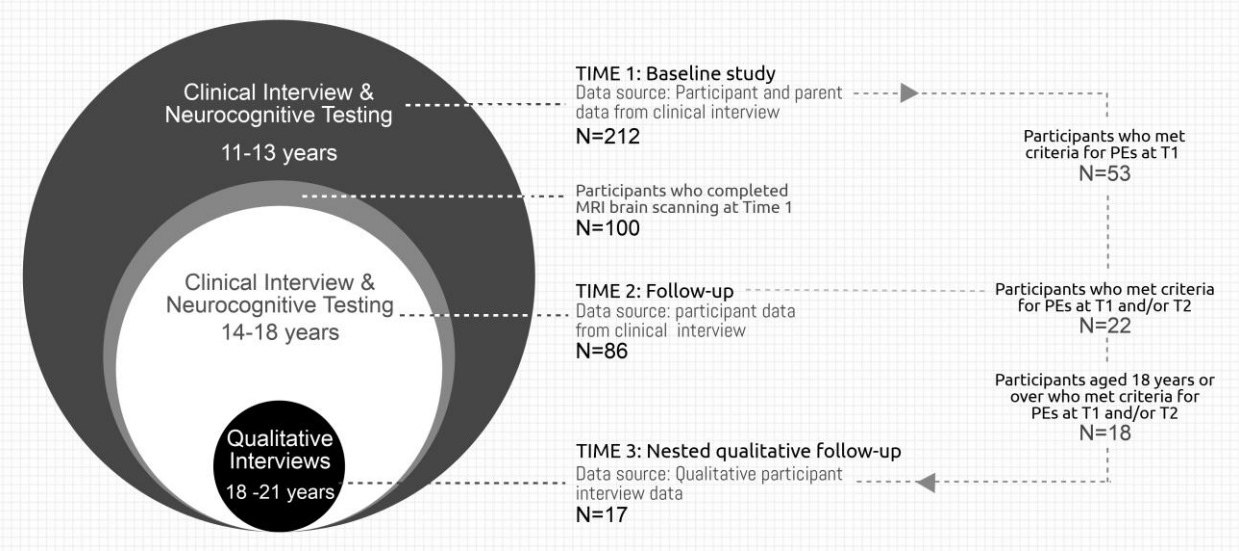

Figure 1 The Adolescent Brain Development Study

A nested qualitative study was conducted when participants were aged 18-21 years (T3). All participants over the age of 18 years who had reported PEs at T1 or T2 (N=18) were invited to take part. Of those, 1 did not respond to two letters of invitation to participate (posted to last known addresses of potential study participants), with the remaining 17 opting in to the study. Interviews were conducted by HC from 9 May to 25 July 2016. Interviews lasted between 45 minutes and 1 hour 50 minutes. A semi-structured interview schedule was used to explore participants' current educational/vocational status; early family life; experiences of stressful events and/or adversity; past and current mental health; lifetime and recent experiences of hallucinatory and delusion-like experiences; relationships with family and peers; self-perception; and life satisfaction. The T3 sub-sample of 17 individuals made up the sample for the current study.

Study Design & Procedure

A comparative case study method was used (Baxter and Jack 2008, Crowe, Cresswell et al. 2011, Yin 2014). This method involves the systematic comparison of two or more cases to identify themes and patterns across cases (Kaarbo and Beasley 1999). For the purposes of this study, each participant was classified as a case. Longitudinal T1-T3 data on each case were analysed using a combination of binary, categorical and thematic coding, after which a cross case comparison was conducted to investigate the presence or absence of shared themes, categories and patterns of experience across all 17 cases. Early risk and protective factors were defined as categorical and thematic findings that were either reported prospectively at T1 and T2 or retrospectively at T3. Outcomes were defined as categorical and thematic findings that related specifically to participants' lives at the time of their T3 interview. To address the potential temporal significance of early life experiences, childhood was defined as the period from birth to 12 years inclusive. All analyses were conducted by HC.

In line with accepted case study protocols (Yin 1999, Ritchie and Spencer 2002, Moran-Ellis, Alexander et al. 2006, Crowe, Cresswell et al. 2011, Yin 2014), all available data on early life histories and young adult outcomes were extracted from T1, T2 and T3 data files for each case. For each participant, early adverse experiences and lifetime psychopathology were coded using binary (yes/no) coding to code for the presence or absence of each experience. Adverse experiences were also classified as either traumatic or non-traumatic (see Table 1). The following criteria were used for classifying experiences as traumatic: exposure to '*death, threatened death, actual or threatened serious injury, or actual or threatened sexual violence*', a DSM-V criterion for post-traumatic stress disorder (American Psychiatric Association 2013); a traumatic death, defined in the literature as either unexpected, violent or untimely (Bonanno 2004) or having occurred in the context of alcohol or drug abuse (Adams, Corr et al. 1999); living for any time period in institutional care (Johnson, Browne et al. 2006); or explicitly reported as a traumatic experience by the participant or his/her parent. Current educational/vocational status was coded into one of the following four categories: in full-time education; in full-time employment; in education and employment; or not in education or employment.

Deductive thematic analysis (Braun and Clarke 2006, 2014) was used to analyse qualitative T3 interview data. These data were coded using a pre-determined coding frame based on the categories of experience that had been explored in the T3 semi-structured interview: i.e. current educational/vocational status; early family life; experiences of stressful events and/or adversity; past and current mental health; lifetime and recent experiences

of hallucinatory and delusion-like experiences; relationships with family and peers; self-perception; and life satisfaction. A set of initial codes within each of these categories was generated based on both the manifest and latent content of the data. Codes within each category of experience were then examined and organised into themes, some of which aligned to the existing coding frame (e.g. self-perception) and some of which were newly generated based on the content of the data (e.g. attachment relationships). In most cases, themes involved a continuum of experience (for example, attachment relationships were sub-classified as secure, ambivalent or insecure to reflect differing patterns of attachment relationships evident across individuals).

TABLE 1 Categories, Definitions and Data Sources for Coding of Early Adverse Life Experiences

Traumatic and Non-Traumatic Adverse Life Experiences	Categories of Early Adverse Life Experience/s	Definition for Purposes of this Study	Data Source†
TRAUMATIC ADVERSE EXPERIENCES	**Birth trauma**	Birth complications resulting in potentially life-threatening medical complications *and* post-birth separation from primary caregiver/s for a period of 24 hours+	1
	Institutional care	Institutional care for any period of time	1
	Traumatic death	Any exposure to a death/s that was unexpected, violent or untimely (Bonanno 2004) or that occurred in the context of alcohol or drug abuse (Adams, Corr et al. 1999)	1, 2
	Other trauma‡	Any other experience that met one of the three criteria for a traumatic experience. For this category, we included any report of an experience that was described as a trauma by a parent (T1) or participant (T3), even when specific details about the experience were not disclosed.	1, 2
NON-TRAUMATIC ADVERSE EXPERIENCES	**Maternal mental ill-health**	Maternal depression, addiction or other mental disorder	1, 2
	Paternal mental ill-health	Paternal depression, addiction or other mental disorder	1, 2
	Parental conflict	Conflict and/or violence between a participant's parents	1, 2
	Parental separation	Parental separation	1, 2
	Death of a loved one	Exposure to the death of parent, grandparent, sibling, aunt, uncle, grand-aunt, grand-uncle or a close friend that did not meet criteria for traumatic death	1, 2
	Other death	Exposure to the death of someone known to the participant who is not a family member or close friend (e.g. a teacher)	1, 2
	Peer victimisation	Bullying and/or rejection by peers causing subjective distress	1, 2

† Data sources: 1 = Parent report at T1, 2 = Participant report at any time

‡ To protect participant identity, details about some of traumatic experiences reported were withheld. In addition, all participants and parents were advised that members of the study team had a mandatory duty of care to report disclosures of sexual, physical or emotional abuse or neglect to child welfare services. In some cases, parents or participants stated that the participant had experienced a trauma without disclosing any details of that trauma. All such reports were categorised as traumatic life experiences.

For each participant, binary, categorical and thematic findings were then combined to create an individual case profile, after which a cross-case comparison was conducted, where all 17 case profiles were compared to look for patterns of early risk and protective factors and young adult outcomes across cases. This method was used to identify archetypal case profiles based on shared patterns of experience that were identified across the sample.

Ethical approval was granted by the Research Ethics Committees of Beaumont Hospital Dublin (T1 and T2) and the Royal College of Surgeons in Ireland (T3).

RESULTS

Overview of Cases

The sample was made up seventeen individuals (ten male, seven female) aged 18-21 years, all of whom had a history of PEs. The mean T1 age of the 17 participants in the current study was 11.7 years (SD=0.75) compared with 11.4 years (SD=0.55) in those with T1 PEs who did not meet criteria for inclusion in this study (N=38). There were no significant differences in gender (χ^2=0.093(df=1), p=0.76) or lifetime DSM-IV diagnoses (χ^2=0.367(df=1), p=0.55) between these two groups at T1. By T3, most participants in the current study (N=14) had met diagnostic criteria for a DSM-IV Axis I (N=14) and/or Axis II (N=2) disorder (American Psychiatric Association 1994). All participants reported at least one early adverse life experience, with most (N=15) reporting two or more. Peer victimisation (bullying and/or peer rejection) was the most frequently reported adverse life experience (N=16). Eight of those who reported persistent experiences of peer victimisation had also experienced some form of adversity in the context of their family or home environment. A total of six reported PEs or culturally normative paranormal experiences (i.e. hallucinatory phenomena attributed to ghosts within a paranormal belief system shared by others).

An overview of all 17 cases is contained in Table 2.

TABLE 2 Education/Vocational Status, Early Adverse Life Experiences, Lifetime Psychopathology and Archetype by Case

Case†	T3 Educational/ Vocational Status	Early Adverse Life Experiences (C= age 0-12, A= age 13-18)	Lifetime Psychopathology	Archetype
M1	In 3rd level education	Death of a close relative (C) Other death[3] (C) Peer victimisation (C)	Depressive and anxiety disorders in childhood and adolescence.	Insecure and Ambivalent
F1	In 2nd level education	Peer victimisation (A)	No Axis I diagnosis ever. Undiagnosed symptoms of anxiety in late adolescence.	Insecure and Ambivalent
F2	In 3rd level education	Paternal mental ill-health (C&A) Other death (C) Peer victimisation (C&A)	Depressive, anxiety and dissociative disorder in adolescence. Symptoms of anxiety in young adulthood.	Insecure and Ambivalent
M2	In 3rd level education	Maternal mental ill-health (C&A) Paternal mental ill-health (C&A) Parental conflict (C) Parental violence (C) Parental separation (C) Other trauma (C) Death of a close relative (C) Peer victimisation (C&A)	Neurodevelopmental disorder. Behavioural, depressive, anxiety and post-traumatic disorders in childhood. Low mood and anxiety in adolescence and young adulthood.	Cascades of Adversity and Trauma *Subtype B*

M3	In 2nd level education	Maternal mental ill-health (C) Parental conflict (C&A) Peer victimisation (C) Parental separation (A)	No Axis I disorder ever. Undiagnosed symptoms of anxiety in adolescence.	Resilient
F3	In 2nd level education	Maternal mental ill-health (C) Paternal mental ill-health (C&A) Parental conflict (C) Parental separation (C) Death of a parent (A)	Depressive disorder in childhood	Resilient
F4	In 3rd level education	Paternal mental ill-health (C) Parental conflict (C) Parental separation (C) Other trauma (C) Traumatic death (C) Peer victimisation (C&A)	Anxiety disorder in childhood. Axis II disorder in young adulthood.	Cascades of Adversity and Trauma *Subtype A*
F5	In 3rd level education	Death of a grandparent (C) Peer victimisation (C) Death of a friend (A)	No Axis I diagnosis ever. Undiagnosed symptoms of anxiety in young adulthood.	Insecure and Ambivalent
M4	In 3rd level education	Death of a grandparent (C) Peer victimisation (C)	Adjustment disorder in childhood	Resilient
M5	In 2nd level education	Birth trauma (C) Institutional care in infancy (C) Other trauma (C) Peer victimisation (C)	Neurodevelopmental disorder. Depressive and anxiety disorders in childhood.	Cascades of Adversity and Trauma *Subtype B*
M6	Working full-time	Paternal mental ill-health (C&A) Parental conflict (C) Traumatic death (C) Death of a grandparent (C) Peer victimisation (C&A)	Adjustment and depressive disorders in childhood.	Transcending Adversity and Trauma
F6	In 2nd level education	Death of a close relative (C) Peer victimisation (A) Death of a grandparent (A) Traumatic death (A)	Adjustment disorder in childhood. Depressive disorder and anxiety in adolescence.	Insecure and Ambivalent
M7	Working part-time	Death of grandparent (C) Peer victimisation (C) Other trauma (A)	Depressive disorder in childhood. Undiagnosed low mood and anxiety in young adulthood.	Insecure and Ambivalent
F7	In 3rd level education	Peer victimisation (C)	Depressive disorder in childhood. Undiagnosed low mood and anxiety in young adulthood.	Insecure and Ambivalent
M8	Not in education or employment	Birth trauma (C) Maternal mental ill-health(C&A) Paternal mental ill-health (C&A) Parental conflict (C) Parental separation (C) Death of a close relative (C) Traumatic death (A) Peer victimisation (C&A)	Depressive disorder in childhood. Multiple diagnoses in adolescence, including depressive disorder. Diagnosed with Axis II disorder in young adulthood.	Cascades of Adversity and Trauma *Subtype A*
M9	In 3rd level education	Death of a relative (C) Death of a friend (A) Peer victimisation (C&A)	Depressive and anxiety disorders in adolescence.	Insecure and Ambivalent
M10	In 2nd level education	Paternal mental ill-health (C) Parental conflict (C) Parental separation (C) Peer victimisation (C) Other trauma (A)	Adjustment and depressive disorders in childhood. Depressive disorder in adolescence. Symptoms of depression in young adulthood.	Cascades of Adversity and Trauma *Subtype A*

† Anonymised case identifiers have been used to protect participant identity (e.g. M1 = male participant 1, F1 = female participant 1, etc.).

Four archetypes of early risk and protective factors and young adult outcomes were identified (see Figure 2), each of which is described below. Illustrative verbatim quotes from T3 qualitative interviews for each archetype are contained in Table 3.

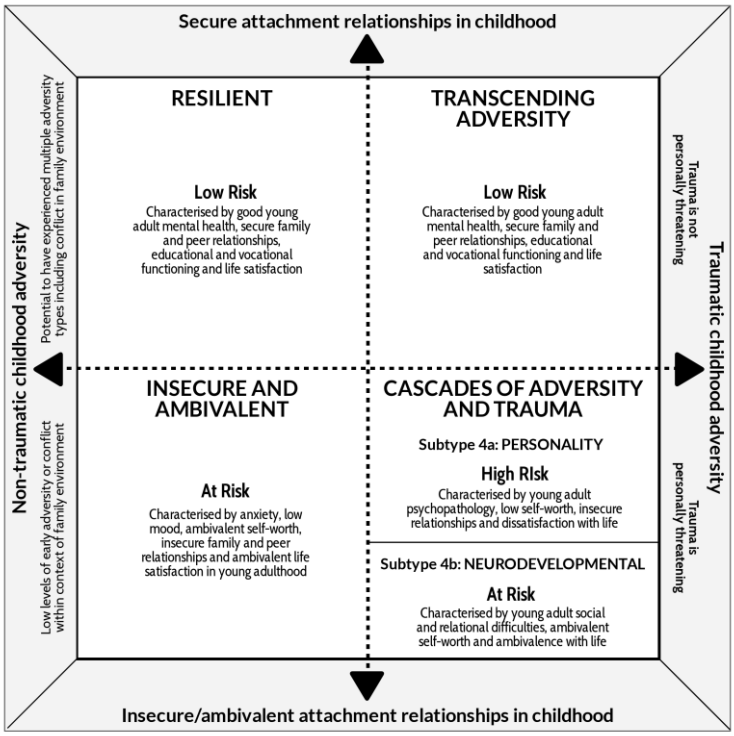

Figure 2 Archetypes of early risk and protective factors and associated risk for poor young adult outcomes

Archetype 1: Resilient

Three cases (2 male, 1 female) were categorised as 'Resilient', all of whom had high levels of life satisfaction and functioning. In all cases, participants had positive self-perceptions and described trusted attachment relationships with both parents and peers. Although adverse experiences in this archetype were heterogeneous and included parental mental ill-health, parental conflict and separation, peer victimisation and parental death, two distinct features were evident across cases. The first was the absence of any traumatic adverse experiences in either childhood or adolescence. The second was the presence of secure parental attachment relationships, particularly with mothers. Participants all perceived that their needs had been consistently well met by their parents, even those who had experienced adversity within the context of their family environments. In all cases, there was some history of emotional or mental health difficulties. However, these were transient and no participant in this archetype had ever sought or required the support of child and adolescent or adult mental health services. No cases in this classification reported PEs or any paranormal perceptions and beliefs at T3.

Archetype 2: Transcending Adversity and Trauma

There was one male participant who was categorised as 'Transcending Adversity and Trauma'. As with participants in the Resilient archetype, his narrative account reflected a secure sense of self and the presence of a number of secure and trusted family and peer relationships. This participant had experienced multiple and persistent early

adverse life experiences that included one childhood trauma. His narrative account indicated that these early life experiences had impacted on his self-worth and wellbeing in childhood and early adolescence. However, he also reported the presence of trusted parent and non-parent adult attachment figures throughout his life who provided him with a sense and a place of safety during times of adversity. In addition, this participant reported a turning point in his life when he began volunteering in his community in mid-adolescence. By providing him with opportunities for corrective intra- and interpersonal experiences and for the creation of meaning in his life, this experience marked a turning point in this participant's life, enabling him to transcend the impact of his previous adverse experiences. This participant had experienced both a depressive disorder and symptoms of post-traumatic stress disorder in childhood. He also had a brief attendance at child and adolescent mental health services in childhood. However, his mental health improved following his involvement in volunteering and, by young adulthood, he was no longer experiencing any emotional distress or mental health difficulties. This participant did report some culturally normative paranormal beliefs and associated unusual perceptual experiences at T3 but these did not cause him any distress or negatively impact his life.

Archetype 3: Insecure and Ambivalent

Eight cases (3 male, 5 female) were categorised as 'Insecure and Ambivalent'. While all participants were functioning well and had social connections, their narrative accounts reflected persistent ambivalence and insecurity in relation to their self-perception, relationships with peers and their satisfaction with life. A distinctive feature of this archetype was lower levels of adversity and the absence of any experiences of adversity within their family contexts. None of the participants in this archetype had experienced a traumatic childhood experience and, in the two cases where participants did report trauma, this had occurred in mid-adolescence. What all participants did share was a history of peer victimisation, which had impacted on their emotional wellbeing and self-worth. A notable feature for all but one participant within this archetype was insecure and ambivalent parental attachment relationships. Evidence of these insecure attachments were both manifest and latent within participants' narrative accounts. This archetype was characterised by high levels of anxiety and emotional distress in young adulthood. Six participants had previously met criteria for childhood or adolescent depression and four had attended child and adolescent mental health services in the past. One participant in this archetype reported both PEs and paranormal perceptual experiences at T3. These experiences included both hallucinatory phenomena and delusional beliefs, some of which had negatively impacted on her emotional wellbeing and functioning. She was the only participant in the sample with a history of a dissociative disorder.

Archetype 4: Cascades of Adversity and Trauma

Five participants (4 male, 1 female) were categorised in the Cascades of Adversity and Trauma archetype, which was comprised of a Personality (subtype 4a) and Neurodevelopmental (subtype 4b) subtype.

Subtype 4a: Cascades of Adversity and Trauma (Personality Subtype)

Three participants were categorised within this subtype (2 male, 1 female). Across the sample, they had the lowest levels of life satisfaction and self-worth and the highest level of enduring social, relational and functional difficulties in young adulthood. In all three cases, chronic family adversity and a parental inability to meet their needs were features of participants' early life experiences. All had insecure parental relationships and none had access to a trusted non-parent attachment figure. All three participants in this archetype had also experienced childhood trauma that was personally threatening or involved a member of their family. Unlike the participant in the Transcending Adversity and Trauma archetype, none had accessed any corrective opportunities that could counterbalance their experiences of exclusion and low self-worth. During their childhood years, the psychopathological profiles of participants in this archetype were not dissimilar to others in our sample. However, there was evidence of a pattern of worsening mental health during their mid-adolescent years that continued into early adulthood. All cases had attended mental health services. Two participants had internalised their distress. Both described a history of self-harm, low mood and anxiety, eventually leading to a diagnosis of emotionally unstable personality disorder in early adulthood. The other participant, who reported a long history of depression, had externalised his distress and, by late adolescence, he was misusing drugs and alcohol and engaging in risk-taking behaviour. The two participants who internalised their distress both reported PEs at T3. The participant who externalised his distress reported unusual perceptual experiences at T3 but these had all occurred in the context of a culturally normative paranormal belief system.

Subtype 4b: Cascades of Adversity and Trauma (Neurodevelopmental Subtype)

Two male participants were categorised within this subtype. Both had experienced multiple early adversities, including one or more childhood traumas that had occurred within their family or caregiving environments. Unlike those in subtype 4a, the participants in this subtype expressed less negative and critical perceptions of themselves in young adulthood. A more dominant theme for both was their experiences of social and relational difficulties and peer victimisation over the course of their lives. In both cases, participants had a neurodevelopmental disorder.

Both had also met criteria for multiple behavioural, mood and anxiety disorders in childhood. Anger was a common emotion in these participants' lives, often expressed through externalising behaviours in childhood. By young adulthood, despite challenges related to social and relational connections and evidence of ongoing emotional vulnerability, they were functioning relatively well and had did not report any of the internalising or externalising behaviours than those in the other Cascades of Adversity and Trauma subtype. One of the two participants in this sub-group reported unusual beliefs at T3 but these all related to a particular spiritual belief system that he held.

TABLE 3 Illustrative Verbatim Quotes from T3 Interviews for each Archetype

1 Resilient	2 Transcending Adversity and Trauma	3 Insecure and Ambivalent	4 Cascades of Adversity and Trauma
Life Satisfaction			
Fairly happy with it now, yeah. I've got good friends around me, a cool girlfriend. School hasn't been too bad so far. Overall it's been very good (M3)	Extremely. Very happy in life at the moment with, with the way things are going (M6)	I want to live, like I do like living, but.. I often think it's like, it just feels like, my future would be like doomed or something (F7)	At the moment I'm unemployed and, and I'm getting welfare and..I find it very difficult to allow myself to take the money, and, you know it kind of, I feel like I'm taking from society rather than, than giving anything to it (M8: Subtype 4a) I'm happy enough yeah. Ehm, I want to make more friends in college, so that's…one thing I want to do (M5: Subtype 4b)
Self-Perception			
Nothing special… which I'm, completely OK with. I don't feel you have to be special in anything, you know, as long as you're a decent person as well. Like, you know, that's enough for you. (M3)	I think, for the first probably 15, 16 years it was a very, I was very low. Like, I had no self-worth. I just wouldn't look at myself, and I was like, 'Oh, no-one likes you.' After 16, 17, when I started maturing a little bit and the volunteering kicked in, and I started making my friends, realising this is what actual friendship is, not getting bullied or getting the p*ss ripped out or whatever, I realised, I was like, 'Well, I don't really care what these people think anymore' (M6)	I think I have always struggled with, like, self-confidence in a way (F7) Still a bit of self-doubt and stuff like that but, I think that will always be a facet of my character, for whatever reason. Like, it's always been said about me in, like, teacher reports and stuff like that. Always say, like, 'Good grades, hard-working, always doubts himself' (M1) Some days I'm really confident and I'm really like, it's always. It's that, like, whatever side of the bed I wake up on, you know? Like, if I wake up and I'm like, 'Yeah', like there's some days like I go through and I'm very content, you know I will go up and talk to new people..and there's other days when I'm just like, if I could live in anybody else's body right now, I would (F5)	I wasn't doing so well, eh, mental health-wise. So, the last two years at school I missed the majority of the year. I would say..close to 80% if not more. I felt terrible, absolutely, I guess, disgusted with myself, that I allowed myself to miss so much time. That I let my emotions..run away with me and, you know, I guess I blamed myself quite a lot and I felt so foreign and distant (M8: Subtype 4a) Before, if something was going on around me, and somebody was just like, angry or, being confrontational or, just like nasty or whatever, I would put it down to me. Because like I thought I was like a poison to other people (M10: Subtype 4a)
Emotional Wellbeing & Psychopathology			
Yeah, I didn't hate myself. Like, get really depressed at all. I never was really, like… I never said I was really, really depressed at all. Sad times, sad at times, but like, never like fully depressed (M4) I feel like, for the, last time I saw you, maybe a few years ago when I was like 13, 14, I was sadder. I feel like I didn't really leave my house. Like I'm quite an introvert person. Yeah, but I feel happier now (F3)	I think that's more associated with the past now. Ehm, I haven't been anxious about anything, apart from that time, in November of last year. Apart from that I haven't been anxious in a long time. And I think that was because, it was more when I was in school and, and not even, like as soon as I finished sixth year in school, I think that sort of, dropped a bit for me, because I wasn't, I was, I was starting fresh when I was going out to <location of course>. No-one knew me (M6)	I get worried about very small things like, ehm, getting on the bus and there not being money on the Leap card <Irish public transport card> or, ehm, the likes of, forgetting something. Like, very very small things I get anxious over (M9) It could be a depression or whatever, anxiety or something like that. You know it's like, I would be like I really want to fight this, how I'm feeling, and this blank, like kind of, state I'm in. I really want to, like I want to think, I want to have, conversations that I feel are meaningful with people. I want to, you know go out and enjoy being alive. And I'm like.. you can do that but then when I try to do it, it just doesn't happen for me.. It actually feels physical. You know what I mean? Like, it feels	It was kind of like I, I got, I got very very depressed in fifth year. And I would say, that kind of depression lasted, and anxious and anxiety came out of that then very strongly as well. But there was a time where, ehm, like, I didn't feel I deserved to sleep in my bed, so I would sleep on the floor (M8: Subtype 4a) It can be directed at other people but then I always take it back and internalise it on myself. I burnt the palm of my hand here with <a cigar> but it was almost like, when I done that, it was kind of.. It pulled me back into, I guess, normality. I guess. Not a very good coping mechanism, but it almost like, it snapped me back to reality (M8: Subtype 4a - internalising)

like, you are stuck in this state like and, there's a better version of yourself trapped inside but it can't, take over, you know what I mean, your overall consciousness or something like that (M7)

I don't think when I say something, but after I've said it I think over it too much. And when someone says something I think over that a bit too much and I keep repeating it and repeating it. And I start making up my own theory and it goes out of control. Like if I'm in bed at night that's all I think of, I just keep thinking about it. (F1)

Almost like I don't really care what happens to me, sometimes. Especially like if I'm, drunk or something. I will just go and do stupid sh!t.(M10: Subtype 4a - externalising)

Well I used to, ehm, really not like going to school. So I remember once I just sat in the car and refused to go in, so my Mam got the teacher out. Ehm, I used to puncture her tyres quite a lot (M5: Subtype 4b)

Well, since the last study I have gone through , well depression issues, though that was probably related to the fact that I have really never gotten on with anyone my age. However, since then I have kind of gotten away from that (M2: Subtype 4b)

Attachment Relationships with Parents and/or other Non-parent Adult Attachment Figures

My mam was you know like real… She still is to this day.. She has a very mothering effect. She's really protective as well. But, in a good way as well, where she wants the best for you as well and for you to not get hurt (M3)

I have a very, good family. Especially, like my Mom. If I was <upset>, she would always just say, like 'Let it out it's fine to cry'. We're still quite close…. Out of my sisters, I'll probably be the closest with her (F3)

I think like every time I had, I was being bullied, and I went home, I felt quite safe at home, which, which everyone deserves to feel safe in their own home. But I could go to my Granny's and feel quite safe (M6)

But me and my Granny are like, like we get on really well..and my Granddad is there. So yeah, no, I am quite lucky to have a supportive family around me that I can, I can turn back to and be like, 'I need help' (M6)

I never felt really attached to my family. So I always kind of thought like, obviously I know now that this isn't true, but I always kind of thought that they wouldn't be burdened, if I was gone (F6)

I always say I was dragged up, rather than I grew up. Because it was like, 'C'mon <name>, like you're one of the lads, let's go out'. So…it's that kind of male, like not being able to depend on other people. I always say we were never the cuddly family. Like, they never knew..how I was feeling. I would never be like, 'Go away I'm having a sad day', I would just be like, 'Go away' (F5)

I would blame myself then for their arguments and stuff. Ehm, you know I done something wrong you know when in reality it was completely and entirely between them, but I would be blaming myself (M8: Subtype 4a)

Not really. Like according to my Mum I just I refused to talk about it but I don't really remember (F4: Subtype 4a)

It <relationship with father> was turbulent for the first few years, and then we kind of started to get on better when he started to teach me a lot of cooking. Nowadays we get on like a house on fire (M2: Subtype 4b)

Relationships with Peers

It was my family. Like my Mom and my close friends. I'm very close with them. And my sisters, just all together (F3)

Been good, been good, made a lot of new friends and kept old ones as well, and expanded them (M3)

And I have a few friends I could just ring and say, 'Look, I'm not feeling myself today', or 'I'm not feeling the best' or 'I need to talk to someone'. And I have them group of friends that I can say that to, that I'm happy to say that to and..they would be like, 'Yeah, what's up, what's going on? Come on over to my house, come and collect me, we'll go for a coffee we'll do this or we'll just get your mind off it. Come on we will go gym and we'll talk.' (M6)

But my..like my body just won't let me kind of trust someone completely. Like, I'm always, like these are the, like my friends in college now, they are the closest I have been in years. But still I'm a little bit kind of sketchy of them. (F2)

Like, I was just a part of a cruel world. Like I was no different than them. That's what I thought. That's probably why it affected me so much longer than it should've anyway because I took everything that they said on board. And I believed it, like, because I was, like, Well these are my best friends, these are the ones who know me the most, you know. They cut me deep. Yeah, I just had no self-esteem, nothing like that (F2 – speaking about being her experiences of bullying and rejection in mid-adolescence)

Things were building up at the time, because I really hated college, and I didn't fit in with anyone. And I wasn't making friends. I have always found it hard to sort of, make friends or maintain friends or, fit in with people. It's kind of, you kind of just don't understand. You're like, 'Why, why is it me that has to be, like, different?' (F4: Subtype 4a)

I had a group of friends before that person, and em, I tried to get back into contact with them. You know, I would send them texts, do you want to do something, I would send him a text, do you want to do something, you know I never got replies and stuff. So, em, I guess not getting replies and stuff, it didn't do too well for me either you know. I guess, I felt there was something wrong with me that people didn't want to hang out with me and stuff at the time too (M8: Subtype 4a)

I have, probably from day one of primary school all the way up, never had a minute's peace from little bullies (M2: Subtype 4b)

The human connection side's always been the hardest part of everything for me (M2: Subtype 4b)

I just kind of noticed, from a pretty young age that em, eh, I didn't fit it. So then when I tried to fit and, I couldn't, and then you know I just, kind of stopped (M5: Subtype 4b)

DISCUSSION

Findings from this study have identified four archetypes of early risk and protective factors and young adult outcomes in a sample of young people with a history of PEs. This finding is important because it provides evidence that there are notable qualitative differences in the early life experiences and later outcomes within samples of young people who report PEs. While our findings support existing evidence of a relationship between adversity and both PEs and psychopathology (Kelleher, Harley et al. 2008, Afifi, Mather et al. 2011, Bentall, de Sousa et al. 2014, Dolphin, Dooley et al. 2015, Hughes, Bellis et al. 2017) they offer new evidence that may advance our understanding of this relationship. In particular, they suggest that the risk for PE persistence, psychopathology and low levels of life satisfaction in young adulthood may be associated with particular permutations of qualitatively distinct early adverse experiences and childhood trauma that occur in the absence of sufficient protective and corrective factors. Additionally, our findings also demonstrate that not all young people who report PEs have high levels of early adversity or trauma. In line with recent findings from a large community sample in the UK (Crush, Arseneault et al. 2018), they also provide encouraging evidence that positive young adult outcomes are possible for young people with a history of both adversity and PEs. In particular, they highlight the protective impact of trusted adult attachment relationships, positive peer relationships and opportunities to contribute to society.

The Role of the Type, Timing and Context of Early Adversity and Trauma

Findings from this study highlight that the type, timing and context of early adversity and trauma may be important factors in understanding differing trajectories and outcomes among young people who report PEs. In particular, we found that experiencing multiple adversities that included adversity within a child's family/caregiving context and at least one childhood trauma that occurred in the absence of parental and social protective factors, was the most potent combination of risk and protective factors in relation to PE persistence, psychopathology and low life satisfaction in young adulthood. This combination of adversity and trauma was only evident in the Cascades of Adversity and Trauma archetype, with Subtype A (Personality) demonstrating the poorest young adult outcomes. The presence of personally threatening traumas across this archetype is consistent with evidence that experiences that involve an intent to harm have a stronger association with PEs than those without such intent (Arseneault, Cannon et al. 2011, van Nierop, Lataster et al. 2014). However, our findings further suggest that the timing of trauma may be relevant in understanding differing outcomes in adulthood. Furthermore, these traumatic experiences were primarily observed in combination with a) infant and childhood experiences living in an adverse family environment, b) insecure or disrupted parental attachments and c) later experiences of peer victimisation or exclusion,

demonstrating that poor outcomes associated with these traumas involve a complex and additive interaction between these and other risk and protective factors in young people's lives.

The Role of Early Attachment Relationships and Opportunities for Corrective Experiences

The finding that insecure early attachments were evident in the accounts of almost all participants in our at risk archetypes replicates well-established evidence that early attachment relationships are intrinsically linked to personality formation, psychopathology and to the capacity to form and maintain trusted attachment relationships in adulthood (Bowlby 1977, Fonagy 2001, Sarkar and Adshead 2006, Holmes 2014). The combination of high levels of insecure parental attachments and low levels of childhood adversity in the Insecure and Ambivalent archetype was an interesting and unanticipated finding in this study. The absence of both adversity within the family environment and of childhood trauma was notable in this archetype. We therefore propose that there may be a distinct subgroup of children whose emotional vulnerability and susceptibility to PEs may stem from the insidious effects of insecure early attachments rather than from the impact of early adversity and/or trauma. This subgroup may be at low risk for PE persistence but at high risk for peer victimisation, low self-worth and emotional and mental health difficulties and these are young people who are likely to seek out or require professional intervention and support.

Insecure attachment relationships were also evident among participants in the Cascades of Adversity and Trauma archetype. Our finding of both a personality and a neurodevelopmental subtype within this archetype is also consistent with evidence of an overlap between manifestations of attachment disorders and both personality (Sarkar and Adshead 2006) and neurodevelopmental (Davidson, O'Hare et al. 2015) disorders. Given the high levels of early adversity and childhood trauma in this archetype, our findings are also consistent with existing evidence that attachment may play a role in mediating the relationship between early adversity and both PEs (Berry, Barrowclough et al. 2007, Berry, Barrowclough et al. 2008, Carr, Hardy et al. 2018) and psychological distress and wellbeing (Corcoran and McNulty 2018).

Consistent with decades of evidence (Bowlby 1977, Fergusson and Horwood 2003), an encouraging finding was that secure attachment relationships were protective in the lives of young people in our study. In fact, the presence of a secure early attachment relationship(s) was the primary differentiating feature between our at risk and low risk archetypes. This was the case even when participants had experienced adversity within their family environment,

an exposure that has previously been identified as placing children at high risk for poor psychopathological outcomes (Kessler, McLaughlin et al. 2010). This was most evident within our Resilient archetype, where secure parental attachment relationships appeared to buffer young people against the effects of the multiple early adversities they had experienced, some of which included parental conflict, separation and death. Within our Transcending Adversity and Trauma archetype, we also found that secure attachment relationships with non-parent adult figures were protective. This finding complements existing evidence on the protective role that trusted adults play in the lives of young people (Dooley and Fitzgerald 2012). In the context of limited attachment-based research in the field of psychosis (Read and Gumley 2010), we believe that our findings point to a need for further research to examine the role that attachment and family relationships have in young people's lives.

In addition to the protective role of secure attachment relationships, we also found evidence of the transformative effect of corrective experiences in adolescence. This was seen in our Transcending Adversity and Trauma archetype, whereby the opportunity to engage in meaningful volunteering work provided the turning point for one participant who had previously experienced emotional distress and low self-worth in the context of multiple adversities and trauma. By young adulthood, this participant was no longer experiencing any psychopathological difficulties and any unusual perceptions he reported were grounded in a culturally normative, non-pathological paranormal belief system. This finding reflects findings that corrective experiences in adolescence can support young people, not only to transcend the worst effects of early adversity, but also to develop personal resilience (Werner 2004, Werner 2012).

Strengths, Limitations and Research Implications of the Study

We acknowledge that the study is limited by the small sample size and the findings are therefore not generalizable to larger populations of young people with a history of PEs. However, findings from this study have provided important insights into the complex interrelationships between early life experiences and young adult outcomes among young people who experience PEs that can be used to inform future studies with larger sample sizes. In addition, we recognise that, as the data were analysed by HC only, this may have introduced a level of subjective bias in the analysis, an issue that is often raised as a criticism of qualitative methods. However, there is a growing recognition of the value and importance of exploratory qualitative studies that use systematic methods in the field of health services research (Mays and Pope 1995, Kessler, Amminger et al. 2007, O'Cathain, Murphy et al. 2007, Braun and Clarke 2014), providing rich and complementary findings about complex human phenomena and

supporting the development of new hypotheses for further research. In the case of this study, our finding of a complex interaction between risk and protective factors and young adult outcomes suggests that research that relies on simple cause-and-effect models or that only applies a crude count of adverse life events may be of limited value in identifying specific permutations of risk for poor outcomes in later life. We believe that future research would benefit from research designs that can examine complex interactions between exposures and outcomes and that include the role of protective factors. The emergence of attachment as a central theme in this study also warrants further investigation.

Conclusion

With the identification of both risk and protective factors recognised as a global mental health research priority (Collins, Patel et al. 2011), this study provides a welcome alternative to studies within the field of PE research that have focused only on risk. Our finding of two low risk archetypes (Resilient and Transcending Adversity and Trauma) and two at risk archetypes (Insecure and Ambivalent and Cascades of Adversity and Trauma) demonstrates that not all young people who report PEs have high levels of early adversity and trauma or are destined to a future characterised by poor mental health and compromised functioning. Our findings also highlight that the qualitative differences in early adversity and trauma and the presence or absence of secure attachment relationships may be key factors in discriminating between young people at high and low risk for PEs and for poor young adult outcomes. From a public health perspective, we suggest that intervening to promote trusted attachment relationships, social connections and opportunities to contribute to society may positively impact the trajectories of young people who report PEs.

DECLARATION OF CONFLICTING INTERESTS

The authors declare that there are no conflicts of interest

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