Understanding the influence of childhood adversity on pathways to care in first episode psychosis.

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Doctorate in Clinical Psychology
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Submission date: 05/06/2023

Thesis portfolio word count: 35,867

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Thesis Portfolio Abstract

Background

Early intervention is vital to improve treatment outcomes in individuals experiencing mental health difficulties (MHD), and particularly in those experiencing first episode psychosis (FEP). Research has sought to identify factors that impact upon pathways to care (PtC) to reduce barriers that result in treatment delays. Childhood adversity (CA) is a factor widely associated with increased risks of experiencing MHD, yet its impact on PtC is less known. This thesis aimed to explore the impact of CA on PtC and help-seeking behaviours for MHD and more specifically in FEP.

Methods

A systematic review exploring the relationship between CA and help-seeking for different MHD was conducted, analysed using narrative analysis. A quantitative study to examine associations between CA and PtC during FEP was carried out using data collected from adults presenting to services in two London boroughs between 2010-2012 (N=558). Data were analysed using Chi-square, t- and Kruskal-Wallis tests, and regression analyses.

Results

Twelve studies were included in the systematic review. Overall findings suggested links between CA and help-seeking behaviours, but mixed evidence of the direction of impact. Some studies reported CA as a barrier to help-seeking, while others suggested that it increased help-seeking behaviours. The impact of CA was not shown to vary across differing mental health presentations. Findings of this review were cautioned due to the heterogeneity of the papers included. The empirical study findings indicated that individuals with records of CA were more likely to experience longer duration of untreated psychosis (DUP), insidious onset of psychosis and have previous service use. These factors were also associated with number of CAs experienced. Younger and female individuals were found as more likely to have CA records.

Conclusions

The findings indicated that experiences of CA can influence PtC, in FEP and MHD more widely. It remains unclear as to whether CA acts as a facilitator or barrier to help-seeking during MHD, although in FEP, the results showed that it can lead to delays to receiving care and higher service use. Research in these areas was found

to be limited, warranting further exploration of the role CA plays in PtC for MHD to help inform care pathways and increase opportunities for early intervention.

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Table of Contents

Acknowledgements

Thank you to my primary supervisor, Dr Sheri Oduola, without whom I could not have gotten through this process. Your patience and guidance has been invaluable. Thank you also to Dr Jo Hodgekins for taking the time to review my work before submission and co-facilitating a mock viva for me. Thank you to my placement supervisors who have been incredibly understanding and flexible with my time during the thesis process. A big thank you to my Dyslexia Tutor, Jess, who went above and beyond to make the process more manageable and ensured that I felt heard and supported. I'm so grateful that you always made the time to see me if I asked, no matter how short notice or how busy you were.

Thank you to my fellow trainees, especially Heather, Zoe, Rhiannon and Bella, for your continuous peer support throughout this process. With special thanks to Rhiannon for taking the time out away from her own project to be my second screener for the systematic review, as well as for always being on the other end of the phone to support me and answer my never-ending list of questions. I'm lucky to have met such wonderful people during training.

Lastly a huge thank you to family and friends for your unwavering support behind the scenes. To my Mum, Dad and Granny for all the extra things you did to help make life easier and take the stress off. To my friends who sent pick-me-ups, dragged me out of the house and regularly checked in despite me dropping off the face of the earth for weeks at a time. To my dog Maui, people said I was mad getting a puppy during 3rd year but your happy face and wagging tail has kept me going on more occasions than I can count. Not to mention how helpful it has been for you to remind me to take breaks and go for walks to clear my head. Finally, to my husband, Stephen, for being my rock through all the ups and downs of the process, cheering me on at every step, and for all the hours you spent helping to proof-read version after version. I'm so grateful to have you all in my life, I could not have completed this without you.

Chapter One - Introduction

1.1 Mental health difficulties

Mental health difficulties (MHD) are experiences of dysfunction in our emotional, psychological, and social well-being (Keyes, 2006). These experiences interfere with our perception of the world and how we live our lives. In understanding MHD, they are frequently grouped into 2 main types, common MHD and severe and enduring MHD. Common MHD include depression and anxiety disorders (generalised anxiety disorder, panic disorder, phobias, social anxiety disorder, obsessive-compulsive disorder and post-traumatic stress disorder (PTSD) (NICE, 2011). They are referred to as “common” as they are some of the more frequently experienced MHD, with up to 15% of individuals in the UK known to be affected by these (NICE, 2011). They frequently co-occur and the severity and impact can vary greatly, but overall show lower rates of impairment of functioning and higher rates of recovery than other disorders (Jorm et al., 2005; Kessler et al., 2005; WHO, 2017). Severe and enduring mental illness refers mainly to experience of psychosis, but also can include other chronic functional disorders (Kafetz, 2009). These disorders are likely to result in higher levels of symptom severity, impairment and have poorer long-term outcomes (Perlick et al., 2004; Vornik & Hirschfeld, 2005). Within the UK population it is estimated that around 0.8% of individuals will experience severe MHD (NMHIN, 2018), a significantly lower rate of occurrence than common MHD.

1.2 Psychosis

Psychosis is a complex and varied concept encompassing a range of symptoms and experiences, including positive symptoms (e.g. hallucinations, delusions) and negative symptoms (e.g. lack of motivation, difficulties experiencing pleasure) (NICE, 2014; WHO, 1992). It is characterised as disruptions to a person's thoughts and perceptions. It makes it difficult for them to recognise what is real and what is not, interfering with their sense of reality (APA, 2013; WHO, 1992). Psychotic symptoms can occur because of various factors, including genetics, substance abuse, brain injury, or underlying mental health conditions such as schizophrenia, bipolar disorder, or severe depression (APA, 2013). Long term experiences of psychosis are associated with high levels of disability and suffering (Rössler et al., 2005) however evidence has shown that outcomes can be improved through early intervention (Penttilä et al., 2014). As such, research has sought to understand risk factors linked to psychosis and how they may impact upon seeking help from services.

1.3 Understanding early intervention.

Research has repeatedly shown the importance of intervening quickly to support those experiencing a variety of MHD. (Arango et al., 2018; Catania et al., 2011; Galea et al., 2020; Mihalopoulos et al., 2009; Penttilä et al., 2014; Petito et al., 2020). Early intervention (EI) is the process of providing swift identification, specialist intervention and support to a person experiencing early symptoms of mental illness. It is vital in improving service engagement and treatment outcomes by reducing duration of untreated illness (DUI) (Dadds et al., 1997; Halfin, 2007; Singh, 2010). DUI is defined as the interval between the onset of a patient's first psychiatric episode and that patient's first appropriate treatment (Dell'Osso & Altamura, 2010). It also demonstrates wider societal outcomes for both individuals and services (Reardon et al., 2022; Sediqzadah et al., 2022; Shearer et al., 2018). Psychosis is no exception to this, with strong evidence supporting the benefits of EI on treatment and socio-economic outcomes (Birchwood et al., 1998; Kelly et al., 2007; Norman & Malla, 2001; Singh, 2010).

EI in Psychosis teams are well established within the National Healthcare Services (NHS England, 2020) to provide rapid support to individuals experiencing First Episode Psychosis (FEP) and other related psychotic illnesses. FEP refers to the first time someone experiences symptoms of a psychotic disorder, such as hallucinations or delusions, which typically occur in late adolescence or early adulthood (NIMH, 2016). Evidence has shown that many who experience psychosis struggle to initiate contact or use help-seeking behaviours, resulting in longer durations of untreated psychosis (DUP), the time from the onset of psychotic symptoms until the first treatment, which can have severe consequences (Penttilä et al., 2014).

Routes to accessing help in psychosis are varied due to a number of factors including insight (Ferrara et al., 2021; Lecomte et al., 2008), trust in services (Lysaker et al., 2005), stigma (Mantovani et al., 2017; Xu et al., 2016), and barriers to care (Hasan & Musleh, 2017; Powell et al., 2021). They may also include non-mental health specific agencies such as emergency services, social support and the criminal justice system (Singh & Grange, 2006). Delays to help-seeking due to challenges in accessing the right support can risk prolonging DUP, and impact long-term outcomes (Penttilä et al., 2014). Given the complex nature of how people contact mental health services during FEP, a focus on examining PtC to identify factors that may impact early intervention would appear essential given its vital role in helping to reduce DUP (Oduola & Craig, 2017).

1.4 Pathways to care, help-seeking and influencing factors

Treatment access for MHD can come via multiple routes, a concept understood as Pathways to Care (PtC). PtC refers to how a person enters the care pathway, at what stage and who their first contact is with. It is specifically used to measure delays in help seeking and treatment, which is important for understanding how people can access services at an earlier stage (Allan et al., 2021). Rogler and Cortes (1993) defined PtC as ‘the sequence of contacts with individuals and organisations prompted by the distressed person's efforts, and those of his or her significant others, to seek help as well as the help that is supplied in response’. It is a broad term that encompasses all routes that can be taken by individuals, support networks and services in acquiring support to those in need (Singh & Grange, 2006). PtC generally measures the time between symptom onset, first professional contact and the initiation of appropriate treatment, which gives an estimate timescale of help-seeking and treatment delays (Allan et al., 2021). This has the potential to identify whether public health or service level intervention would be most of benefit, focusing on patient need.

The concept of help-seeking for MHD has become a key focus of research in recent decades to identify the factors which may help facilitate or act a barrier to receiving support. Help-seeking is understood to be a dynamic process, defined as any action or activity taken to consider or seek personal, psychological, emotional, or social support, care or service (Barker, 2007; Xu et al., 2018). Andersen and Davidson’s (2007) Behavioural Model of Health Services Use conceptualises these factors well, categorising them into 3 main groups which they say describes the overall determinants of help-seeking. These include predisposing characteristics, enabling factors, and need, which encompasses actual (biological/clinical) and perceived need. A high proportion of individuals experiencing MHD are found as unlikely to seek help (Lubian et al., 2016; McManus, 2016; McManus et al., 2009).

Therefore, in order to provide EI it is important to understand the factors that can impact on help-seeking and PtC.

The Health Belief Model (HBM) highlights the importance of belief in understating help-seeking behaviour (Rosenstock, 2000). Beliefs are views held by the individual which shape their view of the world and are formed during various experiences and exposures throughout life. As such, they determine how an individual responds and behaves towards situations they encounter (Glasman & Albarracín, 2006). The HBM is a theoretical framework that suggests the decision to seek help for a MHD is influenced by a combination of self-efficacy, cues to action, perceived barriers, perceived benefits, perceived severity and perceived susceptibility. Some beliefs can help to facilitate help-seeking behaviours for MHD. Individuals who hold more positive beliefs of receiving support (Jimenez et al., 2012; Mojtabai, 2007) or have more trust and confidence in services (Jorm et al., 2005; Kam et al., 2019) have been proven to increase the likelihood of seeking help for MHD. Alternatively, beliefs can act as a barrier to help-seeking. Those who display more negative views of mental health and help-seeking are shown as less likely to seek help (Aguirre Velasco et al., 2020; Clement et al., 2015; Corrigan et al., 2014). As too are those who have lower self-esteem (Heath et al., 2018), a lower sense of perceived need (Andrade et al., 2014; Bruffaerts et al., 2011; Kam et al., 2019) or display higher beliefs about their resilience (Chang et al., 2020). All of this demonstrates the importance that beliefs hold in determining help-seeking behaviours.

Stigma is a hugely influential element that shapes beliefs and has been widely shown to impact on help-seeking behaviours (Aguirre Velasco et al., 2020; Clement et al., 2015; Corrigan et al., 2014). Stigma is a set of negative attitudes or discrimination against someone based on a distinguishing characteristic. In addition to shaping the beliefs an individual holds, stigma can present from a multitude of levels, internally and externally, impacting on experiences and understanding of mental health. Stigma towards MHD results from several factors, including lack of knowledge or understanding about mental illness, negative stereotypes, fear of the unknown and historical and cultural influence (Corrigan et al., 2014; Link & Phelan, 2001; Pescosolido et al., 2008) with negative language frequently associated, such as “psycho” or “nutter” (Thornicroft et al., 2017). This stigma towards MHD can result in more negative appraisal of themselves and their illness, regardless of diagnosis

(Green, 2003), whilst also having wider socio-demographic impacts, such as reduced job opportunities and income (Stuart et al., 2014). With this in mind, it is unsurprising that people may want to prevent association with such labels by avoiding contact with mental health services (Clement et al., 2015), with higher rates of stigma resulting in reduced readiness to seek help (Schomerus & Angermeyer, 2008). Societal understanding of mental health has improved in more recent years, yet its historic negative narrative, further reinforced by widely shared health misinformation through social media (Chou et al., 2018; Suarez-Lledo & Alvarez-Galvez, 2021), continues to facilitate experiences of embarrassment and shame in acknowledging mental illness (Chang et al., 2020; Schnyder et al., 2017; Yousaf et al., 2015) and lowers levels of perceived need (Schomerus et al., 2012). Consequently, this stigma proves responsible for treatment seeking delays and reduces the likelihood that a mentally ill patient will receive adequate care (Shrivastava et al., 2012).

Demographic factors have also been shown as predictors of help-seeking behaviours for MHD. Research has shown that age, gender, education, socio-economic status, marital status and ethnicity all impact on help-seeking behaviours (Villatoro et al., 2018). Younger individuals, males (Galdas et al., 2005; Mackenzie et al., 2006), those from ethnic minority backgrounds (Kam et al., 2019; Taylor & Kuo, 2019; De Luca et al., 2016; Jimenez et al., 2012), and individuals with lower socio-economic status (Mojtabai, 2007; Mojtabai, 2009; Regier et al., 1993) exhibit decreased tendencies to seek help for mental health difficulties. Additionally, race, gender, and age (Cachelin et al., 2001; Grillot & Keel, 2018) have been identified as specific barriers to help-seeking due to the impact of stigma and financial limitations. Education too is indicated as an important influencer of help-seeking, with studies highlighting that those with better mental health literacy (Aguirre Velasco et al., 2020; Cheng et al., 2018), as well as higher levels of overall education (Gondek & Kirkbride, 2018; Hammer et al., 2013; Hardy et al., 2018) are more likely to actively seek-help. Levels of social support are also found to act as a significant mediator in relation to seeking help for MHD (Gao et al., 2022; Have et al., 2002; Jones et al., 2019).

From this understanding of influencers of help-seeking for MHD, research has also sought to identify how these can vary across presentations. In FEP this knowledge can help to reduce DUP and to get people on the care pathway as quickly as possible. Socio-demographic concepts found to be of significant importance to help-seeking for FEP include ethnicity (Oduola et al., 2019; Oduola., et al., 2021), gender (Ferrari et al., 2018), social deprivation (Croudace et al., 2000; Morgan et al., 2007) and unemployment (Boydell et al., 2013; Ramsay et al., 2012).

These factors have all been shown to influence the stage that patients first contact mental health services during FEP, the severity of their initial contact and their long-term outcomes. For example, some studies have shown that people from ethnic minority backgrounds have increased likelihood of entering mental health care via the police and the criminal justice system (Bhui et al., 2003; Ghali et al., 2013; Morgan et al., 2005), and are 2 to 4 times more likely to enter services via compulsory admission compared to their white counterparts during experiences of FEP (Oduola et al., 2021). Research has also identified factors that can help improve help-seeking during FEP, such as social support. Having strong connections with friends and family (Cole et al., 1995; Crush et al., 2018; DiMatteo, 2004; Pruessner et al., 2011) proves important as many help-seeking contacts are initiated by support networks rather than the individual (Addington et al., 2002). This is often in cases where individuals lack insight into their illness while equally better able to navigate the process of accessing support for their loved one. Higher education has also been shown to improve help-seeking and result in better long-term outcomes in FEP (Hardy et al., 2018). Interestingly, all the aforementioned concepts impacting on help-seeking also impact upon the overall risk of developing FEP more generally.

1.5 Childhood adversity

Childhood adversity (CA) refers to traumatic experiences that occur during childhood (Butchart, 2006). These experiences can include physical, emotional, or sexual abuse, neglect, household dysfunction, exposure to violence or other traumatic events, poverty, and other forms of adversity (Felitti et al., 1998). CA can have long-lasting effects on a child's health, well-being, and ability to form healthy relationships later in life. Research has shown that children who experience CA are at increased risk of developing mental health problems, such as depression and anxiety, as well as physical health problems, such as cardiovascular disease and obesity, in adulthood (Anda et al., 2006; McLaughlin et al., 2014). According to the World Health Organization (WHO), regardless of the level of economic development, approximately 40% of children worldwide are estimated to experience at least one form of CA (Kessler et al., 2010). Worse still, CAs often co-occur and persist over time, further impacting the child and their long-term outcomes (Morgan & Gayer-Anderson, 2016).

1.6 Childhood adversity and mental health difficulties

Research has shown that of those experiencing MHD, at least a third will have experienced adversity in their childhood years (Green et al., 2010; Kessler et al., 2010; McLaughlin et al., 2014). Experiences of CA have long been associated with both increased risks of developing MHD and subsequent poorer long-term outcomes throughout the lifespan (Juwariah et al., 2022; Kessler et al., 1997; van der Vegt et al., 2009). McLaughlin et al (2010) found that children who experienced early life stress, such as abuse or neglect, had alterations in brain development that may increase the risk of developing MHD in later life. Moreover, research has shown that the type, severity and frequency of exposure to CA (Lochner et al., 2010) can result in different outcomes in relation to MHD in later life.

The nature of the MHD experienced by those exposed to CA are indiscriminate. Associations are well evidenced between CA exposure and a variety of mental health disorders (Álvarez et al., 2011; Anda et al., 2006; Hayward et al., 2020; Kessler & Magee, 1993; Poole et al., 2017; Read & Bentall, 2012; Sideli et al., 2012; Stilo et al., 2013; Young et al., 1997), as well as displaying increased maladaptive behaviours, such as suicide attempts, self-harm and substance abuse (Briere & Elliott, 2003; Feeney & Collins, 2015; Felitti et al., 1998; Noll et al., 2007; Wisdom, 1997). Williams and colleagues (2016) conducted a study which compared childhood trauma prevalence in depressed patients with healthy controls. They found that 62.5% of depressed participants reported more than two traumatic events compared with 28.4% of controls.

Demographic influences also contribute to these effects. Shah, Kedare and Mehta (2021) found that within a sample of depressed patients 70% of males and 68% of females had experienced at least one adversity before the age of 17, suggesting a relatively equal impact of CA on depression by gender. Comparatively, development of anxiety disorders have been seen to differ across genders depending on the type of trauma experienced (Cougle et al., 2010). Differences in ethnic groups have shown that black individuals display lower posttraumatic depression and anxiety symptoms overall compared to Hispanic and white individuals (Harnett et al., 2022).

1.7 Childhood adversity and psychosis

Childhood adversity is a well-established risk factor for both the development of psychosis (Álvarez et al., 2011; Read & Bentall, 2012; Sideli et al., 2012; Stilo et al., 2013) and for poorer clinical and social outcomes (Alameda et al., 2015; Conus et al., 2010; Üçok & Bkmaz, 2007). This association is also supported by the trauma model of psychosis (Read et al., 2005) that traumatic experiences, such as physical or sexual abuse, can increase the risk of developing psychosis, possibly by altering the brain's stress response system.

Studies have consistently shown that individuals who experienced CA before the age of 17 are at an increased risk of developing psychosis (Ajnakina et al., 2016). The prevalence of CA is higher among individuals with first-episode psychosis (FEP) compared to control groups (Devi et al., 2019; Vila-Badia et al., 2021) with research suggesting that this association could be as high as 2.78 increased odds of later development of psychosis for those with CA histories (Varese et al., 2012). These associations are corroborated by findings of higher rates of CA in FEP cases compared to controls (Devi et al., 2019; Vila-Badia et al., 2021).

CA has significant implications for psychosis outcomes. It is associated with more positive symptoms, higher levels of depression, anxiety, and stress (Duhig et al., 2015), as well as worse 5-year outcomes (Ajnakina et al., 2018) being more likely to experience readmissions, relapses and longer stays in hospital (Trotta et al., 2016). Prevalence and impact of CA can vary across demographic factors. Individuals from ethnic minorities and lower socio-economic backgrounds have been shown as more likely to experience CA (Maguire-Jack et al., 2019; Yearby, 2018), with CA found to mediate the association between ethnic minority patients and hallucinations (Berg et al., 2015). Gender differences also exist, with the course of psychotic illnesses in females as being more impacted by CA than males (Stanton et al., 2020). That being said, many studies noted the importance of the type of abuse experienced in the impact of gender, with studies finding higher rates of sexual or emotional abuse in women compared to higher rates of physical and emotional neglect in males which impacted their subsequent outcomes (Pruessner et al., 2019; Vila-Badia et al., 2021).

Different types of CA have distinct effects on psychosis. Parental separation or death (Morgan et al., 2007), being taken into care (Bebbington et al., 2004), physical and sexual abuse (Bonoldi et al., 2013; Fisher et al., 2010) have all shown to impact on development and outcomes in psychosis. Sexual abuse has been shown as associated with more positive symptoms, hallucinations, anxiety, and reduced executive function (Lysaker et al., 2005; Read et al., 2005; Ross et al., 1994; Whitfield et al., 2005), while neglect and early life stress is evidenced to increase the severity of psychotic symptoms (Colins et al., 2009; Schalinski et al., 2015). Type of CA can also influence the course and severity of psychosis presentations. Individuals with histories of physical abuse and parental separation have been shown to experience increased hospital admissions and non-compliance of medication, while those exposed to parental death or separation found to be twice as likely to be compulsorily detained (Trotta et al., 2016). It was posited that this may be linked to reduced help-seeking during crisis periods due to distrust of services (McGovern et al., 1994) and subsequent medication non-compliance (DiMatteo, 2004) although thus far there is limited evidence exploring CA, FEP and help-seeking to support this hypothesis.

It is evident throughout literature that CA is strongly associated with development and outcomes for FEP, and that early intervention in FEP is crucial (Birchwood et al., 1998; Norman & Malla, 2001; Singh, 2010; Singh & Grange, 2006). It remains less clear however as to whether CA can impact upon the ability to provide swift care to those experiencing FEP. Gaps in the literature highlight the need to investigate whether experiences of CA can influence care pathways, not only in the stage that a person enters care, but by what means, voluntary or compulsory (Addington et al., 2002; Birchwood et al., 2013; Murphy et al., 2012). This understanding can help inform early intervention approaches for FEP patients with a history of CA, ultimately leading to improved long-term outcomes.

1.8 The relationships between CA and PtC, the evidence and the gaps in our understanding

There is evidence to suggest that childhood adversity may be associated with pathways to care for MHD. Research has found that individuals who have experienced CA may be less likely to seek help for MHD from health services due to having reduced access to social support to aid help-seeking (Ford & Blaustein, 2013; Kendall-Tackett, 2002), or demonstrate higher uses of maladaptive behaviours, such as substance use or self-harm, as alternative ways to cope (Briere & Elliott, 2003; Feeney & Collins, 2015; Noll et al., 2007; Wisdom, 1997). A study by Evans et al (2013) found that individuals who reported a history of CA were less likely to seek help for MHD, even after controlling for other factors such as symptom severity. CA can also lead to a variety of negative outcomes, including decreased access to resources and increased stigma, which can make it more difficult for individuals to seek out and access appropriate care.

In addition, research has shown that individuals who have experienced CA may be more likely to receive a diagnosis of a severe mental illness, such as psychosis, compared to those who have not experienced CA (Read et al., 2005). This may be due to the increased risks of mental health disorder development as discussed above, but could also result from trauma related symptomology, such as flashbacks and nightmares. These symptoms can be mistaken for psychosis-like symptoms, such as hallucinations or delusions, which can lead to a misdiagnosis, impacting trust in services and professionals (Mueser et al., 1998; Velligan & Miller, 1999), something found to influence PtC (Jorm et al., 2005; Kam et al., 2019). Furthermore, individuals who have experienced CA may have more complex needs, including co-occurring MHD (Green et al., 2010; McLaughlin et al., 2010), substance abuse issues (Anda et al., 2006; Green et al., 2010), and social and economic challenges (Hillis et al., 2000; Merrick et al., 2018). These additional factors can complicate an individual’s insight of their MHD and consequently, their perceived need for support and help-seeking intentions (McEvoy, 2006). The trauma model of psychosis (Read et al., 2005) also posits that experiences such as CA may impact PtC during FEP. The model proposes that psychotic symptoms and experiences, such as hallucinations or delusions, are a result of unresolved psychological trauma. As such, understanding and addressing the underlying trauma can be crucial in the treatment and recovery of individuals with psychosis. Traditional PtC may not fully address or give focus to the underlying trauma that contributed to the development of psychotic symptoms (Larkin, 2017; Read, 2013) thus again reducing engagement and trust in services.

Given the increased complexity of presentations with histories of CA, also influenced by a range of individual, cultural, and societal factors (Evans et al., 2013; Masten & Barnes, 2018; Shonkoff et al., 2009), the relationship between CA and PtC for MHD remains unclear. The limited research into the associations between PtC and CA are indicative of associations but demonstrate mixed results. For example, some studies have found that experiences of CA can result in higher use of help-seeking behaviours (Kessler et al., 2010), while others suggest it as a barrier (Cauce et al., 2002; Dube et al., 2005; Santiago et al., 2011). Exploration of more formal PtC routes by identifying entry routes into services prove even more limited. One study did find that individuals who had experienced CA had an increased likelihood of police arrests or contact with criminal justice system before first admission (Pope et al., 2021). The authors suggested this may be linked to marked exposure to extreme risk, danger and exposure in those who had a history of adverse childhood experiences. However, the sparsity of relevant literature suggests a need for further exploration into this area.

Given the relationships between many past risk factors for FEP and impacts on PtC it would not be a stretch to consider CA having an impact on PtC too. Understanding this relationship is important for developing effective strategies to improve access to appropriate mental health care for individuals who have experienced CA.

1.9 Outline of the thesis portfolio

This thesis aims to address the gaps in literature identified. Chapter two presents a systematic review and narrative analysis on the relationship between CA and help-seeking for MHD. This chapter specifically aims to identify factors related to help-seeking for MHD in those with experiences of CA and to understand what is currently known about the relationship between CA and PtC. It also seeks to examine whether this relationship differs between diagnosis or type of adversity experienced.

Chapter four aims to further this by examining the influence of CA on PtC in a FEP population. It aims to identify and describe the socio-demographic factors associated with CA, describe the relationship between number of CAs and PtC characteristics in FEP patients. The links between these studies are discussed in chapters three and five, as well as the limitations, recommendations and clinical implications resulting from this work.

Chapter Two - Systematic Review

Systematic Review

The relationship between childhood adversity and help-seeking for anxiety, depression and psychosis.

Prepared for submission to Schizophrenia Research

Word Count: 5167 (excluding tables, figures and in-text citations)

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Abstract word count: 233
Text body word count: 8951
Tables: 4
Figures: 1

See Appendix A for author guidelines. For ease of reading, figures and tables are provided within the main body of text.

2.1 Abstract

Background

The need for early intervention for mental health difficulties has been repeatedly evidenced in many studies, yet numerous people with mental health difficulties face barriers to seeking help. Research has shown that help-seeking behaviours and pathways to care vary by mental health conditions and socio-demographic characteristics. However, the influence of childhood adversity on patterns of help-seeking is less understood.

Methods

A systematic review was conducted searching the EMBASE, PsycINFO, PubMed, CINAHL, and MEDLINE databases. Studies that focused on adult populations, diagnosed with anxiety, depression or psychotic mental health conditions, with experiences of childhood adversity, published in English, between 1985 and 2023 were included.

Results

Twelve studies matched the inclusion criteria, eleven quantitative and one mixed methods. A range of data collection methods and screening tools were used. Nine studies indicated an association between experiences of childhood adversity and help-seeking behaviours, although the direction of this varied. Socio-demographic factors, stigma, trust, and maladaptive behaviours were shown to impact on the association.

Conclusions

The systematic review suggests there is an association between childhood adversity and pathways to care when experiencing anxiety, depression, or psychosis, although literature exploring this is limited. Future research is needed to understand this association more clearly, to determine childhood adversity as a facilitator or barrier to help-seeking and whether this varies between diagnosis and type of adversity, to support early intervention and pathways to care.

Keywords: Childhood Adversity, Pathways to Care, Help-Seeking, Common Mental Health Difficulties, Severe and Enduring Mental Health Difficulties.

2.2 Introduction

2.2.1 Mental health difficulties

Mental health difficulties (MHD) encompass emotional, psychological, and social dysfunctions in well-being (Keyes, 2006). Evidence suggests a continuum of psychosis (Van Os et al., 1999; Yung et al., 2009), in which symptomologies of MHD present across a spectrum. This spans from mental health wellness, through affective states, such as anxiety and depression, to psychotic illnesses with increasing severity (Begemann., et al 2020; Martin & Fleming, 2019). Affective disorders such as depression and anxiety, are seen as more common in prevalence, affecting up to 15% of the UK population (NICE, 2011). These disorders often co-occur, vary in severity and impact, and generally show lower rates of impaired functioning and higher rates of recovery (Jorm et al., 2005; Kessler et al., 2005; Organization, 2017). On the other hand, psychosis-related illnesses like schizophrenia, first episode psychosis (FEP), and bipolar disorder (Kafetz, 2009) are typically considered to be more severe and enduring in nature. These disorders typically exhibit higher symptom severity, impairment, and poorer long-term outcomes (Perlick et al., 2004; Vornik & Hirschfeld, 2005). In the UK, the estimated prevalence of psychosis is 0.8% (THIN, 2018), significantly lower than common MHD, like anxiety and depression.

2.2.2 Early intervention for improving pathways to care

Early intervention (EI) is shown to have significant and life-changing outcomes across diagnoses (Arango et al., 2018; Catania et al., 2011; Galea et al., 2020; Mihalopoulos et al., 2009; Penttilä et al., 2014; Petito et al., 2020). It can be understood as the process of providing swift identification, intervention, and support to someone experiencing mental illness. It provides timely treatment and improves long-term outcomes at individual (Dadds et al., 1997; Halfin, 2007; Singh, 2010), and wider socio-economic levels (Reardon et al., 2022; Sediqzadah et al., 2022; Shearer et al., 2018).

A paradigm which informs understanding of delays to EI is pathways to care (PtC). PtC refers to how a person accesses mental health care, measuring delays in help-seeking and treatment to provide understanding of how people could access services at an earlier stage (Allan et al., 2021). Help-seeking is an essential phase of PtC which encompasses any action or effort made to explore or obtain personal, psychological, emotional, or social support, care, or services (Barker, 2007; Xu et al., 2018). One in four people are estimated to experience a MHD each year in England, yet only 1 in 8 (12.1%) will seek help (McManus, 2009; McManus, 2016; Lubian et al., 2016). It is therefore important to explore factors that may facilitate or impede help-seeking and PtC characteristics for people experiencing MHD.

2.2.3 Help-seeking influencers

Several features have already been well documented for their role in influencing help-seeking, such as beliefs, stigma and socio-demographic factors. The Health Belief Model (Rosenstock, 2000) highlights the importance of “beliefs” in understanding help-seeking behaviour. More positive beliefs of receiving support (Jimenez et al., 2012; Mojtabai, 2007) or increased trust and confidence in services (Jorm et al., 2006; Kam et al., 2019) improve likelihood of seeking help for MHD. Negative or stigmatised views of mental health on the other hand decrease help-seeking behaviours (Aguirre Velasco et al., 2020; Clement et al., 2015; Corrigan et al., 2014). Furthermore, individuals with a lower sense of perceived need (Andrade et al., 2014; Bruffaerts et al., 2011; Kam et al., 2019), poorer self-esteem (Heath et al., 2018), or higher beliefs about their resilience (Chang et al., 2020) are reported to seek help less. These findings have been consistently shown across MHD, highlighting the importance of beliefs at all levels of psychological distress.

The influence of demographic factors on help-seeking for MHD is well studied. Individuals who are younger, male (Galdas et al., 2005; Mackenzie et al., 2006), from ethnic minority backgrounds (De Luca et al., 2016; Jimenez et al., 2012; Kam et al., 2019 2019; Taylor & Kuo, 2019), or of lower socio-economic status (Mojtabai, 2007; Regier et al., 1993) are less likely to seek help for MHD. Conversely, those with better mental health literacy (Aguirre Velasco et al., 2020; Cheng et al., 2018), higher overall education (Gondek & Kirkbride, 2018; Hammer et al., 2013; Hardy et al., 2018) and more social support (Gao et al., 2022; Have et al., 2002; Jones et al., 2019) are found as more likely to seek help. In FEP research, minority ethnic background status, educational achievement, communication difficulties (language problems/barriers) and employment status have been identified as predictors of help-seeking behaviours (Anderson et al., 2010; Chen et al., 2016; Marshall et al., 2005; Murphy et al., 2012). In anxiety and depression, age (Thompson et al., 2008), gender, social support and education level (Roness et al., 2005) are also associated with help-seeking behaviours.

2.2.4 Childhood adversity

Childhood adversity (CA), defined as a range of detrimental experiences known to negatively affect life course and clinical outcomes (Kessler et al., 1997) is identified as a significant risk factor for development of various MHD (Anda et al., 2006; Gilbert et al., 2009; Green et al., 2010; Teicher et al., 2016). Yet there has been less exploration of whether it can also impact upon PtC or help-seeking for MHD. The World Health Organisation (WHO) estimate that across the world, 40% of children will face at least one form of CA (Kessler et al., 2010) with many of those exposed to additional or prolonged incidences (Morgan & Gayer-Anderson, 2016). Moreover, research has shown that the type, severity and frequency of exposure (Lochner et al., 2010) can result in different mental health outcomes in later life.

2.2.5 The relationships between childhood adversity and mental health conditions (anxiety, depression and psychosis)

The nature of MHD experienced by those exposed to CA are indiscriminate, with the association demonstrated across mental health presentations. Research has shown CA as a risk factor for anxiety and depression (Hayward et al., 2020; Kessler & Magee, 1993; Poole et al., 2017; Young et al., 1997), found present in over two thirds of people experiencing depression, compared to less than a third in those without (Williams et al., 2016). The strength of this association was influenced by demographic factors (Cougle et al., 2010; Shah et al., 2021; Harnett et al., 2022) but nonetheless highly prevalent. CA is also shown to increase risk in psychosis (Varese et al., 2012), of both the development (Álvarez et al., 2011; Read & Bentall, 2012; Sideli et al., 2012; Stilo et al., 2013) and poorer long-term outcomes (Alameda et al., 2015; Conus et al., 2010; Turner et al., 2019; Üçok & Bıkmaz, 2007). Higher rates of CA have repeatedly been found in FEP cases compared to controls (Devi et al., 2019; Vila-Badia et al., 2021).

2.2.6 Rationale and aims

While the links between CA and MHD are evident, it is less clear to what extent CA impacts upon how people seek help. Research has shown reduced help-seeking for MHD in individuals who have experienced CA (Evans et al., 2013). This may be due to reduced access to social support to aid help-seeking (Ford &

Blaustein, 2013; Kendall-Tackett, 2002), or by using maladaptive behaviours as alternative coping methods (Briere & Elliott, 2003; Feeney & Collins, 2015; Noll et al., 2007; Wisdom, 1997). Therefore, it is important to consider whether CA may influence the help-seeking process when experiencing MHD.

Given the known benefits of early intervention and the potential consequences of delays to treatment, such as poorer outcomes, identification of factors with potential to impact on help-seeking and PtC is of vital importance. This systematic review aimed to examine whether experiences of CA impact upon help-seeking behaviours and PtC in those experiencing anxiety, depression or psychotic symptomologies spanning across the continuum of psychosis. In this review, anxiety, depression and psychosis will be collectively referred to as MHD unless being spoken about individually. We sought to describe the relationship between CA and help-seeking patterns, and to explore delays to help-seeking for the different mental health presentations. Further, we investigated whether PtC contact differed by type of MHD and type of CA. By exploring individuals with CA help-seeking patterns and PtC, we hope to help inform interventions to help reduce delays in this population and therefore improve outcomes.

2.3 Method

This systematic review protocol was developed in line with Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA; Moher et al., 2009). It was registered with the International Prospective Register of Systematic Reviews (PROSPERO, https://www.crd.york.ac.uk/prospero, registration number CRD42022318553).

2.3.1 Search strategy and procedure

The EMBASE, PsycINFO, PubMed, CINAHL, and MEDLINE databases were searched using the following search terms: (Child* trauma OR child* abuse OR child* neglect OR child* maltreatment* OR child* adversity* OR parental separation* OR parental loss*) AND (psychot* OR first episode psychosis OR anxiety OR depression) AND (pathway* to care OR pathway* to mental health care OR pathway* to health care OR pathway* to services OR pathway* to mental health services OR pathway* to health services OR pathway* to psychiatric services OR help-seeking OR treatment delays or duration of untreated psychosis).

2.3.2 Inclusion and exclusion criteria

The following inclusion and exclusion criteria for the systematic review were as follows:

Studies were included if:

- Included individuals diagnosed with a psychotic disorder, anxiety or depression as determined by clinical opinion or measured by a standardised tool.
- Included an adult population aged 18-64.
- Included individuals who experienced adversity/trauma during childhood. This was defined as a broad concept which includes child maltreatment (all forms of physical and/or emotional ill-treatment, sexual abuse, neglect or negligent treatment or commercial or other exploitation), peer victimization (e.g. bullying), experiences of parental loss and separation, war-related trauma, natural disasters, and witnessing domestic or non-domestic violence (Butchart et al., 2006) consistent with previous reviews (Trotta, Murray & Fisher, 2015) and recorded using a standardised tool (eg, Childhood Trauma Questionnaire (CTQ)) or specific clinical parameters.
- Published in English since 1985 consistent with previous systematic reviews investigating PtC (Anderson et al., 2010).
- Reported outcomes on characteristics of help-seeking or PtC, defined as any action or effort made to explore or obtain personal, psychological, emotional, or social support, care, or services (Barker, 2007; Xu et al., 2018), such as key pathways contacts, help-seeking behaviours, duration of PtC, or use of any standardised tools.

Studies were excluded if they did not fulfil the above inclusion criteria. Both qualitative and quantitative papers were considered for inclusion, but other systematic reviews or meta-analysis were excluded.

2.3.3 Screening

Screening was completed by HC, reviewing all titles and abstracts of the papers identified from the databases which were mapped against the inclusion criteria. Any papers meeting the eligibility criteria were later full text screened. Ten percent of the titles and abstracts were reviewed by a second reviewer (RM) (N=80) with a 96.25% agreement rate. A third reviewer (SO) was consulted to discuss 3 discrepancies during the abstract screening phase. Twenty percent of full text papers were second screened by RM (N=11) with no discrepancies (100% agreement rate). Double screening for the quality assessment was not possible due to this review taking place as part of a doctorate project. Four full text articles were discussed between HC and SO to gain consensus.

2.3.4 Quality appraisal

The Mixed Methods Appraisal Tool (MMAT; Hong et al., 2018) was used to assess the quality of the studies included. The tool is a methodological guide to quality assess research studies. It permits appraisal of the methodological quality of five categories to studies: qualitative research, randomized controlled trials, non-randomized studies, quantitative descriptive studies, and mixed methods studies (Hong et al., 2018).

The MMAT was scored using the Gronholm (2017) approach. For this, all the points were totalled, and the score was converted into a percentage (0% no criteria met to 100% all criteria met). Higher scores were indicative of a better-quality study.

2.3.5 Data extraction and narrative synthesis

Data were extracted from the included studies, including, the study characteristics (aims, design, sample source, variables, participant demographics) and the outcomes for PtC and CA (definitions, measures, types of help-seeking and CAs, diagnoses, study findings). A narrative synthesis was conducted following guidelines (Popay et al., 2006) to describe patterns identified in the studies, the relationships between the data and the robustness of the studies by exploration within and across the full texts. In line with the guidance, the quality appraisal was conducted prior to the narrative synthesis.

2.4 Results

The searches, conducted in September 2022, yielded 1797 articles. Duplicates were removed leaving 1034 articles to be reviewed. From these, 58 full texts were screened for eligibility with twelve meeting the inclusion criteria (see Figure 1 for breakdown of inclusion process flowchart).

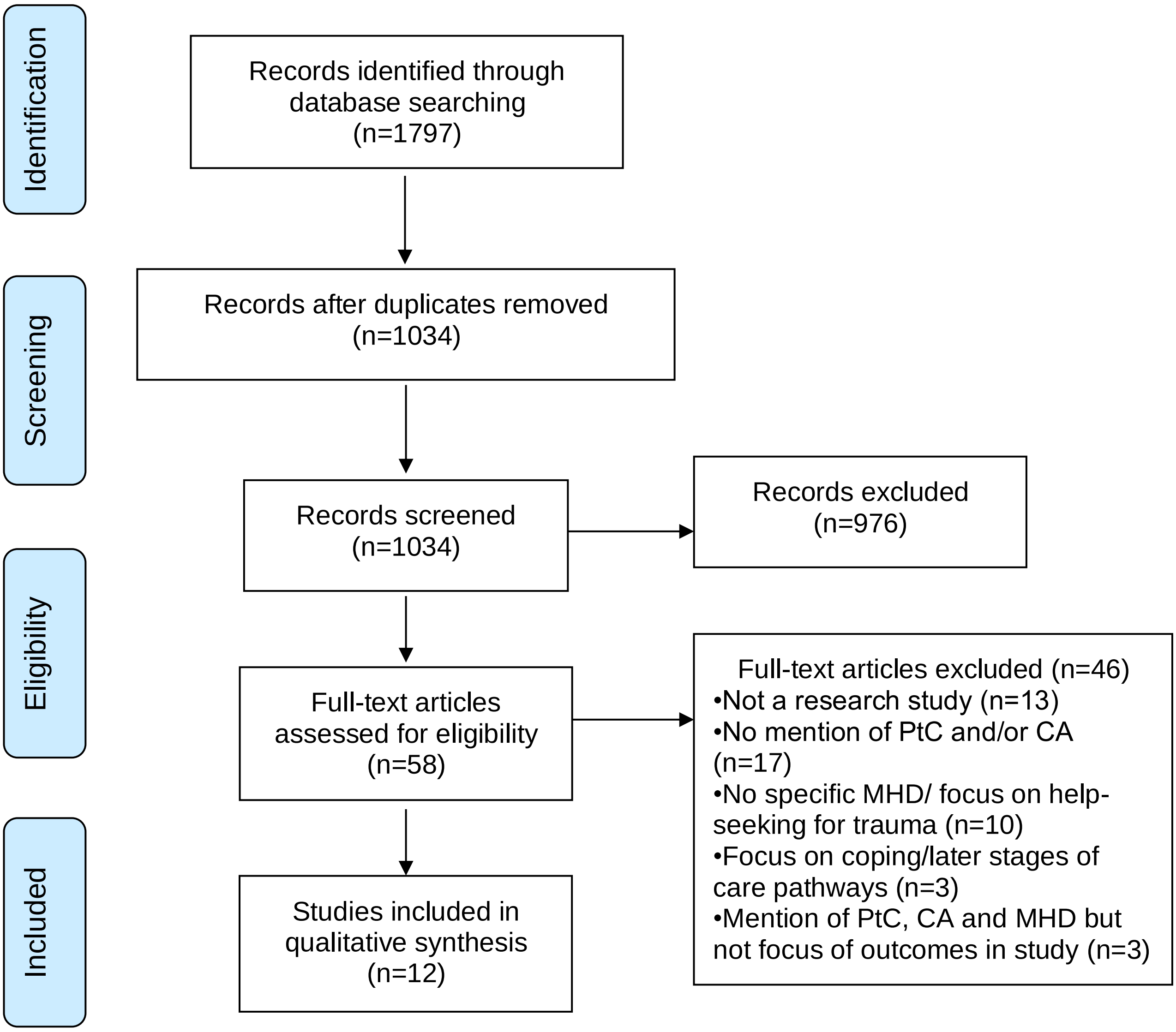

Figure 1: flow chart demonstrating process of review

2.4.1 Study characteristics

Study characteristics are displayed in Table 1. The studies originated multiple countries, three from Germany, two from the UK and USA, and one from Canada, Australia, Italy, New Zealand and Croatia. One of the UK studies used data originating from the USA (Curran et al., 2021). Nine papers stated their study design, all as cross-sectional. Methods of data collection varied, with most studies utilising interviews (n=10) and/or surveys and questionnaires (n=7). All but one study reported their results quantitively, with (Karatekin, 2019) using a mixed methods approach.

Across the studies, sample sources most commonly came from community or in-patient populations. Sample sizes ranged from 96 to 7432 with a mean of 903.67.

Two studies focused solely on females (Morris et al., 1998; Ullman & Brecklin, 2003), one did not report gender (Benedetti et al., 2014) and of the remaining mixed gender studies, male participants had a mean of 45% (range = 23%-69.6%). Ethnicity was reported in two out of the twelve articles (16.67%) with the majority in both studies being white/Caucasian (71% and 89.3%). Mean ages were reported by six studies (mean = 38, range = 22-56 years), two studies reported median age (median = 23, range = 19-27), two studies only reported the age range and two did not report any age.

2.4.2 Diagnosis and measurements

Six studies focused on depression/mood disorders (Curran et al., 2021; Stolzenburg, et al., 2018; Stolzenburg, et al., 2019; Morris et al., 1998; Ullman et al., 2003; Schomerus et al., 2013), four on psychotic disorders (e.g. FEP and Schizophrenia) (Conus et al., 2010; Ajnakina et al., 2018; Lovretić et al., 2022; Veru et al., 2022), one on OCD (Benedetti et al., 2014) and one was non-disorder specific but covered depression, anxiety and stress (Karatekin, 2019)(see Table 2). Measurement tools used for diagnoses varied across studies. Eleven out of the twelve studies used standardised diagnostic measures with eight reporting fulfilments of appropriate DSM or ICD diagnostic classification as inclusion criteria. One study did not report a measure of diagnosis (Morris et al., 1998).

Table 1: Study characteristics.

Author	Study Objectives	SS*	Design	Data Source	Sample Source	Gender	Mean/ Median Age (Yrs)	Ethnicity	Diagnosis and Measure
Ajnakina et al., 2018 *UK*	To investigate relationships between childhood adversity and FEP patients' clinical and social outcomes, service utilisation and self-injurious behaviours during a 5-year follow-up after first contact with mental health services.	237	Cross-sectional study	Recruited as part of the National Institute for Health Research (NIHR) Biomedical Research Centre (BRC) Genetics and Psychosis (GAP)	Inpatient/ community patient sample	149 males (62.9%), 88 females (37.1%)	Mean: 30.1	NR	FEP/ Schizophrenia-Spectrum Disorders; International Classification of Diseases (ICD-10) Schedules for Clinical Assessment in Neuropsychiatry (SCAN)
Benedetti et al., 2014 *Italy*	To explore the relationship between use of medication, gender, and Adverse Childhood Experiences in patients affected by OCD.	97	Cross-sectional study	Patients with OCD consecutively referred to the university hospital to start an inpatient rehabilitation	NR	NR	NR	NR	OCD; Diagnostic and Statistical Manual (DSM-IV), SCID-I interview
Conus et al., 2010 *Australia*	To examine in FEP patients, prevalence rates of stressful events and pre-treatment, baseline, and outcome differences between subjects who did and did not report past sexual and/or physical abuse (SPA).	658	Cross-sectional study	Patients with FEP, consecutively admitted to the Early Psychosis Prevention and Intervention Centre (EPPIC) in Melbourne between 1998 and 2000.	Inpatient/ community intensive treatment sample	432 males (65.7%), 225 females (34.3%)	Mean: 22	NR	FEP and Comorbid Disorders; Royal Park Multidiagnostic Instrument for Psychosis

Curran et al., 2021 *Northern Ireland United Kingdom (USA participant data - national survey)*	To identify profiles of complex childhood trauma amongst men and women with major depression, examine patterns of service access and treatment or maladaptive coping, and associations with socio-economic/demographic characteristics, comorbid PTSD, anxiety/mood disorders and perceived social support.	7432	Cross-sectional study	2012–2013 USA National Epidemiologic Survey on Alcohol and Related Conditions	Representative survey sample	2335 (31%) males and 5097 (69%) females	NR	NR	Depression; Alcohol Use Disorder and Associated Disabilities Interview Schedule, DSM-5 Version (AUDADIS-5)
Karatekin., 2019 *USA*	To conduct an exploratory study to generate ideas for hypothesis-driven research.	321	NR	Online survey recruited from Psychology classes offering course credit for research participation	University undergraduate sample	76% female, 23% male, 1% “other”	Median: 19.0	Caucasian (71%), Asian (20%), African American (3%), multiracial (3%), “other” (2%), Native American (0.3%), 2% Hispanic	Depression, stress, and Anxiety; DSM-V
Lovretić et al., 2022 *Croatia*	To investigate associations between specific childhood trauma and personality dimensions with DUP in participants with FEP.	*105*	Cross-sectional study	Patients in early-course psychosis (less than 5 years’ duration of illness) who were hospitalized in Psychiatric Hospital “Sveti Ivan”, Zagreb, Croatia.	Inpatient sample	63 males (60%) 42 women (40%)	Median: 27	NR	FEP/ Schizophrenia-Spectrum disorders; ICD-10 (codes from F20 to F29)

Morris et al., 1998 *New Zealand*	To investigate the frequency and usefulness of professional help for emotional problems sought by women who have and have not experienced childhood sexual abuse.	354	Cross-sectional study	Follow-up interview in 1995 from those who participated in the 1989 Otago Women's Health Survey Child Sexual Abuse (CSA) Study. Random selection from Otago electoral rolls, equal sample of under 65s who did and did not report CSA	Community sample	100% female	NR	NR	Emotional difficulties, Anxiety, Depression; Measure NR
Schomerus et al., 2013 *Germany*	To examine to what extent the experience of childhood trauma, personality traits, and resilience influence help-seeking for depression.	395	Cross-sectional study	Used the data from the study of health in Pomerania (SHIP). Simple random sampling was drawn from residence registries, stratified by gender and age.	Population-based cohort sample	121 male (30.6%), 274 women (69.4%)	Mean: 52	NR	Major Depressive Disorder (MDD); Munich-Composite International Diagnostic Interview (M-CIDI)
Stolzenburg, et al., 2018 *Germany*	To find out how causal attributions of untreated mental health problems are associated with stigmatizing attitudes, anticipated self-stigma when seeking help and perceived stigma-stress.	207	Cross-sectional study	Persons with a depressive syndrome via newspaper advertisements, Facebook posts and flyers to participate	Community sample	147 (71%) Female 60 (29%) Male	Mean: 49.6	NR	Depression/ Mood Disorder; Patient Health Questionnaire (PHQ-9), ICD-10

Stolzenburg, et al., 2019 *Germany*	To find out to what extent the perceived causes of current untreated mental health problems determine whether a person considers themselves as having a mental illness, perceives need for professional help and plans to seek help	207	Cross-sectional study	Persons with a depressive syndrome via newspaper advertisements, Facebook posts and flyers to participate.	Community sample	147 (71%) Female 60 (29%) Male	Mean: 49.6	NR	Depression/ Mood Disorder PHQ-9, ICD-10, M.I.N.I Diagnostic Interview
Ullman & Brecklin, 2003 *USA*	To examine correlates of past-year chronic medical conditions and lifetime contact with health care professionals for mental health and substance abuse problems in women with differing histories of sexual victimization.	627	NR	Recruited using The National Comorbidity Survey (NCS)	Community sample	100% Women	Mean: 34	European American (89.3), ethnic minorities 10.7% (African American; 1.0% Native American; 0.2% Asian American; 9.7% Latin American; 3.5% mixed races; and 0.4% other).	Depression; DSM III-R
Veru et al., 2022 *Canada*	To determine the effects of childhood trauma on overall treatment delays in FEP and on its specific components, i.e., help-seeking DUP and referral DUP.	203	NR	Prevention and Early Intervention Program for Psychosis, (PEPP-Montreal).	Community sample	Male144 (69.6%) Female 63 (30.40%)	Mean: 22.78	NR	FEP/ Schizophrenia-Spectrum disorders; SCID-IV

**SS=Sample Size; NR = not reported*

2.4.3 Pathways to care and childhood adversity findings

PtC and CA main findings displayed in Table 2 (additional PtC findings in appendix B)

Table 2: Summary of the childhood adversity and pathways to care outcomes.

Author	Definition of PtC/ Help-Seeking	Measure of PtC	Key Pathway Agents	Definition of CA	Measure of CA	Types/ Experiences of CA	Study Findings
Ajnakina et al., 2018	NR	The Life Chart Schedule (LCS) extended version (Organization, 1992)	Inpatient admissions, compulsory or voluntary	Separation from or death of a parent, physical and sexual abuse, being taken into care, and disrupted living arrangements prior to the age of 17	Childhood Experience of Care and Abuse Questionnaire (CECA.Q) (Bifulco et al., 2005)	Parental separation Physical abuse Disrupted family arrangements Sexual abuse Death of a biological parent Being placed into care by authorities	Exposure to childhood adversity significantly associated with increased likelihood of compulsory admissions. Especially for those exposed to parental separation or parental death. Institutional care significantly associated with longer total length of inpatient stays.
Benedetti et al., 2014	NR	NR	Hospital admissions	Childhood emotional and physical abuse and neglect	Risky Families Questionnaire (RFQ) (Taylor et al., 2006)	Degree of harsh parenting Overt family conflict Deficient nurturing experiences	Adult drug-naïve patients reported lower exposure to childhood adversity and later contacts with mental health professionals than drug-treated. Interaction effects of gender with factors linked with the early familial environment biased access to psychiatric care and use of medication.
Conus et al., 2010	NR	Duration of Untreated Psychosis (DUP) Scale (McGorry et al., 1990)	Hospital admission, Psychiatrists Crisis-assertive community treatment team	“Sexual abuse” refers to sexual molestation and/or rape. “Physical abuse” refers to physical attack or assault or being repeatedly beaten by family/caregiver during childhood.	Early Psychosis File Questionnaire; EPFQ (Conus et al., 2007)	Separation of parents Physical abuse Death or loss of close other Migration Problems with partner Sexual abuse	Sexual and physical abuse patients were more likely to have presented to services with other psychiatric disorders before psychosis onset, higher rate of comorbid diagnosis, more likely to display suicidal behaviours, and to have had poorer premorbid functional levels.

Curran et al., 2021	NR	Interview developed for the study (participant)	Sought professional help; self-help support; hospitalised or admitted to hospital emergency care; been prescribed medical treatment.	Not defined	NESARC-3 - modified from: Childhood Trauma Questionnaire (CTQ) (Keyes et al., 2012) and the Conflict Tactics Scales (Straus, 1979)	Sexual Abuse - touched Rape Emotional abuse Physical abuse Neglect Domestic Violence Parental dysfunction Low resilience	Two thirds of the sample diagnosed with depression reported a history of complex childhood trauma. Maladaptive coping is associated with the most severe trauma groups, comorbid PTSD, dysthymia, and anxiety disorders.
Karatekin, 2019	NR	Interview developed for the study (participant)	University, media, professionals	Stressful and potentially traumatic events (such as maltreatment, exposure to violence, and family psychopathology) that take place during childhood.	Adapted the Juvenile Victimization Questionnaire (JVQ) (Finkelhor et al., 2013) adding questions from the original ACEs* questionnaire (Felitti et al.)	Child maltreatment Household dysfunction Separation from parental figures Peer and sibling victimization Discrimination Exposure to community violence Property victimization Bad accident Illness of someone close Social isolation.	Those with reports of CA were more likely to seek help, both professional and informal types. Common reasons for seeking help were anxiety, stress, and depression, with depression more prevalent in the high-CAs group. More CAs were associated with more unmet needs and greater likelihood of obtaining health information from school, another professional, or the media.
Lovretić et al., 2022	NR	Inventory of Personality Organization (Vogel et al.) (Clarkin et al.)	NR	Not defined	Childhood Trauma Questionnaire (Pennebaker & Susman).	Death of significant other Parental divorce/separation Sexual abuse Violence Illness or injury Other	Associations found between multiple childhood trauma and shorter DUP. DUP was not associated with specific type of childhood trauma or presence of trauma overall.

Morris et al., 1998	NR	Interview developed for the study (participant)	Counselling, medication, psychiatrist, psychologist/ therapist/ counsellor, social worker, minister, healer	Not defined	No formal measure. Set levels of intrusiveness of abuse	Childhood sexual abuse	Women in the childhood sexual abuse (CSA) group were more likely than the comparison group to have sought help but material status (separation) was a more significant predictor. The CSA group were more likely to report cost as a barrier. Women giving a history of CSA have higher rates of formal help-seeking and are more likely than other women to report that help they receive is not useful.
Schomerus et al., 2013	Help-seeking of services for treatment of mental/ emotional problems	The Composite International Diagnostic Interview (CIDI) - (patient)	Psychologist psychiatrist, or general practitioner	Self-report of childhood maltreatment including emotional, physical, and sexual abuse as well as emotional and physical neglect	Childhood Trauma Questionnaire (CTQ) (Pennebaker & Susman, 1988)	Childhood maltreatment, Emotional abuse Physical abuse Sexual abuse Emotional neglect Physical neglect	Older age, higher education, more perceived social support, presence of childhood abuse, higher levels of conscientiousness, lower levels of resilience, and more severe depression were associated with help-seeking for depression. Claimed personality-related predisposing factors as important predictors of help-seeking.
Stolzenburg et al., 2018	NR	The self-stigma of seeking help scale (SSOSH) (Vogel et al., 2013 2006)	NR	Not defined	Childhood Trauma Screener (Grabe et al., 2012)	Emotional abuse Physical abuse Sexual abuse Physical neglect Emotional neglect	Biomedical causes and belief in childhood trauma or unhealthy behaviour as a cause of the problem, were associated with stronger personal stigma and with more stigma-stress.
Stolzenburg et al., 2019	NR	Interview developed for the study (participant)	GP, psychologist, therapist, and psychiatrist	Growing up in broken families or in an orphanage', 'sexual or physical abuse during childhood or adolescence'	Self-Identification as Having Mental Illness – Scale' (SELFI) (Schomerus et al., 2019)	Broken family Orphan Physical abuse Sexual abuse	Attributing MHD to biomedical causes, person-related causes, childhood trauma and stress were associated with stronger self-identification as having a mental illness. Person-related causes were related to lower perceived need. Childhood trauma, stress and belief in unhealthy behaviour as a cause, were unrelated to need, or help-seeking intentions.

Ullman & Brecklin, 2003	Medical service seeking/ Health care seeking	Interview developed for the study (participant)	GP, family physician, cardiologist, gynaecologist, nurse, occupational therapist, or other physician/ health professional	Not defined	The National Comorbidity Survey (NCS) (Kessler & Walters, 2002)	Sexual assault	In child sexual assault victims, being older was associated with increased odds of lifetime help-seeking from a health professional for mental health issues. Married child sexual abuse survivors were over three times more likely to seek help from health professionals compared with unmarried victims. More stressful life events were associated with increased odds of health care seeking for child sexual assault victims. Depressed child sexual assault victims were three times more likely to have contacted health professionals for mental health/substance abuse issues than nondepressed victims.
Veru et al., 2022	The process of recognizing a need for help and the steps taken to obtain it.	Circumstances of Onset and Relapse Schedule (CORS) (Malla & McGorry, 2019) - interview	NR	Detrimental experiences known to negatively affect life course and clinical outcomes; including abuse or neglect (emotional, psychological, physical, and sexual); parental loss (death or divorce); mental illness or substance use in the household; and the incarceration of a family member.	Childhood Trauma Questionnaire (CTQ)	Emotional Abuse Physical Abuse Sexual Abuse Emotional Neglect Physical Neglect	Multiple linear regression analyses revealed that for a one-unit increase in CTQ scores, average overall DUP increased by 25%. Higher CTQ scores also significantly predicted help-seeking and referral DUPs. The results showed that childhood trauma increases DUP by prolonging the help-seeking process and delaying access to mental healthcare even after help is sought.

NR = not reported

2.4.3.1 Pathways to care measurement tools

Eleven studies stated measurement tools for help-seeking/PtC, one did not report (Benedetti et al., 2014). Of the measures reported, six studies used pre-existing instruments while five developed specific resources for their study (Curran et al., 2021; Karatekin, 2019; Morris et al., 1998; Stolzenburg et al., 2019; Ullman & Brecklin, 2003). The instruments used to assess help-seeking behaviours and PtC varied in degrees of specificity around help-seeking. The questions asked in Ullman et al (2003) study simply asked the participant “Did you ever in your lifetime go to see any of the professionals on this list for problems with your emotions or nerves or your use of alcohol or drugs?” and coded according to a yes or no response, regardless of profession or duration. Comparatively, the procedure used by three studies (Stolzenburg et al., 2019; Morris et al; 1998; Karatekin, 2019) sought to obtain more specific details about the types, reasons for and durations of help-seeking which may have provided greater accuracy of reporting.

2.4.3.2 Pathways to care and help-seeking behaviours

One study specifically defined help-seeking in relation to delays (Veru et al., 2022), two stated PtC contacts specific to the studies (Schomerus et al., 2013; Ullman & Brecklin, 2003) (Table 2). Help-seeking behaviours were noted by nine of the studies (Appendix B) in varying levels of detail with common themes in these relating to contacting professional services (n=7), and social support (n=4). Other help-seeking characteristics less frequently listed included personality traits (n=2); self-recognition (n=2) (Stolzenburg et al., 2019; Veru et al., 2022), media resources (n=1) and university (n=1). Three studies did not report any types of help-seeking behaviours (Ajnakina et al., 2018; Conus et al., 2010; Stolzenburg et al., 2018). All but three studies (Lovretić et al., 2022; Stolzenburg et al., 2018; Veru et al., 2022) reported key pathway agents (people or agencies involved in help-seeking across the whole care pathway) with hospitalisation, GP, and mental health professionals (psychiatrist, psychologist, therapist, etc.) listed most frequently.

Further comparable information regarding PtC was limited. Only two studies commented on the frequency of help-seeking contacts (Karatekin, 2019; Morris et al., 1998) and two studies reported on the type of first help-seeking contact (Morris et al., 1998; Stolzenburg et al., 2019). These contacts were with a GP or mental health professional. Duration of untreated illness (DUI) was defined by four studies, three of these specifically using the Nottingham Onset Schedule (Fernandes et al. 2021; Singh et al., 2005) definition of duration of untreated psychosis (DUP) (Ajnakina et al., 2018; Lovretić et al., 2022; Veru et al., 2022) and the fourth related to delays in treatment from onset of depression (Curran et al., 2021). DUI was recorded by two studies (Benedetti et al., 2014; Conus et al., 2010) and one study reported help-seeking delays (Morris et al., 1998).

2.4.3.3 Childhood adversity

CA was defined by seven studies in varying levels of detail (see Table 2). All but one study (Morris et al., 1998) utilised a pre-existing measure. Four studies (Stolzenburg et al., 2018; Veru et al., 2022; Lovretić et al., 2022; Schomerus et al., 2013) used the Childhood Trauma Questionnaire (CTQ; Bernstein and Fink, 1998).

Across the studies, a range of CAs were included. Sexual abuse was the most frequently explored, listed in all but two studies (Benedetti et al., 2014; Karatekin, 2019). Two studies focused solely on sexual trauma, with one specifically examining the impact of childhood sexual abuse (CSA) on professional help-seeking (Morris et al., 1998) and the other comparing help-seeking behaviours after sexual trauma in childhood versus adulthood (Ullman & Brecklin, 2003). The remaining ten studies considered a wide range of CAs, including physical (physical and sexual abuse, neglect, illness, etc.), psychological (emotional abuse, bullying, etc.) and systemic (migration, parental separation, parental death, etc.) experiences.

2.4.3.4 Relationships between childhood adversity, pathways to care, help-seeking and mental health difficulties.

The included studies provide some indications of association between help-seeking and CA, although the findings were not consistent. Across the three MHD presnetations, all but four (Ajnakina et al., 2018; Stolzenburg et al., 2018; Stolzenburg et al., 2019; Veru et al., 2022) of the twelve studies found that participants with a history of CA showed more help-seeking behaviours than those without CA. Emerging themes identified linked this association with demographic factors (Schomerus et al., 2013; Morris et al., 1998; Ullman & Brecklin, 2003), DUI (Veru et al., 2022; Lovretić et al., 2022), maladaptive behaviours (Conus et al., 2010; Curran et al., 2021), personal attributes and attitudes (Ajnakina et al., 2018;

Schomerus et al., 2013; Stolzenburg et al., 2018; Stolzenburg et al., 2019) and the impact of higher CA exposure (Benedetti et al., 2014; Karatekin, 2019). No clear differences were found between the type of MHD and help-seeking behaviours following CA.

Participant demographic characteristics were identified by five studies as associated with CA and help-seeking. Schomerus et al (2013) found higher education levels, social support, self-awareness, and severity of presentation to all be associated with increased help-seeking. Two studies found marital status: being married (Ullman & Brecklin, 2003) or separated (Morris et al., 1998), as facilitators of help-seeking for depression after CA. Ullman and Brecklin (2003) identified a mediating impact of age and later stressful life events. Conus et al (2010) found that those with histories of CSA were more likely to have had contact with mental health services prior to the onset of psychosis, which may have impacted on future help-seeking intentions. This study also found individuals with CSA histories as less likely to be living with family.

Benedetti and colleagues (2014) found that those with multiple CA experiences were more likely to experience higher levels of disorder or distress, consequently increasing perceived and observed need with earlier contact made to mental health services. In this study, interaction effects of gender and early familial environment were found to bias access to mental health support and treatment for OCD. In addition to supporting the association between increased CA and help-seeking, Curran et al (2021) study showed that maladaptive coping strategies (self-harm, suicide attempts, substance misuse) were also positively associated with CA, as was the increased likelihood of experiencing comorbid anxiety. These findings are concurrent with Conus et al (2010) who also found increased maladaptive behaviours and comorbid diagnoses in FEP patients with higher reported CA. Ajnakina and colleagues (2018) showed that patients exposed to at least CA were significantly more likely to experience compulsory admissions than those without CA histories.

Two studies reported on DUI, although findings were inconsistent. Veru et al (2022) found CA to be associated with longer DUP and delayed help-seeking processes, showing for every one unit increase on the CTQ, there was an increase of 25% in DUP. Alternatively, Lovretić et al (2022) found an association between multiple CAs and shorter DUP, although no associations between types of CA and

DUP. Karatekin (2019) found more CAs led to increased help-seeking for MHD, but that those with higher CAs would be less likely to find the support helpful and likely to disengage early from treatment.

Four studies highlighted the role of personal attributes and attitudes. Stolzenburg et al (2019) findings suggested that CA was not directly associated with help-seeking intentions for depression yet did show perspectives of CA as associated with depression, leading to higher self-identification of experiencing MHD. Similarly, Stolzenburg et al (2018) did not directly comment on help-seeking pathways but confirmed previous research findings of stigma as a barrier to help-seeking. They suggested associations between views of CAs and increased stigma in individuals with depression, thereby impacting upon help-seeking. Higher levels of conscientiousness and lower levels of resilience were also shown as personality-related predisposing factors of help-seeking (Schomerus et al., 2013). Ajnakina et al (2018) showed insight into illness and trust in mental health services as important facilitators in accessing support, with these most significant in those who had experienced parental separation or death.

2.4.4 Quality appraisal

The findings from the MMAT indicated that the methodological qualities of the studies were relatively consistent (see Table 3). The percentages of overall study quality calculated ranged from 86%-100%, with a mean of 98% indicating high quality papers throughout. All studies included clear research aims and objectives. Limitations were predominantly found within the quantitative non-randomized studies. One study did not include evidence of accounting for confounders (Lovretić et al., 2022) and one study did not provide clear explanation or evidence of their measurements (Morris et al., 1998).

Table 3: Table showing the quality appraisal outcomes

		Quality assessment of included studies											
	Quality Criteria	**Ajnakina et al., 2018**	**Benedetti et al., 2014**	**Conus et al., 2010**	**Curran et al., 2021**	**Karatekin 2019**	**Lovretić et al., 2022**	**Morris et al., 1998**	**Schomerus et al., 2013**	**Stolzenburg, et al., 2018**	**Stolzenburg, et al., 2019**	**Ullman et al., 2003**	**Veru et al., 2022**
Screening Questions	S1. Are there clear research questions?	+	+	+	+	+	+	+	+	+	+	+	+
	S2. Do the collected data allow to address the research questions?	+	+	+	+	+	+	+	+	+	+	+	+
3. NON-RANDOMIZED STUDIES	3.1. Are the participants representative of the target population?	+	+	+	+	N/A	+	+	+	+	+	N/A	+
	3.2. Are measurements appropriate regarding both the outcome and intervention (or exposure)?	+	+	+	+	N/A	+	?	+	+	+	N/A	+
	3.3. Are there complete outcome data?	+	+	+	+	N/A	+	+	+	+	+	N/A	+
	3.4. Are the confounders accounted for in the design and analysis?	+	+	+	+	N/A	-	+	+	+	+	N/A	+
	3.5. During the study period, is the intervention administered (or exposure occurred) as intended?	+	+	+	+	N/A	+	+	+	+	+	N/A	+
4. QUANTITATIVE DESCRIPTIVE	4.1. Is the sampling strategy relevant to address the research question?	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	+	N/A
	4.2. Is the sample representative of the target population?	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	+	N/A

	4.3. Are the measurements appropriate?	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	+	N/A
	4.4. Is the risk of nonresponse bias low?	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	+	N/A
	4.5. Is the statistical analysis appropriate to answer the research question?	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	+	N/A
5. MIXED METHODS STUDIES	5.1. Is there an adequate rationale for using a mixed methods design to address the research question?	N/A	N/A	N/A	N/A	+	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	5.2. Are the different components of the study effectively integrated to answer the research question?	N/A	N/A	N/A	N/A	+	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	5.3. Are the outputs of the integration of qualitative and quantitative components adequately interpreted?	N/A	N/A	N/A	N/A	+	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	5.4. Are divergences and inconsistencies between quantitative and qualitative results adequately addressed?	N/A	N/A	N/A	N/A	+	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	5.5. Do the different components of the study adhere to the quality criteria of each tradition of the methods involved?	N/A	N/A	N/A	N/A	+	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total percentage	100%	100%	100%	100%	100%	86%	86%	100%	100%	100%	100%	100%

2.5 Discussion

2.5.1 Main findings

This systematic review examined the relationships between CA and PtC and help-seeking for different MHD established from previous literature. The review found twelve studies meeting the inclusion criteria, nine of which indicated a link between experiences of CA and help-seeking behaviours. There were mixed findings across the papers, but with the majority, eight, suggesting that CA increased help-seeking behaviours. Four out of the twelve studies focused on psychosis (Conus et al., 2010; Ajnakina et al., 2018; Lovretić et al., 2022; Veru et al., 2022), with the remaining eight covering anxiety or depression. Six studies focused on depression/mood disorders (Curran et al., 2021; Stolzenburg, et al., 2018; Stolzenburg, et al., 2019; Morris et al., 1998; Ullman et al., 2003; Schomerus et al., 2013), four on psychotic disorders (e.g. FEP and Schizophrenia) (Conus et al., 2010; Ajnakina et al., 2018; Lovretić et al., 2022; Veru et al., 2022), one on OCD (Benedetti et al., 2014) and one was non-disorder specific but covered depression, anxiety and stress (Karatekin, 2019). We found no clear differences in PtC contact by type of MHD. The grouping of types of CA into overall CA experiences in all but two studies made it difficult to ascertain the relationship between the type of CA and help-seeking behaviours. Associations between CA and socio-demographic factors, DUI, maladaptive behaviours and perceptions were all highlighted as predictors of help-seeking.

2.5.2 Interpretation of findings

The outcomes of the studies included in this review indicates associations between CA and help-seeking which impacts upon accessing support for MHD. However, the limited number of papers meeting the inclusion criteria and the varying outcomes of the studies highlight the need for further research to clarify the associations between CA and PtC. Findings were mixed in acknowledging how CA can impact upon PtC but had a majority skew towards identifying it as increasing help-seeking behaviours. This lack of continuity was evident even within the disorders. For example, in the psychosis studies one study described how experiences of CA shortened DUP (Lovretić et al., 2022), whereas another indicated that it lengthened it (Veru et al., 2022). One reason for these variations could be due to the studies originating in different countries, meaning cultural differences in understandings of mental health (Gopalkrishnan, 2018; Hwang et al., 2008), care systems (Kirmayer et al., 2014) and intentions to seek help (Cauce et al., 2002). Clarity around this relationship would provide vital information in improving care pathways for MHD including FEP, supporting early identification for those with CA experiences who may be less likely to seek help, or may seek help quicker but unknowingly be presenting with comorbid presentations (Green et al., 2010; Pietrek et al., 2013).

No clear differences were indicated between the relationship of CA on help-seeking for anxiety and depression compared to psychotic disorders. This fits the wider view of CA as a transdiagnostic risk factor for MHD, impacting both mental wellbeing and related help-seeking, irrespective of the presenting concern (McKay et al., 2022). It was also difficult to establish if the type of CA impacted help-seeking behaviours as the papers mostly considered CAs overall, rather than comparing the types of CAs and their outcomes separately. Ajnakina et al (2018) concluded that types of CA can impact treatment pathways in FEP patients, and CSA survivors were found to be more likely to seek help but less likely to find support helpful than those without trauma (Morris et al., 1998). Wider research has indicated that types of CA can impact mental health differently (Felitti et al., 1998; Green et al., 2010; Norman et al., 2012) making it likely that types of CA could influence PtC differently too. It would be helpful for future research to explore exposure to different types of CA and how it can impact on PtC.

The role of socio-demographic factors in PtC and CA were repeatedly evidenced throughout the papers. Social support, gender, education, marital status and age were all identified as predictors of help-seeking across the 3 disorders. This fits previous findings evidencing demographic influences on help-seeking (Villatoro et al., 2018). CSA survivors experiencing FEP were less likely to live with family than those without trauma histories (Conus et al., 2010), potentially reducing availability for social support (Runsten et al., 2014). Studies have shown that 30% of mental health contacts for FEP are initiated by family, these are often also more successful than those initiated by patients themselves (Addington et al., 2002). This finding could therefore imply CSA as a risk factor for delays to treatment due to the reduced social support (Gao et al., 2022; Have et al., 2002; Jones et al., 2019). Moreover, the suggestion of reduced familial support could be considered more widely to other types of CA. Those who have experienced parental death or separation may be less likely to have ongoing parental support at the time of illness to help with recognition and help-seeking. Being married was another form of social support identified as a facilitator in help-seeking for depression among people who have experienced CA (Ullman & Brecklin, 2003). Although the role of marital status increasing help-seeking is potentially countered by the finding that being separated can also increase help-seeking for depression after CA (Morris et al., 1998). This could instead fall into the category of a stressful life-event, another identified mediator for help-seeking (Ullman & Brecklin, 2003). This also fits with previous research, suggestive that higher stress levels increase help-seeking intentions (Zochil & Thorsteinsson, 2018).

The role of self-recognition and insight as important concepts to perceived need of help-seeking (Schomerus et al., 2012; Thornicroft et al., 2017) were evidenced in the included studies. Interestingly, findings suggested that perceptions can impact help-seeking after CA. Attributing MHD to CA, among other factors, was associated with stronger self-identification as having a mental illness and resulted in higher levels of perceived need to seek support (Stolzenburg et al., 2019). This was compared to beliefs of person-related factors as the reason for distress which was related to lower perceived need due to higher self-blame. Therefore, it could be argued that CA may aid help-seeking behaviours by externalising the cause of the problem, making it easier to cope with or reduce the barrier of stigma (Mak et al., 2006). The previously established role of stigma as a barrier to help-seeking (Aguirre Velasco et al., 2020; Clement et al., 2015; Corrigan et al., 2014) was also corroborated in two of the included papers. It was argued that those who experience both CA and MHD may feel “doubly burdened” by stigmatization which impacted upon fears about help-seeking (Stolzenburg et al., 2018). Therefore, it would be important to further understand the relationship between CA and stigma, and the joint impact on help-seeking. This could highlight individuals less likely to seek help due to past experiences causing self-stigma and provide wider awareness of the impacts of trauma to improve insight and perceived need for support.

Trust was another previously established influencer of help-seeking (Jorm et al., 2005; Kam et al., 2019) identified as linked with CA. Trust is a vital component of help-seeking (Corry & Leavey, 2017; Van der Rijt et al., 2013) but studies have shown that those who have experienced CA may find it harder to form healthy attachments (Waldinger et al., 2006) and trusting relationships (Brent & Silverstein, 2013). Conus et al (2010) suggested these difficulties extend to the need to form trusting relationships with health-care professionals, making individuals with experience of CA less likely to seek help. Moreover, those with CA histories are also more likely to have previous exposure to care services (Felitti et al.,1998; Kessler et al., 1997; Turner et al., 2006), increasing the risk of past negative experiences acting as a further barrier to future help-seeking (Staiger et al., 2017) and increasing DUI.

An alternative explanation for delays to help-seeking within those who have experienced CA highlighted in these findings is the increased use of maladaptive coping strategies (Conus et al., 2010; Curran et al., 2021). It is well documented that CA can increase use of maladaptive coping behaviours such as suicide attempts, self-harm and substance misuse (Choi et al., 2017; Dube et al., 2001; Fernandes et al., 2021) which can impact on PtC. Such behaviours are shown to be associated with referral PtC through more emergency means (Barrio, 2013; Horsfall et al., 2010) and result in misinterpretations of presenting needs (Miller & Rollnick, 2012; Turner et al., 2021). These behaviours can also influence perceptions of self-worth and perceived need (Aydın et al., 2019) reducing willingness to seek support. Behaviours such as substance misuse can result in further barriers to help-seeking, through fear of stigmatization and by creation of additional problems, such as addiction, which can overshadow the need to treat the underlying causes of distress (Hall & Farrell, 1997; Nash, 2013). This awareness of how CA and subsequent maladaptive behaviours can quickly disrupt PtC and help-seeking intentions is key to providing insight to services with the aim to remove barriers and increase early intervention. Moreover, early identification and support into treatment for CA can reduce the risk of developing maladaptive behaviours and later MHD, improving patient long-term outcomes and reducing future demands on services (Arango et al., 2018; Catania et al., 2011; Galea et al., 2020; Mihalopoulos et al., 2009; Penttilä et al., 2014; Petito et al., 2020).

2.5.3 Limitations

It is important to bear in mind the limitations of this study when considering the results. This study is limited by the low number of papers included, of which all varied in aims making it difficult to compare results across the studies. The studies also came from a variety of countries, and while all studies used valid measures to verify presence of MHD it is important to consider the cultural variation implications this will have on the ability to draw these findings together. The implications of different understandings of mental health difficulties, classification of disorders and forms of healthcare services will undoubtedly result in variation in ways and views of help-seeking. Moreover, the use of varied forms of measurement of CA and the limited use of valid measurement tools for PtC unquestionably leaves the findings vulnerable to subjectivity. From this, it is fair to conclude that this is a sparsely explored area which could benefit from future research using consistent, valid measures to explore the role of CA on help-seeking for MHD.

Despite the rigorous screening and data extraction procedure, the review could have benefited from a second review of the full text articles to improve rigor. A strength of the study was the high scores across the papers using the MMAT tool, indicative of high-quality research included. All but one paper (Lovretić et al., 2022) controlled for confounders which is important given the strong evidence that additional factors can impact the association between CA and help-seeking. It would be important for future research to explore these associations closely to understand both the individual and interactional effects.

2.5.4 Implications and recommendations

We offer recommendations cautiously owing to the heterogenous nature of the papers included in this review, including the countries and different samples in the studies. However, our findings indicated that experiences of CA can influence help-seeking for MHD. This suggests the importance of future research to continue exploration of CA as not only a risk factor for MHDs, but to understand its influence on help-seeking and PtC. Within this, it would be vital to control for the effects of covariates to understand the interactional effects between barriers to help-seeking and isolate individual influence. Such research will continue building the evidence base surrounding barriers to EI in the hope these can be pre-empted to reduce DUI and avoid the associated consequences (Saunders & Bowersox, 2007). Moreover, research comparing delays to help-seeking across disorders similarly appeared sparse. Given the increased likelihood of comorbid presentations in those who have experienced CA (Conus et al., 2010; Curran et al., 2021), furthering the evidence base within this field could help provide services with the knowledge of how to support EI and avoid the complications that challenge treatment planning, compliance, and coordination caused by comorbidity (Newman et al., 1998).

The findings provide important information for clinical practice, although again recognising that these must be taken with caution due to the heterogeneity of the papers included. Given the high prevalence of CA (Kessler et al., 2010) and evidence supporting the need for EI it is of mounting importance to distinguish how CA affects mental health pathways at all levels. EI services, such as those for psychosis, could benefit from implementing mandatory initial trauma screenings and subsequent detailed assessment of CA to ensure those with reported histories are monitored closely and well supported when experiencing MHD. Moreover, a consideration from the findings is that those who have experienced CA may display different help-seeking behaviours and frequencies to those without CA, potentially entering care-pathways with higher levels of distress or need. The evidence highlighted GPs, psychiatrists and psychologists as key pathway agents for those seeking support for MHD with experiences of CA. Therefore, it is vital that sufficient training is offered to these individuals, as well as wider clinical teams, in how to best support at-risk individuals when they present to services. Methods to improve early identification, along with clinicians who understand the impact of CA on PtC and mental health could result in more trauma-informed approaches being utilised, which in turn can contribute to efforts to increase help-seeking (Steinhardt & Dolbier, 2008) reduce DUI. Moreover, early identification of CA could allow for preventative measures to be taken, such as offers of trauma therapy and management of associated difficulties (Nanni et al., 2012; Wiersma, 2015) before the development of wider MHD consequences.

2.6 Conclusion

In summary, this review found that research exploring the influence of CA on help-seeking is limited in general, but specifically for psychosis. This is particularly surprising given the vast amount of literature indicating that importance of CA in the aetiology of psychosis. The included papers indicated a link between CA and help-seeking behaviours but requires further exploration to establish the influence of the type of CA, number, and duration on PtC characteristics such as source of referral, compulsory admissions, DUP and mode of onset of psychosis. The limited research exploring these issues in individuals living with psychotic disorders highlights the urgent need for further research in this population. This will strengthen the efforts being spent on early detection and improving outcomes.

2.7 References

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2.8 Appendices

Appendix A – Author Guidelines

Types of papers:

(1) Full-length papers: 4000 words (excluding tables, figures and references). (2) Review articles: up to 5000 words. (3) Invited comments or hypotheses (no abstract; less than 1000 words). (4) Editorials. (5) Schizophrenia meeting reviews: solicited and/or submitted. (6) Book reviews (less than 1000 words). (7) Letters to the Editor: written in response to recent content in Schizophrenia Research, as well as letters with independent content (1000 words, unstructured (no side headings) and with no abstract. Up to 10 references will be allowed. Additional tables or figures may be included as supplementary material). Submission Checklist

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Graphical Abstracts / Highlights files (where applicable)

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Reference to a website:

Cancer Research UK, 1975. Cancer statistics reports for the UK. http://www.cancerresearchuk.org/aboutcancer/statistics/cancerstatsreport/ (accessed 13 March 2003).

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Appendix B – Additional Help-Seeking and PtC Outcomes

Table 4: Summary of the help-seeking and pathways to care outcomes.

Author	Definition of PtC/Help-Seeking *	Measure of PtC *	Help Seeking Behaviours	Key Pathway Agents *	Mean no of Help-Seeking Contacts	First Help-Seeking Contact	Definition of DUI	Help-Seeking Delays	Duration of Untreated Illness (DUI)
Ajnakina et al., 2018	NR	The Life Chart Schedule (LCS) extended version (WHO, 1992b)	NR	Inpatient admission, compulsorily/ voluntarily	NR	NR	Duration of untreated psychosis was defined as the time between the date of onset of the first psychotic symptom to the date of treatment with antipsychotic medications (Singh et al., 2005)	NR	NR
Benedetti et al., 2014	NR	NR	Increased use of psychotropic drugs, seeking of psychiatric care and accessing treatment services		NR	NR	NR	NR	mean 4.5 years
Conus et al., 2010	NR	Duration of Untreated Psychosis (DUP) Scale	NR	Hospital admission; Psychiatrists; Crisis-assertive community treatment team	NR	NR	NR	NR	36.4 weeks mean
Curran et al., 2021	NR	Interview developed for the study (participant)	Differing patterns of therapeutic health-seeking (social support, professional help) and maladaptive coping (suicide attempts, substance misuse)	Sought professional help; sought self-help support; been hospitalised or admitted to hospital emergency care; or been prescribed	NR	NR	Delays after first onset of depression	NR	NR

				medical treatment.					
Karatekin, 2019	NR	Interview developed for the study (participant)	The most popular source was search engines, followed by recommendations of friends and family, and referrals by another professional or information related to health obtained from the University.	University, media, professionals	Students in the low-ACEs group had sought a median of two types of help (M1⁄42.5, SD1⁄42.6), whereas students in the high-ACEs group had sought a median of three types of help (M1⁄43.9, SD1⁄44.1	NR	NR	NR	Not reported but discusses more unmet needs with higher ACEs
Lovretić et al., 2022	NR	Inventory of Personality Organization (Vogel et al.) (Kernberg & Clarkin 1995)	Personality traits linked with help-seeking (neuroticism, extraversion, openness, agreeableness, conscientiousness)	NR	NR	NR	Duration of untreated psychosis (DUP) defined as the time from onset of psychosis until the start of adequate antipsychotic treatment.	NR	Median DUP was 60.0 (IQR 14.5-285) days, while the mean was 157.99 (SD 184.94) days. Minimum was 2 days and maximum was 735 days

Morris et al., 1998	NR	Interview developed for the study (participant)	Contacting professional services	Counselling, medication, advice from a psychiatrist, clinical psychologist/ therapist/ counsellor, social worker, minister, natural healer	A total of 59 initial contacts were made by the 41 help seekers	Therapists and counsellors and general practitioners identified as main first contacts through full sample, CSA group most likely to first contact a therapist or counsellor than any other practitioner	NR	59 initial contacts were made by the 41 help seekers, 15 out of 41 (36.6%) initiated a second contact	NR
Schomerus et al., 2013	Help-seeking of professional services for treatment of mental or emotional problems	The Composite International Diagnostic Interview (CIDI) - Interview (patient)	Making contact with professional services; Personality traits linked with help-seeking (neuroticism, extraversion, openness, agreeableness, conscientiousness)	Psychologist, psychiatrist, or general practitioner	NR	NR	NR	NR	NR
Stolzenburg et al., 2018	NR	The self-stigma of seeking help scale (SSOSH) (Vogel, Wade, & Haake, 2006)	NR	NR	NR	NR	NR	NR	Not reported but discusses stigma as a barrier

Stolzenburg et al., 2019	NR	Interview developed for the study (participant)	Self- identification, perceived need and help-seeking intentions, making contact with professionals.	GP, psychologist, psychotherapist, and psychiatrist	NR	Half of participants reported previous treatment for mental health problems. Of these, 50 persons (24.2%) had sought help from a psychiatrist and 86 (41.5%) from a therapist/ psychologist.	NR	NR	NR
Ullman et al., 2003	Medical service seeking/ Health care seeking	Interview developed for the study (participant)	Mental health service seeking, contact with health care professionals, current social support (spouse/partners, friends, and relatives)	General practitioner, family physician, cardiologist, gynaecologist, nurse, occupational therapist, or other health professional	NR	NR	NR	NR	NR
Veru et al., 2022	Help-seeking is defined as the process of recognizing a need for help (by the individual or their carers), and the steps taken to obtain it.	Circumstances of Onset and Relapse Schedule (CORS) (Malla et al., 2006) - interview	Contacting professional services - individual or carer; recognising need for help; steps to obtain help	NR	NR	NR	It is measured in terms of the duration of untreated psychosis (DUP), which is defined as the duration of time between the onset of frank psychotic symptoms and the commencement of treatment.	NR	NR

NR = not reported

Chapter Three - Bridging Chapter

The previous chapter sought to explore the availability of literature relating how help-seeking for mental health problems can be impacted by CA across differing mental health presentations. The systematic review highlighted the sparsity of research into this field with only twelve papers meeting the full inclusion criteria and heterogeneity within the papers due to their differing geographic origins, methods and measures. Nonetheless, the findings indicated a relationship between CA and help-seeking. It remains unclear as to the direction of this relationship, with inconsistent findings with CA found as both a facilitator and a barrier to help-seeking. Nonetheless nine of the papers all noted an impact of CA, with further links to socio-demographic factors such as social support, stigma and maladaptive behaviours as linked to this relationship. The variability in findings between the studies included made it difficult to detect disorder specific variations, instead, indicative that CA can influence upon PtC, irrespective of presenting concern.

The gaps in the literature evidenced in the systematic review suggest further need to explore the relationship between CA and help-seeking during experiences of MHD, including for those experiencing FEP. In line with the aims of this portfolio the following chapter therefore outlines an empirical, quantitative study investigating associations between CAs and PtC in FEP. This is the first quantitative study known to explore the associations between these factors in such detail.

Chapter Four - Empirical Paper

Understanding the influence of childhood adversity on pathways to care in first episode psychosis.

Prepared for submission to ‘Social Psychiatry and Psychiatric Epidemiology’[1]

Word Count: 4696 (excluding references, tables, figures and appendix)

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Abstract word count: 231
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Tables: 4
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[1] See Appendix A for author guidelines. For ease of reading, figures and tables are provided within the main body of text.

Title: Understanding the influence of childhood adversity on pathways to care in first episode psychosis.

4.1 Abstract

Background

There is considerable research reporting associations between various types of childhood adversity (CA) and onset of psychosis. Less attention has been given to understanding how CA could influence pathways to care among people with first episode psychosis (FEP). We addressed these issues in this study.

Method

Individuals living in London boroughs of Lambeth and Southwark with FEP who presented to adult mental health services between 1 May 2010 and 30 April 2012 were identified at the South London and Maudsley NHS Trust (SLaM) as part of the Clinical Record Interactive Search Database - First Episode Psychosis (CRIS-FEP) study. Patient records were screened for evidence of CA (n=558) descriptive statistics and regression analysis were used as appropriate to examine the relationships between CA and PtC, controlling for confounders.

Results

The findings showed strong associations between report of CA and longer duration of untreated psychosis (DUP) insidious onset of psychosis, and age. Evidence was also found that those who report CA were more likely to be women and have previously accessed mental health support for non-psychotic illnesses. Over 50% of those who had records of CA were shown to have experienced more than one childhood adversity. Multiple CAs were associated with previous service use, DUP and an insidious onset of psychosis.

Conclusion

The findings provide evidence that CA does influence PtC for FEP. Future studies investigating relationships between types of CA and PtC during FEP are needed.

Keywords: childhood adversity, pathways to care, help-seeking, early intervention, first episode psychosis, duration of untreated psychosis

4.2 Introduction

4.2.1 Pathways to care in psychosis and help-seeking

Pathways to care (PtC) refers to how a person enters the care pathway, at what stage and who their first contact is with. It is specifically used to measure delays in help-seeking and treatment, which is important for understanding how people can access services at an earlier stage [1]. There is a growing body of literature highlighting some of the factors known to influence PtC for psychosis. These include insight [2, 3], trust in services [4], stigma [5, 6] and barriers to care [7, 8]. At the individual level, factors such as ethnicity [9, 10], gender [11], social deprivation [12, 13] and unemployment [14, 15] have also been linked to PtC.

Research has also identified factors that can help improve help seeking during FEP. Social support, having strong connections with friends and family [16-19] proves important as many help-seeking contacts are initiated by support networks rather than the individual [20]. Higher level of education has also been shown to improve help seeking and results in better long-term outcomes [21].

4.2.2 Early intervention in psychosis

Research has repeatedly indicated the importance of providing quick support and intervention for individuals experiencing first episode psychosis (FEP) [22]. Extended duration of untreated psychosis (DUP), the time from the onset of psychotic symptoms until the first treatment, is associated with high levels of disability, reduced treatment adherence and increased suffering [23]. As such, early intervention for psychosis programmes aim to improve the long-term outcomes for this client group, with evidence showing improved treatment engagement and results, and wider socio-economic benefits [24-26]. The process of seeking help for FEP can prove complex, therefore it is vital to examine factors that may impact on help-seeking pathways and early intervention, with the aim to reduce DUP and the associated consequences [10].

4.2.3 Childhood adversity and psychosis

Childhood adversity (CA) is a term that refers to circumstances or events in which a child is exposed to a serious threat to their physical or psychological wellbeing [27]. Examples include abuse and neglect, domestic violence, bullying, serious accidents or injuries, discrimination, extreme poverty, and community violence [28]. It is a well-established risk factor, both for the development of psychosis [29-32] and for poorer clinical and social outcomes [33-35].

Research has shown that those who experienced CA prior to the age of 17 are increasingly likely to experience psychosis [36]. This association could be as high as 2.78 increased odds of later development of psychosis [37]. Experiences of CA have also been shown to predict worse medium to long-term outcomes among patients with psychosis including longer admissions [38], poorer medication adherence and difficulties engaging and maintaining relationships with services [2].

Research has begun to explore whether experiences of CA result in delays to seeking help and accessing support during FEP. Strong associations have been indicated between CA and DUP, although the direction of this association has varied. Veru and colleagues [39] showed CA to increase DUP by 25%, with higher levels of CA also found to predict delays to help-seeking and referrals to mental health services during FEP, even after support was sought. Conversely another study found CA to shorten DUP, particularly for those who had been exposed to multiple CAs. Interestingly, both studies found no association of the type of CA experienced on help-seeking behaviours which contrasts previous findings of CA types to differently impact risk of development and outcomes of FEP [11, 36, 29, 40-42].

Impact of CA on overall aspects of PtC rather than DUP alone has been less researched. One study found FEP individuals who had experienced CA to have increased likelihood of police arrests or contact with criminal justice systems before first admission [43]. The authors suggested this may be linked to marked exposure to extreme risk, danger and exposure in those who had a history of CA. Another study [34] indicated that individuals with CA histories were more likely to have had previous service contact prior to FEP onset for other mental health problems, substance misuse or suicide attempts. They also showed this group to have poorer premorbid functioning levels and having higher rates of comorbid diagnosis on entry to services for FEP, demonstrating how CA can complicate PtC for FEP.

4.2.4 Rationale and aims

Despite the accumulated evidence on the relationships between socio-demographic factors and PtC, there is limited research specifically exploring the influence of CA on PtC in the FEP population. Therefore, this study aimed to examine the associations between PtC characteristics and any report of CA and number of CAs among patients with FEP, independent of confounders. It also examined whether FEP patients with a record of CA differed by socio-demographic characteristics.

4.3 Method

4.3.1 Design, settings and data source

The study used a cross-sectional incidence study design. It utilized the Clinical Record Interactive Search - First Episode Psychosis study (CRIS-FEP) sample, which was assembled within the South London and Maudsley NHS Trust (SLaM) Clinical Records Interactive Search (CRIS) system [9]. SLaM CRIS provides access to fully de-identified electronic health records of patients receiving care in SLaM [44]. CRIS contains over 300,000 patient records from hospital and community services. The clinical information documented in CRIS appears in two forms i.e. structured fields (e.g. dates, demographic and diagnosis) and unstructured free-text fields (e.g. clinical information in medical notes and correspondence) [44].

The present study is part of a larger (CRIS-FEP) incidence study carried out May 2010 and April 2012 [10]. The study was conducted in two inner city areas of London, served by the South London and Maudsley NHS Foundation Trust (SLaM). These are the London boroughs of Lambeth and Southwark, with a combined population of 625,300 people [45].

4.3.2 Participants (including sample size) and case identification

Five hundred and fifty-eight patients presented to SLaM mental health services with a first episode psychotic disorder (in ICD-10: F20-F29, F30-F33 psychotic codes) in the CRIS-FEP study. The approach for identifying FEP cases has been published previously [9, 46]. In summary, cases were identified using a manual 3 stage screening process. The CRIS clinical records were examined between May 2010 and April 2012 to find probable cases of psychosis. Of the cases identified, records were reviewed using the structured language query [47, 48] based on specific search terms linked to the predetermined inclusion and exclusion criteria. Examples of these specific search terms are: date, postcode, age, symptoms-psychos*; psychot*, delusion*, voices, hallucinat* and diagnosis). A team of researchers the individually screened the cases identified using the Screening Schedule for Psychosis [49]. Discrepant or ambiguous cases were resolved by consensus with the principal investigator. All patients presenting to SLaM adult mental health services in Lambeth and Southwark for the first time with a psychotic disorder between May 2010 and April 2012 recorded on SLaM CRIS were included in the sample.

4.3.3 Inclusion/exclusion criteria

The inclusion criteria in the CRIS-FEP study were those who resided in the London boroughs of Lambeth or Southwark during the study period; aged 18–64 years (inclusive); experiencing psychotic symptoms for at least one day duration, as assessed by the Screening Schedule for Psychosis [49]. Exclusion criteria were evidence of psychotic symptoms caused by an organic cause; transient psychotic symptoms resulting from acute intoxication; and evidence of the previous contact with services for psychotic symptoms [9].

4.3.4 Data available in the sample

Socio-demographic characteristics data were collected using the Medical Research Council Socio-Demographic Schedule MRC-SDS [50]. Data on DUP, PtC characteristics and specialist mental health service use were collected using the Personal and Psychiatric History Schedule (PPHS) [51]. DUP was measured from the date of onset of psychotic symptoms to the date of first contact with services for psychosis [10]. Individuals were counted as “detainment under the MHA” if records showed that they had been compulsorily detained at first contact to mental health services. The data was collected prior to the commencement of this study as part of the larger (CRIS-FEP) incidence study (see [10]).

4.3.5 Procedure for childhood adversity data collection

Childhood adversity data on 425 cases were collected in the CRIS-FEP study, and data on the remaining 133 cases were collected by principal researcher HC. The Childhood Experience of Care and Abuse (CECA) [52] tool (appendix B) was used as a guide for data collection to define CA experiences reported in the data. CECA is a retrospective, investigator-based measure to examine childhood experiences. The tool was used to establish the presence of five domains of CA in the sample:

physical abuse, sexual abuse, parental separation, parental death, and changes to school. All before the age of 17 years.

Data were extracted in the CRIS front-end, which is a web-based interface of the electronic clinical records at SLaM. First, we retrieved the clinical records of each patient in the CRIS-FEP study sample. Second, interrogated the free-text fields of CRIS to screen for the record of CA using search terms (informed by the CECA tool) such as “abuse”, “trauma”, “childhood”, “parental separation”, “sexual”, “physical”, “death”, “school”, “slapped”, “hit” etc. Third, the researchers individually read the participants clinical records (eg, progress notes, discharge summaries, etc) manually determine and document the presence of CA factors. From the data retrieved, the research team completed the CECA for each participant to determine their CA status (i.e., parental death, separation, moved schools, physical or sexual abuse) and coded accordingly (appendix B for coding values on CECA). Fifteen percent (n=83) of the sample was second screened by SO, who was blind to HC data extraction. A kappa score of 0.80 ($p<0.001$), and 88.24% agreement was achieved between the two raters.

4.3.7 Ethical consideration

The CRIS database has overarching ethical approval as an anonymised dataset for secondary analysis by the NHS Research Ethics Committee (reference 18/SC/0372). Local approval for CRIS-FEP study was obtained from the CRIS Oversight Committee at the BRC SLaM (reference: 09-041). A further CRIS Oversight Committee approval was obtained in order to collect the additional data for this study (reference: 21-034). Under UK law, patient consent was not required for this study.

4.4 Data analysis

Data were analysed using STATA 15.1 [53]. Descriptive statistics, including frequencies, percentages, categorical data, means, and medians, along with the standard deviation and interquartile range for continuous data were used to describe the sample. Firstly, complete data for patients with CA and independent variables were examined in the descriptive analysis. We performed chi-square, t and Kruskal-Wallis tests as appropriate to compare socio-demographic and PtC clinical characteristics between patients with and without a record of CA.

Secondly, missing data were handled via multiple imputation by fully conditional specification using chained equations [54]. Crude and multivariable logistic regression analysis was employed to assess the associations between a report of CA and PtC characteristics, adjusting for a-prior confounders (age, gender) based on the significant associations identified in the first phase of analysis. The regression output of odds ratio (OR) quantifies the association between a binary outcome and an exposure. In crude analysis, it compares outcome odds in exposed and unexposed groups. In multivariable logistic regression, it assesses exposure's independent effect while accounting for other variables. An OR > 1 implies positive association, < 1 implies negative, and = 1 implies no association. Third, to examine the relationships between the number of CAs and PtC characteristics, negative binominal regression was employed. Negative binomial regression models were used to overcome the over-dispersion of zero in the CA data, and the data were not normally distributed (Pearson goodness-of-fit $X^2 = 711.15$, df = 452, $p < .0001$). The output for negative binomial regression, incidence rate ratio [55], measures the relative change in event rates between groups. It quantifies the effect of a predictor on the rate of events while accounting for overdispersion. An IRR > 1 implies increased rate, < 1 implies decreased rate, and = 1 implies no change.

4.5 Results

4.5.1 Sample characteristics

The sample characteristics of the CRIS-FEP study have been reported in previously published work [9, 10, 46] also presented in Table 1. In summary, the mean age was 33.26 (SD = 10.68, range = 46) [18-64] with a higher number of males, 52% of the sample (n=292). The largest ethnic group in the sample was Black African (n=147 (26.34%)), closely followed by White British (n=133 (23.84%)). A high proportion of patients were living with family or friends (60.07%), 62.22% were single and 68.51% were unemployed. The median DUP was 93 (19-447) days, and 37.46% of patients experienced an insidious onset of psychosis. The most common sources of referral were through A&E (38.89%) and GP (35.13%). Two hundred and eighteen patients had records of CA; the type of CA and frequencies are reported in Table 1.

Table 1: Sample characteristics.

Characteristic	**N=558 (%)**
Sex	
Male	292 (52.33)
Female	266 (47.67)
Mean Age (SD) years	33.26 (10.68)
Ethnicity	
White British	133 (23.84)
Black African	147 (26.34)
Black Caribbean	91 (16.31)
White Other/Non-British	75 (13.44)
Asian	44 (7.89)
Mixed	27 (4.84)
Other	41 (7.35)
Living Circumstances[1]	
Alone	161 (29.76)
Friends/Family	325 (60.07)
Hostel/Refuge	55 (10.17)
Relationship Status[2]	
Single	331 (62.22)
Married/Steady Relationship	127 (23.87)
Divorced/Separated/Widow	74 (13.91)
Employment Status[3]	
Unemployed	346 (68.51)
Student	60 (11.88)
Employed	99 (19.60)
Detained under the Mental Health Act (MHA) for FEP	
No	389 (69.71)
Yes	169 (30.29)

Mode of Onset of FEP	
Acute	116 (20.79)
Moderate	111 (19.89)
Gradual	122 (21.86)
Insidious	209 (37.46)
Median Length of DUP in Days (IQR)	93 (19-447)
Source of Referral	
GP	196 (35.13)
A&E	217 (38.89)
Police/Criminal Justice System	77 (13.80)
Other	68 (12.19)
Family Involvement	
No	362 (64.87)
Yes	196 (35.13)
Previous Service Use	
No	426 (76.34)
Yes	132 (23.66)
Any record of Childhood Adversity[4]	
No	214 (38.35)
Yes	240 (43.01)
Not Recorded	102 (18.28)
Record of Parental Death before the age of 17[5]	
No	309 (55.58)
Yes	46 (8.27)
Not Recorded	201 (36.15)
Record of Parental Separation before the age of 17[6]	
No	116 (20.86)
Yes	135 (24.28)
Not Recorded	305 (54.86)
Record of Changing Schools before the age of 17[7]	
No	47 (8.45)
Yes	50 (8.99)

Not Recorded	459 (82.55)
Record of Physical Abuse before the age of 17[8]	
No	57 (10.25)
Yes	36 (6.47)
Not Recorded	463 (83.27)
Record of Sexual Abuse before the age of 17[9]	
No	60 (10.79)
Yes	35 (6.29)
Not Recorded	461 (82.91)
Number of Child Adversities recorded [10]	
None	214 (47.14)
One	97 (21.37)
Two	76 (16.74)
Three	36 (7.93)
Four	23 (5.07)
Five	8 (1.76)

Missing records: [1] 17 patients, [2] 26 patients, [3] 53 patients, [4-10] 2 patients

4.5.2 Associations between the socio-demographic factors, pathways to care and childhood adversity

Table 2 shows the associations between CA and the socio-demographic and PtC variables. Compared with those without a record of CA, patients with a record of CA were more likely to be women and younger in age. There was no evidence of associations with ethnicity, although it is observed that patients from the White British group were more likely to have a record of CA (27.50%) than their Asian counterparts (5.83%, p=.214). Chi-square test revealed that those with records of CA were considerably more likely to experience insidious onset of psychosis than those without (no CA:30.37% vs. records of CA:42.92%, p=.030). Kruskal-Wallis tests showed strong evidence of association between DUP and record of CA, (no CA: median 76 days, records of CA: median 133 days, p=.002). Similarly, while not significant, results showed that those with records of CA were more likely to be living with family or friends (57.45%) than those living in refuges or hostels (10.64%, p=.565).

Table 2: Differences in socio-demographic and pathways to care factors between those with records of childhood adversity

Variable	**Records of Childhood Adversity (n=455)**		**Chi Sq./Kruskal-Wallis tests/T-tests, df, p value**
	No = 214 (47.14%)	Yes = 240 (52.86%)	
Sex			X^2=5.46, (1) p=.019*
Male	126 (58.88)	115 (47.92)	
Female	88 (41.12)	125 (52.08)	
Age Mean (SD)	33.32 (10.47)	31.17 (10.67)	T=2.16, (45) p=.031*
Ethnicity			X^2=8.34, (6) p=.214
White British	54 (25.23)	66 (27.50)	
Black African	55 (26.15)	56 (23.33)	
Black Caribbean	30 (14.02)	44 (18.33)	
White Other/Non-British	30 (14.02)	26 (10.83)	
Asian	22 (10.28)	14 (5.83)	
Mixed	8 (3.74)	18 (7.50)	
Other	15 (7.01)	16 (6.83)	
Living Circumstances[1]			X^2=1.14, (2) p=.565
Alone	57 (27.40)	75 (31.91)	
Friends/Family	129 (62.02)	135 (57.45)	
Hostel/Refuge	22 (10.58)	25 (10.64)	
Relationship Status[2]			X^2=0.61, (2) p=.738
Single	129 (63.86)	155 (67.39)	
Married/Steady Relationship	49 (24.26)	51 (22.17)	
Divorced/Separated/Widow	24 (11.88)	24 (10.43)	
Employment Status[3]			X^2=0.36, (2) p=.836
Unemployed	139 (69.85)	148 (67.27)	
Student	24 (12.06)	30 (13.64)	
Employed	36 (18.09)	42 (19.09)	

Detained under the MHA for FEP			X^2=0.67, (1) p=.414
No	144 (67.29)	170 (70.83)	
Yes	70 (32.71)	70 (29.17)	
Mode of Onset of FEP			X^2=8.93, (3) p=.030*
Acute	55 (25.70)	42 (17.50)	
Moderate	42 (19.63)	41 (17.08)	
Gradual	52 (24.30)	54 (22.50)	
Insidious	65 (30.37)	103 (42.92)	
Median DUP (IQR) in Days	76 (9, 348)	133 (24, 566)	X^2=9.88, (1) p=.002*
Source of Referral			X^2=3.98, (3) p=.264
GP	78 (36.45)	86 (35.83)	
A&E	86 (40.19)	85 (35.42)	
Police/Criminal Justice System	32 (14.95)	35 (14.58)	
Other	18 (8.41)	34 (14.17)	
Family Involvement			X^2=0.65, (1) p=.419
No	134 (62.62)	159 (66.25)	
Yes	80 (37.38)	81 (33.75)	
Previous Service Use			X^2=3.59, (1) p=.058
No	169 (78.97)	171 (71.25)	
Yes	45 (21.03)	69 (28.75)	

Missing records: [1] 1 patient, [2] 22 patients, [3] 35 patients

4.5.3 Relationships between pathways to care and childhood adversity

In both the binary logistic regression models (Model 1 and Model 2, Table 3), longer DUP was strongly associated with records of CA compared to those with shorter DUP (unadjusted OR=1.10, CI=1.04-1.36*; adjusted OR=1.21, CI=1.02-1.40*). For mode of onset of psychosis, compared to patients presenting with an acute onset, there was strong evidence that those with insidious onset as more likely to have records of CA (OR=1.80, CI=1.08 to 2.99), and the strength of association held after controlling for confounders (OR=2.04, CI=1.21-3.47). Previous service use showed weak evidence of association with CA (unadjusted OR=1.42, CI=0.92 to

2.18; adjusted OR=1.45, CI=0.93 to 2.25), suggesting some relationship between previous psychiatric service use and reports of CA.

There was no evidence of associations between record of CA and source of referral or family involvement.

There was weak evidence of associations between being younger and a record of CA (unadjusted OR=0.98, CI=0.97-1.00*).This association remained when adjusted for gender. A strong association was found between CA and gender (unadjusted OR=1.45, CI=1.01-2.08), with women being 1.4 times more likely to have a record of CA than men. The strength of association increased to 1.5 times when adjusted for age (OR=1.56, CI=1.07-2.26*).

Table 3: Binary logistic regression analysis of factors associated with childhood adversity, pathways to care and socio-demographic factors

Variables	**Unadjusted OR* Model 1**	**95% CI**	**Adjusted OR Model 2**	**95% CI**
Sex				
Male	1.00		1.00	
Female	1.45	1.01 to 2.08*	1.56	1.07 to 2.26*
Age	0.98	0.97 to 1.00	0.98	0.96 to 1.00*
Detained under the MHA for FEP				
No	1.00		1.00	
Yes	0.85	0.57 to 1.27	0.86	0.57 to 1.29
Mode of Onset of FEP				
Acute	1.00		1.00	
Moderate	1.24	0.71 to 2.17	1.33	0.75 to 2.36
Gradual	1.27	0.73 to 2.22	1.36	0.77 to 2.38
Insidious	1.80	1.08 to 2.99*	2.04	1.21 to 3.47*
Median DUP (IQR) in Days	1.10	1.04 to 1.36*	1.21	1.02 to 1.40*
Source of Referral				
GP	1.00		1.00	
A&E	0.90	0.58 to 1.39	0.86	0.56 to 1.34
Police/Criminal Justice System	0.99	0.56 to 1.74	0.97	0.55 to 1.73

Other	1.52	0.80 to 2.90	1.55	0.81 to 2.99
Family Involvement				
No	1.00		1.00	
Yes	0.87	0.60 to 1.28	0.81	0.54 to 1.20
Previous Service Use				
No	1.00		1.00	
Yes	1.42	0.92 to 2.18	1.45	0.93 to 2.25

**OR=Odds Ratio*

4.5.4 Relationships between pathways to care and number of childhood adversities

The frequencies of adversities experienced by those with CA records are shown in appendix C. Of those who had records of CA, 60% had experienced more than one type of CA.

There was evidence of strong associations between number of CAs and long DUP in both models (unadjusted IRR=1.09, CI=1.02-1.15*; adjusted IRR=1.10, CI=1.03-1.16*) (see Table 4). Similarly, compared with acute onset of psychosis, insidious onset of psychosis was strongly associated in both models (unadjusted IRR=1.51, CI=1.12-2.04*; adjusted IRR=1.65, CI=1.21-2.25*), demonstrating evidence that patients with an insidious onset were more likely to experience multiple CAs. Other modes of onset of psychosis were not found to be associated with numbers of CAs. Previous service use was found as strongly associated with number of CAs, with the strength of association increasing in the adjusted model (unadjusted IRR=1.28, CI=1.01-1.63*; adjusted IRR=1.29, CI=1.02-1.64*).

Gender was found as strongly associated with women found as more likely to have experienced higher numbers of CA (unadjusted IRR=1.20, CI=0.97-1.48). Weak associations were found between number of adversities and age (unadjusted IRR=0.99, CI=0.98-1.00) and family involvement (unadjusted IRR=0.83, CI=0.67-1.05), the association of which strengthened in the adjusted model (IRR=0.79, CI=0.63-1.00*) indicating higher numbers of CAs in younger individuals. No associations were found between number of CA records and compulsory admission or referral source.

Table 4: Negative binomial regression of factor associations between the number of childhood adversities, pathways to care and socio-demographic characteristics

Variables	**Unadjusted IRR* Model 1**	**95% CI**	**Adjusted IRR Model 2**	**95% CI**
Sex				
Male	1.00		1.00	
Female	1.20	0.97 to 1.48	1.24	1.00 to 1.53
Age	0.99	0.98 to 1.00	0.99	0.98 to 1.00
Detained under the MHA for FEP				
No	1.00		1.00	
Yes	0.90	0.71 to 1.14	0.91	0.71 to 1.15
Mode of Onset of FEP				
Acute	1.00		1.00	
Moderate	1.15	0.81 to 1.64	1.19	0.82 to 1.73
Gradual	1.23	0.88 to 1.72	1.30	0.92 to 1.83
Insidious	1.51	1.12 to 2.04*	1.65	1.21 to 2.25*
Median DUP (IQR) in Days	1.09	1.02 to 1.15*	1.10	1.03 to 1.16*
Source of Referral				
GP	1.00		1.00	
A&E	0.91	0.71 to 1.18	0.89	0.69 to 1.15
Police/Criminal Justice System	0.89	0.64 to 1.25	0.88	0.63 to 1.23

Other	1.20	0.86 to 1.68	1.20	0.86 to 1.67
Family Involvement				
No	1.00		1.00	
Yes	0.83	0.67 to 1.05	0.79	0.63 to 1.00*
Previous Service Use				
No	1.00		1.00	
Yes	1.28	1.01 to 1.63*	1.29	1.02 to 1.64*

IRR=incident rate ratio

4.6 Discussion

4.6.1 Main findings

In this population-based study of 558 individuals presenting to services with FEP in South London, 240 participants (42.63%) had at least one record of childhood adversity. The study aimed to examine the associations between PtC characteristics and a report of CA (i.e., any record of CA and number of CA) among patients with FEP. It also examined whether FEP patients with a record of CA differed by socio-demographic characteristics.

The findings indicated that CA is related to PtC (DUP, insidious onset of psychosis, and previous service use) and socio-demographic (age and gender) characteristics. Negative binomial regression also demonstrated that number of CAs are strongly associated with long DUP, insidious onset of psychosis and previous service use. Our findings show that women were also more likely to experience multiple CA. Family involvement in PtC was shown to be a protective factor of number of CA.

4.6.2 Interpreting the findings.

4.6.2.1 Childhood adversity and pathways to care

These findings add to the literature seeking to understand how CA can impact on PtC in FEP.

Longer DUP was found in those who had records of CA, increasing in those with multiple CA records. These findings fit with previous research [39] which suggest CA as a potential risk factor for extended DUP at both individual (help-seeking) and systemic (referral) levels. Explanations for those who have reported CA experiencing delays to care could be due to having attachment difficulties or difficulties with trust [56-58] making them more unwilling or dismissive of engaging with healthcare professionals. CA can lead to use of more maladaptive ways of coping, such as substance misuse or self-harm [59-61], reducing intentions to seek more formal routes of support resulting in treatment delays [62, 63].

Mode of onset of psychosis was another characteristic of PtC found to be associated with CA. Insidious onset of psychosis was found to be strongly associated with higher records of CA. One explanation for this may be the increased risk of comorbid difficulties associated with CA [34, 64]. Comorbid symptomologies or slower onset, particularly those similar to the negative symptoms of psychosis, may mean the individual is less aware of the progression of the illness [65] or have reduced motivation to seek help [66]. Social support systems may also be less aware of symptom progressions, or be less inclined to encourage help-seeking if symptom development is spread over a longer time-period [65]. Importantly, onset of psychosis and DUP have previously shown as associated [65, 67], providing scope for future research to explore the mechanisms between CA, insidious onset and prolonged DUP.

Our study found that those with records of CA were more likely to have previously accessed services for support with other MHD, and that those with multiple CAs were more likely to have used mental health services previously. These findings fit with previous literature, indicative that having an experience of CA can result in higher service use [68] and provides important considerations for impact of help-seeking during FEP as these experiences can prove vital for future service engagement. Dependent on these interactions, individuals may be more encouraged or deterred from help-seeking during FEP [69] suggestive that past experiences of service support resulting from CA may influence later intentions to seek help for FEP.

Interestingly, our study did not find evidence of associations between family involvement and records of CA, given previous literature emphasising the importance of family involvement in PtC for FEP [20, 70] and the reduced social support and familial contact in people exposed to CA [71-73]. We speculate that this may be due to decreased reliance on or contact with familial relationships following CA [74] (e.g., those who had experienced parental death or separation), with more emphasis placed on wider social networks [75]. Moreover, our data indicated some insights into a relationship between number of CAs and family involvement. Therefore, further research exploring how experiences of CA can impact on social presence during PtC may prove vital to future attempts of maintaining social support in at-risk groups, such as those with experiences of CA, to reduce delays to accessing care.

4.6.2.2 Socio-demographic Factors

Younger patients were shown to be more likely to have records of CA. This may be due to increased levels of CA in recent years [76], that younger generations hold less stigma and are more likely to disclose [77, 78] or simply that reporting of such incidents has improved. Similarly, women were found as more likely to have CA records than males. Again these figures could result from higher levels of exposure to CA in women [79] or as reported in previous research, due to facing less negative stigma and shame associated with disclosure of trauma and mental health support than men [80]. Weak associations were found to support the former point, indicating that women are 1.2 times more likely to report experiencing multiple CAs.

4.6.3 Methodological considerations – strengths and limitations

The findings of this study provide important information to a previously unexplored area, adding to the growing body of literature examining PtC for FEP to inform and improve early intervention pathways for psychosis.

A key strength of this study is the large sample size, made accessible using the CRIS system. This allowed for exploration of data collected from a range of participants over a long time-period, encompassing various socio-demographic factors and inclusive of participants who may have been more challenging to recruit organically due to socio-cultural barriers, providing a more representative sample. Moreover, this research was strengthened using multiple imputation to address missing data by generating plausible values. It allowed for preservation of the sample size while minimising the risk of bias, improving the accuracy and reliability of analyses conducted to increase confidence in research findings.

A limitation of this research was that many of the CA records were marked as not recorded. This meant no evidence in the patient’s clinical record of whether a patient had experienced CA or if they had been asked. While missing data was managed using multiple imputation during analysis, the sparsity of records pertaining to types of CA meant that it was not possible to explore these in this study. It was possible to make the most of the available data to look at frequencies of adverse experiences, however understanding of the specific impact of types of CA remains unclear and an area for future exploration. Moreover, this highlights a weakness of data source and methods of collection via retrospective case note review. CRIS consists of de-identified clinical information recorded by clinicians and administrative staff. The accuracy of this information is dependent on the quality and detail of documentation. Documentation of CA can vary greatly, relying on healthcare professionals asking the question, patients choosing to disclose, the assessment of the CA, the perceptions of both regarding the CA (i.e. if a slapped bottom consisted as physical abuse), and the documentation of this in the notes by the healthcare professional. Arguably, it may be that those who stay under service care for longer have more records of CA due to having more time to collect information and for patients to build trust before disclosure [36], although research would be required to determine if this is the case. Research has shown the need for improvement in consistency of trauma screening by healthcare professionals [81] with this undoubtably impacting the accuracy of the data recorded by this study. Similarly, the process of relying on second hand records and search strategies to find relevant information will to have impacted the accuracy of data collected. Future research would benefit from collecting data from the source or look to improve record keeping processes for such purposes.

The study was also limited by only including five forms of CA despite many more being important factors, such as neglect, bullying, emotional abuse or having a parent with an addiction [82-84]. Therefore, future research would benefit from using measures inclusive of a wider range of CA to be more representative of CA experiences as a whole. This would also allow for exploration of whether specific types of CA may impact upon PtC differently given that some types of CA (e.g. ethnic discrimination and bullying) have stronger evidence for FEP onset [85-87]. Building upon this, another limitation of this study is that it only looks at the potential confounding effects of sociodemographic factors. It does not take into consideration additional potential confounders such as those that could affect chances of being exposed to CA, the likelihood of developing mental health problems and factors that result in PtC differing, such as parental or family mental health problems. It would be of benefit for these potential associations to be explore more widely to establish if any of these factors impact upon the relationship between CA and PtC and if so be controlled for in future PtC research.

4.6.4 Implications of findings

Out of the sample of 558 individuals included in the study, 237 had records of CA, a higher proportion than estimated within the general population [88] demonstrating the strong links between CA and FEP. The results of this study add important insight to this relationship as one of the first studies to explore the relationship between CA and PtC in first episode psychosis populations. Our results emphasise the need for early identification of CA as something that can result in discrete onset of FEP and help-seeking delays impacting upon treatment outcomes [23], with the risk of these increasing with higher exposures to CA. The findings also support the NHS long-term plan outlining the need to move towards more trauma-informed care within mental health settings [89]. Evidence of a link between family involvement and number of CAs suggest the potential need to further explore social support in the care pathways for those experiencing FEP after CA.

The gaps in records of CA identified in the data collection for this study highlights a need for service improvements in assessments of childhood experiences. Given the well-established link between trauma and FEP, it is of clear importance to understand the childhood experiences of those entering services. The findings support NICE guidelines which state the need for comprehensive, co-produced biopsychosocial formulation inclusive of trauma and adversity during the assessment stage of Early Intervention in Psychosis (EIP) teams [90]. This information is vital in both preventative methods for those with CA histories at risk of developing FEP, early identification of mental health distress and to provide swift intervention.

Moreover, the data collection process demonstrated issues with documentation of trauma histories within the clinical records, having both clinical and research implications. It was noted during data extraction on CRIS that there was no specific place for this information to be recorded, with details mostly pulled from clinical notes. Future clinical practice could benefit from clear documentation of the questions asked around CA and the answers provided to record a clear picture of childhood histories. This clear documentation would enables swiftness of informed treatment pathways as well as clear understanding of risk management and providing patient-centred care. It would improve patient experiences by not having to repeat information, especially that of which could be distressing in nature. It could also aid future research by improving the quality and accessibility of data.

4.7 Conclusion

The findings provide evidence that childhood adversity does influence pathways to care for first episode psychosis. Experiences of CA are associated with longer DUP, insidious onset of psychosis and are more prevalent in young people and women. There was evidence of associations also identified between CA and moderate and gradual onset, and previous service use, which could benefit from further exploration. Our findings also showed that patients with multiple CAs were more likely to experience longer DUP, insidious onset of psychosis and had used mental health services prior to their psychotic illness. Future studies are needed to investigate the relationships between types of childhood adversity and pathways to care during first episode psychosis.

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4.9 Appendices

Appendix A – Author guidelines

Instructions for Authors

Types of Papers

- Papers must be written in English.
- Accepted article types: Research, Review, Brief Report, Editorial, Comment, Correspondence, and Study Protocol.
- Research papers or Reviews should not exceed 4,500 words, not including references, plus 5 tables or figures. An abstract (150 to 250 words) and 4-6 keywords are required (please see also section ‘title page’).
- Submissions for Study Protocols are welcome which describe the rationale, the design, procedures, and sample characteristics of large epidemiological studies in the context of existing research. Papers should not exceed 4,500 words. An abstract (150 to 250 words) and 4-6 keywords are required.
- Brief Reports should not contain more than 1,500 words plus 1 figure or table. Please submit a short abstract of max. 100 words and 4-6 keywords.
- Editorials and Correspondence articles will be considered for publication; they should not contain more than 1,500 words.
- Comments should not contain more than 10,000 characters and less than 10 references. Please do not include an abstract or keywords.
- Exceptions to the word limits can be made only with the agreement of the Editor-in-Chief.
- Authors are required to state the word count of their paper when submitting the manuscript.

Manuscript Submission

Submission of a manuscript implies: that the work described has not been published before; that it is not under consideration for publication anywhere else; that its publication has been approved by all co-authors, if any, as well as by the responsible authorities – tacitly or explicitly – at the institute where the work has been carried out. The publisher will not be held legally responsible should there be any claims for compensation.

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Please follow the hyperlink “Submit manuscript” and upload all of your manuscript files following the instructions given on the screen.

Source Files

Please ensure you provide all relevant editable source files at every submission and revision. Failing to submit a complete set of editable source files will result in your article not being considered for review. For your manuscript text please always submit in common word processing formats such as .docx or LaTeX.

Title Page

Please make sure your title page contains the following information.

Title

The title should be concise and informative.

Author information

- The name(s) of the author(s)
- The affiliation(s) of the author(s), i.e. institution, (department), city, (state), country
- A clear indication and an active e-mail address of the corresponding author
- If available, the 16-digit ORCID of the author(s)
- If address information is provided with the affiliation(s) it will also be published.
- For authors that are (temporarily) unaffiliated we will only capture their city and country of residence, not their e-mail address unless specifically requested.
- Large Language Models (LLMs), such as ChatGPT, do not currently satisfy our authorship criteria. Notably an attribution of authorship carries with it accountability for the work, which cannot be effectively applied to LLMs. Use of an LLM should be properly documented in the Methods section (and if a

Methods section is not available, in a suitable alternative part) of the manuscript.

Abstract

Please provide a structured abstract of 150 to 250 words which should be divided into the following sections:

- Purpose (stating the main purposes and research question)
- Methods
- Results
- Conclusion
- *For life science journals only (when applicable)*
- Trial registration number and date of registration for prospectively registered trials
- Trial registration number and date of registration followed by “retrospectively registered”, for retrospectively registered trials

Keywords

Please provide 4 to 6 keywords which can be used for indexing purposes.

Statements and Declarations

The following statements should be included under the heading "Statements and Declarations" for inclusion in the published paper. Please note that submissions that do not include relevant declarations will be returned as incomplete.

Competing Interests

Authors are required to disclose financial or non-financial interests that are directly or indirectly related to the work submitted for publication. Please refer to “Competing Interests and Funding” below for more information on how to complete this section.

Please see the relevant sections in the submission guidelines for further information as well as various examples of wording. Please revise/customize the sample statements according to your own needs.

Text

Text Formatting

- Manuscripts should be submitted in Word.
- Use a normal, plain font (e.g., 10-point Times Roman) for text.
- Use italics for emphasis.

- Use the automatic page numbering function to number the pages.
- Do not use field functions.
- Use tab stops or other commands for indents, not the space bar.
- Use the table function, not spreadsheets, to make tables.
- Use the equation editor or MathType for equations.
- Save your file in docx format (Word 2007 or higher) or doc format (older Word versions).
- Manuscripts with mathematical content can also be submitted in LaTeX. We recommend using Springer Nature's LaTeX template.

Headings

Please use no more than three levels of displayed headings.

Abbreviations

Abbreviations should be defined at first mention and used consistently thereafter.

Footnotes

Footnotes can be used to give additional information, which may include the citation of a reference included in the reference list. They should not consist solely of a reference citation, and they should never include the bibliographic details of a reference. They should also not contain any figures or tables.

Footnotes to the text are numbered consecutively; those to tables should be indicated by superscript lower-case letters (or asterisks for significance values and other statistical data). Footnotes to the title or the authors of the article are not given reference symbols.

Always use footnotes instead of endnotes.

Acknowledgments

Acknowledgments of people, grants, funds, etc. should be placed in a separate section on the title page. The names of funding organizations should be written in full.

References

Citation

Reference citations in the text should be identified by numbers in square brackets. Some examples:

1. Negotiation research spans many disciplines [3].

2. This result was later contradicted by Becker and Seligman [5].
3. This effect has been widely studied [1-3, 7].

Reference list

- The list of references should only include works that are cited in the text and that have been published or accepted for publication. Personal communications and unpublished works should only be mentioned in the text.
- The entries in the list should be numbered consecutively.
- If available, please always include DOIs as full DOI links in your reference list (e.g. “https://doi.org/abc”).
- Journal article
- Gamelin FX, Baquet G, Berthoin S, Thevenet D, Nourry C, Nottin S, Bosquet L (2009) Effect of high intensity intermittent training on heart rate variability in prepubescent children. Eur J Appl Physiol 105:731-738. https://doi.org/10.1007/s00421-008-0955-8
- Ideally, the names of all authors should be provided, but the usage of “et al” in long author lists will also be accepted:
- Smith J, Jones M Jr, Houghton L et al (1999) Future of health insurance. N Engl J Med 965:325–329
- Article by DOI
- Slifka MK, Whitton JL (2000) Clinical implications of dysregulated cytokine production. J Mol Med. https://doi.org/10.1007/s001090000086
- Book
- South J, Blass B (2001) The future of modern genomics. Blackwell, London
- Book chapter
- Brown B, Aaron M (2001) The politics of nature. In: Smith J (ed) The rise of modern genomics, 3rd edn. Wiley, New York, pp 230-257
- Online document
- Cartwright J (2007) Big stars have weather too. IOP Publishing PhysicsWeb. http://physicsweb.org/articles/news/11/6/16/1. Accessed 26 June 2007
- Dissertation
- Trent JW (1975) Experimental acute renal failure. Dissertation, University of California

- Always use the standard abbreviation of a journal’s name according to the ISSN List of Title Word Abbreviations, see
- ISSN.org LTWA
- If you are unsure, please use the full journal title.
- Authors preparing their manuscript in LaTeX can use the bibliography style file sn-basic.bst which is included in the Springer Nature Article Template.

Tables

- All tables are to be numbered using Arabic numerals.
- Tables should always be cited in text in consecutive numerical order.
- For each table, please supply a table caption (title) explaining the components of the table.
- Identify any previously published material by giving the original source in the form of a reference at the end of the table caption.
- Footnotes to tables should be indicated by superscript lower-case letters (or asterisks for significance values and other statistical data) and included beneath the table body.

Artwork and Illustrations Guidelines

Electronic Figure Submission

- Supply all figures electronically.
- Indicate what graphics program was used to create the artwork.
- For vector graphics, the preferred format is EPS; for halftones, please use TIFF format. MSOffice files are also acceptable.
- Vector graphics containing fonts must have the fonts embedded in the files.
- Name your figure files with "Fig" and the figure number, e.g., Fig1.eps.

Line Art

- Definition: Black and white graphic with no shading.
- Do not use faint lines and/or lettering and check that all lines and lettering within the figures are legible at final size.
- All lines should be at least 0.1 mm (0.3 pt) wide.
- Scanned line drawings and line drawings in bitmap format should have a minimum resolution of 1200 dpi.

- Vector graphics containing fonts must have the fonts embedded in the files.

Halftone Art

- Definition: Photographs, drawings, or paintings with fine shading, etc.
- If any magnification is used in the photographs, indicate this by using scale bars within the figures themselves.
- Halftones should have a minimum resolution of 300 dpi.

Combination Art

- Definition: a combination of halftone and line art, e.g., halftones containing line drawing, extensive lettering, color diagrams, etc.
- Combination artwork should have a minimum resolution of 600 dpi.

Color Art

- Color art is free of charge for online publication.
- If black and white will be shown in the print version, make sure that the main information will still be visible. Many colors are not distinguishable from one another when converted to black and white. A simple way to check this is to make a xerographic copy to see if the necessary distinctions between the different colors are still apparent.
- If the figures will be printed in black and white, do not refer to color in the captions.
- Color illustrations should be submitted as RGB (8 bits per channel).

Figure Lettering

- To add lettering, it is best to use Helvetica or Arial (sans serif fonts).
- Keep lettering consistently sized throughout your final-sized artwork, usually about 2–3 mm (8–12 pt).
- Variance of type size within an illustration should be minimal, e.g., do not use 8-pt type on an axis and 20-pt type for the axis label.
- Avoid effects such as shading, outline letters, etc.
- Do not include titles or captions within your illustrations.

Figure Numbering

- All figures are to be numbered using Arabic numerals.
- Figures should always be cited in text in consecutive numerical order.
- Figure parts should be denoted by lowercase letters (a, b, c, etc.).

- If an appendix appears in your article and it contains one or more figures, continue the consecutive numbering of the main text. Do not number the appendix figures,"A1, A2, A3, etc." Figures in online appendices [Supplementary Information (SI)] should, however, be numbered separately.

Figure Captions

- Each figure should have a concise caption describing accurately what the figure depicts. Include the captions in the text file of the manuscript, not in the figure file.
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- No punctuation is to be included after the number, nor is any punctuation to be placed at the end of the caption.
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Authors must indicate whether or not they have a financial relationship with the organization that sponsored the research. This note should be added in a separate section before the reference list.

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Appendix B – CECA Questionnaire

Social (2) Childhood

1. One or both of your biological parents died, before age 17?

1.a. Mother died [O -77 Not Recorded] O0 No O1 Yes

1.b. Father died [O -77 Not Recorded] O0 No O1 Yes

2. Separated from a biological parent (longer than 6 months), before age 17?

2.a. Separated from mother [O -77 Not Recorded] O0 No O1 Yes

2.b. Separated from father [O -77 Not Recorded] O0 No O1 Yes

2.e. What was the main reason for the separation? [O -77 Not Recorded]

O1 Parental Illness	O2 Divorce, Separation	O3 Work	O4 Never knew parent	O5 Own illness
O6 Boarding school	O7 Migration	O8 Other		

2.g. Specify other: …………………………………..

	Age					
Before the age of 17 years …	**0-11**			**12-16**		
3. Ever change schools? (other than change to secondary)	O-77 NR	O0 No	O1 Yes	O-77 NR	O0 No	O1 Yes

Notes

Before the age of 17 years …	**Age 0-11**			**Age 12-16**		
4. Ever hit/slapped on number of occasions, enough to cause harm?	○-77 NR	○0 No	○1 Yes	○-77 NR	○0 No	○1 Yes
5. Ever sexually abused?	○-77 NR	○0 No	○1 Yes	○-77 NR	○0 No	○1 Yes

If **yes to Q7:**

(1) Perpetrator	**(2) Age started**	**(3) Age ended**	**(4) Duration yrs**	**(4) Duration mths**	**(5) Frequency**	**(6) Severity**	**(8) Official contact**
☐	______	______	☐	☐	☐	☐	☐

If **yes to Q 8:**

(1) Perpetrator	**(2) Age started**	**(3) Age ended**	**(4) Duration yrs**	**(4) Duration mths**	**(5) Frequency**	**(6) Severity**	**(8) Official contact**
☐	______	______	☐	☐	☐	☐	☐

RATINGS		
Perpetrator **1 Both parents; 2 Mother; 3Father; 4 Sibling; 5 Other relative; 6 Family friend; 7 Other person in household; 8 Other person outside of household**		
Frequency **0 Never; 1 Rarely (once/twice); 2 Occasionally (less than monthly); 3Frequently (monthly+); 4 Very frequently (weekly+)**		
Severity	**Physical**	**Sexual**
0 None	No abuse; Object used without possibility of causing injury; Pushed, grabbed or shoved	No abuse; Flashed by stranger; Willing sexual contact with someone the same age
1 Some	Hit with open hand; Single incidents of being slapped around head or face; Hit hard or repeatedly around body, hard enough to cause injury	Single incidents of non-intercourse abuse; Forced to watch pornography/masturbation; Verbal solicitations by relative/authority figure
2 Moderate	Punched, kicked, bitten, burnt; Implement or object used that could have caused injury	Repeated non-intercourse abuse (touching of own or others' private parts)
3 Marked	Life threatened (e.g. gun or knife); Severe/multiple injuries likely; Abuse intense and frequent	Repeated sexual abuse that involved intercourse (vaginal or anal)
Official contact **0 None; 1 Social services; 2 GP; 3 Police; 4 Other (specify)**		

Notes

Appendix C – Distribution histogram showing spread of frequencies for childhood adversities.

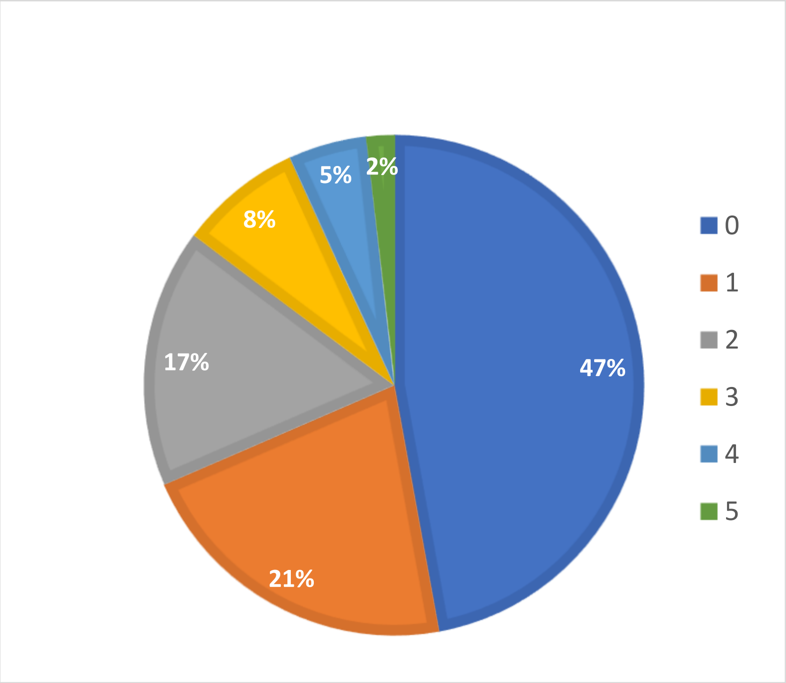

Figure 1: Pie chart displaying numbers of childhood adversity experiences experienced by each patient.

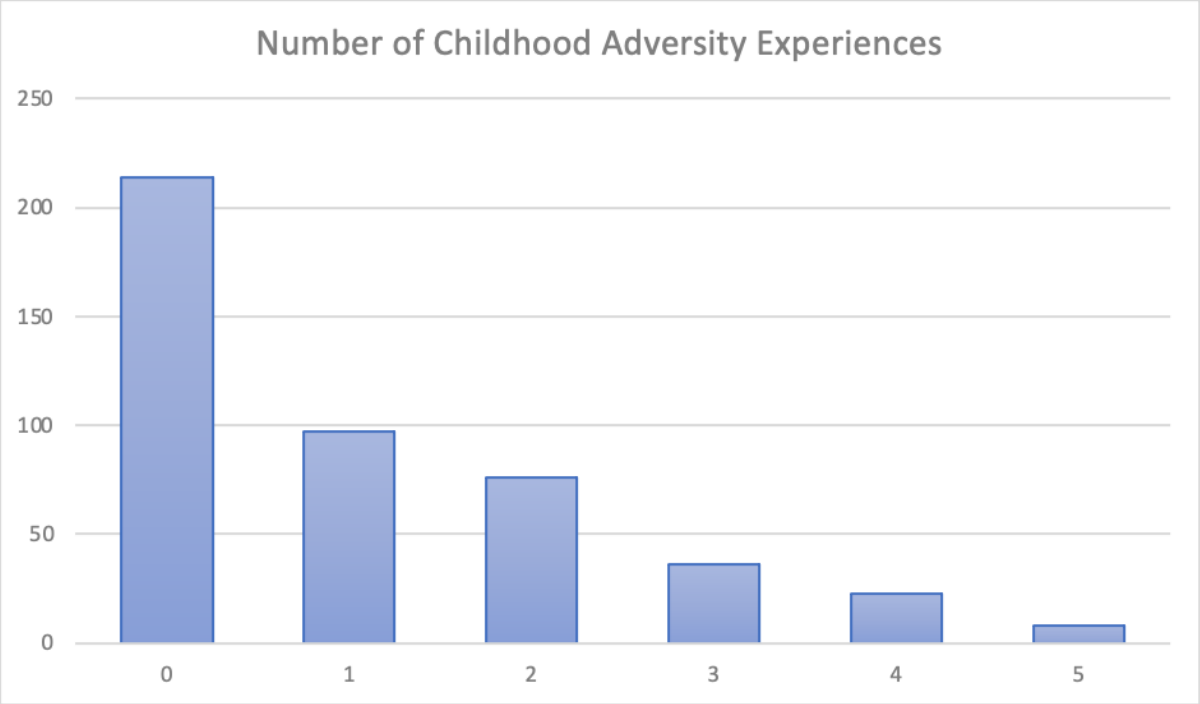

Figure 2: Histogram showing spread of number of recorded childhood adversities experienced by each participant.

Chapter Five - General Discussion and Critical Review

This chapter reflects on the findings of the systematic review and empirical paper. It will consider the implications and how they contribute to the evidence base in understanding the relationship between childhood adversity (CA) and pathways to care (PtC) for first episode psychosis (FEP). It will review the strengths and limitations of the research conducted.

5.1 Summary of findings

The systematic review of the impact of CA on PtC and help-seeking for different mental health difficulties (MHD) found twelve studies meeting the inclusion criteria. The studies originated from a variety of countries and used various screening tools to establish CA. Nine of the included papers indicated an association between experiences of CA and influences on help-seeking behaviours. The majority of studies (eight) suggested that CA increased help-seeking behaviours, although others suggested it instead as a barrier to help-seeking. No clear differences were demonstrated in the impact of CA on help-seeking across the types of MHD. The grouping of types of adversity into overall CA experiences in all but two studies made it difficult to ascertain the impact of the type of adversity. The studies also highlighted influencing effects of socio-demographic factors, duration of untreated illness, maladaptive behaviours, and perceptions on the relationship between CA and PtC.

The empirical paper explored the relationship between CA and PtC in a population-based sample (n=558) of individuals presenting to services with FEP in two London boroughs. Of the individuals included, 240 had records of CA, with 143 of these having experienced more than one adversity. The findings provided evidence that CA does impact upon PtC for FEP. Mode of onset of psychosis, previous service use and length of duration of untreated psychosis (DUP) were aspects of PtC shown to be associated with experiences of CA, with those who had CA records as more likely to experience longer DUP, insidious onset of psychosis and have previously used services for MHD. The likelihood of these occurring increased with frequency of exposure to CA. In contrast to previous findings (Trotta et al., 2016) no association was found between experiences or numbers of CA and compulsory admission. High levels of missing records meant impact of types of CA could not be examined. Gender was found to be associated with records of CA, showing that women within the sample were 1.4 times more likely to report CA. Age was also found to be associated with reports of CA, indicating that younger individuals were more likely to report CA experiences. Associations were found between number of adversities and gender with females more likely to have experienced multiple CAs. Age and family involvement were found to be weakly associated with numbers of CAs, with those who were younger or had less family involvement as having higher numbers of CA records.

The findings of these studies fit together by evidencing CA as an influencer of PtC for MHD and highlight the need for further research to clarify the direction of effect. The systematic review provided overall evidence of association between CA and help-seeking for MHD, while the empirical paper highlighted the specific aspects of PtC impacted by CA in FEP presentations. The systematic review showed mixed direction of association of CA help-seeking behaviours, whereas the empirical paper showed strong evidence that experiences of CA lead to delays in accessing support within the FEP population. Both studies drew attention to the role of social support in influencing the effects of CA and PtC. Social support was found to be important in four of the included systematic review papers. The empirical paper found only weak associations between family involvement, PtC and CA, but did show strong associations with DUP and insidious onset; both factors shown previously to be importantly linked to family support (Oduola et al., 2019; Oduola et al., 2021). The papers also substantiated the role of age and gender influencing the association, as well as the importance of stigma and beliefs in intentions to seek help.

5.2 Implications

5.2.1 Clinical implications

The aim of this portfolio was to provide insight into how CA can impact on PtC and to clarify its role as a potential influencer during MHD, in particular FEP. In doing so it hopes to inform patient care and provide evidence for services to deliver early intervention (EI) to improve patient outcomes (Dadds et al., 1997; Halfin, 2007; Singh, 2010). The findings add CA to the growing list of factors known to influence individuals when needing to seek help for MHD including during psychosis. They provide insight into how CA can impact several stages of the care pathways, suggestive of the need to tackle this impact from multiple levels. Healthcare providers can use this information to work towards developing strategies to identify and intervene early with at-risk individuals to reduce duration of untreated illness (DUI). One way of doing so would be through working more widely with communities, charities, education providers and governments to initiate public health campaigns. These could be directed at improving mental health literacy (Aguirre Velasco et al., 2020; Cheng et al., 2018), reducing stigma towards MHD generally and help-seeking (Aguirre Velasco et al., 2020; Clement et al., 2015; Corrigan et al., 2014), and boosting confidence in services (Jorm et al., 2005; Kam et al., 2019). This work could also aim to improve pathways between services to facilitate access to those disclosing experiences of CA.

Within the healthcare sector more specifically, the findings indicate a need to implement mandatory initial trauma screenings and subsequent detailed assessment of CA to ensure those with reported histories are monitored closely and well supported when experiencing MHD. This is particularly apparent in need given the strong associations between insidious onset of psychosis in those with CA experiences, making recognition more challenging due to less apparent symptomologies (Morgan et al., 2006). Additionally, initial trauma screens can identify need and offer early trauma interventions as a preventative measure to reduce risk of future MHD development (Arango et al., 2018). Moreover, the knowledge that those with CA histories experiencing FEP are increasingly likely to have previously accessed services or be experiencing comorbid presentations (Conus et al., 2010; Curran et al., 2021) increases opportunities for earlier identification and reduces risk of misdiagnosis. Previous service use can also encourage help-seeking behaviours through positive experiences and reduce stigma surrounding MHD and seeking support (Carlton & Deane, 2000; Staiger et al., 2017), both of which could help reduce DUI and encourage individuals to seek the help they need (Schomerus & Angermeyer, 2008; Shrivastava et al., 2012). Training could be offered within services to broaden the awareness of the impact of CA and upskill staff with the aim of addressing these concerns.

Clinicians who are able to recognise the impact of CA on PtC and on mental health may be more likely to adopt a trauma-informed care approach. This approach recognizes the impact of past trauma on an individual's current mental health, and emphasizes safety, trust, and collaboration in the therapeutic relationship, factors known to be key to help-seeking behaviours (Corry & Leavey, 2017; Van der Rijt et al., 2013). The systematic review highlighted the important role played by clinicians, particularly GPs, psychiatrists and therapists, as the most frequent key pathway agents for those seeking help. This information indicates who in services are more likely to encounter people experiencing MHD and might be best placed to ascertain CA histories to identify additional barriers to engaging and consider extra support. Addressing the impact of CA on PtC may also require a more integrated approach to healthcare. This can involve collaboration between mental health providers, primary care physicians, and other healthcare providers to share knowledge of CA histories to ensure that individuals receive person-centred, comprehensive, co-ordinated care.

Recognition of the socio-demographic factors found to be associated with CA and PtC also provide information to services in helping to identify people who may be more at risk of CA and subsequent development of MHD problems as a consequence (Anda et al., 2006; Dumornay et al., 2023; Haahr-Pedersen et al., 2020; Kessler et al., 1997; NSPCC, 2022). Younger individuals and women experiencing FEP are known to be more likely to have records of CA. It was not established if these rates were due to higher exposure to CAs (Haahr-Pedersen et al., 2020; NSPCC, 2022) or because these groups may be more willing to report trauma histories than their older (APA, 2013; Baral et al., 2022) or male (Mackenzie et al., 2006) counterparts. Nevertheless, it is important for services to hold in mind the potential for these to be higher at-risk groups of facing more barriers to help-seeking due to their trauma histories, whilst also considering individuals willingness to disclose CA histories and the barriers to this too.

It is also important for services to recognise the important role of families and wider social support networks in helping individuals to seek help (Addington et al., 2002) and how this can be impacted by CA (Gao et al., 2022; Have et al., 2002; Jones et al., 2019; Sheikh et al., 2016). Promoting inclusivity among those assisting individuals in need, by fostering open channels of communication, transparency throughout the caregiving journey, and empowering these networks to provide support for their loved ones. Awareness to how presence and types of social support may differ in those who have or haven’t experienced CA with family presence more likely reduced in those with CA histories (Bower, 2015; Conus et al., 2010; Ford & Blaustein, 2013; Kendall-Tackett, 2002; Runsten et al., 2014; Schomerus et al., 2013) and more reliance on non-familial relationships. Moreover, CA histories and MHD rarely impact individuals alone (NIMH, 2019) so it may be of importance to provide support to the family and friends of patients, such as through family therapy or support groups, both for their own benefit and as an aid to helping their loved ones seek support.

The high level of missing data in the empirical paper evidenced the need for clearer and more accurate record keeping of CA in clinical practice. While this was highlighted through data collection for research, it is vital that this information is clearly documented and easily accessible to care professionals given its implications on MHD development (Anda et al., 2006; Felitti et al., 1998), outcomes (Juwariah et al., 2022; Kessler et al., 2010; van der Vegt et al., 2009) and service engagement (Campbell-Sills, 2006; Dube et al., 2003). Development of a clear record keeping process for this information with reminders for completion could help improve collection and documentation processes and make the information more accessible.

5.2.2 Research implications

The findings from this portfolio summarise and add to the evidence base in understanding of CA and PtC for MHD (Benedetti et al., 2014; Conus et al., 2010; Curran et al., 2021; Morris et al., 1998; Schomerus et al., 2013; Ullman & Brecklin, 2003), confirming associations between CA and PtC for MHD. The empirical paper provides insight into specific aspects of PtC impacted by presence and frequency of CA exposures in people experiencing FEP. This finding suggests that it may be a complex relationship with some elements of PtC more impacted than others which fits in line with previous PtC in FEP research (Allan et al., 2021; Oduola et al., 2019; Oduola et al., 2021; Oduola et al., 2021). Future research could look to expand this focus to define the impact of CA on PtC in other MHD to ascertain if the impact on PtC differs across presentations. This would help to build the evidence base surrounding factors aiding early intervention in the hope MHD can be pre-empted to reduce DUI and avoid the associated consequences (Saunders & Bowersox, 2007). Moreover, while overall findings indicated associations between experiences of CA and PtC for MHD, there is less clarity as to whether it contributes as a barrier or facilitator of help-seeking, or alternatively whether it could be considered both depending on the stage of care pathway. For example where those with experiences of CA may be more likely to seek help (Karatekin, 2019; Schomerus et al., 2013), but then find it harder to engage (Karatekin, 2019; Larkin, 2017; Read, 2013) or there may be delays in health professionals recognising difficulties and referring to the right support (Mueser et al., 1998; Velligan & Miller, 1999). This suggests the importance of future research to continue exploration of CA and PtC to build evidence for the direction of effect.

Both papers highlighted a lack of focus on the effects of different types of adversity in PtC. This thesis aimed to address this but due to the high level of missing data in the empirical paper was unable to, therefore demonstrating a remaining gap in the literature for future research to explore. Moreover, as highlighted in the systematic review and empirical paper this research would benefit from using measures that cover a more consistent and inclusive range of adversities. This would help to create a clearer picture of CA in MHD populations, especially when exploring the effects of types of CA on PtC for MHD.

The frequent reference to the role of social support and family influence in the systematic review but only weak associations found in the empirical paper also indicate the need for exploration of this area. Additional study is needed to explore how CA can impact on presence of family and social support when it is known as such a key facilitator of help-seeking for MHD (Addington et al., 2002; Croudace et al., 2000; Morgan et al., 2007). This could be strengthened by broadening studies of family involvement PtC in FEP to include wider social support networks, as family presence may be reduced in those with CA histories (Bower, 2015; Conus et al., 2010; Ford & Blaustein, 2013; Kendall-Tackett, 2002; Runsten et al., 2014).

5.2.3 Theoretical implications

The findings of the thesis have theoretical implications for models of both psychosis and of help-seeking. They support the suggestions of the trauma model of psychosis (Read et al., 2005) that traditional PtC routes do not fully address underlying antecedents for MHD, such as CA. Instead, it is suggested that PtC need to take a more comprehensive approach to identifying and treating psychosis, incorporating trauma-informed care, such as therapy-focused on addressing trauma, into traditional treatment methods (Mueser et al., 1998).

Findings of the mode of onset of psychosis, importance of social support and role of demographic factors on help-seeking after CA fit the Behavioural Model of Health Service Use (Andersen & Davidson, 2007). It supports their idea that help-seeking is determined by multiple factors, fitting into three categories, predisposing characteristics, enabling factors, and need, which encompasses actual (biological/clinical) and perceived need. In addition, the findings acknowledgement of stigma further complicating the relationship between CA and PtC (Stolzenburg et al., 2018; Stolzenburg et al., 2019) contributes to the Health Belief Model (Rosenstock, 2000) emphasising how beliefs shape help-seeking intentions and outcomes.

5.3 Strengths and limitations

The main strength of the thesis portfolio is its contribution to the evidence base exploring PtC. The systematic review draws together previous findings of CA and help-seeking literature helping to summarise the limited research in this area. The understanding of which falls largely behind that of wider exploration of the impact of CA on MHD (Ajnakina et al., 2016; Alameda et al., 2015; Álvarez et al., 2011; Conus et al., 2010; Read & Bentall, 2012; Sideli et al., 2012; Stilo et al., 2013; Üçok & Bkmaz, 2007; Varese et al., 2012).

The empirical paper joins the larger portfolio of the Clinical Record Interactive Search - First Episode Psychosis (CRIS-FEP) studies (Oduola et al., 2019; Oduola et al., 2021; Oduola et al., 2021) seeking to clarify how factors impact on PtC to reduce DUI during psychosis and is the first paper of these studies to include CA. Moreover, it is the first study of its kind to explore the influence of CA on specific elements of PtC rather than help-seeking more generally. It benefitted from utilising a large, diverse sample, with 23.84% reporting White British ethnicity and the rest from ethnic minority backgrounds. Lambeth and Southwark have ethnically diverse populations, with 45% belonging to ethnic minority groups (ONS, 2011), supporting the generalisability of the study to wider populations. This is reinforced by the knowledge that individuals from minority backgrounds are more prone to experiencing psychosis, as indicated by previous research (Coid et al., 2020; Schwartz & Blankenship, 2014). Multiple imputation was used to manage missing data within the sample to improve the accuracy and reliability of analyses conducted while preserving sample size and reducing bias.

It is important that the results of these studies are interpreted with caution due to their limitations. The systematic review is limited by the low number of papers included, of which all varied in aims. The studies came from a variety of countries, and while all studies used valid measures to verify presence of MHD, it is important to consider the cultural variation implications this will have on the ability to draw these findings together. The implications of different understandings of MHD, classification of disorders and healthcare services will undoubtably result in variation in ways and views of help-seeking. Moreover, the use of varied forms of measurement of CA and the limited use of valid measurement tools for PtC undoubtably leave the findings vulnerable to subjectivity.

The empirical paper was limited by the high levels of data marked as “not recorded”, particularly for the specific types of adversity faced. This meant that some of the original aims of this thesis, to explore impacts of types of CA on PtC, could not be achieved resulting in a continued gap within the literature. This also highlighted a weakness of data collection methods, using retrospective case note review. Whilst this provided the opportunity to recruit a large sample, the reliance on second-hand records resulted in high levels of missing data, something that could have been avoided if information was collected from the source. Future research could look to address this by working with services to collect data directly, or by implementing measures to improve record keeping for future review. The study was also limited by only including five forms of CA despite many more being important (Felitti et al., 1998; Keyes et al., 2012; Pennebaker & Susman, 1988), such as neglect, institutionalisation, or emotional abuse. Therefore, future research would benefit from using measures inclusive of a wider range of CA to be more representative of CA experiences as a whole.

5.5 Dissemination

The findings of this thesis will contribute to the CRIS-FEP studies portfolio. Both papers aim to be submitted for publication post viva and will be presented at the University of East Anglia Research Conference in September 2023.

5.6 Overall conclusions

In conclusion, this thesis provides important insights into how CA can impact on PtC for MHD, specifically during FEP. It confirms a relationship between the CA and PtC for MHD, although the direction of this influence for MHD overall remains unclear. There is however evidence from the empirical paper to suggest that in FEP, CA experiences can result in delays to PtC and increase duration of untreated psychosis. Furthermore, the relationship between CA and PtC is complicated by co-occurring impacts of factors including socio-demographics, stigma and increased complex needs shown in populations exposed to CA as shown in the systematic review. This thesis highlights several areas for future research in the hopes of improving access to appropriate and timely treatment for this vulnerable population.

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