What Characteristics Are Associated With Good Versus Poor Parenting Outcomes Amongst Parents Living With Psychotic Disorders: A Confirmatory Factor Analysis

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December, 2014
Acknowledgements

To my husband, Byron and our beautiful children – Joshua and Mia.

Byron, you have been such a fantastic support through this journey. Your understanding and patience with my late night writing and constant work has been much appreciated. Without you I would not have been able to complete this degree (or the earlier ones).

Thank you, Scott, Don, Renate, Mary-Claire, Natalie, Nic and Kathryn for your help. Your time, expertise and sound advice has made this journey so much easier.

I would like to acknowledge, and thank the many Australians with psychotic disorders who gave their time and shared their stories.

I would like to acknowledge the members of the Survey of High Impact Psychosis Study Group, and the hundreds of mental health professionals who participated in the preparation and conduct of the survey.
Statement of Originality

The thesis contains no material which has been accepted for the award of any other degree or diploma in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text. I give consent for the final version of my thesis being made available worldwide when deposited in the University’s Digital Repository**, subject to the provisions of the Copyright Act 1968.

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Statement of Authorship

I hereby certify that the work embodied in this thesis contains a manuscript submitted for publication, of which I am a joint author. Below is a written statement, endorsed by my supervisors, attesting to my contribution to the joint publication.

Linda Campbell conceived of the research questions, participated in the design of the current study, and undertook some of the statistical analyses. Don and Scott Brown participated in the design of the current study, and undertook the statistical analyses. Donald Van Ravenzwaaij, Scott Brown and Linda Campbell interpreted the data, considered the implications of the study and drafted the manuscript. All other authors assisted with the writing of the manuscript, contributed to the interpretation and the implications of the findings and approved the final manuscript.

This publication is based on data collected in the framework of the 2010 Australian National Survey of High Impact Psychosis. The members of the Survey of High Impact Psychosis Study Group are: V. Morgan (National Project Director), A. Jablensky (Chief Scientific Advisor), A. Waterreus (National Project Coordinator), R. Bush, V. Carr, D. Castle, M. Cohen, C. Galletly, C. Harvey, B. Hocking, A. Mackinnon, P. McGorry, J. McGrath, A. Neil, S. Saw and H. Stain. Ethics approvals for the study were obtained from the relevant institutional human research ethics committees.
## Contents

Acknowledgements ........................................................................................................................................ 2
Statement of Originality ......................................................................................................................... 3
Statement of Authorship ....................................................................................................................... 4
Structured abstract .................................................................................................................................. 6
Literature review ..................................................................................................................................... 8
  Parents with severe mental illness ...................................................................................................... 8
  ‘Good enough’ parenting ...................................................................................................................... 11
  Individual barriers to ‘good enough’ parenting .................................................................................... 12
  Outcomes of psychosocial support ....................................................................................................... 14
  Experienced and perceived stigma ........................................................................................................ 16
  Social barriers to parenting .................................................................................................................... 17
  Symptoms and comorbidities as a barrier to “good enough” parenting ..................................................... 19
  Consequences of SMI for “good enough” parenting ................................................................................ 22
  Summary and conclusions ................................................................................................................... 23
Manuscript .................................................................................................................................................. 26
References ................................................................................................................................................ 41
  Table 1 Family composition ................................................................................................................ 46
  Table 2 Demographic and diagnostic characteristics of parents living with dependent children by gender .................................................................................................................. 47
  Table 3 The loadings of observed (indicator) variables on latent variables .......................................... 49
  Table 4. Correlation coefficients (standard error) between latent variables ........................................ 50
  Table 5. Loadings of latent variables onto outcome variable (quality of care) ...................................... 50
  Figure 1 Confirmatory Factor Analysis Tree Chart ............................................................................. 51
Appendix ................................................................................................................................................... 52
Structured abstract

**Scope:** Parenthood is central to most adult people’s personal and social identity. For many people with psychotic disorders, parenthood is associated with formidable challenges that, for some, are difficult to overcome. Some of these challenges are present prior to the onset of the psychotic disorder, yet others occur as a consequence of the disorder. Many of these challenges are associated with social disadvantage that would make it difficult to parent with or without a psychotic disorder. Others are more directly associated with disorder itself such as problematic symptoms and decreased level of functioning. Whilst some parents with psychotic disorder manage well in their parenting, others have problems that can result in poor parent-child relationships and/or loss of custody.

**Purpose:** The current study aimed to identify latent variables predictive of good enough parenting outcome amongst a representative sample of parents with psychotic disorders.

**Methodology:** The second Australian national survey used a two-phase design to include a catchment population of 1.5 million people aged 18-64 (Morgan et al., 2012). In the first phase people who attended services that support people with mental illness, such as public mental health services and non-government organisations, were screened for psychosis during the census month (March, 2010). Of those participants who screened positive (N= 7955), a randomised sample stratified by age group was chosen and asked to consider participation in the study. Thereafter, in the second phase a total of 1825 people were interviewed and assessed. Out of these participants, data pertaining to 234 parents living with dependent children were included in the current analysis. Parenting outcome was operationalized as quality of care of children (last 12 months). Five latent variables were constructed, using a hypothesis-driven approach from contemporary literature, and labelled psychosocial support, illness severity, substance abuse/dependence, adaptive functioning and parenting role. The data were analysed using a confirmatory factor analysis.

**Results:** Importantly, seventy-five per cent of participants were not identified as having any parenting dysfunction in the last 12 months (outcome variable). Out of five hypothesised latent variables, severity of illness and adaptive functioning were found to be reliably associated with the outcome variable. Meanwhile, neither the latent variables psychosocial functioning, substance abuse/dependence nor parenting role was found to be related to the
outcome variable although the variables did have an indirect relationship via their association with either severity of illness and/or adaptive functioning.

**General conclusions:** Whilst the majority of the participants were functioning adequately well in their parenting role, for those parents who were not doing well, increased symptom severity and decreased adaptive functioning presented significant difficulties.

**Implications:** Many parents with psychosis are in need of assistance to manage their parenting obligations. However, it is important to consider that symptoms and functioning can change episodically and therefore it is vital to have targeted and flexible support that can temporarily assist in times of need to improve not only parenting outcomes but also maximise child outcomes.

*Keywords:* Mental health, parents, psychosis, quality of care.


**Literature review**

In Australia, according to the Australian Bureau of Statistics, there were 2,656,000 families with children under 18 years in 2009-2010 (Australian Bureau of Statistics, 2011). Each of these families are unique although the various contexts in which people parent their children are shaped by social structures such as gender, family composition, socio-economic status, race/ethnicity and culture. Some families are exposed to more adversities than others - some manage well and some not so well. However, most parents believe that being a parent is important for whom they are as individuals and most share a desire to raise confident, happy and resilient children. Contradictory to what is often expected, most parents find it difficult to learn to parent well (Qu & Weston, 2008). Indeed, whilst parenthood brings many rewards, it is also a major life-changing event with significant challenges (Evenson & Simon, 2005; Qu & Weston, 2008; Umberson, Pudrovska, & Reczek, 2010).

For some, parenting is a particularly challenging experience. One such group of people are those parents with a severe mental illness (SMI; that is, schizophrenia, schizoaffective disorder, bipolar disorder with or without psychosis and major depression with or without psychosis). Although parents with SMI share many similar experiences with those of all parents, they are more likely to experience a much higher cumulative rate of adversity. Some of these adversities are antecedent socioeconomic factors, others occur as consequences of the SMI and some are as a result of societal attitudes. Regardless of origin, these adversities significantly affect not only the physical and psychological wellbeing of parents with SMI but also their parenting skills. The objective of this literature review is to discuss the adversities and challenges that parents with SMI experience and the impact these may have on their parenting ability with the aim of identifying vulnerability factors for poor parenting outcomes.

**Parents with severe mental illness**

It is estimated that the majority of people with SMI are parents. Hearle et al. reported that 59% of female Australian community mental health consumers were mothers (Hearle, Plant, Jenner, Barkla, & McGrath, 1999). Additionally, Campbell and colleagues noted that
the likelihood that people with psychosis in Australia will become parents has actually increased over the last decade (Campbell et al., 2012). More specifically, data from the second Australian national survey of psychosis found that more than half the women and about one quarter of men were parents, an increase of around 5% since the first Australian national survey of psychosis (Campbell et al., 2012; Morgan, Korten, & Jablensky, 2006). This is supported by Canadian research reporting that the general fertility rate amongst women with an SMI has increased over the last decade (Vigod et al., 2012).

As mentioned, parents with SMI are likely to experience more obstacles, compared to healthy parents, making it more problematic to parent well. Whilst the majority of studies of parents with SMI have focussed on parental psychopathology or the risk to the children of parents with SMI, less research has tried to determine which factors make it most difficult to parent well. More generally, studies have identified an association between factors such as poverty, social isolation, lack of employment, adequate housing, and social disadvantage not only with poor parental wellbeing but also with poor outcomes for the affected children (Manning & Gregoire, 2006; Thomas & Kalucy, 2003). In many cases such parental adversities can result in a life-long trajectory of disadvantage not only for the parents but also for the children. Research investigating the needs of parents with SMI, particularly mothers, has dramatically increased over the last decade. This has occurred as a result of raised awareness of the importance of recognising parental status and rights to optimise outcomes, not only for the parent themselves but also for that of their child(ren). In addition there has been an increased recognition that the symptoms of SMI can improve over time and that positive functional outcomes can be reached. Indeed, recently Zipursky and colleagues reminded us that, clinically, about 40% of people with schizophrenia functionally or socially recover over time (Zipursky, Reilly, & Murray, 2013). This is particularly pertinent when working with parents since decisions about care of children, including temporary and permanent removal of children, have significant long-term effects for both parent and child wellbeing.

In addition, the rights of people with mental illnesses not to be discriminated against in their roles as parents are protected in the UN Convention on the Rights of Persons with Disabilities (United Nations General Assembly, 2007). Despite this, there is still often too little focus by health care professionals on the parental status of their clients, and coordination between different services (such as adult mental health and child protection services) is often poor. It is also important to bear in mind that most health care professionals,
child protection workers and indeed clinical researchers usually only meet (or read about) people who are in the middle of acute episodes or who experience more disabling symptoms and characteristics of SMI (and therefore frequent services more often), giving rise to the ‘clinician’s illusion’. The clinician’s illusion was described by Cohen and Cohen and refers to the process by which a person’s views are biased by what they see in their daily clinical work rather than reflecting on the experiences of those people with SMI who may not be in frequent contact with services (Cohen & Cohen, 1984). Hence, parents with SMI not only struggle with the symptoms of their illness and social adversity, but also with stigma (including prejudices and discrimination) not only from people in the general community but also from people tasked to help them. Experiences of social adversity, clinical symptoms, stigma and discrimination can act in a transactional manner and result in a higher burden of disease including a decline in mental health, downward social mobility, difficulties in the parent-child relationship, and in many cases the removal of children.

Firstly though, it is important to set the scene. Many emotional thoughts and images are conjured when starting a conversation about mental health problems and parenting; most of these are negative. The thoughts that most readily come to mind are those associated with potential risks to the child growing up with a parent who is unable to look after them - a child who is at an increased risk of all sorts of poor outcomes (Seeman, 2010). These problematic outcomes - and in some instances very negative outcomes - cannot be ignored: the safety of children is and should always be of primary consideration. However, it is interesting that people rarely consider the experience of the parents and the trauma of losing access to one’s child. Nevertheless, over the last two decades an emerging body of research supporting the view that parenthood is of central importance to people with SMI offers important insights to our understanding of parents struggling with SMI. Indeed, qualitative studies by, for instance, Mowbray and colleagues noted that the role of being a mother was of the utmost importance to the interviewed women (Mowbray, Oyserman, Bybee, MacFarlane, & Rueda-Riedle, 2001). Similarly, there is qualitative evidence of the importance that fathers with SMI place on fatherhood and the responsibility they feel towards their children (Reupert & Maybery, 2009). Regardless of the challenges encountered by parents with SMI, there is ample evidence of the many positive consequences of becoming a parent. These include improved self-esteem and a stronger ability to actively deal with mental health issues including a motivational increase to participate in treatments and to cease using substances (Dolman, Jones, & Howard, 2013; Montgomery, Mossey, Bailey, & Forchuk, 2011). There are also
chilling accounts of the trauma caused by loss of custody and child removals by authorities not only from the parent but also from children (Bruskas, 2008; Fox, 1999). This is a very complex societal issue that is pertinent to many of us. To offer some perspective of the impact of parental mental illness on children, it has been estimated that around one quarter of Australian children are living with at least one parent with a non-substance use mental health problem (Maybery, Reupert, Patrick, Goodyear, & Crase, 2009). However, most of these families never come to the attention of mental health professionals, this is mainly because most of them are doing well, others because they have not sought or been offered assistance. There is evidence that support and resources can improve parenting outcomes for people with SMI (Seeman, 2012). It is therefore important to identify vulnerable parents, such as those who have an increased risk of poor parenting outcomes, to enable effective intervention.

‘Good enough’ parenting

One of the key problems when discussing what constitutes ‘good parenting’ is that there are generally no good definitions or measurements of what good parenting means. The idea of what good parenting is, what strategies parents should use and so on, is very culturally specific and changes dramatically across time in most cultures. However, it is important to understand what constitutes ‘good enough’ parenting. Care professionals and governmental agencies are tasked with the role of making decisions about the quality of parenting, particularly in relation to poor parenting and when deciding upon custody of children. These decisions have a major impact on parents and children. The concept of ‘a good enough mother’ was introduced by Winnicott in the middle half of last century (Winnicott, 1957, 1964). The idea of ‘good enough’ parenting is to describe a parent-child relationship in which not only are the basic needs (sustenance, housing, physical care and protection) of the child met but also the emotional components of the relationship are taken into account. Whilst ‘good enough’ parenting is difficult to define succinctly, typical characteristics include a secure attachment; consistent and affectionate care; clear and age appropriate boundaries and expectations; respect, understanding and nurturance of the child’s autonomy (again in an age appropriate manner); as well as the maintenance of an appropriate level of authority to ensure the health, safety, education and social development of the child (Henshaw et al., 2011). No parent is expected to be perfect, rather mistakes are expected and the negotiation management
or resolution of these mistakes is seen as valuable learning experiences for the child when set in an affectionate, warm and valuing family environment.

So why is it that some people do not manage to be ‘good enough’ parents? Of course there is no simple formula that can identify parents who will or will not become good enough. Over the years there have been many attempts to design scales to determine quality of parenting. What has been found is that whilst health care professionals are relatively proficient (or at least have strong views) in identifying good versus poor parenting, identifying parents who are ‘good enough’ is more difficult and very subjective (Taylor, Lauder, Moy, & Corlett, 2009). What is known though, is that there are many circumstances that can make parenting significantly more difficult regardless of mental health. These circumstances can include both individual factors such as personality and coping mechanisms and socio-cultural factors such as poverty. Some people living with SMI are already socially disadvantaged prior to the onset of their illness but many people also experience poor social sequelae to their illness that makes it increasingly difficult for them to parent well. Indeed, it has been reported that these psychosocial aspects as well as the chronicity of the illness can be more detrimental to the child than the mental illness itself (Thomas & Kalucy, 2003). Hence, when considering parenting ability, it is important to consider individual and psychosocial barriers and the interplay between these barriers and the symptoms of the mental illness.

**Individual barriers to ‘good enough’ parenting**

Age can influence parenting ability and being a young parent can be very challenging. It is well established that there is an increased risk of adverse long-term health and psychosocial outcomes for younger, in particular teenage, parents (Ermisch, 2003). In a recent Western Australian study, it was found that teenage mothers were more likely to be from socially deprived backgrounds (Lewis, Hickey, Doherty, & Skinner, 2009). Overall teenage mothers were more likely to smoke, to have pregnancy related health issues such as anaemia and hypertension; they were also more likely to have poor birth outcomes including stillbirths, children of low birth weight and low Apgar scores. Teenage parenthood is also more common among people with SMI. Indeed the average age at which people with SMI become parents is lower, on average at 20 years of age (Nicholson & Miller, 2008), compared
to the general population with 28 years of age being the current median age of first-time mothers (Li, Zeki, Hilder, & Sullivan, 2012). A recently published Canadian study, utilising population-based records, indicated that the likelihood of young women (aged 15-19) with SMI becoming pregnant was significantly higher compared to their peers (Vigod et al., 2014). Complications during pregnancy, birth or early in the child’s life have also been found to be more common for Australian mothers with SMI, irrespective of age, compared to mothers with no known psychiatric disorder (Jablensky, Morgan, Zubrick, Bower, & Yellachich, 2005). For instance, obstetric complications are more likely, children are at an increased risk of gaining less weight in utero, being born with low birth weight, being born prematurely, as well as having an increased risk of still birth or early infant death (Bennedsen, Mortensen, Olesen, & Henriksen, 1999; King-Hele et al., 2009; Webb, Abel, Pickles, & Appleby, 2005). In addition, many parents with SMI have children with significant medical or behavioural problems.

The second Australian national survey of psychosis identified that 7% of fathers and about one quarter of the mothers had children with medical or behavioural needs (Campbell et al., 2012; Morgan et al., 2012). Although the reason for this is not clear, the authors suggested this increased risk was likely to be due to both biological and behavioural factors with a higher risk for those mothers who were pregnant after the onset of the psychiatric disorder. Regardless of their origin, these adversities are likely to impact parenting ability. They are likely to influence the attachment process between parent-infant and may interact with one another to increase the likelihood of negative parenting outcomes.

The timing of motherhood in relation to the onset of the SMI has also been found to influence parenting outcomes, with those mothers who developed the illness around the time of their child’s birth having the poorest outcomes (Mowbray, Bybee, Oyserman, & MacFarlane, 2005). Meanwhile, mothers who had their children before the onset of the SMI had the best outcomes. It was suggested that these mothers would have had a chance to establish themselves vocationally and socially prior to the SMI and also that they would have developed appropriate parenting styles (Mowbray et al., 2000). However, whilst being a young parent, experiencing adverse events around the time of the birth of the child with a disability are important risk factors for both the parent and the child; frequently associated psychosocial adverse circumstances (further discussed below), such as sole parenting role, lower educational attainment, unemployment, poverty and difficulties finding appropriate housing also make it more difficult to parent well (Ermisch, 2003).
Outcomes of psychosocial support

The person parents most often turn to with regards to parenting issues and support is their partner or spouse. Married parents are more likely to be buffered against some of the potentially stressful demands that accompany having children such as finances, work issues and the various emotional demands including the effects of role overload (Cunningham & Knoester, 2007; Walen & Lachman, 2000). Good mental health is more frequently present among married parents compared to those who are sole parents (Evenson & Simon, 2005); indeed having a partner can act as a protective factor against stress and poor mental health (Crosier, Butterworth, & Rodgers, 2007; Jackson, 1992). For people with an SMI, the likelihood of getting married is lower compared to the rest of the population and there is also a higher likelihood of separation and divorce (Breslau et al., 2011). In a US longitudinal study, Mowbray et al reported that only 40% of the mothers in their cohort with SMI were currently married or cohabiting with a partner (Mowbray et al., 2001). Of the remainder of the sample, half had never been married and half were separated or divorced. Similarly, in the second Australian national survey of psychosis, only around one third of parents with a psychotic disorder who had dependent children (aged below 18 years of age) were married or cohabiting whilst a little over one third were separated, divorced or widowed, with around one quarter had never married (Campbell et al., 2012). With low marriage and partner rates and high levels of divorces, there are also likely to be a high number of sole parents, non-custodial parents, cohabiting parents, and step-parents with SMI, which confers additional challenges. Indeed, being a single parent has been identified as a risk factor for problematic parenting among women with schizophrenia (Abel, Webb, Salmon, Wan, & Appleby, 2005). Similar to people without mental illness, there is evidence that being married or cohabiting is associated with more favourable outcomes among people with SMI (Nyer et al., 2010). More specifically, middle aged or older people with SMI who were married, but not necessarily parents, rated their own quality of life higher than those who were not married or cohabiting. However, it is not always good news to live with a partner. Many people with SMI experience problematic relationships that cause significant stress especially when the partner have his/her own mental health issues (including substance use) or is violent. For instance, for mothers with SMI at least, there are reports of high rates of conflicts in their partnerships (Mowbray, Bybee, Hollingsworth, Goodkind, & Oyserman, 2005). In addition, the same
study of women with SMI indicated that living with a partner did not confer any advantages compared to living alone with children. The authors argued that this might be related to the high level of relationship problems reported by the women in the study, indicating that rather than being a source of support the partner acts as a further stressor. Women who were living with their children and extended family reported the best outcomes, although this finding was mediated by race. More specifically, it was found that African-American mothers living with extended family, rather than living just with their own children, displayed less distress and more satisfaction even when important variables such as overall social support, clinical variables and various demographic variables had been taken into account. However, for white American mothers the results were weaker and also in the opposite direction, showing that these mothers found living with extended family more difficult and not as helpful. Indeed, frequent conflicts with extended family members were reported. Meanwhile, positive emotional support from extended family was associated with better functioning for white Americans only whilst negative support was found to be strongly associated with poorer symptomatology and day-to-day functioning for both groups.

Psychosocial support and a sense of connectedness is important for both physical and psychological wellbeing (Umberson & Montez, 2010). For most people, having someone to rely on for help when one is in need, having someone to talk to and confide in or to obtain advice and information from and not least to validate one’s identity is important for wellbeing. Social support can be sought (and received) from many sources including family and friends, but also from community and societal organisations. A qualitative study found that women with SMI identified family members and health care workers as providing the most support with friends giving emotional support (Chernomas & Clarke, 2003). However, overall people with SMI experience extensive social problems including social isolation and loneliness and, not unexpectedly, socialising is among the reported top challenges to people living with psychosis in Australia (Morgan et al., 2011). The importance of social support for positive parenting practices is well established.

Indeed, social support for parents has been linked with better parent-child interactions and better parenting skills (Green, Furrer, & McAllister, 2007). Whilst there are reports that mothers with SMI are better socially adjusted prior to the onset of their illness than those without children this advantage does not persist, indicating a decline in social functioning over time for those with SMI (Caton, Cournos, & Dominguez, 1999). Mothers with SMI have been found to feel socially isolated (Bassett, Lampe, & Lloyd, 1999) and to have smaller
social networks compared to people with less severe mental health problems, but similar in size to women who were similarly disadvantaged (Mowbray et al., 2000). Like non-parents, social support for parents serves many different functions and a lack of a social networks can be devastating for parents (and their children) in everyday life as well as at times of crisis, especially if partner support may not be readily available (Mowbray, Oyserman, & Ross, 1995). More generally, it has been proposed that social support networks can improve parenting skills by providing models for how to parent well but also to provide both emotional and practical assistance which may in turn act to improve perceived self-efficacy, reduce stress and improve the parenting experience (Cochran and Brasard 1979, as cited in Rogosch, Mowbray, & Bogat, 1992a). Further, parents with SMI with good social support systems have been found to function better than those who were socially isolated when they experienced a crisis (Ackerson, 2003b). In addition, those without social supports were more likely to lose custody of their children. However, there are many obstacles to improve social support for parents with SMI; some of these issues are linked to attitudes about mental illness in the general population.

Experienced and perceived stigma

Stigma is a complex construct that includes ignorance (lack of knowledge), prejudices (negative attitudes), experienced discrimination (that is the perception of unfair treatment from others due to an attribute such as MI) and self/internalised stigma (the way in which individuals sees themselves) that can have a significant impact on those who encounter it. Stigma in relation to parenting with SMI is a phenomenon frequently described by mental health consumers. Indeed, the authors of a recent meta-synthesis of qualitative studies reported that more than 75% of the papers included in the synthesis had references to the detrimental effects of stigma on mothers (Dolman et al., 2013). More specifically, it was found that the stigma these mothers reported were a hindrance to them discussing their problems openly, an impediment to socialisation, and it reduced their overall help-seeking behaviours. Jeffery et al. reported data from a telephone survey in the UK in which more than 2000 mental health consumers were interviewed about their experiences with stigma (Jeffery et al., 2013). More than one quarter of parents reported that they had experienced stigma regarding their role as a parent. More specifically, themes identified by the researchers
included being seen as unfit to be parents, to be undermined in their parental role, not being allowed to see their children, not getting much-needed support and so on. Parents with SMI also reported that they felt unfairly judged by the general population in relation to their parenting ability and that they were often not given the chance to show that they could parent well (Savvidou, Bozikas, Hatzigeleki, & Karavatos, 2003). Self or internalised stigma also occurs with parents reporting that they see themselves as poor parents due to their SMI (Dolman et al., 2013). Guilt and shame are also frequently expressed due to a sense of failing their children in different ways. Stigma, in combination with other factors, can also make it difficult for people with SMI to achieve adequate means to support themselves and their families.

**Social barriers to parenting**

Education provides opportunities to enter the workplace, to compete for more skilled work opportunities and to obtain higher remuneration. Participating in the labour force is also linked to better health outcomes both physically and psychologically (Blustein, 2008). Conversely, the lack of such stability is associated with financial uncertainty and poverty, risk factors for poor parenting practices (Charlow, 2001; Lee & Goerge, 1999). However, only 30% of people with a psychotic disorder in Australia are likely to have completed high-school (Wagorn et al., 2012), indicating that for many, disadvantage begins very early in life. Further, using data from the same survey, only half of parents living with psychosis had attained post-school qualifications (Campbell et al., 2012) which is a similar figure to those who were not parents (Wagorn et al., 2012). Overall though, those who lived with their dependent children were more likely to have achieved post-school qualifications compared to those who did not live with their dependent children (Campbell et al., 2012), possibly an indication of an overall higher level of functioning of this cohort and a later age of onset of illness. As expected, those individuals who did obtain higher levels of education were more likely to be employed (Wagorn et al., 2012). However, about 70% of parents had no paid employment in the year prior to this study (the second Australian national survey of psychosis) and the main source of income for most people was a disability pension. As can be expected general functioning and illness severity are linked to workforce participation, with those severely affected less likely to maintain employment (Luciano & Meara, 2014).
Consequently, with low levels of employment, many parents with SMI experience financial worries (Mowbray et al., 2001). Indeed, poverty is a reality for many parents living with psychosis in Australia with one-fifth of parents living with dependent children reportedly surviving on incomes below the poverty line (AU$577 per fortnight per single adult as per December 2010; Campbell et al., 2012; Melbourne Institute of Applied Economic and Social Research, 2011). Whilst social adversities, including lower income, financial strain and living in areas distinguished by social disadvantage is frequently associated with poorer mental health, for those already affected by poor mental health these circumstances can be a hindrance to recovery and result in further social decline (Kingston, 2013; Wadsworth & Achenbach, 2005). In addition, social disadvantage is linked with worse parenting practices and both familial and neighbourhood economic disadvantages are linked with poorer child outcomes (Conger & Donnellan, 2007).

Poverty is also reflected in the types of accommodation in which people reside. Having access to appropriate and satisfactory housing is an important part of wellbeing as it can increase a person’s quality of life but also improve the ability of people to develop and maintain relationships and to support community integration (Nelson, Sylvestre, Aubry, George, & Trainor, 2007; Newman, 2001; Sylvestre, Nelson, Sabloff, & Peddle, 2007). It has also been found that symptomatology and service utilisation decreases when people live in appropriate housing (Nelson & Laurior, 2010; Sylvestre et al., 2007). Of course, different people have different needs with regards to housing but generally if people feel that they have more choice and control over where they live, they will be more satisfied. Indeed, Morgan et al. (2006) stressed that housing is of paramount importance to promote better outcomes for people with SMIs such as psychosis. However, the reality is that despite the increased awareness of the importance of housing needs for psychological stability among people with SMI, most people with SMI reportedly live in unstable housing and people with SMI have been found to move more frequently than the general population (Harvey, Killackey, Groves, & Herrman, 2012). Indeed, participants in Mowbray et al.’s study (2000b) reported very low levels of satisfaction with housing and the quality of neighbourhoods among the mothers they interviewed. In the second Australian national survey of psychosis, many participants (parents and non-parents alike) reported that the housing they currently lived in was inadequate, not currently safe and that they had little choice in the type of accommodation in which they lived (Harvey et al., 2012). Whilst the majority of participants lived in public or private rental housing, only about 12% were currently living in their own home and many
were waiting for public housing. With regards to parents more specifically, Campbell et al. (2012) reported that whilst 84% of mothers with psychosis were living in their own home or rented private/public accommodation this only applied to 60% of fathers.

Lack of access to adequate housing can cause significant difficulties when trying to raise a child. Indeed homelessness, unstable tenure and an associated feeling of lack of safety can lead to worsened mental health. In addition, issues of child safety such as homelessness can in some cases lead to parents voluntarily relinquishing custody of their children and increase the likelihood of forceful removal of children (Nicholson & Miller, 2008). This is particularly pertinent for younger mothers who are more likely to experience homelessness (Montgomery, Brown, & Forchuk, 2011). Indeed, it has been argued that the loss of housing is frequently associated with a loss of children for mothers living with mental health problems (Zlotnick, 2009).

To conclude, research highlights the strong economic marginalisation to which people with SMI, and in particular psychosis, are exposed. This marginalisation is strongly linked to worse adaptive functioning, chronically or periodically, present for people with SMIs; but social support, education, workforce participation, and housing opportunities are also linked to public attitudes about mental illness. All in all, these psychosocial adversities make it difficult for people with SMI to make ends meet and provide the necessities for themselves as well as their children (Nicholson & Miller, 2008). These additional stressors are likely to exacerbate the symptoms of mental illness and further compromise the ability of parents to look after their child(ren).

**Symptoms and comorbidities as a barrier to “good enough” parenting**

The symptoms of mental illness can also have a significant impact on the parenting ability of people living with SMI; however it is important to recognise that symptoms are frequently episodic or fluctuating over time. Shared themes from interviewed fathers described the negative impact they felt that the symptoms from their illness, as well as pharmaceutical side effects (e.g., lethargy, poor memory, irritability, blocking of emotions and poor concentration) had on their ability to develop positive father-child relationships (Evenson, Rhodes, Feigenbaum, & Solly, 2008). Similar experiences have been reported in
mothers’ connections between their own symptoms and child’s behaviours, during which they described that often when they were feeling unwell, the children could ‘feel’ it and acted in more challenging ways which in turn made them feel more stressed and inadequate as parents and resulted in less optimal parenting patterns (Nicholson, Sweeney, & Geller, 1998).

Whilst ‘negative symptoms’ usually describe those experienced by people with psychotic disorders, similar symptoms occur for people with major depressive disorders such as fatigue, blunted affect, apathy, withdrawal, lack of energy and motivation (American Psychiatric Association, 2013). Cognitive impairments, such as executive dysfunction, leading to planning problems are also frequently present as a symptom of SMI (Ostler & Ackerson, 2009). Such symptoms can exacerbate problems with interpreting or understanding the needs of children and can therefore have a major impact on parent-child interactions, attachment and child development. On top of that, these symptoms make it difficult for parents to manage day-to-day parental tasks such as providing meals, making sure the children have clean clothes and helping them to school (Nicholson & Miller, 2008). Mania and positive symptoms such as delusions and hallucinations can also affect parenting skills by leading to the misinterpretation of information, to act in erratic, strange or bizarre ways and although not systematically examined, some types of hallucinations may lead to harmful behaviours (Ostler & Ackerson, 2009). Perhaps more difficult to manage from a health care point of view, is lack of insight.

Lack of insight is a feature of mental illness that essentially refers to the ability of a person to be aware of their illness, reflect on their own illness and the symptoms and the effects these have on their life. For parents, a lack of insight can be particularly problematic since it may reduce help-seeking behaviours and ultimately reduce parenting capacity. However, having insight can also lead to potentially problematic behaviours including concealment of symptoms and avoidance of help. For instance, Montgomery et al. reported that parents with insight described that they frequently masked their symptoms to protect their children and at times avoided seeking help in order to focus on the children (Montgomery, Tompkins, Forchuk, & French, 2006). Some parents reportedly opt to stop treatment, such as taking medications, in order to be able to fulfil parenting obligations (Seeman, 2010). This may lead to relapse and poorer prognosis. Conversely, it has also been reported that parents with insight into their mental health have better interactions with their children, are less likely to harm their children and more specifically show a greater level of
sensitivity - one of the key factors in emotional availability (Mullick, Miller, & Jacobsen, 2001).

The personal stress involved in enduring mental health symptoms whilst parenting can lead parents to have a low perceived parental self-efficacy, resulting in insecurity about their own ability to meet their children’s needs as well as indecision in taking positive parenting steps (Blegen, Hummelvoll, & Severinsson, 2010). Whilst diagnosis per se has not been found to be a strong indicator of parenting (in)ability, chronicity and illness severity have more prominent roles in predicting parenting ability (Mowbray, Oyserman, Bybee, & MacFarlane, 2002; Rogosch, Mowbray, & Bogat, 1992b). A recent study confirmed that symptom severity and symptom fluctuations are reflected in parenting capacity over time (Kahng, Oyserman, Bybee, & Mowbray, 2008). The study findings suggested a positive relationship between symptom decline and parenting stress, and a negative relationship between these factors and the improvement of parenting skills. Contextual psychosocial stressors such as education, social support, daily hassles, financial stress and substance use seemed to account for some of the association between symptoms and parenting skills. These findings support the lived experiences reported by parents with SMI, in which their worries are expressed about the impact of crises and relapse on their children, tacitly acknowledging that their parenting skills suffer substantially at these times especially when support is not available (Ackerson, 2003a).

Unfortunately, dual diagnoses are common among people with SMI, and parents are no different in this regard. Campbell and colleagues (2012) reported that fathers (~70%) were more likely than mothers (~45%) with SMI to have a life-time comorbid diagnosis of alcohol abuse and cannabis abuse. Comorbid substance use disorders have a negative impact on overall functioning and frequently have a detrimental impact on parenting (Nicholson & Miller, 2008). Drug and alcohol use disorders are also associated with a range of psychosocial risk factors for poor parenting such as impoverished housing, low incomes, low socio-demographic neighbourhoods, violence and disruptive behaviours. Unfortunately, drug and alcohol use disorders are closely associated with child abuse and neglect, and with increasing use, the likelihood of a parent with SMI remaining living with their child diminishes dramatically (Henshaw et al., 2011).

To conclude, in addition to the range of individual and psychosocial risk factors for poor parenting, symptoms of mental illness, drug and alcohol use can act independently and
together to make parenting more challenging. The interrelationships between these risk factors are complex and multidirectional and, although many parents with SMI thrive, for some people and their families, parenting outcomes are problematic and in some cases tragic.

**Consequences of SMI for “good enough” parenting**

Many parents with severe mental illness, given sufficient support and resources, are adequate parents despite the challenges they encounter, and for some people the illness does not interfere with parenting (Seeman, 2012). However, parenting problems among mothers with SMI in particular, but to a lesser extent fathers are well documented in the literature. Over the years there has been a focus on delineating parental deficits associated with SMI. This deficit-driven focus has served the purpose of highlighting the impact of parental illness on children and the aims of the research have been to deservedly promote the wellbeing and safety of children. However, it is important to bear in mind that many of the assessments utilised when investigating parental skills in this population are focussed on deficits or impairments and less often assess parental strengths (Nicholson, Biebel, Hinden, Henry, & Stier, 2001; Seeman, 2012).

Overall, parents’ ability to care for children physically by providing a nurturing and safe environment is frequently described as impaired, with some parents neglecting their children’s needs (Göpfert, Webster, & Seeman, 2004; Reupert & Maybery, 2009). Additionally, the parents’ ability to interact and form appropriate emotional relationships with their children has also been found to be deficient (Göpfert et al., 2004; Reupert & Maybery, 2009). More specifically, parents with SMI have been described as being less emotionally warm, to have a reduced sensitivity and responsiveness to their child’s needs, and to show increased levels of intrusiveness and hostility (Conroy et al., 2012; Manning & Gregoire, 2006). These behaviours can result in poorer child-parent attachment and the bond between the parent and child may be weaker than it would be otherwise. Parents also frequently express concerns regarding their own feelings of incompetence and uncertainty of their own ability to parent well (Ackerson, 2003a) and as a result when parenting older children, parents (in particular mothers) frequently adopt a permissive or non-restrictive parenting style (Oyserman, Bybee, Mowbray, & Hart-Johnson, 2005). These failures in
adequate parenting may be caused by distorted perceptions of parents caused by the illness but may also be closely related to psychosocial stressors and comorbidities.

As a consequence of poor parenting skills and the associated challenges, there are large numbers of parents with SMI who lose custody of their children for either a short or long period of time (Seeman, 2012). Gewurtz et al. reported that as many as 84% of their Canadian rural community mental health care consumers did not live with their children and that many had very few opportunities to meet with their children (Gewurtz, Krupa, Eastabrook, & Horgan, 2004). Similarly in the UK, 26% of mothers with SMI reported that they had at some point lost custody of their child (Hollingsworth, 2004), whilst 68% of mothers engaged with supported rehabilitation had experienced a permanent loss of custody from at least one dependent child (Dipple, Smith, Andrews, & Evans, 2002). Data from the second Australian national survey of psychosis indicated that 70% of fathers with dependent children and 31% of mothers did not live with their children (Campbell et al., 2012). The majority of the children were cared for by the other parent (mothers: 19%; fathers 60%), however 42% of mothers and 76% of fathers had at least one child cared for by other relatives or in external care (mothers: 23% and fathers: 14%). In some cases the custody of the child remained with the child’s other parent after a separation or divorce. Alternatively, the child lived with a close family member. In other cases, though, the child had been removed and placed in foster care. The removal of children from the care of their parents is carried out to protect the emotional and physical wellbeing of the child. However, the removal inevitably is a very traumatic experience for both the parent and the child (Seeman, 2012). The experience of having a child removed when in a vulnerable position, such as acute illness, can also be very confusing and bewildering for parents especially if the episode is associated with a lack of insight.

**Summary and conclusions**

There is a common conviction that psychotic illnesses are intractable and that people with a SMI diagnosis are unable to recover. This is often linked to the belief that people with severe mental illnesses, and in particular those with psychotic illnesses are unable to parent well. However, it has been argued that even though it is likely that a psychotic illness will have an impact on parenting, it does not necessarily mean the impact will be detrimental.
Indeed, Seeman (2011) argues that if mothers living with psychosis are given “well-timed, appropriate, and adequate education and resources” (p.1), they can parent their children well. However, she further suggests that the attitudes held towards parents with SMI by the general community ensure that they are given limited opportunities to actually show that they are competent parents. Regardless, the literature indicate that whilst accurate and objective investigations of parental skills are important to fully appreciate the ability of the parent to care for any given child, it is also important to consider factors closely associated with SMI including level of disability, and social support. Good social networks in particular have been identified as significantly protective in keeping custody of a child (Reupert, Maybery, & Kowalenko, 2012; Seeman, 2012). Indeed, such factors have been found to be more important for child outcomes than the mental illness itself (Rutter & Quinton, 1984).

Conversely, the timing, chronicity and severity of parental SMI are important predictors of adaptive parenting skills, with the most significant risk for negative outcomes for parents (and their children) being the presence of comorbid substance abuse (Reupert & Maybery, 2009; Reupert et al., 2012).

To conclude, parents with SMI face many adversities that can have a negative impact on their ability to parent well. Most of these factors, such as substance use, poverty, inadequate housing, unemployment and a lack of social support, are critical determinants of positive outcomes for all parents, not only those with an SMI. Other challenges are more directly linked with the illness itself such as severity, effects of medication or non-adherence to treatment and the potential for relapses. However, parents with SMI report that the role as a parent is incredibly important to them and a source of esteem, and it has even been suggested that they actually value their role as parents more highly than people without an SMI. Dolman et al (2013) suggested that this may be due to the precariousness of their parenting with the constant threat of losing access to their children but also due to the lack of other important aspects of life that increase wellbeing.

The way forward for working with parents with SMI is to recognise and respect the transformative experience it is to become a parent and the importance that most parents place on their role of being a parent. Despite the inherent uniqueness of each family, there are some aspects that are most likely universally shared such as the wonder, excitement, and the sense of responsibility but also fear and thrill of having a child; and people with SMI are certainly not exempt from this human experience. It is also important to recognise how not only the symptoms of the illness but also the presence of social structural adversities affects the
emotional and psychological wellbeing of the parent and, as a consequence, their parenting ability. The importance of safety for the child remains primary but if it is possible to provide a safe and nurturing environment for the child with their parent, together with adequate support and resources, this must surely be preferable to placing yet another child into the precarious fate of the child protection system; a system that today is stretched well beyond its resources (Australian Institute of Health and Welfare, 2010). Hence, we need to focus our research not only on those people who are struggling with their parenting but also include those who, despite challenges, are doing well or at least providing ‘good enough’ parenting. That will provide us with more comprehensive and generalizable that will assist with developing programs to improve parenting.

In the following manuscript, I will present a cross-sectional study aiming to identify predictors of “good enough” parenting outcome among a representative cohort of parents living with severe mental illness (predominantly psychotic disorders). This cohort was not recruited as a function of their parental status; rather they were recruited as participants in the second Australian national survey of psychosis. The research question asked was ‘Are there any particular characteristics that are associated with good versus poor parenting outcomes? We hypothesised that, on the basis of earlier literature, better adaptive functioning, less severe illness symptomatology, low levels of substance abuse, and strong psycho-social support would significantly predict good parenting outcomes. The manuscript includes a brief introduction, a method and result section and a discussion section.
Severity of illness and adaptive functioning predict quality of care of children among parents with psychotic disorders: A confirmatory factor analysis

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Abstract

**Background:** Parenthood is central to the personal and social identity of many people. For individuals with psychotic disorders, parenthood is often associated with formidable challenges. We aimed to identify predictors of adequate parenting amongst parents with psychotic disorders.

**Methods:** Representative data from the second Australian national survey of psychosis pertaining to 234 parents living with dependent children were analysed using a confirmatory factor analysis. Parenting outcome was operationalized as quality of care of children (last 12 months). Five hypothesis-driven latent variables were constructed and labelled psychosocial support, illness severity, substance abuse/dependence, adaptive functioning and parenting role.

**Results:** Importantly, 75 per cent of participants were not identified to have any dysfunction in the quality of care provided to their child/ren. Severity of illness and adaptive functioning were reliably associated with quality of care/parenting. Psychosocial support, substance abuse/dependence and parenting role had an indirect relationship to the outcome variable via their association with either severity of illness and/or adaptive functioning.

**Conclusions:** The majority of parents in the current sample provided adequate parenting. However, for those parents who were not doing well, greater symptom severity and poorer adaptive functioning presented parents with significant difficulties. These parents are in need of assistance to manage their parenting obligations. It is important to consider that symptoms and functioning can change episodically and provision of targeted and flexible support that can temporarily assist in times of need is vital. This would maximise the quality of care provided to vulnerable children, with potential long term benefits.

**Keywords:** Mental health, parents, psychosis, quality of care.
Introduction

Parenthood is a common aspiration, however this role is difficult to fully prepare for, often involving a range of emotions and practical responsibilities. For most people the steep learning curve involved with becoming a parent is a joyous, albeit at times very challenging, part of life. However, the decline of the extended family system and rise of the nuclear family can potentially reduce the opportunity for modelling of positive parenting skills and lead to a lack of extended family support for parents (Bessant and Watts, 2007). People with psychotic disorders might find the parental journey even more challenging for this and other reasons.

As can be expected, parents with severe mental illnesses (SMI) including psychotic disorders, have the same aspirations to parent well and hold comparable dreams and fears for their children as do parents without SMI (Ackerson and Venkataraman, 2003, Fudge et al., 2004). While many individuals with SMI derive a great deal of pleasure from engagement in the parenting role (Bassett et al., 1999), many report considerable stress, making it challenging for them to parent well. Many non-parents and parents alike, with psychotic disorders, live in poverty and have difficulties completing education, maintaining employment, and having satisfying social relationships (Plant et al., 2002, Campbell et al., 2012). Moreover, low levels of parental satisfaction are often reported despite many parents with psychotic disorders rating themselves as effective parents (Plant et al., 2002). These stressors have been linked to poor parenting outcomes including difficulties in forming attachments to their children and nurturing them appropriately (Oyserman et al., 2000).

Indeed, mothers with psychosis appear particularly prone to poor parenting outcomes compared to parents with, for example, mood disorders (Landeen et al., 2007). More than half of women and around a quarter of men with psychotic disorders are parents (Campbell et al., 2012), making it important to identify factors that increase the likelihood of positive child and parent outcomes.

Parents who experience a psychotic disorder become parents on average at 20 years of age, with 65% of those yet to experience their first episode of psychosis (Morgan et al., 2005, Miller and Nicholson, 2008). For those 35% whose psychotic illness precedes parenthood, managing symptoms and meeting parental role obligations places immense pressure on them.
and on their family and friends (Caton et al., 1999). Furthermore, women who developed SMI, including psychotic disorders, around the time of their child’s birth had worse parenting outcomes compared to those who had their children before mental illness onset (Mowbray et al., 2005). Yet, mothers with psychosis who have higher levels of marital and social support, and are of higher socio-economic status, cope better with crises and have better parenting outcomes (Landeen et al., 2007, Morgan et al., 2012). However, in reality many mothers with psychosis report wanting more support and often experience loneliness (Hearle et al., 1999, Howard et al., 2001, Blegen et al., 2010). For parents with psychosis, having access to support and respite in times of crisis or hospitalisation is critical (Morgan et al., 2012).

Underlying the social isolation of both mothers and fathers, there is often a pervasive sense of fear that their illness will lead to stigmatisation and custodial loss of their children to protective services or, if separated, to the other parent (Zemencuk et al., 1995, Bassett et al., 1999). Unfortunately, fear of custodial loss is not unfounded, with 30-80% of mothers with psychotic disorders having lost custody of their children (Nicholson et al., 2001). This fear can inhibit parents from engaging with services that may help them, not only in their parenting role but also for their own physical and psychological wellbeing (Nicholson et al., 2001).

Discrimination and stigma complicate recovery for parents with psychotic disorders (Landeen et al., 2007, Wilken, 2007). Furthermore, legal officials, case workers and mental health clinicians assigned to make decisions in the best interests of the children often hold biased beliefs that individuals with psychotic disorders are inferior parents (Seeman, 2012, Jeffery et al., 2013). However, course of illness more accurately predicts parental functioning than diagnostic status (Rutter and Quinton, 1984, Ackerson and Venkataraman, 2003). Additionally, people with psychotic disorders often experience various challenges that can make it more difficult to parent, regardless of diagnosis, such as low levels of education and subsequent problems with obtaining well-paid and flexible employment (Campbell et al., 2012).

Further, people with psychotic disorders are more likely to experience insecure living circumstances including homelessness compared to the general population (Harvey et al., 2012). In addition, substance use in individuals with psychosis is common: around 70% of fathers and 45% of mothers with psychotic disorders have a life-time substance use comorbidity (Campbell et al., 2012). Substance use increases the risk of treatment noncompliance, exacerbates pre-existing illness and impairs overall functioning and
parenting capacity (Seeman, 2002, Nicholson and Miller, 2008). Additionally, substance use disorders are strongly associated with social disadvantage, violence, disruptive behaviour, and, child abuse and neglect (Henshaw et al., 2011). Poor insight, common amongst individuals with psychotic disorders, can exacerbate parenting difficulties in this group (Pini et al., 2001, Landeen et al., 2007), and can also inhibit many parents from the ability to evaluate how well the family unit is functioning and seeking help when necessary (Plant et al., 2002).

The current study aimed to identify predictors of positive parenting outcomes for adults with psychotic disorders, using data from the second Australian national survey of psychosis (Morgan et al., 2012). The key question was: Which characteristics predict good versus poor parenting outcomes? If these predictors could be identified, this information would enable clinical services to recognise which families with a psychotic parent are most likely to be struggling and in need of help. The rich unique survey dataset used, allowed the examination of quality of care provided to their child/ren for the last 12 months (outcome variable) by both mothers and fathers; and investigation of the relationships between parenting outcomes, parental clinical characteristics, demographics and current psycho-social variables. We hypothesised that better adaptive functioning, less severe illness symptomatology, low levels of substance abuse, parenting role (e.g., contact and responsibility) and strong psycho-social support would be predictive of better parenting outcomes.

**Method**

**Design and recruitment**

See Morgan et al (2012) for detailed information pertaining to the study design and participants in the second Australian national survey of psychosis. Briefly, a two-phase design was utilised to cover a catchment population of 1.5 million people aged 18-64 (~10% of Australia’s population in this age group). Firstly, attendees of public mental health services and non-government organisations, that specifically support people with mental illness, were screened for psychosis during the census month. Of those who screened positive (N= 7955), a
randomised sample stratified by age group was selected and invited to participate in the study. The exclusion criteria included inadequate English and communication or cognitive impairment hindering participation or capability to give informed consent, and current residents in nursing homes or prisons were also ineligible. Secondly, 1825 people participated in the study which included interviews and assessments undertaken from April to December 2010. All participants provided written informed consent in accordance with human research ethics approvals obtained at institutional, state, and national levels as required at each site.

Participants

The current study included a subsample of the participants in the second Australian national survey of psychosis, namely, 234 (60=men, 174=women) parents with psychosis aged between 20-62 years (mean age = 37, SD= 8.0). Inclusion criteria comprised living with at least one dependent child and having a role in the upbringing of their children. Although screened for psychotic symptoms during census, at the time of full assessment, parents were diagnosed as per ICD-10 (World Health Organization, 1992) with: schizophrenia (71), schizoaffective disorder (44), bipolar disorder (58), depressive psychosis (22), delusional disorder and other non-organic psychosis (9), severe depression (28), while 2 did not meet full criteria for a psychotic disorder. For additional participant information, see Tables 1 and 2.

Materials

All interviews were undertaken by trained clinicians with a mental health background; with training and fidelity checks performed across and within sites to ensure inter-rater reliability (for more information see e.g., Morgan et al., 2013). Assessment included the Diagnostic Interview for Psychosis, a diagnostic semi-structured clinical interview with good reliability and validity; and diagnoses were made using the ICD-10 classification system (Castle et al., 2006, World Health Organization, 2008). The remaining survey consisted of 33 modules including questions about education, accommodation, income, substance use, stigma, social
and occupational function, service utilisation, past and present symptoms, and intellectual ability. The Multidimensional Scale of Independent Functioning (MSIF) which has good criterion, discriminative, inter-rater, and construct validity, assessed global independent functioning with corrections for level of support and performance relative to community norms, and reflected the participant’s overall level of adaptive functioning while controlling for the level of performance in each category (Jaeger et al., 2003). Participants were asked about the number of biological and step children they had, how many of these were under 18 years of age, the living and shared-care arrangements, child-care needs, and contact with child protection services. Quality of care of child(ren) in the last 12 months was rated. The ratings were based on participant report and interviewer enquiry/exploration using a number of probes and other relevant interview information, pertaining to e.g., how much time they had spent with the child, and their involvement in their physical, educational and social upbringing. There were three Quality of Care ratings: no dysfunction (defined as participating in child-care about as much as the average carer of same sex/age group would under similar circumstances), obvious dysfunction (defined as having little interest in child-care, or reduced competence for up to half the time), and severe dysfunction (defined as a total lack of interest in child-care, or reduced competence for more than half the time or evidence of neglect). These three Quality of Care ratings provided the operational definition of ‘parenting outcome’.

**Analysis**

Descriptive statistics were extracted using IBM SPSS statistical software (version 22.0; SPSS, Chicago, IL, USA). Initially, mothers and fathers were compared on the number of biological and step-children, number of dependent children and number of dependent children living at home as well as elsewhere (see Table 1) using one-way ANOVAs with gender as the between-group variable. Then, chi-squared tests assessed univariate associations between nominal variables of interest including current housing, fortnightly income, age group of onset, course of disorder, overall global independent functioning, life time substance use disorder, child-care role, sharing arrangements, children with special needs, contact with community services (last 12 months) and quality of care of child/ren (last 12 months). Adjusted residuals (cut-off value of 2) were inspected to enable interpretation of
the chi-squared tests, and Cramer’s V provided an indication of the strength of association among the levels of the row and column variables (>0.5, high association; 0.3–0.5, moderate association; 0.1–0.3, low association; 0–0.1, little if any association).

Confirmatory factor analysis (CFA) tested hypothesised associations between groups of indicator variables and parenting outcome, operationalised as quality of care of children (last 12 months). Associations were mediated by latent variables which corresponded to the hypotheses arising from the literature review above. Five latent variables were investigated, labelled: psychosocial support, illness severity, substance abuse/dependence, adaptive functioning and parenting role. The observed variables that operationalised these latent variables are listed in Table 3, e.g., the latent variable “illness severity” was intended to quantify the severity of parents’ illnesses, and was operationalised by variables such as the age of onset of symptoms, and the lifetime presence/absence of symptoms such as hallucinations and self-harm behaviours (see Table 3).

The CFA model structure is illustrated in Figure 1. Each observed variable was used as an indicator for only one latent variable. All latent variables were allowed to correlate with one another, and to directly associate with the outcome measure. The parameters of the model were estimated using the CFA routine in the package “lavaan” for the statistical programming language R. We report parameters estimated on the scale defined by standardising at the level of latent variables. Both the R language and the lavaan package are freely-available open-source software (R Development Core Team, 2004, Rosseel, 2012).

Results

Participant characterisation

Characteristics of the participants in the study are shown in Tables 1 and 2. The majority of parents were married or in a de facto relationship. However it was more common for fathers to still be married and for mothers to be divorced \[\chi^2 (2, n=234) =13.03, p<0.001, \text{Cramer’s} V=0.24]. Many parents had completed higher education (42% fathers; 44% mothers), but more than one quarter of parents had no post-high school qualifications. The majority of
parents lived in their own or public/private rental accommodation, and had a fortnightly income above $300. Most parents experienced illness onset between the ages of 20-34 years and had experienced multiple episodes of illness. The majority of parents were in the ‘mild to somewhat disabled’ functioning range but it was more common for mothers than fathers to fall in this range, with more fathers having moderate to severe disability [$\chi^2 (2, n=234) =11.05, p<0.004, \text{Cramer’s } V=0.22$]. About half the sample had life-time substance use disorder.

The mean number of children was 2.41 (SD 1.39) for mothers and 2.22 (SD 1.33) for fathers. Most parents had no children living elsewhere (78% of fathers; 84% of mothers). It was more common for mothers to rate themselves as primary caregivers compared to fathers, and fathers were more likely to have a less than equivalent level of caregiving responsibility [$\chi^2 (3, n=234) =47.51, p<0.0005, \text{Cramer’s } V=0.45$]. When care responsibilities were shared, they were most frequently shared with a partner or the child’s other parent (94% of fathers; 87% of mothers). A smaller proportion relied on the child’s grandparents for help (6% of fathers; 13.2% of mothers). Of the parents who received child care support, 82% reported that they would have some or a lot of difficulties if child care support or help was no longer available. Twenty per cent of fathers and 24% of mothers reported caring for children who had psychological or physical special needs. Importantly, around three quarters of the sample were rated as having no dysfunction in their quality of care for their child/ren (last 12 months). No relationship between quality of care and ratings of insight were identified (p>.05). Three quarters of parents had not been in contact with child protection services in the past 12 months. Seventy per cent of those who had been in contact with child protection services were in the group rated as providing adequate care. Seventeen out of 40 parents, who reported that they were in contact with non-governmental organisations for various types of support, had received specific advice or support with parenting in the last 12 months and 17% of all parents reported that they had received family support from other services.

**Confirmatory Factor Analysis (CFA)**

The CFA approach greatly simplified the complex patterns of association naturally present in such a large, variable dataset. Of the five latent variables hypothesised to influence parenting
outcome, two were reliably associated with this outcome measure, and strongly so: illness severity (r=-.49, z=-3.1, p<.01) and adaptive functioning (r=.825, z=3.7, p<.001), while all other proposed latent variables had p>.52. The indicators that loaded onto the latent variable measuring illness severity were age of onset, duration of illness, self-harm and life time symptoms of hallucinations, delusions and subjective thought disorder. Meanwhile, the ability to perform household activities, self-care, overall residential performance, overall global work rating and global independent functioning loaded onto the latent variable measuring adaptive functioning.

The influence of the remaining three latent variables on parenting outcomes was mediated by the illness severity and adaptive functioning variables. These associations were detailed in the CFA model’s estimated correlations between the latent variables (see Table 4). The two predictive latent variables (illness severity and adaptive functioning) correlated significantly (r=.43, z=4.6, p<.001). Additionally, the latent variable measuring strength of psychosocial support was significantly associated with both of the predictive latent variables: illness severity (r=.41, z=4.4, p<.001); and adaptive functioning (r=.43, z=6.1 p<.001). Finally, there was marginal evidence for a correlation between latent variables quantifying substance abuse and illness severity (r=.29, z=2.1, p=.03).

Discussion

Parents with psychotic disorders experience a high cumulative rate of adversities that makes parenting very challenging. Due to the long-term consequences of poor parenting, not only for the child but also the parent, it is important to identify parents at risk of providing inadequate quality of care to their children. The most pertinent finding in the current study was that the majority of parents were functioning adequately, with 75% having no reported dysfunction in the quality of care of their child/ren over the past 12 months. Wide dissemination of these findings could reduce the effect of stigma from members of the community, health care professionals, and parents with psychotic disorders. The knowledge that others in the same situation find strategies to cope and even flourish could bestow a sense of hope on parents with psychotic disorders.
We hypothesised that better adaptive functioning, less severe illness symptomatology, low levels of substance abuse/dependence, and strong psycho-social support would significantly be associated with, and predict, better quality of care of child/ren in the last 12 months. Our hypotheses were partially supported with the two latent variables ‘illness severity’ and ‘adaptive functioning’ being significantly associated with quality of care of child/ren in the last 12 months. Hence, attention in the clinical setting should continue to focus on ameliorating symptom severity and the concomitant experience of stigma; but should be fortified by a further concentration on adaptive strategies to improve everyday functioning. However, it is still important to focus on improving the parent-child relationship. Forman and colleagues (2007) reported that whilst psycho-therapeutic interventions for mothers with postnatal depression could reduce symptomatology and improve parenting stress, no improvement in the parent-child relationship was found. In fact early parental attitudes towards the child predicted more negative child outcomes at 18 months later.

Illness severity is a significant risk factor for poor parenting, and has been identified in many studies (see for instance, Mowbray et al., 2002). Consistent with the literature, the latent variable of illness severity included the age at which the illness emerged (with a younger illness onset associated with lower quality of care), whilst a longer duration of illness, and life-time presence of symptoms such as hallucinations, delusions, subjective thought disorder and self-harm were associated with lower quality of care of children.

Psychosis symptoms (and medication side effects) includes a range of cognitive and emotional problems including lethargy, irritability, poor concentration, blunted affect, withdrawal, lack of energy and motivation (Nicholson et al., 1998, Evenson et al., 2008). The presence of such symptoms can make it difficult for parents to interact well with their children and to form appropriate relationships. Other problems closely related to positive symptoms can include misinterpretation of information, and erratic and bizarre behaviours which may adversely impact parenting (Ostler and Ackerson, 2009). It is important to recognise the impact that symptoms of mental illness have on child-rearing but also imperative to be cognisant of their frequently episodic and fluctuating nature. Although parents may periodically find it difficult to provide good enough parenting, they may be able to provide adequate care for their children at times when symptoms have decreased or support has increased: a well-designed longitudinal study showed that when mental illness symptoms decreased, parenting stress decreased and was associated with an increase of parental adaptive behaviours including nurturance (Kahng et al., 2008).
Meanwhile, the ability to perform household activities and carry out other residential obligations, to look after oneself appropriately, to function at work and overall global independent functioning loaded onto the latent variable adaptive functioning. Parents with poor functioning are likely to have difficulty caring for a child when not provided with appropriate support. Indeed, neglect is a risk factor for removal of children from the home (Ostler and Ackerson, 2009). Negative symptoms and cognitive impairments in particular make it difficult not only to plan but to be motivated to accomplish daily parental tasks such as providing meals and ensuring the children have clean clothes (Nicholson and Miller, 2008). As expected, the level of adaptive functioning was moderately associated with severity of illness, suggesting that parents with psychotic disorders experience more problems in performing everyday activities when in a more active or severe phase of the illness. This then has a cumulative negative effect on the responsibilities associated with child-rearing.

Despite strong evidence for a link between psychosocial support and parenting outcomes in the literature (Chernomas and Clarke, 2003, Evenson and Simon, 2005), our results did not show a direct association between psychosocial support and quality of care for children. However, psychosocial support was associated with severity of illness and adaptive functioning; suggesting psychosocial support indirectly influences quality of parenting in the context of severity and adaptive functioning. Specifically, the results show that parents with the highest needs reported the lowest levels of psychosocial support. Whilst the current study does not allow the determination of direction of the relationship, other studies have found that psychosocial support can improve the likelihood of recovery (Corrigan and Phelan, 2004, Tew et al., 2011) and potentially, by extension, improve parenting outcomes.

An interesting, potentially related finding was that the majority of parents who had been in touch with child protection services over the last year, were rated as providing adequate care for their children. Unfortunately the nature of the available data did not allow for a closer examination of this finding but there are several different explanations that might be possible. Firstly, it is possible that the self-ratings are biased and that parents fail to recognise their own inadequacies although the careful interviewing of the parents using the established protocol should have minimised this bias. Secondly, it might also be so that contact with the child protection services either directly or indirectly (through partner organisations) provides the parent with help and assistance necessary to provide better care for their child.
Indeed, parents with better psychosocial networks, including marital and social relationships, are more likely to have good parenting outcomes (Abel et al., 2005) and have been found to function better in times of crisis compared to socially isolated parents, and to be less likely to lose custody of their children (Ackerson, 2003). Conversely, parenting stress is reportedly higher for mothers when they experience less psychosocial support and more social contextual risk factors such as frequent daily hassles (Kahng et al., 2008). Furthermore, research on the general population suggests parents who have good psychosocial support have more adaptive interactions with their children and stronger parenting skills. Moreover, it is argued that people who provide effective social support can act as positive role models as well as providing emotional support (Rogosch et al., 1992, Green et al., 2007). Hence, by providing social support and opportunities to develop friendship, the community can provide a buffer to the exacerbation of symptoms and related functional difficulties while offering an avenue for the discovery of coping strategies and development of adaptive behaviours. Taken together with our findings, the growing recognition of the importance of psychosocial support for parents suggests greater need for longitudinal studies which model inter-relationships between psychosocial support and other factors relevant to parenting.

Substance misuse is generally recognised as a strong risk factor for poor parenting outcomes in the general population (Ostler and Ackerson, 2009), and occurred at a high rate in the current sample; however, abuse/dependence was indirectly linked to parenting outcome through the weak association with illness severity. Substance misuse potentially influences parenting outcomes for people with substance use disorders through other pathways. Indeed the relationship between substance abuse/dependence and psychosocial support was moderate; indicating a risk of poor psychosocial networks for people with substance use disorders may be a significant factor to consider. Finally, the participants’ parenting role, that is, the amount of contact with children over the past 12 months and their child care involvement, was also not associated directly with quality of care. However, it was significantly associated with adaptive functioning such that parents with lower levels of functioning did not interact as much with their children as parents with a higher level of functioning. This underscores the importance of parental functioning, indicating treatment efforts aimed at improving parents’ functioning are also likely to benefit their children.

One of the strengths of the current study of parenting is that it involved a large representative sample of people with psychotic disorders. However, due to the cross-sectional nature and diverse range of enquiry within the second Australian national survey of psychosis, the items
mapping specifically onto the parenting section lacked sufficient detail to comprehensively explore the parenting experiences of the participants. It would have been informative to examine the timing of illness onset relative to parenthood, the nature of the relationship between parent and child, the parental experiences of parenting and more specific information pertaining to, for example, the living situation. It would also have been preferable to have more than a single outcome to measure quality of parenting. Although the ratings were based on participant self-report and interviewer enquiry/exploration using probes and other relevant interview information, a more objective measure of parenting such as observational home-visits or dyadic interactions would have added value to the current study.

Conclusions and Future Studies

Parenting can be challenging, especially for people who have encountered significant numbers of adversities such as those faced by people with psychosis. Our findings underscore a growing body of literature stating that parents with psychotic disorders are in high need of specifically-targeted interventions addressing issues, such as practical and social support and stress-reduction related to parenting challenges, which commonly trigger illness relapse for many parents (Nicholson et al., 1998). Some clinical services may not consider the parenting status of clients and care is often designed to a ‘one-size-fits-all’ model (Fudge et al., 2004). Cognisant services would ask all clients about their parental roles and responsibilities. Greater understanding of predictive factors for parenting difficulties and poor parenting outcomes would assist to improve targeting of appropriate and effective supports for parents and their children. Interventions should aim to include parenting techniques but also work on improving the parent-child relationship directly (Forman et al., 2007). It is also critical for services to acknowledge the economic burden for these parents in having their children at home, and the potential for heightened stress.

Regardless of formidable challenges, parents with psychosis value their role as parents and being a parent is a critical part of their identity and daily lives. Our results indicate there are many parents with psychosis who are doing well; however, the quality of their parenting is directly affected by their illness severity and daily functioning. Additionally, psychosocial support and substance abuse/dependence may indirectly influence the parenting ability of an
adult with psychosis. In addition financial hardship is present for many of these parents making it even more difficult to parent well. It is important to acknowledge that the support needs of parents with psychotic disorders are likely to change episodically and therefore, treatment plans should be flexible and targeted to times of greater needs. Adults with psychotic disorders should receive increased support not only prior, but also subsequent, to the birth of their child, to assist them on their parental journey. Finally, parenthood needs to be viewed as more central to recovery from mental illness, along with connectedness, empowerment, future-centred hope and optimism as part of finding meaning and purpose in life (Tew et al., 2011). This will entail providing more effective and better-targeted treatment and support to parents with psychosis.

Acknowledgements

This publication is based on data collected in the framework of the 2010 Australian National Survey of High Impact Psychosis. The members of the Survey of High Impact Psychosis Study Group are V. Morgan (National Project Director), A. Jablensky (Chief Scientific Advisor), A. Waterreus (National Project Coordinator), R. Bush, V. Carr, D. Castle, M. Cohen, C. Galletly, C. Harvey, B. Hocking, A. Mackinnon, P. McGorry, J. McGrath, A. Neil, S. Saw, and H. Stain. Ethics approvals for the study were obtained from relevant institutional human research ethics committees. This report acknowledges all the effort and hard work by the local site coordinators. We would also like to thank the hundreds of mental health professionals who participated in the preparation and conduct of the survey and, importantly the many Australians with psychotic disorders who gave their time and whose responses form the basis of this publication.
References


Nelson, G., Sylvestre, J., Aubry, T., George, L., & Trainor, J. (2007). Housing choice and control, housing quality, and control over professional support as contributors to the subjective quality of life and community adaptation of people with severe mental illness. *Administration and Policy in Mental Health and Mental Health Services Research, 34*(2), 89-100. doi: 10.1007/s10488-006-0083-x


**Table 1 Family composition**

<table>
<thead>
<tr>
<th></th>
<th>Mothers</th>
<th>Fathers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N=174</td>
<td>N=60</td>
</tr>
<tr>
<td>Mean (SD)</td>
<td>Range</td>
<td>Mean (SD)</td>
</tr>
<tr>
<td>Biological children</td>
<td>2.41 (1.39)</td>
<td>2.22 (1.33)</td>
</tr>
<tr>
<td>Stepchildren</td>
<td>.22 (1.01)</td>
<td>.43 (.98)</td>
</tr>
<tr>
<td>Dependent children</td>
<td>1.91 (1.07)</td>
<td>2.23 (1.35)</td>
</tr>
<tr>
<td>(including stepchildren)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dependent children living at home</td>
<td>1.70 (.96)</td>
<td>1.87 (.98)</td>
</tr>
<tr>
<td>Children living elsewhere</td>
<td>.21 (.52)</td>
<td>.37 (.78)</td>
</tr>
<tr>
<td>Variables</td>
<td>Mothers</td>
<td>Fathers</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>---------</td>
<td>---------</td>
</tr>
<tr>
<td>N (%)</td>
<td>N (%)</td>
<td></td>
</tr>
<tr>
<td><strong>Marital status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single, never married</td>
<td>40 (23)</td>
<td>6 (10)</td>
</tr>
<tr>
<td>Married or de Facto</td>
<td>78 (44.8)</td>
<td>43 (71.7)</td>
</tr>
<tr>
<td>Separated, divorced, widowed</td>
<td>56 (32.2)</td>
<td>11 (18.3)</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No qualifications</td>
<td>52 (29.9)</td>
<td>17 (28.3)</td>
</tr>
<tr>
<td>Leaving certificate</td>
<td>22 (12.6)</td>
<td>8 (13.3)</td>
</tr>
<tr>
<td>Higher Education</td>
<td>76 (43.7)</td>
<td>25 (41.7)</td>
</tr>
<tr>
<td>Tertiary education</td>
<td>18 (10.3)</td>
<td>4 (6.7)</td>
</tr>
<tr>
<td>Other</td>
<td>6 (3.4)</td>
<td>6 (10)</td>
</tr>
<tr>
<td><strong>Current housing</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Own or public/private rental</td>
<td>108 (62)</td>
<td>33 (55)</td>
</tr>
<tr>
<td>Family home (with own parents)</td>
<td>17 (9.78)</td>
<td>7 (11.77)</td>
</tr>
<tr>
<td>Supported group accommodation</td>
<td>0 (0)</td>
<td>1 (1.67)</td>
</tr>
<tr>
<td>Homeless</td>
<td>2 (1.15)</td>
<td>1 (1.67)</td>
</tr>
<tr>
<td>Other including hospital, institution</td>
<td>2 (1.15)</td>
<td>1 (1.67)</td>
</tr>
<tr>
<td><strong>Fortnightly income</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than $300 or NK</td>
<td>6 (3.7)</td>
<td>3 (5.2)</td>
</tr>
<tr>
<td>$300-499</td>
<td>17 (10.6)</td>
<td>13 (22.4)</td>
</tr>
<tr>
<td>$500-799</td>
<td>61 (37.9)</td>
<td>25 (43.1)</td>
</tr>
<tr>
<td>$800-1000</td>
<td>47 (29.2)</td>
<td>6 (10.3)</td>
</tr>
<tr>
<td>More than $1000</td>
<td>30 (18.6)</td>
<td>11 (19.0)</td>
</tr>
<tr>
<td><strong>Age group of onset</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under 20</td>
<td>50 (28.9)</td>
<td>16 (26.7)</td>
</tr>
<tr>
<td>20-34</td>
<td>96 (55.5)</td>
<td>35 (58.3)</td>
</tr>
<tr>
<td>Over 34</td>
<td>27 (15.6)</td>
<td>9 (15.0)</td>
</tr>
<tr>
<td><strong>Course of Disorder</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single episode</td>
<td>16 (9.2)</td>
<td>2 (3.3)</td>
</tr>
<tr>
<td>Multiple episodes</td>
<td>126 (72.4)</td>
<td>46 (76.7)</td>
</tr>
<tr>
<td>Continuous chronic illness</td>
<td>32 (18.4)</td>
<td>12 (2)</td>
</tr>
<tr>
<td><strong>Overall global independent functioning</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normal functioning</td>
<td>31 (17.8)</td>
<td>11 (18.3)</td>
</tr>
<tr>
<td>Very mild/somewhat disabled</td>
<td>118 (67.8)</td>
<td>29 (48.3)</td>
</tr>
<tr>
<td>Moderately/severe disabled</td>
<td>25 (14.4)</td>
<td>20 (33.3)</td>
</tr>
<tr>
<td><strong>Substance use disorder</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LT alcohol abuse/dependence</td>
<td>75 (43.1)</td>
<td>34 (56.7)</td>
</tr>
<tr>
<td>LT cannabis abuse/dependence</td>
<td>82 (47.1)</td>
<td>34 (56.7)</td>
</tr>
<tr>
<td>LT other abuse/dependence</td>
<td>54 (31)</td>
<td>20 (33.3)</td>
</tr>
<tr>
<td><strong>Any children living elsewhere</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Child care role</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>121 (69.5)</td>
<td>13 (21.7)</td>
</tr>
<tr>
<td>Shared equally</td>
<td>37 (21.3)</td>
<td>27 (45)</td>
</tr>
<tr>
<td>Less than equal but substantial</td>
<td>13 (7.5)</td>
<td>11 (18.3)</td>
</tr>
<tr>
<td>Minimal</td>
<td>3 (1.7)</td>
<td>9 (15)</td>
</tr>
<tr>
<td>Sharing care responsibility with partner or</td>
<td>46 (86.8)</td>
<td>44 (93.6)</td>
</tr>
<tr>
<td></td>
<td>No dysfunction</td>
<td>Obvious dysfunction</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>----------------</td>
<td>---------------------</td>
</tr>
<tr>
<td><strong>Children with special needs</strong></td>
<td>41 (23.6%)</td>
<td>12 (20)</td>
</tr>
<tr>
<td><strong>Contact with community services</strong></td>
<td>45 (25.9%)</td>
<td>14 (23.3)</td>
</tr>
<tr>
<td><strong>Quality of childcare</strong></td>
<td>135 (78.5%)</td>
<td>42 (71.2)</td>
</tr>
<tr>
<td></td>
<td>33 (19.2)</td>
<td>12 (20.3)</td>
</tr>
<tr>
<td></td>
<td>4 (2.3)</td>
<td>5 (8.5)</td>
</tr>
</tbody>
</table>

*Adjusted residuals equal or exceed threshold.
Significance values from Chi-square analyses: ** p<.01 ***p<0.001.
## Table 3: The loadings of observed (indicator) variables on latent variables

<table>
<thead>
<tr>
<th>Latent variables</th>
<th>Observed Variables</th>
<th>Loading (Standard Error)</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Psychosocial support</strong>*</td>
<td>Overall socialising</td>
<td>0.759 (0.055)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td></td>
<td>Number of friends</td>
<td>-0.676 (0.047)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td></td>
<td>Loneliness</td>
<td>0.855 (0.034)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td></td>
<td>Personal relationships</td>
<td>0.529 (0.071)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td></td>
<td>Relationships with other people</td>
<td>0.929 (0.03)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td></td>
<td>Relationships with family</td>
<td>0.678 (0.07)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td></td>
<td>Satisfaction with help and support from case worker</td>
<td>0.328 (0.086)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td></td>
<td>Experiences of stigma or discrimination</td>
<td>0.445 (0.099)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td><strong>Illness severity</strong></td>
<td>Age of onset</td>
<td>-3.305 (0.976)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td></td>
<td>LT symptoms of hallucinations</td>
<td>0.694 (0.137)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td></td>
<td>LT symptoms of delusions</td>
<td>0.421 (0.159)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td></td>
<td>LT symptoms of subjective thought disorder</td>
<td>0.669 (0.116)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td></td>
<td>Duration of illness</td>
<td>1.69 (0.849)</td>
<td>0.05</td>
</tr>
<tr>
<td></td>
<td>Self-harm</td>
<td>0.538 (0.145)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td><strong>Substance abuse/dependence</strong></td>
<td>LT diagnosis of alcohol abuse/dependence</td>
<td>0.792 (0.099)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td></td>
<td>LT diagnosis of cannabis abuse/dependence</td>
<td>0.949 (0.097)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td></td>
<td>LT diagnosis of other abuse/dependence</td>
<td>0.744 (0.093)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td><strong>Adaptive functioning</strong></td>
<td>Ability to do household activities</td>
<td>3.158 (0.536)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td></td>
<td>Self-care</td>
<td>0.636 (0.09)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td></td>
<td>Residential performance</td>
<td>0.851 (0.029)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td></td>
<td>Overall global work rating</td>
<td>0.870 (0.028)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td></td>
<td>Overall global independent functioning</td>
<td>0.976 (0.021)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td><strong>Parenting role</strong></td>
<td>Child care involvement</td>
<td>-0.771 (0.176)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td></td>
<td>Contact with children over last 12 months</td>
<td>0.503 (0.159)</td>
<td></td>
</tr>
</tbody>
</table>

* Higher score signifies lower levels of support. LT = lifetime
### Table 4. Correlation coefficients (standard error) between latent variables

<table>
<thead>
<tr>
<th></th>
<th>Illness severity</th>
<th>Substance Abuse/dependence</th>
<th>Adaptive functioning</th>
<th>Parenting Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychosocial support</td>
<td>.407 (.093)</td>
<td>.404 (.096)</td>
<td>.430 (.071)</td>
<td>.042 (.126)</td>
</tr>
<tr>
<td>Illness severity</td>
<td>.291 (.137)</td>
<td>.430 (.094)</td>
<td>- .059 (.156)</td>
<td></td>
</tr>
<tr>
<td>Substance Abuse</td>
<td></td>
<td>.141 (.107)</td>
<td>.110 (.166)</td>
<td></td>
</tr>
<tr>
<td>Adaptive functioning</td>
<td></td>
<td></td>
<td>-.616 (.148)</td>
<td></td>
</tr>
</tbody>
</table>

### Table 5. Loadings of latent variables onto outcome variable (quality of care).

<table>
<thead>
<tr>
<th></th>
<th>Regression Coefficient (Standard Error)</th>
<th>Z-Score</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychosocial support</td>
<td>0.103 (0.161)</td>
<td>0.637</td>
<td>.524</td>
</tr>
<tr>
<td>Illness severity</td>
<td>-0.488 (0.157)</td>
<td>3.112</td>
<td>.002</td>
</tr>
<tr>
<td>Substance Abuse</td>
<td>0.020 (0.156)</td>
<td>0.128</td>
<td>.899</td>
</tr>
<tr>
<td>Adaptive functioning</td>
<td>0.852 (0.225)</td>
<td>3.664</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Parenting Role</td>
<td>0.022 (0.217)</td>
<td>0.103</td>
<td>.981</td>
</tr>
</tbody>
</table>
Figure 1: Confirmatory Factor Analysis Tree Chart

Predictors of Quality of Parenting in Psychotic Disorders
Appendix

The full dataset contains survey of psychosis data from 1825 participants. For this paper, we have selected only those participants who have at least one dependent child. This leaves 234 participants (60 males, 274 females, aged between 20-62 years) for the final data analysis.

Some of the variables in the dataset were recoded to make them more suitable for the analysis. Below, we list all the recodings that were necessary:

- **FamilyRel**: relationships with family (last week): answers “many parts of family role could not carry out” and “could not carry out any part of family role” were merged, because there was only one count of the latter response.

- **Qualification**: highest qualification obtained: Answers “left school no qualifications” and “secondary school qualification/leaving certificate” were merged. Answers “TAFE certificate”, “nursing qualification (hospital based training)”, “trade certificate/apprenticeship”, “technicians/advanced trade certificate”, and “associate diploma” were merged. Answers “undergraduate diploma”, “bachelor degree”, “postgraduate diploma”, “masters/doctorate”, and “other specify” were merged. The resulting groups were ordered in ascending levels of qualifications obtained.

- **Housing**: current housing – aggreg: Answers “supported accommodation”, “homeless: primary, secondary, or tertiary”, “institution/hospital”, and “other incl caravan” were merged. Answers “public rented house/unit” and “family home” were merged. Answers “private rented house/unit” and “own house/unit” were merged. The resulting groups were ordered in ascending levels of housing.

- **SelfCare**: self care (personal or dental hygiene in last 4 weeks): Answers “obvious dysfunction” and “severe dysfunction” were merged.
- GlobalIndepFunc: MSIF - overall global independent functioning (last 4 weeks): Answers “extremely disabled” and “totally disabled” were merged.

- NoOwnChildren: no. of own children and NoDepChildren: no. of dependent children living with (incl. stepchildren): All answers higher than 3 were merged into the category “higher than 3”.

- ContactChildren: any form of contact - children (incl. stepchildren): Answers “less than once a month” and “at least monthly” were merged.

- QualityCare: quality of caring for child/children (last 12 months): Answers “obvious dysfunction” and “severe dysfunction” were merged.

- IPMHadm: no. of MH inpatient admissions - past year: All answers higher than 1 were merged into the category “higher than 1”.

- Q27_10csmCt: contact with case manager (last 12 months) and Q31_10cont: contact with NGO case manager (last 12 months): Answers “not at all”, “at least once in the last 12 months”, “at least once every 6 months”, and “at least once every 3 months” were merged.

Based on those recodings, we ran a number of models. The first model included

- Factor Psychosocial Support with indicators Socialising: overall socialising (last 12 months), NoFriends: number of friends, ExpStigmaDiscr: experienced stigma or discrimination due to mental illness (last 12 months), Loneliness: perceived loneliness (last 12 months), PersonalRel: personal relationships (last week), OtherRel: relationships with other people (last week), FamilyRel: relationships with family (last week), and SatisCasemng: satisfaction with case manager (last 12 months).


- Factor Disability with indicators HouseholdActivity: incapacity for household activities (no. of days in last 4 weeks), SelfCare: self care (personal or dental hygiene in last 4 weeks), ResidentialPerf: MSIF - residential performance (last 4 weeks), GlobalWorkFunc: MSIF - overall global work rating, GlobalIndepFunc: MSIF - overall global independent functioning (last 4 weeks).

- Factor Parenting Role with indicators NoOwnChildren: no. of own children, NoDepChildren: no. of dependent children living with (incl. stepchildren), ChildcareRespons: responsibility of childcare role, and ContactChildren: any form of contact - children (incl. stepchildren).

We regressed outcome variable QualityCare: quality of caring for child/children (last 12 months) on these five factors.
The next model we ran dropped factor Socio-Economic Status, instead regressing just Income: current net fortnightly income on the outcome variable. Also, we dropped the following indicator variables:

- From factor Illness: Depression: lifetime any depressive symptoms, Mania: lifetime any symptoms of mania - elevated or irritable mood, and Disorg: lifetime any disorganisation.

- From factor Parenting Role: NoOwnChildren: no. of own children, and NoDepChildren: no. of dependent children living with (incl. stepchildren).

We created a new factor Substance Abuse which included three indicators that belonged to Illness in the previous model: AlcoholAbuseDep: lifetime diagnosis of alcohol abuse / dependence, CannabisAbuseDep: lifetime diagnosis of cannabis abuse / dependence, and OtherAbuseDep: lifetime diagnosis of other abuse / dependence. We regressed outcome variable QualityCare: quality of caring for child/children (last 12 months) on these five factors and on indicator Income: current net fortnightly income.

The next model we ran is the one we report in the manuscript. The model is identical to the previous one, except that we regressed outcome variable QualityCare: quality of caring for child/children (last 12 months) on sex in addition to the factors and indicator mentioned for the previous model.

We have run one final model in which we attempted to split factor Psychosocial Support into
- A factor Relationships with indicators Socialising: overall socialising (last 12 months), NoFriends: number of friends, Loneliness: perceived loneliness (last 12 months), PersonalRel: personal relationships (last week), OtherRel: relationships with other people (last week), and FamilyRel: relationships with family (last week).

- A factor Experienced Satisfaction with Case Worker with indicators ExpStigmaDiscr: experienced stigma or discrimination due to mental illness (last 12 months), and SatisCasemng: satisfaction with case manager (last 12 months).

Unfortunately, this model failed to fit the data.