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Title: Men and women with psychosis and the impact of illness-duration on sex-

differences: The second Australian national survey of psychosis

Authors: Mary-Claire Hanlon ^{a,b,c,d}*, Linda E. Campbell ^{a,d,e}, Natalie Single ^f, Clare Coleman ^g, Vera A. Morgan ^{h,i}, Susan M. Cotton ^{j,k}, Helen J. Stain ^{b,l}, David J. Castle ^{m,n}

- a. The University of Newcastle, Callaghan NSW Australia;
- b. Priority Research Centre for Brain and Mental Health, The University of Newcastle, Callaghan NSW Australia;
- c. Calvary Mater Newcastle, Waratah NSW, Australia
- d. Hunter Medical Research Institute, New Lambton Heights NSW Australia
- e. Priority Research Centre GrowUpWell and the School of Psychology, University of Newcastle, Australia
- f. Centacare Bathurst NSW, Australia
- g. University of Sydney, Sydney NSW Australia
- h. School of Psychiatry & Clinical Neurosciences, University of Western Australia WA, Australia
- i. North Metropolitan Health Service Mental Health, Perth WA, Australia
- j. Centre for Youth Mental Health, University of Melbourne, Melbourne Vic, Australia
- k. Orygen, The National Centre of Excellence in Youth Mental Health, Melbourne Vic, Australia
- I. School of Social and Health Sciences, Leeds Trinity University, Horsforth Leeds, UK
- m. St. Vincent's Hospital Melbourne, Melbourne Vic, Australia
- n. University of Melbourne, Melbourne Vic, Australia

*Corresponding Author: Mary-Claire Hanlon, Priority Research Centre for Brain &

Mental Health, PO Box 833 Newcastle, NSW 2300, Australia; Mary-

Claire.Hanlon@uon.edu.au; Telephone +61 2 4014 3923; Facsimile +61 2 4014

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Abstract

We aimed to examine and compare sex-differences in people receiving treatment for psychotic illnesses in community settings, based on long or short duration of illness; expecting association between longer illness-duration and worse outcomes in women and men. Clinical, demographic and service-use data from the Survey of High Impact Psychosis were analysed by sex and duration of illness (\leq 5 years; \geq 6 years), using independent t-tests, chi-square tests, one-way ANOVA, and Cramer's V. Of the 1825 participants, 47% had schizophrenia, 17.5% bipolar and 16.1% schizo-affective disorders. Women were more likely than men to have undertaken post-school education, maintained relationships, and been living in their own homes. Women with a shorter-illness-duration showed social functioning equivalent to non-ill women in the general population. Men tended to have an early illness onset, show premorbid dysfunction, be single, show severe disability, and to use illicit substances. Men with a longerillness-duration were very socially disadvantaged and isolated, often experiencing homelessness and substance use. Men with a short-illness-duration were most likely to be in paid employment, but two-thirds earned less than \$AUD500 per fortnight. Men with longerillness-duration showed most disability, socially and globally. Interventions should be guided by diagnosis, but also by a person's sex and duration of illness.

Keywords: gender differences; human; schizophrenia; bipolar disorder; duration of illness

1. Introduction

Psychotic disorders affect approximately 2% of the population with lifetime prevalence similar for both sexes (Morgan et al., 2010; Morgan et al., 2013; Morgan et al., 2011; Morgan et al., 2012); and higher incidence for men than women (Angermeyer and Kühnz, 1988; Castle et al., 1993; MacDonald and Schulz, 2009). Characterised by heterogeneous symptomatology, functioning and outcomes, psychotic disorders may be confounded by sex, and age of onset, which varies tending to be later by 3-5 years for women than for men (Angermeyer and Kühnz, 1988; Castle et al., 1993; MacDonald and Schulz, 2009; Morgan et al., 2008).

The reported bimodal, or even tri-modal, distribution of onset suggests sexrelated vulnerability to different psychotic disorders (Castle et al., 1998; Castle et al., 2000; Castle et al., 1994; Morgan et al., 2008). Women with psychosis tend to show better social integration than men, which may be partly-explained by diagnosis type (Grossman et al., 2008; Larsen et al., 1996; Morgan et al., 2008), better coping strategies for managing symptoms (McGlashan, 2008; Schenkel et al., 2005), less disability, and better long-term well-being. Sex-differences may appear early in the illness course, even pre-morbidly (Conrad et al., 2014; Lewin et al., 2012). Women often experience a psychosocial stressor around time of onset (Morgan et al., 2008), with more depressive symptoms (Carpenter et al., 2007), and fewer negative symptoms than men.

Women's functioning eventually approximates that of men (Canuso and Pandina, 2007; Castle et al., 2000). However, in schizophrenia specifically, the prognosis for men is poorer than that for women (Ran et al., 2015), who have better remission, fewer relapses (Grossman et al., 2008), and better marital and housing outcomes (Olsson et al., 2016). While marriage may ameliorate the long-term effects of schizophrenia (Ran et al., 2016) men are relatively unlikely, compared to women with schizophrenia or the general population, to be (Campbell et al., 2012). Early intervention decreases mortality and morbidity (Henry et al., 2010; Mihalopoulos et

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al., 2009), encouraging community management (Gleeson et al., 2009; Jorm et al., 2008; Mihalopoulos et al., 2009). Early intervention potentially improves consequences for youth (especially regarding employment (Marshall and Rathbone, 2011)), and ameliorating positive symptoms (Birnbaum et al., 2015), but possibly not helping those with long-term experience of their disorder, with detrimental effects on employment, education, social functioning and physical health (Bartels and Pratt, 2009).

Additionally, onset is associated with prognosis: participants in a Hong Kong study with adult-onset psychosis were more likely to be better-functioning, women, full-time employed, smokers, have poorer medication compliance and more hospitalisation for psychiatric issues than adolescent-onset participants, and fewer had schizophrenia (Hui et al., 2014). However, an Australian study showed that compared with adult-onset, early-onset participants who received early interventions reported fewer positive symptoms and showed better global, vocational and social functioning, living comfortably in the community with a better course of illness (Amminger et al., 2011). Hence, treatment timing is important (Ehmann et al., 2014).

The Survey of High Impact Psychosis (SHIP) was conducted in Australia, where there has been a recent move from treatment delivered via general practitioners (GPs) and psychiatric specialists to case managers in publicly-delivered Mental Health Services (MHS) and Community Managed Organisations (CMOs). This is seen as a more person-centred, recovery-focussed method of holistic care that reduces stigma and enables peer support and treatment compliance (National Mental Health Commission, 2015a, b).

Few authors have specifically explored the impact of illness duration on sexspecific findings, and SHIP data provide this opportunity. We chose five years postfirst-episode as a cut-off point for our examination into duration of illness, as previous research has suggested that early intervention (during the first five years after a first episode) is effective in reducing symptom severity and improving prognosis in many domains, especially in terms of motivation and positive symptoms (Agius, 2009; Agius

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et al., 2010; Agius et al., 2009; Amminger et al., 2011; Bird et al., 2010; Birnbaum et al., 2015; Cabral and Chaves, 2010; Chen et al., 2011; Coentre et al., 2011; Cotton et al., 2011; Gleeson et al., 2009; Henry et al., 2010; Liu et al., 2010; Marshall and Rathbone, 2011; Norman et al., 2015; Norman et al., 2012; Porter, 2012; Restek-Petrovic et al., 2012; Shrivastava et al., 2012; Srihari et al., 2012; Theodore et al., 2012), and these findings continue to be replicated and debated (Carrión et al., 2017; Castle and Singh, 2015; Chong et al., 2016; Conrad et al., 2014; Ehmann et al., 2014; Galletly et al., 2016; Hahn et al., 2016; Howes et al., 2016; Hughes et al., 2014; Joyce et al., 2016; Lambert et al., 2016; Laurens et al., 2015; Lower et al., 2015; Marshall et al., 2015; McGorry, 2015; Nordentoft et al., 2014; Okasha et al., 2016; Srihari et al., 2015; Windell et al., 2015).

The aims of this study were to (1) examine sex-differences in adults receiving treatment for psychotic disorders, and (2) compare sex-differences between those with a short duration of illness (0-5 years since onset; SD) and those with a long duration of illness (6 years or longer since onset; LD). Longer illness-duration was expected to be associated with differentially-worse outcomes in women and men.

2. Methods

A comprehensive overview of the study design, including ascertainment, instruments, validity, and participant characteristics can be found elsewhere (Morgan et al., 2013; Morgan et al., 2011; Morgan et al., 2012). Briefly, the SHIP was conducted across seven catchment sites, covering 1.5 million adults aged 18-64 years (approximately 10% of the Australian population in this age group). A two-phase design was employed. In phase one, all people in contact with specialised MHSs (namely, public inpatient, outpatient and ambulatory services) and non-governmental services supporting people with mental illness (now known as CMOs) within designated catchment areas in the census month (March 2010) were screened for psychotic illness; this was supplemented with an audit of public mental health contacts in the 11 months prior to census; resulting in 7955 adults being screen-positive for

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psychosis. In phase two (April 2010 – March 2011), 1825 individuals were randomly selected from those 7955 adults and interviewed.

Interviewers and site coordinators, who were mental health professionals, attended national training workshops and had onsite training prior to interviewing participants. Weekly teleconferences and inter-rater reliability testing occurred at the start and end of data collection, and at regular time-points throughout the study.

Participants were aged 18-64 and living in the designated catchment areas at the time of screening. Exclusion criteria were: communication/cognitive impairment, insufficient English, and prison/nursing home residence. Participants provided written informed consent; most also agreed to case-note and GP access. Human research ethics approval was in place at all sites.

The interview schedule comprised 32 modules with closed and open-ended questions (depending on the module) allowing self-report on demographics, education, employment, accommodation, homelessness, income source and amount, substance use, stigma, social and occupational function, and utilisation of physical and mental health services. ICD-10 diagnosis was determined using the Diagnostic Interview for Psychosis-Diagnostic Module (DIP-DM); a semi-structured interview schedule used to rate symptom experience, using the Operational Criteria for Psychosis (OPCRIT) algorithm (Conrad et al., 2014) to assign a lifetime diagnosis; and covering premorbid functioning, age of onset, course of illness, and mode of onset (Castle et al., 2006). The National Adult Reading Test (NART) was used to rate premorbid IQ (Nelson, 1982). The Digit-Symbol Coding Task, a speed of processing task, was used to rate current cognitive performance (Kaplan et al., 1991; Randolph et al., 1998). Disability in performance at work, in study and activities of daily living, was assessed by interviewers on the basis of relevant modules, using The Multidimensional Scale of Independent Functioning (MSIF); here we report on global independent functioning (corrected for level of support and performance relative to community norms) (Jaeger et al., 2003). Participants responded to questions (Kirkpatrick et al., 1989) regarding socialising, social isolation, social withdrawal, perceived and

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experienced stigma, and relationships with family and friends. Based on these responses and the participants' demeanour, interviewers gave an overall socialising dysfunction score and diminished emotional range score. Interviewers also rated the Personal and Social Performance (PSP) which examined vocational activities, relationships, self-care, and aggressive behaviour (Morosini et al., 2000). Consequently, an overall socialising score of zero or a PSP score of 100 would indicate that the participant exhibited no social dysfunction and socialised as much as could be expected for someone of the same demographics.

2.1 Analysis

Statistical analyses were conducted in IBM[®] SPSS[®] Statistics Version 20. The sample was divided according to sex (male, female) and then also by duration of illness (SD (\leq 5 years) and LD (\geq 6 years)). Differences between men and women on a range of measures were determined using independent t-tests, chi-square tests and one-way ANOVA (with Scheffé post-hoc tests where appropriate). To assess univariate associations between nominal variables, chi-square tests were used, and their adjusted residuals inspected to report how far the observed count was from the expected count; utilising a cut-off *z* value of 2, indicating significance at the .05 level. Cramer's *V* measured the strength of association among the levels of the row and column variables (>0.5= high, 0.3 to 0.5= moderate, 0.1 to 0.3= low, 0 to 0.1= little if any association) (Cramér, 1946).

3. Results

3.1 Men-versus-Women (Tables 1 and 2)

3.1.1 Demographics

As shown in Table 1 (following), there were more men (59.6%) than women (40.4%) in the sample [$\chi^2(1, N=1825)$ =66.74, p<.001], with men significantly younger than women [t(1823)=-4.22, p<.001]. Schizophrenia was the most common diagnosis (men, 56.3%; women 33.2%), and women were more likely than men to have bipolar disorder or schizoaffective disorder [V=0.27; χ^2 (6, N=1825) =130.00, p<.001]. Age of

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onset data were missing for 10 participants thus reducing the sample for the duration of illness results. Those 10 persons without Duration data were screen-positive for psychosis but did not meet criteria for ICD-10 diagnosis. They were aged 26-56 (mean=39.40), most were male and aged closer to 26. Those in the under 5 years' group were aged 18-64 (mean=31.02), mostly male and most frequently aged around 22. Those in the 6+ group were aged 19-65 (mean=39.00) mostly male and aged most frequently at 38 years. Mean duration of illness was significantly longer for women than men [t(1813)=-2.79, p<.005].

Onset for 48.8% of the men and women was between 20-34 years of age, with 39.6% reporting onset before 20 years of age. Mean age of onset for men (23 years), was significantly younger than for women (24 years) [t(1813)=-2.24, p=.025]. Onset for women was more likely than men to be before the age of 20 or after 34 years of age [V=0.09; χ^2 (2, N=1815) =14.00, p<0.001]. Significantly more women (73%) than men (56%) experienced a psychosocial stressor prior to illness onset [V=0.17; χ^2 (1, N=1825) =53.60 p<0.001], with no sex-differences in mode of onset, which was most frequently categorised as gradual (29.1%) or insidious (42.2%).

Proportionally more women (66%) than men (58.4%) experienced "multiple episodes", and the opposite for "continuous chronic illness" (men, 33.7%; women, 25.7%). Women (53.3%) were rated as having milder disability (as per MSIF); men (57.9%) were rated as moderately-to-severely disabled [V = 0.17; χ^2 (6, *N*=1815) =106.91 p<0.001].

[Table 1 here]

Table 1. Demographics, diagnostic characteristics and global functioning of men and women

	Men		Women		Total	Statistic
	N=1087 (59.56%)	I	N=738 (40.44%)		N=1815	
	n (column %)	residual	n (column %)	esidual		
Mean age (SD)	37.46(10.92)		39.70(11.37)	-	38.36(11.16)	*** t(1823) = -4.22, p<.001
ICD-10 diagnosis (DIP, OPCRIT)						+***V=0.27, χ ² (6, N=1815)=129.12, <i>p</i> <0.001
						Fisher's Exact=130.35, <i>p</i> <0.001
Schizophrenia	612 (56.3)	9.7	245 (33.2)	-9.7	857 (47.0)	
Schizoaffective disorder	157 (14.4)	-2.3	136 (18.4)	2.3	293 (16.1)	
Bipolar, mania	141 (13.0)	-6.2	178 (24.1)	6.2	319 (17.5)	
Depressive psychosis	33 (3.0)	-3.5	48 (6.5)	3.5	81 (4.4)	
Delusional and other non-organic depression	65 (6.0)	2.2	27 (3.7)	-2.2	92 (5.0)	
Severe depression without psychosis	629 (5.7)	-5.4	96 (13.0)	5.4	158 (8.7)	
Screen-positive for psychosis, without meeting	17 (1.6)	0.9	8 (1.1)	-0.9	25 (1.4)	
diagnostic criteria						
Mean age of onset, in years (SD)	23.33 (8.13)		24.26 (9.32)		23.71(8.64)	**t(1813)=-2.24, p=0.025

Age group of onset						
Under 20	434 (30.73)	0.6	285 (38.62)	-0.6	719 (39.6)	+***V=0.09, χ²(2, N=1815)=14.00, <i>p</i> <0.001
20-34	545 (50.14)	1.7	341 (46.21)	-1.7	886 (48.8)	
Over 34	100 (9.20)	-3.7	110 (14.91)	3.7	210 (11.6)	
Duration of Illness, in years (mean, SD)	14.09 (9.90)		15.47 (10.90)		14.65 (10.34)	**t(1, 1813) = -2.79, p<.005
(min-max)	(0-50)		(0-47)			
Psychosocial stressor prior to illness onset	609 (56.0)	-7.3	538 (72.9)	7.3	1147 (62.8)	^+***V=0.17; χ2(1, N=1825)=53.60 <i>p</i> <0.001
Unemployed at onset	332 (30.5)	1.5	201 (27.2)	-1.5	533 (29.2)	ns
Mode of onset (DIP)						ns
No episode	9(0.8)	1.5	2 (0.3)	-1.5	11 (0.6)	
Abrupt, hours/days	94 (8.6)	0.7	57 (7.7)	-0.7	151 (8.3)	
Acute, 1 week	73 (6.7)	-1.0	59 (8.0)	1.0	132 (7.2)	
Moderately acute, 1 month	127 (11.7)	-1.4	103 (14.0)	1.4	230 (12.6)	
Gradual, up to 6 months	320 (29.4)	0.4	211 (28.6)	-0.4	531 (29.1)	
Insidious, more than 6 months	464 (42.7)	0.5	306 (41.5)	-0.5	770 (42.2)	

Course of disorder (DIP)

Single episode	86 (7.9)	-0.3	61 (8.3)	0.3	147 (8.1)	⁺ ***V=0.09; χ2(2, N=1825)=13.23 <i>p</i> <0.001
Multiple episodes	635 (58.4)	-3.3	487 (66.0)	3.3	1122 (61.5)	
Continuous chronic illness with or without	366 (33.7)	3.6	190 (25.7)	-3.6	556 (30.5)	
deterioration						
Overall Global independent functioning (MSIF)						
Normal functioning	48 (4.4)	-3.0	57 (7.7)	3.0	105 (5.75)	+*** V =0.19, χ2(2, N=1825)=63.52, <i>p</i> <0.001
Normal functioning Very mild/somewhat disabled	48 (4.4) 410 (37.7)	-3.0 -6.6	57 (7.7) 393 (53.3)	3.0 6.6	105 (5.75) 803 (44.0)	+*** V =0.19, χ2(2, N=1825)=63.52, <i>p</i> <0.001
Normal functioning Very mild/somewhat disabled Moderately/severe disabled	48 (4.4) 410 (37.7) 629 (57.9)	-3.0 -6.6 7.9	57 (7.7) 393 (53.3) 288 (39.0)	3.0 6.6 -7.9	105 (5.75) 803 (44.0) 917 (50.25)	†*** V =0.19, χ2(2, N=1825)=63.52, <i>p</i> <0.001

Significance values from Chi-square analyses, ** p<0.01, ***p<0.001, ns – non-significant, V=Cramer's V. + = adjusted residuals equal or exceed threshold.

^ Psychosocial stressor prior to onset of first episode significantly more likely than schizophrenia for schizoaffective disorder (mean difference .26 (SEM=.03)), Bipolar, mania (mean

difference .16 (SEM=.03)), depressive psychosis (mean difference .28 (SEM=.05)), and depression without psychosis (mean difference .22 (SEM=.04)), all p<0.001.

3.1.2 Outcomes

Substance-use was significantly higher for men than women, including alcohol [*V*=0.19; χ^2 (1, *N*=1825) =66.43, *p*<.001], cannabis [*V*=0.24; χ^2 (1, *N*=1825) =105.90, *p*<.001] and other drugs [*V*=0.13; χ^2 (1, *N*=1825) =32.21 *p*<.001].

Significantly fewer men (43.3%) than women (52.6%) had attained post-school qualifications [*V*=0.09; χ^2 (1, *N*=1825) =15.08, *p*=.001], though no sex-differences in the proportion employed or in the amount of income received. Income source (men, 85.8%; women, 83.7%) was a government payment [*V*=0.09; χ^2 (3, *N*=1825) =13.79, *p*=.003]. Men (53.3%) were less likely than women (74.1%) to own or rent public or privately-owned homes, and more likely to be living in a family home (men, 21.6%; women, 15.4%), or supported group accommodation (men, 14.4%; women, 6%) [*V*=0.23; χ^2 (4, *N*=1825) =92.96, *p*<.001].

[Table 2 here]

Table 2. Social demographics and functioning for men and women

	Men		Women		Total	Statistic
	N=1087 (59.56%)		N=738 (40.44%)		N=1825	
	n (column %)	Residual	n (column %)	Residual		
Alcohol	634 (58.3)	8.2	287 (38.9)	-8.2	921 (50.5)	^{+***} V=0.19, χ2(1, N=1825)=66.43 p<0.001
Cannabis	660 (60.7)	10.3	267 (36.2)	-10.3	927 (50.8)	^{+***} V=0.24, χ2(1, N=1825)=105.90, p<0.001
Other drugs	399 (36.7)	5.7	178 (24.1)	-5.7	57 (31.6)	^{+***} V=0.13, χ2(1, N=1825)=32.21 p<0.001
Attained post-school qualification	471(43.3)	-3.9	388 (52.6)	3.9	859(47.1)	^{+***} V=0.09, χ2(1, N=1825)=15.08, p=0.001
Current housing						^{+***} V=0.23, χ2(4, N=1825)=92.96, p<0.001
Own or public/private rental	579(53.3)	-9.0	547 (74.1)	9.0	1126(61.7)	
Family home (with own parents)	235 (21.6)	3.3	114 (15.4)	-3.3	349 (19.1)	
Supported group accommodation	156 (14.4)	5.6	44 (6.0)	-5.6	200 (11.0)	
Homeless	79 (7.3)	5.0	15 (2.0)	-5.0	94 (5.2)	
Other including hospital, institution	38 (3.5)	1.3	18 (2.4)	-1.3	56 (3.1)	

Fortnightly income						
Less than \$300 or NK	30 (2.9)	1.3	28 (4.1)	-1.3	58(3.4)	ns
\$300-499	128 (12.4)	.4	81 (11.8)	4	209 (12.2)	
\$500-799	665 (64.4)	1.6	415 (60.6)	-1.6	1080 (62.9)	
\$800-1000	135 (13.1)	6	97 (14.2)	.6	232 (13.5)	
More than \$1000	75 (7.3)	-1.5	64 (9.3)	1.5	139 (8.1)	
Main source of income						^{+***} V=0.09, χ2(3, N=1825)=13.79, p=0.003
Pension	933 (85.8)	1.2	618 (83.7)	-1.2	1551 (85.0)	
Wages (or profit from business/interest)	132 (12.1)	7	98 (13.3)	.7	230 (12.6)	
Other, including insurance	17 (1.6)	1.4	6 (0.8)	-1.4	23(1.3)	
No income/NK	5 (0.5)	-3.4	16 (2.2)	3.4	21 (1.2)	
Had paid employment in past year	365 (33.6)	1.0	231 (31.3)	-1.0	596(32.7)	Ns
Marital status						^{+***} V=0.28, χ2(2, N=1825)=146.60,p<0.001
Single/never married	789(72.6)	12.1	328(44.4)	-12.1	1117(61.2)	
Married/de facto	131(12.1)	-6.9	181(24.5)	6.9	312(17.1)	
Separated/divorced/widowed	167(15.3)	-8.0	229(31.1)	8.0	396(21.7)	

Childcare						⁺ ***V=0.29, χ2(4, N=1825)=149.98,p<0.001
All children living elsewhere cared for by other	119 (10.9)	3.1	49 (6.6)	-3.1	168(9.2)	
parent						
At least one child cared for by other relative	14 (1.3)	-3.5	28 (3.8)	3.5	42(2.3)	
At least one child in external care	14 (1.3)	-3.8	30 (4.1)	3.8	44(2.4)	
Satisfaction with life as a whole – past 12 months						ns
Mostly satisfied to delighted	529 (50.6)	1.1	336 (47.8)	-1.1	865(49.5)	
Mixed feelings	377 (36.0)	0.1	252 (35.8)	-0.1	629(36.0)	
Socialising - past 12 months						ns
Obvious/severe dysfunction	704 (64.8)	1.7	450 (61.0)	-1.7	1154(63.3)	
Have experienced stigma – past 12 months	346 (31.9)	-6.5	346 (47.1)	6.5	692 (38.1)	+*** V = 0.15, χ2(1, N=1818)=42.50 p<0.001
Current family or friend to rely on	918 (84.5)	-1.2	638 (86.4)	1.2	1556 (85.3)	ns
Current family or friend to confide in	720 (66.2)	-4.9	567 (76.8)	4.9	1287 (70.5)	+*** V = 0.11, χ2(1, N=1825)=23.72 p<0.001
Perceived lack of control with life in general – last	4 weeks					†*** V = 0.10, χ2(3, N=1825)=16.55 p=0.001
Never/rarely	403 (37.6)	2.2	238 (32.5)	-2.2	641 (35.5)	
Sometimes	403 (37.6)	.1.3	253 (34.5)	-1.3	656 (36.4)	

Often	158 (14.8)	-3.7	157 (21.4)	3.7	315(17.5)	
Nearly all the time	107 (10.0)	-1.1	85 (11.6)	1.1	192(10.6)	
Personal and Social Performance Scale (PSP)	54.62 (14.62)		59.49 (14.57)			***t(1823)=-6.99, p=<.001
(mean, SD)						

Significance values from Chi-square analyses, ** p<0.01, ***p<0.001, ns – non-significant, V=Cramer's V. + = adjusted residuals equal or exceed threshold

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3.1.3 Social Functioning; Satisfaction with Life

A greater proportion of men (72.6%) had never been married or in a long-term relationship than women (44.4%); [*V*=0.283; χ^2 (2, *N*=1825) =146.60, *p*<.001], who were more likely than men to have dependent children living with them (23.6% vs 5.5%); [*V*=0.27; χ^2 (2, *N*=1825) =128.45, *p*<0.001].

PSP scores were significantly higher for women than men, indicating better performance vocationally and behaviourally, in relationships and self-care [t(2,1823)=4.22, p=<.001]. Most had someone on whom they could rely (men, 84.5%; women, 86.4%), but women (76.8%) were significantly more likely than men (66.2%) to have someone to confide in $[\chi^2(1, N=1825)=23.72, p<.001]$. Men and women felt similarly satisfied with life as a whole (men, 50.6%; women, 47.8%). Significantly more women (47.1%) than men (31.9%) had experienced stigma in the previous 12 months $[\chi^2(1, N=1818)=42.50, p<.001]$.

3.2 Sex-by-Duration of Illness (Tables 3 and 4)

The sample was stratified by sex (men, women) and duration of illness (SD, \leq 5 years versus LD, \geq 6 years), generating four groups: SD-men, LD-men, SD-women and LD-women. The LD-men group was the largest (46.6%).

3.2.1 Demographics

More men (SD and LD; 56%) and SD-women (45.3%) were diagnosed with schizophrenia, while LD-women were diagnosed with bipolar (26.3%) and schizoaffective (20.5%) disorders [*V*=0.18; χ^2 (18, *N*=1815) =167.86, *p*<.001]. Age of onset was similar for LD-adults (LD-adults, 22 years; *p*=.823) but significantly younger than for SD-adults (SD-women, 30 years; SD-men, 27 years): that is, SD-men and SD-women differed significantly from each other, and also from LD-adults (who did not differ significantly from each other); [*F*(3,1811)=49.47, *p*<0.001; Scheffé post-hoc tests, *p*<.05].

Duration of Illness - 2	groups Short or Long Duration		Se	2X		Total	Statistic
		Men		Women			****V=0.23
		(60.9%)	ы Б	(39.1%)	<u>е</u>		y2(6, N=1815)=19.39 p=0.004
5 Years Duration or Les	s	N=234	sidu	N=150	sidu	N=384	
		% within DIP	d Re	% within DIP	d Re	% within DIP	
		ICD-10,	uste	ICD-10,	uste	ICD-10,	
		% within sex,	Adj	% within sex,	Adj	% within sex,	
		% of total		% of total		% of total	
		132	2.1	68	-2.1	200	+
	Schizophronia	66.0%		34.0%		100.0%	
	Schizophienia	56.4%		45.3%		52.1%	
		34.4%		17.7%		52.1%	
		26	.1	16	1	42	
	Schizooffoctivo	61.9%		38.1%		100.0%	
	Schizoanective	11.1%		10.7%		10.9%	
		6.8%		4.2%		10.9%	
DIF ICD-10		27	-1.3	24	1.3	51	
	Rinolar mania	52.9%		47.1%		100.0%	
		11.5%		16.0%		13.3%	
		7.0%		6.3%		13.3%	
		10	2	7	.2	17	
	Depressive psychosis	58.8%		41.2%		100.0%	
	Depressive psychosis	4.3%		4.7%		4.4%	
		2.6%		1.8%		4.4%	

Table 3: Three-way Crosstabulation: Duration of Illness by DIP ICD-10 Diagnosis by Sex

		20	1.7	6	-1.7	26	
	Delusional disorders and other non-organic nsychosis	76.9%		23.1%		100.0%	
	beidstonial disorders and other non organic psychosis	8.5%		4.0%		6.8%	
		5.2%		1.6%		6.8%	
		15	-3.7	28	3.7	43	+
	Severe depression without psychosis	34.9%		65.1%		100.0%	
		6.4%		18.7%		11.2%	
		3.9%		7.3%		11.2%	
		4	.9	1	9	5	
	Screen-positive for psychosis, without meeting diagnostic	80.0%		20.0%		100.0%	
	criteria	1.7%		0.7%		1.3%	
		1.0%		0.3%		1.3%	
		(50.0%)					****V=0.29
		(59.0%)	ual	(41.0%)	ual		χ2(6, N=1815)=120.90 p<0.001
		N=845	esid	N=586	esid	N=1431	
6 Years Duration or Mo	pre	% within DIP	ed R	% within DIP	ed R	% within DIP	
		ICD-10,	ljust	ICD-10,	ljust	ICD-10,	
		% within sex,	Ad	% within sex,	Ad	% within sex,	
		% of total		% of total		% of total	
		480	9.9	177	-9.9	657	+
	Schizophrenia	73.1%		26.9%		100.0%	
		56.8%		30.2%		45.9%	
DIP ICD-10		33.5%		12.4%		45.9%	
		131	-2.4	120	2.4	251	+
	Schizoaffective	52.2%		47.8%		100.0%	
		15.5%		20.5%		17.5%	
		9.2%		8.4%		17.5%	

	114	-6.1	154	6.1	268 +	
Disclos respin	42.5%		57.5%		100.0%	
Bipolar, mania	13.5%		26.3%		18.7%	
	8.0%		10.8%		18.7%	
	23	-3.8	41	3.8	64 †	
	35.9%		64.1%		100.0%	
Depressive psychosis	2.7%		7.0%		4.5%	
	1.6%		2.9%		4.5%	
	45	1.5	21	-1.5	66	
Delusional diservacy and other new exercise reachesis	68.2%		31.8%		100.0%	
Delusional disorders and other non-organic psychosis	5.3%		3.6%		4.6%	
	3.1%		1.5%		4.6%	
	47	-4.1	68	4.1	115 †	
	40.9%		59.1%		100.0%	
Severe depression without psychosis	5.6%		11.6%		8.0%	
	3.3%		4.8%		8.0%	
	5	6	5	.6	10	
	50.0%	-	50.0%	-	100.0%	
Screen-positive for psychosis, without meeting diagnostic	0.6%		0.9%		0.7%	
criteria	0.3%		0.3%		0.7%	

		Men		Women			†***V=0.27
		N=1079	-	N=736	-	N=1815	χ2(6, N=1815)=129.14 p<0.001
		(59.4%)	sidua	(40.6%)	sidua	% within DIP	
Total		% within DIP	d Re	% within DIP	d Re	ICD-10,	
Total		ICD-10,	uste	ICD-10,	uste	% within sex,	
		% within sex,	Adjı	% within sex,	Adjı	% of total	
		% of total		% of total			
		612	9.8	245	-9.8	857	+
		71.4%		28.6%		100.0%	
	Schizophrenia	56.7%		33.3%		47.2%	
		33.7%		13.5%		47.2%	
		453		400		202	
		157	-2.2	136	2.2	293	т
	Schizooffoctivo	53.6%		46.4%		100.0%	
	Schizoanective	14.0% 9.7%		10.5%		10.1%	
		8.770		7.576		10.176	
DIP ICD-10		141	-6.1	178	6.1	319	+
		44.2%		55.8%		100.0%	
	Bipolar, mania	13.1%		24.2%		17.6%	
		7.8%		9.8%		17.6%	
		22	2 5	10	2.5	04	1
		33	-3.5	48	3.5	100.00	Т
	Depressive psychocic	4U./%		59.3%		100.0%	
	הבאווה אלווחצוג	5.1% 1 %		0.5%		4.5% 1 E0/	
		1.0%		2.0%		4.3%	

	65	2.2	27	-2.2	92	+
	70.7%		29.3%		100.0%	
Delusional disorders and other non-organic psychosis	6.0%		3.7%		5.1%	
	3.6%		1.5%		5.1%	
	62	-5.4	96	5.4	158	†
	39.2%		60.8%		100.0%	
Severe depression without psychosis	5.7%		13.0%		8.7%	
	3.4%		5.3%		8.7%	
	9	.0	6	.0	15	
Screen-positive for psychosis, without meeting diagnostic	60.0%		40.0%		100.0%	
criteria	0.8%		0.8%		0.8%	
	0.5%		0.3%		0.8%	

Those who did not meet ICD-10 criteria for psychosis but screened positive contained cells with less than 5; and those who did not have age of onset, and therefore duration of illness, data

have been removed. Significance values from Chi-square analyses, ** p<0.01, ***p<0.001, ns – non-significant, V=Cramer's V. + = adjusted residuals equal or exceed threshold

[Table 3 here]

More SD-adults (49.2%) reported a single episode of illness compared to LDadults (6.3%); more LD-women (67.9%) were rated as having multiple episodes although some SD-adults (SD-men, 16.7%; SD-women, 13.3%) were experiencing a continuous chronic form of illness. LD-adults (LD-men, 60.6%; LD-women, 41.1%) had moderately-severely disabled global functioning [*V*=0.17; χ^2 (6, *N*=1815) =106.91 *p*<0.001].

[Table 4 here]

Table 3. Demographics, diagnostic chara	acteristics and global functioning	of men and women by shorte	er or longer duration of illness
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	Men				Women				Total	Statistic
	Shorter Duration:		Longer Duration:		Shorter Duration:		Longer Duration:			
	0-5 years' illness	residual	6+ years' illness	residual	0-5 years' illness	residual	6+ years' illness	residual		
	N=234 (12.89%)		N=845 (46.56%)		N=150 (8.26%)		N=586 (32.29%)n		N=1815	
	n (column %)	residual	n (column %)	residual	n (column %)	residual	(column %)	residual		
Mean age (SD)	29.81(11)		39.53 (9.92)		32.91(11.63)		41.47 (10.64)		38.36(11.16)	F (3, 1811) = 66.67,
										<i>p</i> <.001
ICD-10 diagnosis										
Schizophrenia	132 (56.4)	3.0	480 (56.8)	7.6	68 (45.3)	5	177 (30.2)	-10.0	857 (47.2)	+*** V = 0.18
Schizoaffective disorder	26 (11.1)	-2.2	131 (15.5)	7	16 (10.7)	-1.9	120 (20.5)	3.5	293 (16.1)	χ2(18, N=1815)=167.86,
Bipolar, mania	27 (11.5)	-2.6	114 (13.5)	-4.3	24 (16.0)	5	154 (26.3)	6.7	319 (17.6)	p<0.001
Depressive psychosis	10 (4.3)	2	23 (2.7)	-3.4	7 (4.7)	.1	41 (7.0)	3.6	81 (4.5)	
Delusional and other non-organic	20 (8.5)	2.6	45 (5.3)	.5	6 (4.0)	6	21 (3.6)	-2.0	92 (5.1)	
depression										
Severe depression without	15 (6.4)	-1.3	47 (5.6)	-4.4	28 (18.7)	4.5	68 (11.6)	3.0	158 (8.7)	
psychosis										
Screen-positive for psychosis,	4 (1.7)	1.6	5 (0.6)	-1.0	1 (0.7)	2	5 (0.9)	.1	15 (0.8)	

without meeting diagnostic

criteria

Age of onset	
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Mean age onset (SD)	26.84 (11.08)		22.36 (6.79)		30 (11.51)		22.79 (8.05)		23.71(8.64)	F (3, 1811) = 49.47,
										<i>p</i> <.001
Age group of onset										
Under 20	76 (32.5)	-2.4	358 (42.4)	2.2	34 (22.7)	-4.4	251 (42.8)	1.9	719 (39.6)	+***V=0.19
20-34	113 (48.3)	2	432 (51.1)	1.8	63 (42)	-1.7	278 (47.4)	8	886 (48.8)	χ2(6, N=1815)=125.13,
Over 34	45 (19.2)	3.9	55 (6.5)	-6.3	53 (35.3)	9.5	57 (9.7)	-1.7	210 (11.6)	p<0.001
Duration of Illness										***F(1, 1813) = 12.36,
										p<.005
Course of disorder										
Single episode	51 (21.8)	8.8	27 (3.2)	-6.6	41 (27.3)	9.6	18 (3.1)	-5.0	137 (7.5)	+***V=0.25
Multiple episodes	144 (61.5)	1	491 (58.1)	-3.0	89 (59.3)	7	398 (67.9)	3.7	1122 (61.8)	χ2(6, N=1815)=231.05
Continuous chronic illness with or	39 (16.7)	-5.0	327 (38.7)	7.0	20 (13.3)	-4.8	170 (29)	-1.0	556 (30.6)	p<0.001
without deterioration										

Overall Global independent functioning

Normal functioning	26 (11.1)	3.9	20 (2.4)	-5.7	20 (13.3)	4.2	37 (6.3)	.8	103 (5.7)	+** V = 0.17
Very mild/somewhat disabled	96 (41)	-1.0	313 (37)	-5.6	83 (55.3)	2.9	308 (52.6)	5	800 (44.1)	χ2(6, N=1815)=106.91
Moderately/severe disabled	112 (47.9)	8	512 (60.6)	8.2	47 (31.3)	-4.8	241 (41.1)	-5.4	912 (50.2)	p<0.001

Significance values from Chi-square analyses, ** p<0.01, ***p<0.001, ns – non-significant, V=Cramer's V. + = adjusted residuals equal or exceed threshold. *NOS= Not Otherwise Specified (includes severe

depression without psychosis' and 'screen-positive for psychosis but did not meet full criteria for ICD-10 psychosis').

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3.2.2 Outcomes

Duration of illness did not impact on sex-differences in substance use and postschool qualifications described above. Men were still significantly more likely than women to use alcohol [*V*=0.19; χ^2 (3, *N*=1815) =66.05, *p*<.001], cannabis [*V*=0.24; χ^2 (3, *N*=1815) =105.04, *p*<.001], and other drugs [*V*=0.14, χ^2 (3, *N*=1815) =33.42, *p*<.001]. Women were still more likely to have post-school qualifications [*V*=0.098; χ^2 (3, *N*=1815) =17.31, *p*=0.001].

Most participants received incomes of \$AUD500-799 per fortnight (LD-men, 68%; LD-women, 65%; SD-men, 55%; SD-women, 45%). However, 62% of SD-adults earned less than \$AUD500 per fortnight compared to around 23% of LD-adults [V=0.15; $\chi^2(12, N$ =710) =107.38, p<0.001].

More LD-adults relied on a government payment (LD-men, 89.7%; LD-women, 85.8%) than SD-adults (women, 75.3%; men, 71.8%), and more SD-adults earned income from wages or business interests (men, 25.6%; women, 20%) than LD-adults (women, 11.6%; men, 8.4%) [*V*=0.12; χ^2 (9, *N*=1815) =79.47, *p*<.001]. Significantly more SD-men (50.4%) were engaged in paid employment in the last year, compared with other groups (SD-women, 42.7%; LD-men, 28.9%; LD-women, 28.5%); [*V*=0.17; χ^2 (3, *N*=1815) =50.52, *p*<0.001].

Significantly more LD-women (77.3%) than other groups (SD-women; 62%; LDmen, 56.1%; SD-men, 42.3%) lived in their own or rented home [χ^2 (12, *N*=1815) =157.33, *p*<0.001]; while higher proportions of SD-adults resided in the family home with their parents than LD-adults (SD-men, 35%; SD-women, 30%; LD-men, 18.1%; LDwomen, 11.8%).

Significantly more LD-men (15.3%) lived in supported accommodation compared to LD-women (6.5%), and being homeless currently or in the past 12 months was most common for men (SD-men, 8.5%; LD-men, 7%; SD-women, 1.3%; LD-women, 2.2%); [*V*=0.17; χ^2 (12, *N*=1815) =157.33, *p*<.001]. There were no significant differences between groups concerning long-term hospitalisation/institutionalisation. Table 5. Social demographics of men and women by shorter or longer duration of illness

	Men				Women					
	Shorter Duration:		Longer		Shorter Duration:		Longer		Total	Statistic
	0-5 years' illness	residual	Duration: 6+ years' illness	residual	0-5 years' illness	residual	Duration: 6+ years' illness	residual		
	N=234 (12.89%)		N=845 (46.56%)		N=150 (8.26%)		N=586 (32.29%)		N=1815	
	n (column %)	residual	n (column %)	residual	n (column %)	residual	n (column %)	residual		
Life time diagnosis of abuse/de	ependence									
Alcohol	128 (54.7)	1.4	500 (59.2)	7.0	59 (39.3)	-2.8	228 (38.9)	-6.8	915 (50.4)	****V=0.19
										χ2(3, N=1815)=66.05
										p<0.001
Cannabis	138 (59)	2.7	517 (61.2)	8.3	57 (38)	-3.3	210 (35.8)	-8.8	922 (50.8)	****V=0.24
										χ2(3, N=1815)=105.04,
										p<0.001
Other drugs	84 (35.9)	1.5	312 (36.9)	4.6	38 (25.3)	-1.7	138 (23.5)	-5.0	572 (31.5)	+***V=0.14
										χ2(3, N=1815)=33.42,

										p<0.001
Attained post-school	111 (47.4)	0.1	356 (42.1)	-3.9	80 (53.3)	1.6	307 (52.4)	3.1	854(47.1)	****V=0.10
qualification										χ2(3, N=1815)=17.31,
										p=0.001
										***V=0.17
Current housing										
Own or public/private rental	99 (42.3)	-6.5	474 (56.1)	-4.5	93 (62)	.1	453 (77.3)	9.5	1119(61.7)	†χ2(12,
Family home (with own	82 (35)	6.6	153 (18.1)	-1.1	45 (30)	3.5	69 (11.8)	-5.6	349 (19.2)	N=1815)=157.33,
parents)										p<0.001
Supported group	25 (10.7)	1	129 (15.3)	5.6	6 (4)	-2.8	38 (6.5)	-4.2	198 (10.9)	
accommodation										
Homeless	20 (8.5)	2.5	59 (7)	3.2	2 (1.3)	-2.2	13 (2.2)	-3.9	94 (5.2)	
Other including hospital,	8 (3.4)	.4	30 (3.6)	1.2	4 (2.7)	3	13 (2.2)	-1.4	55 (3)	
institution										
Accommodation of Dependent	t Children									
Live with at least one	17 (7.3)	-2.7	43 (5.1)	-9.2	33 (22)	3.5	140 (23.9)	9.7	233 (12.8)	****V=0.19

dependent child										χ2(6, N=1815)=128.01,
										p<0.001
Do not live with any children	27 (11.5)	-1.1	118 (14)	.2	26 (17.3)	1.3	79 (13.5)	3	250 (13.8)	***V=0.18
										χ2(6, N=1815)=119.84,
										p<0.001
No children cared for elsewhere	17 (7.3)	-1.8	30 (3.6)	-9.1	26 (17.3)	2.8	120 (20.5)	9.4	193(10.6)	****V=0.17
All children living elsewhere	24 (10.3)	.6	94 (11.1)	2.7	14 (9.3)	.1	34 (5.8)	-3.4	166(9.1)	χ2(12, N=1815)=162.81
cared for by other parent										p<0.001
At least one child cared for by	1 (0.4)	-2.1	13 (1.5)	-2.1	9 (6)	3.1	19 (3.2)	1.8	42(2.3)	
other relative										
At least one child in external	2 (0.9)	-1.6	11 (1.3)	-2.7	3 (2)	3	26 (4.4)	4.2	42(2.3)	
care										
Fortnightly income										
Less than \$300 or NK	16 (7.1)	3.3	14 (1.7)	-3.5	10 (7.3)	2.6	18 (3.3)	1	58(3.4)	****V=0.15
\$300-499	57 (25.4)	6.5	71 (8.8)	-4.0	31 (22.6)	3.9	50 (9.2)	-2.6	209 (12.2)	χ2(12, N=1710)=107.38,
\$500-799	113 (50.4)	-4.1	547 (68.1)	4.3	61 (44.5)	-4.6	353 (64.7)	1.1	1074 (62.8)	p<0.001
\$800-1000	17 (7.6)	-2.8	118 (14.7)	1.3	18 (13.1)	2	79 (14.5)	.7	232(13.6)	
More than \$1000	21 (9.4)	.8	53 (6.6)	-2.0	17 (12.4)	2.0	46 (8.4)	.4	137(8)	

Main source of income										
Pension	168 (71.8)	-6.0	758 (89.7)	5.3	113 (75.3)	-3.4	503 (85.8)	.7	1542 (85)	****V=0.12
Wages (or profit from	60 (25.6)	6.4	71 (8.4)	-5.0	30 (20)	2.8	68 (11.6)	9	229 (12.6)	χ2(9, N=1815)=79.47,
business/interest)										p<0.001
Other, including insurance	3 (1.3)	.0	14 (1.7)	1.4	1 (0.7)	7	5 (0.9)	-1.1	23(1.3)	
No income/NK	3 (1.3)	.2	2 (0.2)	-3.4	6 (4)	3.4	10 (1.7)	1.5	21 (1.2)	
Had paid employment in past	118 (50.4)	6.2	244 (28.9)	-3.2	64 (42.7)	2.7	167 (28.5)	-2.6	593(32.7)	+***V=0.17
year										χ2(3, N=1815)=50.52,
										p<0.001
Marital status										†***V=0.22,χ2(6,N=
										1815)=168.9,p<0.00
										1
Single, never married	184 (78.6)	5.8	602 (71.2)	8.1	84 (56.0)	-1.4	242 (41.3)	-12.1	1112 (61.3)	
Married or de facto	28 (12.0)	-2.2	100 (11.8)	-5.5	33 (22.0)	1.7	148 (25.3)	6.4	309 (17.0)	
Separated, divorced or	22 (9.4)	-4.9	143 (16.9)	-4.6	33 (22.0)	.1	196 (33.4)	8.4	394 (21.7)	
widowed										

Personal and Social	58.36 (14.99)		53.49 (14.30)		63.55 (13.53)		58.41 (14.65)		66.60 (15.53)	***V=0.23
Performance Scale (PSP)										χ2(222, N=1815)
(mean, SD)										=285.22 p<0.003
Satisfaction with life as a whole	- past 12 months									
Mostly satisfied to delighted	103 (45.2)	-1.3	421 (51.9)	2.0	68 (47.6)	4	266 (47.7)	9	858(49.3)	ns
Mixed feelings	89 (39)	1.0	286 (35.3)	6	56 (39.2)	8	196 (35.1)	5	627(36)	
Socialising during last 12										
months										
Obvious/severe dysfunction	144 (61.5)	7	558 (66)	2.1	82 (54.7)	-2.3	368 (62.8)	4	1152(63.5)	ns
Have experienced stigma in	55 (23.6)	-4.9	288 (34.2)	-3.2	63 (42.00)	1.0	283 (48.5)	6.3	689(38.1)	+*** V = 0.17
past year										χ2(3, N=1809)=53.72
										p<0.001
Current family or friend to rely	211 (90.2)	2.3	700 (82.8)	-2.7	131 (87.3)	.8	505 (86.2)	.8	1547(85.2)	†ns

on

Current family or friend to	162 (69.2)	5	555 (65.7)	-4.4	113 (75.3)	1.3	453 (77.3)	4.3	1283(70.7)	+** V = 0.12
confide in										χ2(3, N=1815)=24.41
										p<0.001
Perceived lack of control with life	e in general – last 4 v	veeks?								
Never/rarely	90 (38.8)	1.1	310 (37.3)	1.5	50 (33.6)	5	186 (32)	-2.1	636(35.5)	**** V = 0.06
										χ2(9, N=1794)=22.04
										p=0.009
Sometimes	86 (37.1)	.2	313 (37.7)	1.1	58 (38.9)	.7	195 (33.5)	-1.7	652(36.3)	
Often	37 (15.9)	7	121 (14.6)	-3.1	30 (20.1)	.9	127 (21.8)	3.3	315(17.6)	
Nearly all the time	19 (8.2)	-1.3	87 (10.5)	2	11 (7.4)	-1.3	74 (12.7)	2.0	191(10.6)	

Significance values from Chi-square analyses, ** p<0.01, ***p<0.001, ns – non-significant, V=Cramer's V. + = adjusted residuals equal or exceed threshold

[Table 5 here]

3.3.3 Social Functioning; Satisfaction with Life

Most were unmarried (SD-men, 78.6%; LD-men, 71.2%; SD-women, 56%; LDwomen, 41.3%). While a higher proportion of LD-women had marital relationships (25.3%) they were also more likely to be separated or divorced (33.4%); [*V*=0.22; χ^2 (6, *N*=1815) =168.9, p<0.001].

SD-adults (SD-women, 63.5%; SD-men, 58.4%) had higher mean PSP scores than LD-adults (LD-women, 58.4%; LD-men, 53.5%); [*V*=0.23; χ^2 (222, *N*=1815) =285.22 *p*<.003]. A higher proportion of LD-women (48.5%) than other groups experienced stigma (SD-women, 42%; LD-men, 34.2%; SD-men, 23.6%).

Significantly more SD-men (90.2%) felt they had someone on whom to rely (SDwomen, 87.3%; LD-men, 82.8%; LD-women 86.2%); and more LD-women (77.3%) than other groups reported having someone in whom they could confide (SD-women, 75.3%; SD-men, 69.2%; LD-men, 65.7%); [*V*=0.12; χ^2 (3, *N*=1815) =24.41, *p*<0.001]. Significantly more LD-adults perceived a loss of control of their life "nearly all the time" than SD-adults in the four weeks prior to survey (LD-women, 12.7%; LD-men, 10.5%; SD-men, 8.2%; SD-women, 7.4%) [*V*=0.06; χ^2 (9, *N*=1794) =22.04, *p*=.009].

3.3 Associations

Cramer's V values were under 0.3, with the highest of these being for diagnosis in the sex-alone analyses (V=0.27), indicating low associations between row and column variables.

4. Discussion

We investigated the influence of sex and illness-duration, on functioning and other outcomes for adults receiving treatment for psychotic disorders; expecting an association between longer illness-duration and worse outcomes for both sexes. Previously-reported sex-differences were replicated (Angermeyer and Kühnz, 1988;

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Castle et al., 2000; Conrad et al., 2014; Lacey et al., 2015; Lewin et al., 2012; MacDonald and Schulz, 2009; Radhakrishnan et al., 2014; Ran et al., 2015). However, as indicated by high PSP scores and "no dysfunction" in socialising, SD-women showed mentally-healthy social functioning. LD-men experienced social disadvantage, isolation, homelessness and substance use. While SD-men were most likely to be in paid employment, many earned less than the average Australian income.

4.1 Sex Differences Alone

Schizophrenia was the most common diagnosis for both sexes; then bipolar or depressive disorders for women; and delusional disorder and non-organic psychoses for men. Similar methods and sampling (Morgan et al., 2008) showed non-significant onset differences in the same direction (Power et al., 2014; Radhakrishnan et al., 2014; Stefanis et al., 2013, 2014).

Crucially, there were significant sex-differences for course of disorder. Disability worsened with increasing years of psychotic illness: men had earlier onset (Canuso and Pandina, 2007; Eranti et al., 2013; MacDonald and Schulz, 2009), multiple and chronic episodes and more severe disability than women, and women were more likely to experience premorbid psychosocial stress and a gradual/insidious onset (Morgan et al., 2008), however, those with an onset before the age of 20 years were more likely to be women which was unexpected in light of other literature. This could be due to a higher incidence of psychosocial stressors, or increased use of cannabis and alcohol in younger years. Men's premorbid characteristics, earlier onset, diagnosis, higher substance-use, and greater symptom severity could explain their poorer psychosocial outcomes and poorer academic attainment, functioning, accommodation conditions (Mancuso et al., 2014) and greater need for community management. Men were less likely to be married in this sample, unable to access the possibly protective effects of relationship found elsewhere (Ran et al., 2016) and this could potentially be associated with poorer psychosocial outcomes. Many difficulties could have preceded illness onset (Conrad et al., 2014); further analyses are underway, exploring antecedents and comorbidities.

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While all could equally find someone on whom to rely, more men reported not having someone in whom to confide. Significantly more women than men experienced stigma in the previous 12 months; and, only half felt satisfied with life. This could be due to increased parenting (and childcare responsibilities), making women more noticeable to other members of the public, however this is speculative (Campbell et al., 2012; Lacey et al., 2015). Desire for confidantes and quality of relationships are unknown, and could be explored in future studies. Programs which identify the gaps in and build upon the social and vocational capacity of these people are paramount (Ramon et al., 2011).

These sex-specific results suggest that men with psychotic illnesses generally fare worse than women in terms of social, academic and accommodation characteristics; while women experience more stigma. The recent move in Australia to provide programs and services via CMOs could alleviate much of the suffering experienced, because CMOs seek to reduce stigma, increase friendship and peermentoring, and could be increasing treatment compliance and decreasing substance abuse/dependence – thereby reducing hospital burden. These inferences are examined in other reports.

4.2 Duration of Illness

Compared with SD-adults, LD-adults had a significantly younger age of onset, maybe due to environmental influences or sampling bias; for example, LD-men were most likely to use alcohol, cannabis and other substances; however, childhood adversity and family history could also exacerbate predisposition (Radhakrishnan et al., 2014). LD-adults were more likely to have entered marital relationships and experienced relationship loss than SD-adults; and despite earning higher incomes than SD-adults, be more likely to receive welfare. Schizophrenia remained the most common diagnosis, possibly due to the high number of LD-men in the cohort, though more SD-women had bipolar affective disorder (with mania).

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4.3 Sex and Duration of Illness

SD-men were most likely to have paid employment or business interests, despite lower educational achievement, with 62% earning less than \$AUD500 per fortnight; far below the average wage for Australians at the time (\$AUD2522 (Australian Bureau of Statistics, 2016)), suggesting they may be underpaid or victims of discrimination. While women were more likely to report experiencing stigma, this result seems to reflect a growing part-time workforce in Australia generally (Australian Bureau of Statistics, 2016), and for people with psychotic illnesses (Waghorn et al., 2012). If and how supports exist to specifically help SD-men find adequatelyremunerated employment, is being explored.

LD-men were most likely to have supported accommodation or be homeless, with poorest educational attainment and highest substance-use. LD-women were most likely to have their own home and live with at least one dependent child, refining our earlier reports (Campbell et al., 2012; Lacey et al., 2015). Later onset for SD-women presumably allows for better educational outcomes, though not better vocational outcomes than men (e.g., paid employment). This may be due to childcare needs (Campbell et al., 2012), sex-specific employment opportunities, or lower pay for women (making government payments preferable); requiring prospective examination.

Significantly more LD-women than LD-men reported having someone in whom they could confide, and a loss of control of their life. These results suggest that LDadults might benefit from relationship guidance; that LD-men require assistance in education and accommodation, while LD-women require help with parenting and organisational skills. Finally, we sought to examine if any moderating effects of sex or illness duration on outcomes would be the same across all diagnostic groups; however, threeway cross-tabulation revealed no differences due to diagnosis.

In sum, accommodation is a long-term need which requires long-term commitment by CMOs and other services. This is echoed by educational and vocational needs, including parents' needs for childcare and family support (Campbell et al., 2012; Lacey et al., 2015), but also an urgent need for equity in remuneration. Early intervention is certainly part of the solution, however, psychotic illnesses are largely intractable and costly (Neil et al., 2014a; Neil et al., 2014b).

4.4 Limitations

These cross-sectional results are limited by participant self-report; mitigated by a large cohort, robust design, interviewer training, and inter-rater reliability measures prior to and during data collection; strategic data screening/cleaning, access to participants' case histories (where allowed) and use of the OPCRIT algorithm to provide ICD-10 diagnoses (Conrad et al., 2014).

Sampling bias may have caused a predominance of LD-men in this cohort due to their continued need for care and access to public treatment services. Persons who were incarcerated or residing in nursing homes were excluded, as were people who could not speak English sufficiently, or had cognitive impairment. Hence this sample may not represent those people with psychotic illness who are managing well and only in contact with general practitioners over the 12-month period, or conversely, were more socially isolated and economically disadvantaged. Replication of SHIP in these groups is warranted.

Data on menses and menopause onset, employment opportunities, and quality of close relationships were not collected; restricting our investigation. Comparison with longer-term follow-up studies of first episode samples is also warranted (Henry et al., 2010). Other papers address the impact of childhood adversity, current abuse, medication and other treatment on outcomes, including QoL and physical and mental

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health (Bosanac et al., 2013; Campbell et al., 2012; Carr et al., 2012; Cooper et al., 2012; Foley et al., 2014; Foley et al., 2015; Galletly et al., 2012; Hahn et al., 2014a; Hahn et al., 2014b; Hanlon et al., 2014; Harvey et al., 2012; Haydock et al., 2015; Lacey et al., 2015; Mancuso et al., 2014; Moore et al., 2012; Morgan et al., 2010; Neil et al., 2014a; Neil et al., 2014b; Power et al., 2014; Raudino et al., 2014; Saha et al., 2014a; Saha et al., 2014b; Sankaranarayanan et al., 2014; Shah et al., 2014; Stain et al., 2012; Stefanis et al., 2013, 2014; Stolk et al., 2014; Waghorn et al., 2012; Waghorn et al., 2014; Waterreus et al., 2012).

4.5 Conclusions

Men with longer duration showed most disability, socially and globally. Higher use of supported accommodation by men compared to women might reflect contact with a case manager/GP, and engagement with CMO programs. Different service use patterns by men and women may reflect various coping styles or geographic/financial accessibility.

Impairments might worsen prognosis, but could potentially be ameliorated. Socially/vocationally-oriented interventions which are sex/duration-sensitive could maximise successful help-seeking and provision of optimal quality care; minimising the stigmatising effects of seeking help and clinician-bias when undergoing treatment (Ramon et al., 2011). Further, the development of skills and strategies provided by early interventions may be further supported by sex/duration-specific interventions. Planned studies on CMO program and service delivery will contribute further to our understanding of the Australian context.

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References

- Agius, M., 2009. Early intervention in psychosis. Concepts and service development. Psychiatr Danub 21 Suppl 1, 9-20.
- Agius, M., Hadjinicolaou, A.V., Ramkisson, R., Shah, S., Haq, S.U., Tomenson, B., Zaman, R., 2010. Does early intervention for psychosis work? An analysis of outcomes of early intervention in psychosis based on the critical period hypothesis, measured by number of admissions and bed days used over a period of six years, the first three in an early intervention service, the second three in a community mental health team. Psychiatr Danub 22 Suppl 1, S72-84.
- Agius, M., Shah, S., Ramkisson, R., Murphy, S., Zaman, R., 2009. Developing outcome measures for serious mental illness; using early intervention as an example. Psychiatr Danub 21 Suppl 1, 36-42.
- Amminger, G.P., Henry, L.P., Harrigan, S.M., Harris, M.G., Alvarez-Jimenez, M., Herrman, H., Jackson, H.J., McGorry, P.D., 2011. Outcome in early-onset schizophrenia revisited: findings from the Early Psychosis Prevention and Intervention Centre long-term followup study. Schizophr Res 131 (1-3), 112-119.
- Angermeyer, M.C., Kühnz, L., 1988. Gender differences in age at onset of schizophrenia. European archives of psychiatry and neurological sciences 237 (6), 351-364.
- Australian Bureau of Statistics, 2016. Census. Ausralia, Commonwelath of, Canberra.
- Bartels, S.J., Pratt, S.I., 2009. Psychosocial rehabilitation and quality of life for older adults with serious mental illness: recent findings and future research directions. Curr Opin Psychiatry 22 (4), 381-385.
- Bird, V., Premkumar, P., Kendall, T., Whittington, C., Mitchell, J., Kuipers, E., 2010. Early intervention services, cognitive-behavioural therapy and family intervention in early psychosis: systematic review. Br J Psychiatry 197 (5), 350-356.
- Birnbaum, M.L., Wan, C.R., Broussard, B., Compton, M.T., 2015. Associations between duration of untreated psychosis and domains of positive and negative symptoms. Early Interv Psychiatry, n/a-n/a.
- Bosanac, P., Mancuso, S., Castle, D., 2013. Anxiety symptoms in psychotic disorders. Clin Schizophr Relat Psychoses, 1-22.
- Cabral, R.R., Chaves, A.C., 2010. Multi-family group intervention in a programme for patients with first-episode psychosis: a Brazilian experience. Int J Soc Psychiatry 56 (5), 527-532.
- Campbell, L.E., Hanlon, M.C., Poon, A.W.C., Paolini, S., Stone, M.J., Galletly, C., Stain, H.J., Cohen, M., 2012. The experiences of Australian parents with psychosis: The second Australian national survey of psychosis. Australian and New Zealand Journal of Psychiatry 46 (9), 890-900.
- Canuso, C.M., Pandina, G., 2007. Gender and schizophrenia. Psychopharmacol Bull 40 (4), 178-190.
- Carpenter, J., Milne, D., Lombardo, C., Dickinson, C., 2007. Process and outcomes of training in psychosocial interventions in mental health: A stepwise approach to evaluation. Journal of Mental Health 16 (4), 505 520.
- Carr, V.J., Whiteford, H., Groves, A., McGorry, P., Shepherd, A.M., 2012. Policy and service development implications of the second Australian National Survey of High Impact Psychosis (SHIP). Aust N Z J Psychiatry 46 (8), 708-718.
- Carrión, R.E., Correll, C.U., Auther, A.M., Cornblatt, B.A., 2017. A Severity-Based Clinical Staging Model for the Psychosis Prodrome: Longitudinal Findings From the New York Recognition and Prevention Program. Schizophr Bull 43 (1), 64-74.

- Castle, D., Sham, P., Murray, R., 1998. Differences in distribution of ages of onset in males and females with schizophrenia. Schizophr Res 33 (3), 179-183.
- Castle, D.J., Jablensky, A., McGrath, J.J., Carr, V., Morgan, V., Waterreus, A., Valuri, G., Stain, H., McGuffin, P., Farmer, A., 2006. The diagnostic interview for psychoses (DIP): development, reliability and applications. Psychol Med 36 (1), 69-80.
- Castle, D.J., McGrath, J., Kulkarni, J., 2000. Women and schizophrenia. Cambridge University Press, Cambridge.
- Castle, D.J., Sham, P.C., Wessely, S., Murray, R.M., 1994. The subtyping of schizophrenia in men and women: a latent class analysis. Psychol Med 24 (1), 41-51.
- Castle, D.J., Singh, S.P., 2015. Early intervention in psychosis: still the 'best buy'? Br J Psychiatry 207 (4), 288-292.
- Castle, D.J., Wessely, S., Murray, R.M., 1993. Sex and schizophrenia: Effects of diagnostic stringency, and associations with premorbid variables. British Journal of Psychiatry 162, 658-664.
- Chen, E.Y., Tang, J.Y., Hui, C.L., Chiu, C.P., Lam, M.M., Law, C.W., Yew, C.W., Wong, G.H., Chung, D.W., Tso, S., Chan, K.P., Yip, K.C., Hung, S.F., Honer, W.G., 2011. Three-year outcome of phase-specific early intervention for first-episode psychosis: a cohort study in Hong Kong. Early Interv Psychiatry 5 (4), 315-323.
- Chong, C.S., Siu, M.W., Kwan, C.H., Chang, W.C., Lee, E.H., Chan, S.K., Hui, C.L., Tam, F.Y., Chen, E.Y., Lo, W.T., 2016. Predictors of functioning in people suffering from first-episode psychosis 1 year into entering early intervention service in Hong Kong. Early Interv Psychiatry.
- Coentre, R., Levy, P., Figueira, M.L., 2011. Early intervention in psychosis: first-episode psychosis and critical period. Acta Med Port 24 (1), 117-126.
- Conrad, A.M., Lewin, T.J., Sly, K.A., Schall, U., Halpin, S.A., Hunter, M., Carr, V.J., 2014. Ten-year audit of clients presenting to a specialised service for young people experiencing or at increased risk for psychosis. BMC Psychiatry 14, 318.
- Cooper, J., Mancuso, S.G., Borland, R., Slade, T., Galletly, C., Castle, D., 2012. Tobacco smoking among people living with a psychotic illness: the second Australian Survey of Psychosis. Aust N Z J Psychiatry 46 (9), 851-863.
- Cotton, S.M., Luxmoore, M., Woodhead, G., Albiston, D.D., Gleeson, J.F., McGorry, P.D., 2011. Group programmes in early intervention services. Early Interv Psychiatry 5 (3), 259-266.
- Cramér, H., 1946. Chapter 21. The two-dimensional case, Mathematical Methods of Statistics. Princeton University Press, Princeton, p. 282.
- Ehmann, T.S., Tee, K.A., MacEwan, G.W., Dalzell, K.L., Hanson, L.A., Smith, G.N., Kopala, L.C., Honer, W.G., 2014. Treatment delay and pathways to care in early psychosis. Early Interv Psychiatry 8 (3), 240-246.
- Eranti, S.V., MacCabe, J.H., Bundy, H., Murray, R.M., 2013. Gender difference in age at onset of schizophrenia: a meta-analysis. Psychol Med 43 (01), 155-167.
- Foley, D.L., Mackinnon, A., Morgan, V.A., Watts, G.F., McGrath, J.J., Castle, D.J., Waterreus, A., Galletly, C.A., 2014. Predictors of type 2 diabetes in a nationally representative sample of adults with psychosis. World Psychiatry 13 (2), 176-183.
- Foley, D.L., Mackinnon, A., Morgan, V.A., Watts, G.F., Shaw, J.E., Magliano, D.J., Castle, D.J., McGrath, J.J., Waterreus, A., Galletly, C.A., 2015. Cardiovascular risk factor associations in adults with psychosis and adults in a national comparator sample. Aust N Z J Psychiatry.
- Galletly, C., Castle, D., Dark, F., Humberstone, V., Jablensky, A., Killackey, E., Kulkarni, J., McGorry, P., Nielssen, O., Tran, N., 2016. Royal Australian and New Zealand College of

Psychiatrists clinical practice guidelines for the management of schizophrenia and related disorders. Australian and New Zealand Journal of Psychiatry 50 (5), 410-472.

- Galletly, C.A., Foley, D.L., Waterreus, A., Watts, G.F., Castle, D.J., McGrath, J.J., Mackinnon, A., Morgan, V.A., 2012. Cardiometabolic risk factors in people with psychotic disorders: the second Australian national survey of psychosis. Aust N Z J Psychiatry 46 (8), 753-761.
- Gleeson, J.F., Cotton, S.M., Alvarez-Jimenez, M., Wade, D., Gee, D., Crisp, K., Pearce, T., Newman, B., Spiliotacopoulos, D., Castle, D., McGorry, P.D., 2009. A randomized controlled trial of relapse prevention therapy for first-episode psychosis patients. J Clin Psychiatry 70 (4), 477-486.
- Grossman, L.S., Harrow, M., Rosen, C., Faull, R., Strauss, G.P., 2008. Sex differences in schizophrenia and other psychotic disorders: A 20-year longitudinal study of psychosis and recovery. Compr Psychiatry 49 (6), 523-529.
- Hahn, L., Rigby, A., Galletly, C., 2014a. Determinants of high rates of smoking among people with psychosis living in a socially disadvantaged region in South Australia. Aust N Z J Psychiatry 48 (1), 70-79.
- Hahn, L.A., Galletly, C.A., Foley, D.L., Mackinnon, A., Watts, G.F., Castle, D.J., Waterreus, A., Morgan, V.A., 2014b. Inadequate fruit and vegetable intake in people with psychosis. Aust N Z J Psychiatry 48 (11), 1025-1035.
- Hahn, L.A., Mackinnon, A., Foley, D.L., Morgan, V.A., Waterreus, A., Watts, G.F., Castle, D.J.,
 Liu, D., Galletly, C.A., 2016. Counting up the risks: How common are risk factors for
 morbidity and mortality in young people with psychosis? Early Interv Psychiatry.
- Hanlon, M.C., Campbell, L., Single, N., Coleman, C., Stain, H., Cotton, S., Castle, D., 2014. The experiences of Australian men and women with psychosis: The second Australian national survey of psychosis, Society for Mental Health Research, Adelaide, SA.
- Harvey, C., Killackey, E., Groves, A., Herrman, H., 2012. A place to live: housing needs for people with psychotic disorders identified in the second Australian National Survey of Psychosis. Aust N Z J Psychiatry 46 (9), 840-850.
- Haydock, M., Cowlishaw, S., Harvey, C., Castle, D., 2015. Prevalence and correlates of problem gambling in people with psychotic disorders. Compr Psychiatry 58, 122-129.
- Henry, L.P., Amminger, G.P., Harris, M.G., Yuen, H.P., Harrigan, S.M., Prosser, A.L., Schwartz, O.S., Farrelly, S.E., Herrman, H., Jackson, H.J., McGorry, P.D., 2010. The EPPIC follow-up study of first-episode psychosis: longer-term clinical and functional outcome 7 years after index admission. J Clin Psychiatry 71 (6), 716-728.
- Howes, O.D., McCutcheon, R., Agid, O., de Bartolomeis, A., van Beveren, N.J., Birnbaum, M.L., Bloomfield, M.A., Bressan, R.A., Buchanan, R.W., Carpenter, W.T., Castle, D.J., Citrome, L., Daskalakis, Z.J., Davidson, M., Drake, R.J., Dursun, S., Ebdrup, B.H., Elkis, H., Falkai, P., Fleischacker, W.W., Gadelha, A., Gaughran, F., Glenthoj, B.Y., Graff-Guerrero, A., Hallak, J.E., Honer, W.G., Kennedy, J., Kinon, B.J., Lawrie, S.M., Lee, J., Leweke, F.M., MacCabe, J.H., McNabb, C.B., Meltzer, H., Moller, H.J., Nakajima, S., Pantelis, C., Reis Marques, T., Remington, G., Rossell, S.L., Russell, B.R., Siu, C.O., Suzuki, T., Sommer, I.E., Taylor, D., Thomas, N., Ucok, A., Umbricht, D., Walters, J.T., Kane, J., Correll, C.U., 2016. Treatment-Resistant Schizophrenia: Treatment Response and Resistance in Psychosis (TRRIP) Working Group Consensus Guidelines on Diagnosis and Terminology. Am J Psychiatry, appiajp201616050503.
- Hughes, F., Stavely, H., Simpson, R., Goldstone, S., Pennell, K., McGorry, P., 2014. At the heart of an early psychosis centre: the core components of the 2014 Early Psychosis Prevention and Intervention Centre model for Australian communities. Australas Psychiatry 22 (3), 228-234.

- Hui, C.L., Li, A.W., Leung, C.M., Chang, W.C., Chan, S.K., Lee, E.H., Chen, E.Y., 2014. Comparing illness presentation, treatment and functioning between patients with adolescent- and adult-onset psychosis. Psychiatry Res 220 (3), 797-802.
- Jaeger, J., Berns, S.M., Czobor, P., 2003. The multidimensional scale of independent functioning: a new instrument for measuring functional disability in psychiatric populations. Schizophr Bull 29, 153-168.
- Jorm, A.F., Morgan, A.J., Wright, A., 2008. A comparison of clinician, youth, and parent beliefs about helpfulness of interventions for early psychosis. Psychiatr Serv 59 (10), 1115-1120.
- Joyce, K., Thompson, A., Marwaha, S., 2016. Is treatment for bipolar disorder more effective earlier in illness course? A comprehensive literature review. Int J Bipolar Disord 4 (1), 19.
- Kaplan, E., Fein, D., Morris, R., Delis, D., 1991. WAIS-R-NI manual. Psychological Corporation, San Antonio, Texas.
- Kirkpatrick, B., Buchanan, R.W., McKenney, P.D., Alphs, L.D., Carpenter, W.T., Jr., 1989. The Schedule for the Deficit syndrome: an instrument for research in schizophrenia. Psychiatry Res 30 (2), 119-123.
- Lacey, M., Paolini, S., Hanlon, M.C., Melville, J., Galletly, C., Campbell, L.E., 2015. Parents with serious mental illness: differences in internalised and externalised mental illness stigma and gender stigma between mothers and fathers. Psychiatry Res 225 (3), 723-733.
- Lambert, M., Schottle, D., Sengutta, M., Ruppelt, F., Rohenkohl, A., Luedecke, D., Nawara, L.A., Galling, B., Falk, A.L., Wittmann, L., Niehaus, V., Sarikaya, G., Handwerk, U., Rothlander, W., Rietschel, L., Gagern, C., Lange, B., Meigel-Schleiff, C., Naber, D., Schulte-Markwort, M., Kruger, H., Unger, H.P., Sippel, S., Ott, S., Romer, G., Daubmann, A., Wegscheider, K., Correll, C.U., Schimmelmann, B.G., Bock, T., Gallinat, J., Karow, A., 2016. Early detection and integrated care for adolescents and young adults with severe psychotic disorders: rationales and design of the Integrated Care in Early Psychosis Study (ACCESS III). Early Interv Psychiatry.
- Larsen, T.K., McGlashan, T.H., Johannessen, J.O., Vibe-Hansen, L., 1996. First-episode schizophrenia: II. Premorbid patterns by gender. Schizophr Bull 22 (2), 257.
- Laurens, K.R., Luo, L., Matheson, S.L., Carr, V.J., Raudino, A., Harris, F., Green, M.J., 2015. Common or distinct pathways to psychosis? A systematic review of evidence from prospective studies for developmental risk factors and antecedents of the schizophrenia spectrum disorders and affective psychoses. BMC Psychiatry 15, 205.
- Lewin, T.J., Carr, V.J., Conrad, A.M., Sly, K.A., Tirupati, S., Cohen, M., Ward, P.B., Coombs, T., 2012. Shift climate profiles and correlates in acute psychiatric inpatient units. Soc Psychiatry Psychiatr Epidemiol 47 (9), 1429-1440.
- Liu, P., Parker, A.G., Hetrick, S.E., Callahan, P., de Silva, S., Purcell, R., 2010. An evidence map of interventions across premorbid, ultra-high risk and first episode phases of psychosis. Schizophr Res 123 (1), 37-44.
- Lower, R., Wilson, J., Medin, E., Corlett, E., Turner, R., Wheeler, K., Fowler, D., 2015. Evaluating an early intervention in psychosis service for 'high-risk' adolescents: symptomatic and social recovery outcomes. Early Interv Psychiatry 9 (3), 260-267.
- MacDonald, A.W., Schulz, S.C., 2009. What we know: Findings that every theory of schizophrenia should explain. Schizophr Bull 35 (3), 493-508.
- Mancuso, S.G., Morgan, V.A., Mitchell, P.B., Berk, M., Young, A., Castle, D.J., 2014. A comparison of schizophrenia, schizoaffective disorder, and bipolar disorder: Results from the Second Australian national psychosis survey. J Affect Disord 172c, 30-37.

- Marshall, M., Barrowclough, C., Drake, R., Husain, N., Lobban, F., Lovell, K., Wearden, A., Bradshaw, T., Day, C., Fitzsimmons, M., Pedley, R., Piccuci, R., Picken, A., Larkin, W., Tomenson, B., Warburton, J., Gregg, L., 2015. The HELPER programme: HEalthy Living and Prevention of Early Relapse - three exploratory randomised controlled trials of phase-specific interventions in first-episode psychosis. Queen's Printer and Controller of HMSO 2015. This work was produced by Marshall et al. under the terms of a commissioning contract issued by the Secretary of State for Health. This issue may be freely reproduced for the purposes of private research and study and extracts (or indeed, the full report) may be included in professional journals provided that suitable acknowledgement is made and the reproduction is not associated with any form of advertising. Applications for commercial reproduction should be addressed to: NIHR Journals Library, National Institute for Health Research, Evaluation, Trials and Studies Coordinating Centre, Alpha House, University of Southampton Science Park, Southampton SO16 7NS, UK., Southampton UK.
- Marshall, M., Rathbone, J., 2011. Early intervention for psychosis. Cochrane Database Syst Rev(6), CD004718.
- McGlashan, T.H., 2008. Premorbid adjustment, onset types, and prognostic scaling: still informative? Schizophr Bull 34 (5), 801-805.
- McGorry, P.D., 2015. Early intervention in psychosis: obvious, effective, overdue. J Nerv Ment Dis 203 (5), 310-318.
- Mihalopoulos, C., Harris, M., Henry, L., Harrigan, S., McGorry, P., 2009. Is early intervention in psychosis cost-effective over the long term? Schizophr Bull 35 (5), 909-918.
- Moore, E., Mancuso, S.G., Slade, T., Galletly, C., Castle, D.J., 2012. The impact of alcohol and illicit drugs on people with psychosis: the second Australian National Survey of Psychosis. Aust N Z J Psychiatry 46 (9), 864-878.
- Morgan, V., Waterreus, A., Jablensky, A., Mackinnon, A., McGrath, J.J., Carr, V., Bush, R.,
 Castle, D., Cohen, M., Harvey, C., Galletly, C., Stain, H.J., Neil, A., McGorry, P., Hocking,
 B., Shah, S., Saw, S., 2010. People living with psychotic illness 2010. Commonwealth
 Department of Health and Ageing.
- Morgan, V.A., Castle, D.J., Jablensky, A.V., 2008. Do women express and experience psychosis differently from men? Epidemiological evidence from the Australian national study of low prevalence (psychotic) disorders. Australian and New Zealand Journal of Psychiatry 42 (1), 74-82.
- Morgan, V.A., McGrath, J.J., Jablensky, A., Badcock, J.C., Waterreus, A., Bush, R., Carr, V.,
 Castle, D., Cohen, M., Galletly, C., Harvey, C., Hocking, B., McGorry, P., Neil, A.L., Saw,
 S., Shah, S., Stain, H.J., Mackinnon, A., 2013. Psychosis prevalence and physical,
 metabolic and cognitive co-morbidity: data from the second Australian national survey
 of psychosis. Psychol Med, 1-14.
- Morgan, V.A., Waterreus, A., Jablensky, A., 2011. People living with psychotic illness 2010. Report on the second Australian national survey. Mental Health Publications, Canberra.
- Morgan, V.A., Waterreus, A., Jablensky, A., Mackinnon, A., McGrath, J.J., Carr, V., Bush, R., Castle, D., Cohen, M., Harvey, C., 2012. People living with psychotic illness in 2010: The second Australian national survey of psychosis. Australian and New Zealand Journal of Psychiatry 46 (8), 735-752.
- Morosini, P., Magliano, L., Brambilla, L., Ugolini, S., Pioli, R., 2000. Development, reliability and acceptability of a new version of the DSM-IV social and occupational functioning assessment scale (SOFAS) to assess routine social functioning. Acta Psychiatr Scand 101 (4), 323-329.

National Mental Health Commission, 2015a. Contributing Lives, Thriving Communities - Review of Mental Health Programmes and Services, in: Commonwealth Government (Ed.). National Mental Health Commission,

http://www.mentalhealthcommission.gov.au/our-reports/contributing-lives,-thrivingcommunities-review-of-mental-health-programmes-and-services.aspx.

- National Mental Health Commission, 2015b. Strategic Priorities 2014 15, in: Commonwealth Government (Ed.). National Mental Health Commission, <u>http://www.mentalhealthcommission.gov.au/our-reports/contributing-lives,-thrivingcommunities-review-of-mental-health-programmes-and-services.aspx</u>.
- Neil, A.L., Carr, V.J., Mihalopoulos, C., Mackinnon, A., Lewin, T.J., Morgan, V.A., 2014a. What difference a decade? The costs of psychosis in Australia in 2000 and 2010: comparative results from the first and second Australian national surveys of psychosis. Aust N Z J Psychiatry 48 (3), 237-248.
- Neil, A.L., Carr, V.J., Mihalopoulos, C., Mackinnon, A., Morgan, V.A., 2014b. Costs of psychosis in 2010: findings from the second Australian National Survey of Psychosis. Aust N Z J Psychiatry 48 (2), 169-182.
- Nelson, H.E., 1982. The National Adult Reading Test (NART): test manual. NFER-Nelson.
- Nordentoft, M., Rasmussen, J.O., Melau, M., Hjorthoj, C.R., Thorup, A.A., 2014. How successful are first episode programs? A review of the evidence for specialized assertive early intervention. Curr Opin Psychiatry 27 (3), 167-172.
- Norman, R.M., Manchanda, R., Harricharan, R., Northcott, S., 2015. The course of negative symptoms over the first five years of treatment: Data from an early intervention program for psychosis. Schizophr Res 169 (1-3), 412-417.
- Norman, R.M., Manchanda, R., Windell, D., Harricharan, R., Northcott, S., Hassall, L., 2012. The role of treatment delay in predicting 5-year outcomes in an early intervention program. Psychol Med 42 (2), 223-233.
- Okasha, T., Zaki, N., Meguid, M.A., El-Missiry, M., Sabry, W., Ismaeil, M.K., Fouad, S.M., 2016. Duration of untreated psychosis in an Egyptian sample: Sociodemographic and clinical variables. Int J Soc Psychiatry.
- Olsson, A.K., Hjarthag, F., Helldin, L., 2016. Predicting real-world functional milestones in schizophrenia. Psychiatry Res 242, 1-6.
- Porter, R., 2012. Does evidence lead to policy change? Australian and New Zealand Journal of Psychiatry 46 (8), 693-694.
- Power, B.D., Stefanis, N.C., Dragovic, M., Jablensky, A., Castle, D., Morgan, V., 2014. Age at initiation of amphetamine use and age at onset of psychosis: the Australian Survey of High Impact Psychosis. Schizophr Res 152 (1), 300-302.
- Radhakrishnan, R., Wilkinson, S.T., D'Souza, D.C., 2014. Gone to Pot A Review of the Association between Cannabis and Psychosis. Front Psychiatry 5, 54.
- Ramon, S., Griffiths, C.A., Nieminen, I., Pedersen, M., Dawson, I., 2011. Towards social inclusion through lifelong learning in mental health: analysis of change in the lives of the EMILIA project service users. Int J Soc Psychiatry 57 (3), 211-223.
- Ran, M.S., Mao, W.J., Chan, C.L., Chen, E.Y., Conwell, Y., 2015. Gender differences in outcomes in people with schizophrenia in rural China: 14-year follow-up study. Br J Psychiatry 206 (4), 283-288.
- Ran, M.S., Wong, Y.I., Yang, S.Y., Ho, P.S., Mao, W.J., Li, J., Chan, C.L., 2016. Marriage and outcomes of people with schizophrenia in rural China: 14-year follow-up study. Schizophr Res.
- Randolph, C., Tierney, M.C., Mohr, E., Chase, T.N., 1998. The Repeatable Battery for the Assessment of Neuropsychological Status (RBANS): preliminary clinical validity. J Clin Exp Neuropsychol 20 (3), 310-319.

- Raudino, A., Carr, V.J., Bush, R., Saw, S., Burgess, P., Morgan, V.A., 2014. Patterns of service utilisation in psychosis: findings of the 2010 Australian national survey of psychosis. Aust N Z J Psychiatry 48 (4), 341-351.
- Restek-Petrovic, B., Mihanovic, M., Grah, M., Molnar, S., Bogovic, A., Agius, M., Kezic, S., Grosic, V., Mayer, N., Svrdlin, P., Dominis, V., Gorsic, L., Kamerman, N., Pavlovic, I., Svagelj, A., Vrbek, P., 2012. Early intervention program for psychotic disorders at the psychiatric hospital "Sveti Ivan". Psychiatr Danub 24 (3), 323-332.
- Saha, S., Morgan, V.A., Castle, D., Silove, D., McGrath, J.J., 2014a. Sociodemographic and clinical correlates of migrant status in adults with psychotic disorders: data from the Australian Survey of High Impact Psychosis. Epidemiol Psychiatr Sci, 1-8.
- Saha, S., Whiteford, H., McGrath, J., 2014b. Modelling the incidence and mortality of psychotic disorders: data from the second Australian national survey of psychosis. Aust N Z J Psychiatry 48 (4), 352-359.
- Sankaranarayanan, A., Mancuso, S., Castle, D., 2014. Smoking and suicidality in patients with a psychotic disorder. Psychiatry Res 215 (3), 634-640.
- Schenkel, L.S., Spaulding, W.D., Silverstein, S.M., 2005. Poor premorbid social functioning and theory of mind deficit in schizophrenia: evidence of reduced context processing? J Psychiatr Res 39 (5), 499-508.
- Shah, S., Mackinnon, A., Galletly, C., Carr, V., McGrath, J.J., Stain, H.J., Castle, D., Harvey, C., Sweeney, S., Morgan, V.A., 2014. Prevalence and impact of childhood abuse in people with a psychotic illness. Data from the second Australian National Survey of Psychosis. Schizophr Res 159 (1), 20-26.
- Shrivastava, A.K., Johnston, M.E., Stitt, L., Thakar, M., Sakel, G., Iyer, S., Shah, N., Bureau, Y.,
 2012. Reducing treatment delay for early intervention: evaluation of a community based crisis helpline. Ann Gen Psychiatry 11 (1), 20.
- Srihari, V.H., Shah, J., Keshavan, M.S., 2012. Is early intervention for psychosis feasible and effective? Psychiatr Clin North Am 35 (3), 613-631.
- Srihari, V.H., Tek, C., Kucukgoncu, S., Phutane, V.H., Breitborde, N.J., Pollard, J., Ozkan, B., Saksa, J., Walsh, B.C., Woods, S.W., 2015. First-Episode Services for Psychotic Disorders in the U.S. Public Sector: A Pragmatic Randomized Controlled Trial. Psychiatr Serv, appips201400236.
- Stain, H.J., Galletly, C.A., Clark, S.C., Wilson, J.M., Killen, E.A., Anthes, L.J., Campbell, L.E., Hanlon, M.C., Harvey, C., 2012. Understanding the social costs of psychosis: The experience of adults affected by psychosis identified within the second Australian national survey of psychosis. Australian and New Zealand Journal of Psychiatry 46 (9), 879-889.
- Stefanis, N.C., Dragovic, M., Power, B.D., Jablensky, A., Castle, D., Morgan, V.A., 2013. Age at initiation of cannabis use predicts age at onset of psychosis: the 7- to 8-year trend. Schizophr Bull 39 (2), 251-254.
- Stefanis, N.C., Dragovic, M., Power, B.D., Jablensky, A., Castle, D., Morgan, V.A., 2014. The effect of drug use on the age at onset of psychotic disorders in an Australian cohort. Schizophr Res 156 (2-3), 211-216.
- Stolk, Y., Sevar, K., Tran, N., Mancuso, S.G., Chopra, P., Castle, D., 2014. A comparative study of the economic and social functioning of Vietnamese-Australians with low English proficiency living with psychotic illness. Int J Soc Psychiatry.
- Theodore, K., Johnson, S., Chalmers-Brown, A., Doherty, R., Harrop, C., Ellett, L., 2012. Quality of life and illness beliefs in individuals with early psychosis. Soc Psychiatry Psychiatr Epidemiol 47 (4), 545-551.
- Waghorn, G., Saha, S., Harvey, C., Morgan, V.A., Waterreus, A., Bush, R., Castle, D., Galletly, C., Stain, H.J., Neil, A.L., McGorry, P., McGrath, J.J., 2012. 'Earning and learning' in those

with psychotic disorders: the second Australian national survey of psychosis. Aust N Z J Psychiatry 46 (8), 774-785.

- Waghorn, G., Saha, S., McGrath, J.J., 2014. Correlates of competitive versus noncompetitive employment among adults with psychotic disorders. Psychiatr Serv 65 (4), 476-482.
- Waterreus, A., Morgan, V.A., Castle, D., Galletly, C., Jablensky, A., Di Prinzio, P., Shah, S., 2012. Medication for psychosis–consumption and consequences: The second Australian national survey of psychosis. Australian and New Zealand Journal of Psychiatry 46 (8), 762-773.
- Windell, D.L., Norman, R., Lal, S., Malla, A., 2015. Subjective experiences of illness recovery in individuals treated for first-episode psychosis. Soc Psychiatry Psychiatr Epidemiol 50 (7), 1069-1077.