

Mental health nurses in primary care: quantitative outcomes of the Mental Health Nurse Incentive Program

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Keywords: evidence-based practice, mental health, mental health settings, nursing role, primary care

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Accepted for publication: 28 April 2013

doi: 10.1111/jpm.12089

Accessible summary

- The Mental Health Nurse Incentive Program (MHNIP) is a funding scheme in Australia that enables mental health nurses to work in primary care settings with people with complex mental health problems for as long as necessary. This study examined the outcomes of the programme as reported by nurses.
- Nurses provided profiles of 64 people with whom they worked, including measures of symptoms and problems on admission to the programme and at a second point in time.
- The findings showed that people had high levels of symptom severity and distress on admission, and they experienced significant improvements in all problem areas except physical health over their time working with the nurse.
- The MHNIP appears to be addressing the needs of people with highly complex needs, but more sensitive measures of outcome ought to be routinely collected.

Abstract

The Mental Health Nurse Incentive Program (MHNIP) provides a funding mechanism for credentialed mental health nurses to work in primary care settings in Australia with people with complex and serious psychosocial and mental health problems. This project explored the extent to which the programme contributed to positive outcomes. Sixty-four service user profiles were provided by nurses working within the programme, including the Health of the Nation Outcome Scales (HoNOS), on admission and at the last review point. Mean total HoNOS scores on admission were higher than those typically seen on admission to inpatient care in Australia. Significant reductions in all problem areas except physical health problems were found at the last review point for this sample. These findings support the viewpoint that MHNIP is addressing the needs of people with the most complex needs in primary care and is achieving clinically significant outcomes.

The Mental Health Nurse Incentive Program (MHNIP) is a scheme introduced by the Australian government in 2007 that has enabled community-based general medical practices and private psychiatric practitioners to engage credentialed mental health nurses (CMHNs) to facilitate mental health care in primary care settings. The Australian College of Mental Health Nurses (ACMHN) credentials nurses with specialist postgraduate qualifications, experience

and ongoing professional development in mental health nursing. The MHNIP provides a payment to eligible organizations or CMHNs directly for a session of up to 3.5 h, during which CMHNs may see one or more people. In the year to April 2012, 529 CMHNs engaged by 444 organizations provided 114 573 sessions to 41 535 people under the scheme at a cost of \$35.643 million (Senate Community Affairs Committee 2012). The intent of the

programme is to ‘. . . engage mental health nurses to assist in the provision of coordinated clinical care for people with severe mental health disorders’ (Medicare 2012). A recent phenomenological study of professional’s involvement in MHNIP concluded that participants experienced CMHNs as being clinical leaders who practise autonomously, direct their own interventions in partnership with service users and collaborate with other disciplines (Hurley *et al.* 2013, p. 5).

A handful of studies have considered the outcomes of the MHNIP to date. Happell *et al.* (2010) spoke with 10 CMHNs in Queensland about their role, and elicited anecdotal evidence suggesting reductions in hospital admissions and less frequent contact with medical and other allied health professional for clients within the MHNIP. The most commonly cited outcomes of MHNIP arising from a survey of 225 CMHNs working in MHNIP (Lakeman 2013) included a resolution of presenting problems or reduction in symptoms, improved coping, the continuation or establishment of meaningful occupation, improved relationships and community participation, reduced substance misuse, and improved physical health. These person-centred outcomes were also said to be accompanied by less frequent hospitalization or use of coercive interventions. These findings are consistent with those described in a series of case studies (National Advisory Council on Mental Health 2010) in which most sites reported a reduced demand for specialist health services when the MHNIP was introduced in a local area.

Nurses who are engaged under the MHNIP are required to complete an age-appropriate Health of the Nations Outcomes Scale (HoNOS) when a person is referred to the programme and at three monthly intervals. The adult form of the HoNOS is a 12-item scale in which symptoms or problem areas are rated on a scale from 0 to 4 (0 = no problem, 1 = sub-threshold problem, 2 = mild, 3 = moderate, 4 = severe) (Wing *et al.* 1996). Despite CMHNs gathering this information, it has not been collated centrally (ACMHN 2009, Olasoji & Maude 2010). A survey of CMHNs working in MHNIP undertaken by the ACMHN (2009, p. 18) revealed that most CMHNs had experience of using HoNOS prior to engaging with the programme. They stated that HoNOS was not favoured by many of the 115 CMHNs consulted as it does not reflect a true picture of the person. It has been argued that instruments such as HoNOS fail to capture the richness of mental health recovery or highlight the most significant outcomes for service users (Lakeman 2004). Nevertheless, HoNOS has been a part of a suite of instruments routinely used in public mental health services for close to a decade (Pirkis *et al.* 2005), and aggregated data may provide something of a comparison of symptom severity of users of different services.

Meehan & Robertson (2012) examined the demographic profiles of 309 people admitted to MHNIP in the Ipswich area of Queensland, and compared that data to people admitted to inpatient care in Queensland and those referred to Access to Allied Psychological Services (ATAPs), a programme for brief psychological interventions for high prevalence problems in primary care. They found that those enrolled in the MHNIP had higher total mean HoNOS scores (mean = 12.69, SD = 4.78) than those enrolled in ATAPs (mean = 11.91, SD = 5.01) but less than those admitted to hospital in Queensland (mean = 15.4, SD = 6.7).

Burgess *et al.* (2006) drew upon a database of outcome measures collated in Australia called the Mental Health National Outcomes and Casemix Collection to calculate the Health of the Outcome Scales (HoNOS) change scores associated with 14 659 acute inpatient episodes and 23 692 community episodes of care in Australian public sector mental health services. The aggregate mean HoNOS score on admission to inpatient care was found to be 15.3 (SD = 7.4), with a mean change score of 7.3 on discharge. The mean HoNOS score of people on referral to community mental health care was 11 (SD = 6.3), with a more modest change at last review of 1.8 (SD = 6.1). The authors conclude that, as expected, people tend to have higher scores on admission to hospital, and by and large people in public mental health services ‘get better’ or at least have a reduction in symptom severity as rated on HoNOS. Such analysis of HoNOS change scores has not been undertaken in relation to the MHNIP, but might serve to substantiate the qualitative and anecdotal evidence of positive outcomes associated with the programme.

This project sought to illicit profiles of people enrolled in the MHNIP and to determine if they experience improved outcomes.

Methods

Following ethics approval from Southern Cross University Human Ethics Committee, the ACMHN sent out an email invitation to all CMHNs ($n \sim 1000$) who had provided services through MHNIP ($n \sim 529$) to contribute to an online survey about their work and optionally to contribute to a survey regarding consumer outcomes. The survey was constructed and deployed using the Qualtrics Survey Software (Qualtrics Laboratories Inc. 2009) and accessed via a link from the invitation email. The survey consisted of the mental health nurse’s credential number, which was then able to be used as an identifier and matched against otherwise de-identified demographic data about the CMHN drawn from the credentialing database (age, sex, location of work). The CMHN was asked to provide any

Table 1
Diagnosis and mean Health of the Nation Outcome Scales (HoNOS) change for diagnostic groups

| Diagnostic group | % | <i>n</i> | Mean HoNOS 1 | Mean HoNOS 2 | Mean change | Mean occasions of service |
|-----------------------------|----|----------|--------------|--------------|-------------|---------------------------|
| F30-31.9 Bipolar | 25 | 16 | 17.4 | 7.3 | -10.1 | 30.8 |
| F32-34 Depression | 27 | 17 | 22.2 | 8.2 | -14 | 25.5 |
| F40-48 Anxiety disorder | 22 | 14 | 21.6 | 10.1 | -11.5 | 35.5 |
| F20-29 Schizophrenia | 20 | 13 | 23.8 | 12 | -11.8 | 45.0 |
| F60-69 Personality disorder | 6 | 4 | 26.5 | 15.5 | -11 | 86.6 |

number of client profiles but starting from the last person they had seen and working backwards.

The survey was of entirely de-identified data about clients, including their age, sex, medical diagnosis using the International Classification of Diseases (ICD-10) (World Health Organization 1992), their presenting problem or reason for referral, the main interventions undertaken, and the most significant outcomes or achievements to date. The CMHN was asked to indicate the main interventions and psychotherapeutic approaches used by ticking some boxes, and then to complete the first age-appropriate HoNOS undertaken with the person and the last one undertaken (at last review or on discharge). Finally the CMHN was asked to indicate the number of times the person had been seen and to describe the current phase of the relationship. Only complete records were included in the analysis. The statistical analysis of the data was undertaken by the second author who is not a nurse and had no relationship to the MHNIP.

Respondents

Forty-three CMHNs contributed 64 usable cases with complete adult HoNOS. Eleven CMHNs were male and 32 female who were on average 50.8 years of age ($SD = 7.2$). Fifteen CMHNs were from Victoria (35%), 11 from New South Wales (26%) and 9 were from Queensland (21%). A few respondents were from South Australia, Tasmania or Western Australia. Fifty-eight per cent were from the metropolitan or inner-city areas, and the remainder were from regional (28%) or rural (14%) areas.

Results

The sample consisted of 64 completed case studies, which included full profile data and completed paired adult HoNOS ratings completed on admission to the MHNIP and the last completed rating. The client sample comprised 37 (57.8%) females and 27 (42.2%) males. The ages of people ranged between 17 and 83 years, with a mean age of 43.4 years ($SD = 14.9$ years). The individuals had received between 2 and 250 occasions of service (mean 37.5, $SD =$

48). Diagnoses were categorized into ranges of the ICD-10 (World Health Organization, 1992), with 27% ($n = 17$) being diagnosed with a depressive disorder (F32-34), 25% ($n = 16$) with bipolar affective disorder (F30-31.9), 22% ($n = 14$) with an anxiety disorder, 30% ($n = 13$) with schizophrenia (F20-29), and 6% ($n = 4$) with a personality disorder. As illustrated in Table 1, those in all diagnostic groups had exceptionally high HoNOS scores on admission, and all groups had significant change. Most people were considered stable, and current work is focused on preventing relapse or facilitating growth (64%, $n = 41$). Six people were discharged (9%), and eight (13%) were visiting intermittently for support when needed. Six (9%) people were perceived to be currently acutely unwell, and 3 (5%) were at the beginning of the relationship.

Respondents were asked to provide an outline of the significant problems on referral, and to describe the key interventions and the most significant outcomes of each case. These qualitative data suggested that the issues that people presented with were considerably more complex than people's diagnosis suggested. Examples of client profiles with qualitative data are provided in Table 2. This qualitative data also point to additional outcomes or highlight the significance of particular outcomes for people beyond symptom reduction.

Table 2 further illustrates descriptively some of the interventions employed with individual service users. Respondents were additionally asked to indicate on a checklist the interventions that they undertook (see Fig. 1). Respondents were asked to indicate what psychotherapeutic approaches they took with a particular individual. All respondents identified at least one psychotherapeutic approach (mean = 3). As illustrated in Figure 2, 66% of respondents stated they used cognitive behavioural techniques, and people acknowledged drawing on a range of other approaches (e.g. 45% used interpersonal psychotherapy).

The mean total HoNOS score at Time 1 was 21.47 ($SD = 7.83$), and the mean total score at Time 2 was 9.61 ($SD = 6.24$). The mean change was 11.86 (7.82). Normality of the change scores can be assumed due to the central limit theorem for samples over $n \geq 30$. Significance was set at $P \leq 0.05$.

Table 2
Service user profiles of the diagnostic groups with data illustrating those that made the greatest and least Health of the Nation Outcome Scales (HoNOS) changes

| Age | Sex | Diagnosis | HoNOS pre/post | Outline of the person's presenting problem/ reason for referral | The main interventions or activities undertaken with this person | Main outcomes |
|-----|-----|---|----------------|---|---|--|
| 43 | M | Schizophrenia | 35/5 | ... physically ejected from the medical centre for inappropriate behaviour on many occasions ... An extensive forensic hx for numerous assaults, break and enters and ... drug dealing. He was unpredictable with taking his medication ... He suffered fixed delusions of a paranoid nature that were exacerbated by his drug use ... | ... education into illness and medications ... selling the concept of regular intra muscular depo injections ... Psychodynamic interventions looking at abandonment of his father at an early age ... CBT now that the delusions have been ameliorated ... empowering him to make choices that would give his wife and children along with himself a stable platform to live their lives ... Family therapy to rewrite the script for good marriage ... working with probation ... assisting with self-esteem issue ... re-entry into the work force to recommence previous trade ... | Freedom from psychosis ... safety within the family ... the patient feeling valued and productive and no longer angry with life ... Nil attendances at hospital, nil imprisonment and gross reduction in court appearances. A refocusing on his family life and children ... |
| 48 | M | Schizophrenia | 22/26 | ... Grooming and personal hygiene poor ... negative symptoms prominent ... poverty of speech, diminished emotional range, mood affect flat blunted ... poor sleep/concentration and memory ... poor compliance with medications ... insight level quite poor ... paranoid delusions ... auditory hallucinations bother him to the point he is pondering suicide as a way out ... daily cannabis use ... declines any form of supportive housing ... | Regular weekly counselling support sessions ... 2 weekly follow up with mobile GP at a breakfast drop in centre ... medication review ... general health checks ... fasting blood tests ... ongoing encouragement to address poor housing ... improve diet general wellbeing ... supportive counselling and ongoing education ... | ... that we have created a decent trust and rapport ... and he is regularly attending ... drop in centre ... insight is a work in progress ... able to make appointments with him general health checks ... |
| 56 | F | Bipolar affective disorder I | 29/7 | Resistant symptoms of depression ... Difficulties with domestic, academic and employment functioning ... Difficulties in parenting & family relationships ... Episodic mania. | Psychoeducation ... medication monitoring ... family interventions ... teaching self-awareness & self-symptom monitoring ... CBT & Mindfulness. | Able to self-identify early warning signs & implement interventions ... Able to resume parental & family relationships ... Returned to study & completed courses ... Returned to part time work ... Provides education to others regarding mental health. |
| 61 | M | Bipolar affective disorder I and generalized anxiety disorder | 15/15 | Highly anxious ... compulsion to attend GP clinic several times per week over a sustained period of time ... | Monitoring medication ... Suicide risk assessment ... Monitor metabolic parameters ... Psychoeducation ... Psychotherapy ... CBT ... Mindfulness ... Relaxation strategies ... Activity scheduling ... Referral to and liaison with GP and medical specialties including attendance with client. | Fluctuating acuity ... He has had a significant reduction in relapse requiring admission (2 in 25 months rather than 2 per year) ... Reduction in suicidal ideation ... He has reduced his attendance at GP to ... 1-2 times every 3 weeks ... He has begun to engage in a weekly social activity that does not involve any health professionals ... group activity at community health centre ... |

| | | | | | | |
|----|---|--|-------|---|---|--|
| 42 | F | Major depression | 36/7 | Not interacting with the world . . . Unable to get out of bed . . . ceased work. Struggling with parenting her teenage child . . . Refusing medication from GP, unable to afford services, not willing to engage with other services. Attending GP surgery twice weekly . . . GP uncertain how to treat. | Establish therapeutic engagement. Full assessment . . . psychoeducation . . . Commenced medication and weekly session . . . developed exercise program . . . deputed place of employment to ensure job placed on hold . . . Involved significant other and provided support for daughter . . . Commenced CBT and relaxation techniques . . . Ongoing narrative therapy along with family therapy as required. Report development . . . psychoeducation and efficacy . . . Harm minimisation/ Relapse Prevention . . . Psychodynamic & Interpersonal Therapy . . . Mindfulness . . . Relaxation skills . . . Clinical Hypnotherapy | Back at work 3 days per week . . . parenting effectively . . . Established consistent structure to each day . . . sleep/wake cycle re-established . . . Medication reduced. Exercise regime established . . . Sessions with MH Nurse reduced to fortnightly . . . Maintaining journal for CBT management of anxiety . . . Visits to GP reduced to monthly. |
| 34 | F | Major depression and substance abuse | 16/16 | Referred for counselling in light of recent diagnosis of Hep C . . . | Rapport development . . . psychoeducation and efficacy . . . Harm minimisation/ Relapse Prevention . . . Psychodynamic & Interpersonal Therapy . . . Mindfulness . . . Relaxation skills . . . Clinical Hypnotherapy | Sustained attendance . . . Cessation of intravenous drug use . . . Follow up with Liver Clinic towards treatment for Hep C . . . Coping with relationship turmoil & separation without return to substance use . . . Maintained employment which was at risk initially . . . Developing capacity to identify, explore & express herself and her needs . . . |
| 46 | M | Posttraumatic stress disorder and social phobia | 37/14 | . . . extremely anxious, paranoid, was living in boarding house and not leaving unit or able to attend to daily needs. He found it difficult to go shopping, worried if he went out people may want to harm him . . . He did not work, did not socialise with anyone and came to GP practice in an anxious fearful state . . . History of childhood abuse and dysfunctional family background with physical abuse | Education regarding trauma and attachment and acknowledgement that symptoms he presented with made sense in the context of his history . . . We meet every week at the same time on the same day to provide a regular time in his week which is to assist in the containment of his anxiety . . . Referred [psychologist for short term work and lifestyle support agency] . . . Building a trusting relationship from which he could then reduce anxiety and only then proceed with therapeutic work assessment . . . crisis intervention . . . counselling . . . motivational interviewing . . . lifestyle education . . . liaison with carers and probation / parole . . . preparing documents for the magistrate. | Maintained engagement . . . Group walks were successful . . . was able to converse with other participants and get to know other areas of town to walk . . . He enjoyed this new challenge in his life and could talk on a range of topics . . . Increased interest in physical health and wellbeing . . . Increased socialisation . . . attended martial arts training, life goal had been to get his black belt and he began to work towards this . . . Increased interest in diet . . . Increased ability to seek help . . . Referral to NGO to assist with community integration . . . Therapeutic engagement . . . I have her and her families trust . . . She has remained out of prison and is developing insight |
| 21 | F | Generalized anxiety disorder/ substance abuse | 16/15 | anxiety . . . probable developmental disorder (ADHD) . . . borderline personality traits . . . history of self-harm . . . fractured relationship history, impulsivity, self-destructive behaviours . . . poly-substance abuse history . . . forensic history- assault . . . family relationship under stress . . . lack of employment or meaningful daytime activity | . . . assessment . . . crisis intervention . . . counselling . . . motivational interviewing . . . lifestyle education . . . liaison with carers and probation / parole . . . preparing documents for the magistrate. | The client has not self-harmed in over 18 months. There has been no further attempt at suicide. Reconciliation between mother and youngest son has been facilitated. No further involvement with Corrections. Cessation of alcohol and marijuana use. Appropriate use of prescribed medication . . . Has learnt basic skills such as cooking, knitting and painting to help improve quality of life generally. |
| 45 | F | Borderline personality disorder/ adjustment disorder | 29/7 | Referred for support after release from incarceration (7 and a half years). Difficulty adjusting to life and family outside of prison. Could not live with guilt of her crime outside. Recommended heavy substance use after marriage broke up immediately after her release. Was being assaulted regularly by one son, and other son was school-refusing, using substances and needing child protection intervention. Recommended self-harm with an active suicide attempt shortly before referral . . . | Mandatory report to child protection services . . . Support through ongoing corrections issues. Encourage and advocate support for application for violence order. Regular family meetings with child protection services. Referral and ongoing support with substance abuse issues. Regular monitoring of mood and medication use. Skills training for the management of emotional dysregulation. | |

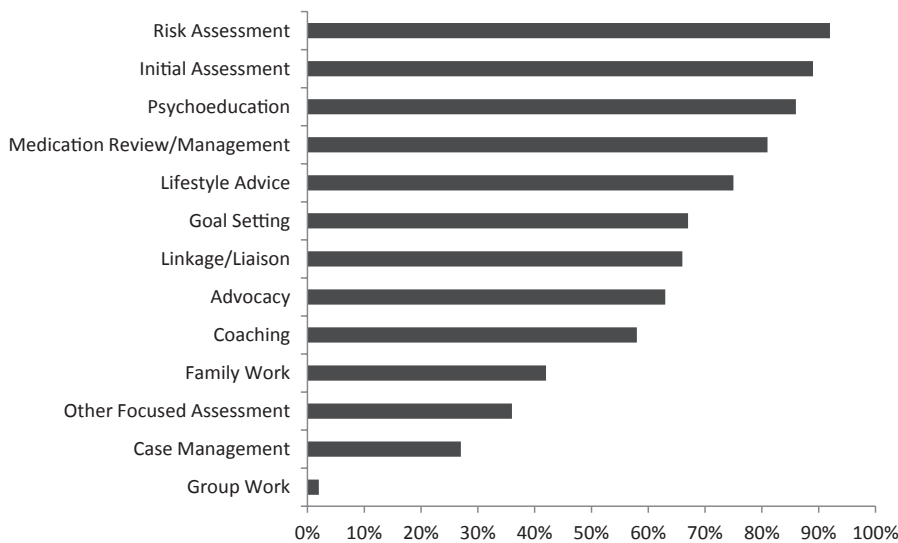


Figure 1
Interventions undertaken with service users

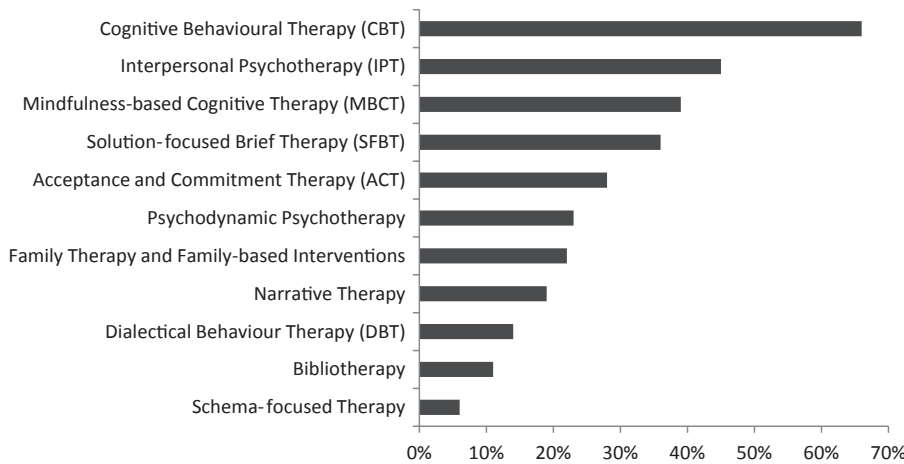


Figure 2
Main psychotherapeutic approaches taken with service users

Age [$F(1,62) = 1.32, P = 0.26$] and gender [$F(1,62) = 0.169, P = 0.68$] were found to have no effect on the change scores. The change on totally HoNOS scores was found to be highly significant on a paired t -test [$t(63) = 12.13, P < 0.001$]. Therefore, it is extremely unlikely that such a difference would occur through chance or sampling variability. Thus, the intervention was associated with a reduction in HoNOS scores.

Each of the scales on the HoNOS was then explored by a graphical representation of the subscales to see which scales were most impacted by the intervention. Figure 3 showed that most of the subscales were dramatically reduced at the second measurement point. All subscales were then tested to investigate the significance of change for each subscale. The probability of the paired t -tests was adjusted to account for multiple tests by applying the Bonferroni adjustment ($0.05/12 = 0.004$). Tests with a $P \leq 0.004$ were considered significant. Table 3 shows that only subscale 5 (physical health problems) did not change significantly, while all other subscales changed significantly.

These results demonstrate that the intervention had a strongly significant impact on the HoNOS outcomes, regardless of age or gender. The effect was strongly significant for total scores and was also significant for every subscale of the HoNOS except for physical health problems.

Individual HoNOS items indicated that depression had the highest mean. On admission or referral, people presented with multiple problems, with over 50% of people having some degree of problem on each item except for hallucinations and delusions (38%, $n = 24$) and problems with drink or drug taking (48%, $n = 31$). Eighty-six per cent ($n = 55$) of people had some ‘other’ problem on admission, with anxiety ($n = 28$), stress ($n = 7$) and sleeping ($n = 7$) being most prevalent. On the second measure of the scale, the prevalence of any problems had dropped to below 50% on most items except for other problems (70%), problems making supportive relationships (77%), problems with activities of daily living (60%), and opportunities for creating and improving abilities through occupation and recreation (54%).

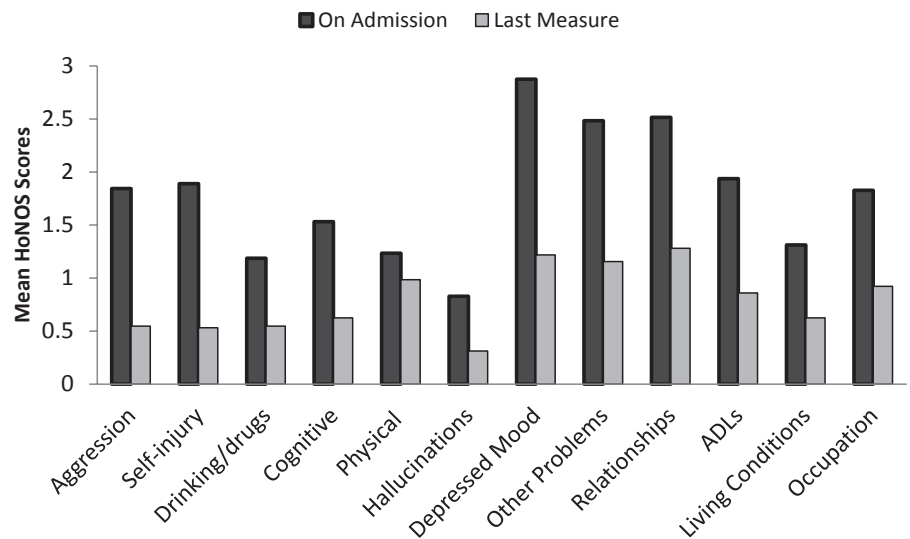


Figure 3
Mean Health of the Nation Outcome Scales (HoNOS) scores on admission/referral and the last HoNOS completed

Table 3
Results of *t*-tests for each subscale of the Health of the Nation Outcome Scales (HoNOS)

| | | Paired differences | | | | | <i>t</i> | df | Sig. (two-tailed) |
|---------|----------------------------|--------------------|--------------------|---------------------|---|-------|----------|----|-------------------|
| | | Mean | Standard deviation | Standard error mean | 95% confidence interval of the difference | | | | |
| | | | | | Lower | Upper | | | |
| Pair 1 | Aggression | 1.292 | 1.343 | 0.167 | 0.960 | 1.625 | 7.758 | 64 | <0.005 |
| Pair 2 | Self-injury | 1.354 | 1.351 | 0.168 | 1.019 | 1.689 | 8.078 | 64 | <0.005 |
| Pair 3 | Drinking/Drug taking | 0.631 | 1.126 | 0.140 | 0.352 | 0.910 | 4.517 | 64 | <0.005 |
| Pair 4 | Cognitive | 0.908 | 1.011 | 0.125 | 0.657 | 1.158 | 7.237 | 64 | <0.005 |
| Pair 5 | Physical | 0.246 | 1.392 | 0.173 | -0.099 | 0.591 | 1.425 | 64 | 0.159 |
| Pair 6 | Hallucinations | 0.523 | 1.062 | 0.132 | 0.260 | 0.786 | 3.970 | 64 | <0.005 |
| Pair 7 | Depressed mood | 1.662 | 1.241 | 0.154 | 1.354 | 1.969 | 10.795 | 64 | <0.005 |
| Pair 8 | Other | 1.323 | 1.276 | 0.158 | 1.007 | 1.639 | 8.359 | 64 | <0.005 |
| Pair 9 | Relationships | 1.246 | 0.919 | 0.114 | 1.018 | 1.474 | 10.931 | 64 | <0.005 |
| Pair 10 | Activities of daily living | 1.077 | 1.254 | 0.156 | 0.766 | 1.388 | 6.925 | 64 | <0.005 |
| Pair 11 | Living conditions | 0.677 | 1.200 | 0.149 | 0.379 | 0.974 | 4.547 | 64 | <0.005 |
| Pair 12 | Occupation | 0.908 | 1.128 | 0.140 | 0.628 | 1.187 | 6.487 | 64 | <0.005 |

Discussion

A major limitation of this study is the non-random selection of profiles. Consequently, one cannot, with any confidence, assume that the outcomes reported here are typical of those achieved in the MHNIP. It may be that respondents selected profiles to share that illustrated particularly impressive outcomes, or some other selection bias was at play. There are some indicators that these profiles are unremarkable. For example, in six profiles, people's HoNOS scores at last assessment were worse or unchanged compared with the one reported on admission. The profiles of some with poorer outcomes are illustrated in Table 2 to enable the reader to judge the credibility or typicality of the

person's presentation. The response rate of CMHNs (43 of a potential out of potentially 529) was low, although the demographic profile of the CMHNs in terms of age and geographic distribution was similar to larger surveys (Lakeman 2013).

The mean HoNOS scores reported here (12.47) are exceptionally high on admission and are close to six points higher than the mean score of those admitted to inpatient care in Australia (Burgess *et al.* 2006) or Queensland (Meehan & Robertson 2012), although what the actual clinical significance of this is open to speculation. It is possible that respondents overinflated their scores on admission, and being largely sole practitioners CMHNs working in MHNIP may not have the opportunities to

engage in activities to improve interrater reliability. An equally plausible explanation is that this sample did indeed have severe problems on admission to the programme. This can be gleaned from examination of the qualitative profile data. It appeared that most of this sample engaged with the CMHN at a time of crisis and had multiple psychosocial stressors.

It is also possible that symptom severity, as measured by HoNOS, is not a useful predictor of hospitalization. For example, Callaly *et al.* (2011) found that people readmitted to hospital within 28 days of discharge had significantly lower HoNOS score on index admission. Paradoxically, those that had follow-up by a community mental health team within 7 days were more likely to be readmitted. Psychosis appears to be highly prevalent in those admitted to hospital in some centres (Abas *et al.* 2003), and in this sample hallucinations and delusions had the lowest mean severity ratings. Kent & Yellowlees (1994) also famously observed that more than 60% of patients had been readmitted for social reasons rather than psychiatric indications in one hospital in Australia. It appears that MHNIP clients in this sample have a constellation of serious symptoms but that the MHNIP appears to facilitate meeting psychosocial and relational needs.

The pattern of distribution of HoNOS item scores is similar to those reported by Meehan & Robertson (2012). In particular, depressed mood, relationship problems and 'other' problems had the highest mean scores. Of note, this sample differed from Meehan & Robertson's (2012) in that it was drawn from the caseloads of CMHNs working nationally, rather than in one region, and it likely included CMHNs working with private psychiatrists and eligible organizations other than general medical practices. However, even if there is some score inflation, this similarity in distribution adds credibility to the findings. It is also consistent with the diagnosis reported for people with mood regulation problems (bipolar affective disorder, major depression and borderline personality disorder) at the severe end of the spectrum being reported for over 50% of the sample.

Aggression and self-injury also had relatively high mean scores on admission, which suggests that the CMHN and other health professionals involved are able to deal with and safely contain risk. It appears that many, if not most, clients had previous contact with public mental health and sometimes had poor experiences or had difficulties engaging with services. The MHNIP appears to be one way of reaching people with severe mental health and social problems. That the MHNIP was able to engage with people over long periods of time and the person visit a clinic with such regularity may be a remarkable outcome in itself for some people, is congruent with the conclusions of Happell & Palmer (2010) that the MHNIP is acceptable and desired by people who use the service.

Further development of the MHNIP or similar programmes ought to embed a method of evaluation from the outset. The HoNOS data may not be particularly clinically useful in working with people with highly complex needs, or indeed capture the richness or complexity of people's problems, but if gathering data is to be imposed on clinicians, it ought to at least be used in service evaluation and development. In light of the profiles of clients of the MHNIP with highly prevalent problems associated with mood and relationships, it would seem sensible to consider more sensitive measures of these phenomena in any suite of routine outcome measures in future.

The qualitative research in which CMHNs describe the most significant outcomes of care (Lakeman 2013) may provide further indicators of outcomes that are worth exploring. Consideration of what elements of the programme that contribute to positive outcomes is likely to be essential to ensuring it's survival. The provision of a suite of interventions, the adaptation of psychotherapeutic approaches, establishing therapeutic alliances and a collaborative relationship with a medical practitioner are all important. However, the relative contributions of these components to clinical outcomes need to be explored. This research suggests that the MHNIP does contribute positive and highly significant outcomes for some people enrolled in the programme and in particular for people with highly complex needs.

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