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Measuring mental health in criminology research: Lessons from the Drug Use Monitoring in Australia program

Lubica Forsythe

AIC Reports
Technical and Background Paper 54

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www.aic.gov.au

ISSN 1836-2052
ISBN 978 1 922009 33 3

Published by the Australian Institute of Criminology
GPO Box 2944
Canberra ACT 2601
Tel: (02) 6260 9200
Fax: (02) 6260 9299
Email: front.desk@aic.gov.au
Website: http://www.aic.gov.au

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Edited and typeset by the Australian Institute of Criminology

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Introduction

Poor mental health among people in the Australian criminal justice system is increasingly being identified and targeted for remediation. This is evidenced by Australian and international governments establishing specialist services for prisoners with mental disorders such as forensic hospitals, forensic units within prisons and specialist drug treatment programs within correctional environments (eg Birgden & Grant 2010; Justice Health & Forensic Mental Health Network 2011). Drug courts, mental health courts, court liaison services and pre-court diversion schemes for drug addicted or mentally ill offenders are also increasingly being established to divert mentally disordered and/or substance dependent offenders away from the criminal justice system and towards treatment (Justice Health & Forensic Mental Health Network 2011; Payne 2006; Richardson 2008).

This focus by the criminal justice system on addiction and mental health stems from evidence indicating that these factors may be related to offending behaviour and rehabilitation prospects (Andrews & Bonta 2010; Day & Howells 2008). The link between illicit drug use and criminal offending has been well established (Andrews & Bonta 2010; Bradford & Payne 2012; Kinner et al. 2009) and evidence also suggests a relationship between mental disorders and illicit drug use (Degenhardt 2008; Frisher et al. 2005; Marsh 2008; Mattick & O'Brien 2008). However, the findings regarding a relationship between mental disorders and offending behaviour are varied (Andrews & Bonta 2010), with some studies suggesting that the relationship is not a direct one but rather, may be mediated by substance abuse (Elbogen & Johnson 2009; Fazel et al. 2009).

While it is arguable that mental disorders play a causal role in offending behaviour, studies have identified that imprisoned offenders experience poor mental health (AIHW 2012; Butler & Allnutt 2003; Fazel & Danesh 2002). It is also widely accepted that offenders who are mentally ill are less able to respond to offender rehabilitation programs (Andrews & Bonta 2010), thereby making mental health treatment important not only on humanitarian grounds but also to give offender rehabilitation programs the best possible chance of success.

It is important to note that prisoners constitute a minority of offenders, as most people who appear in court are not given a custodial sentence (BOCSAR 2012), however recent studies of police detainees suggest that alleged offenders (ie those not yet brought before the courts) may also experience poor mental health at the time of their arrest (Baksheev, Ogloff & Thomas 2010; Forsythe & Gaffney 2012; Heffernan et al. 2003). One issue that has been highlighted by such studies is the challenge of

accurately measuring mental health among people who are detained for short periods of time in police cells or watchhouses.

Measuring mental health concerns: Lessons from the Drug Use Monitoring in Australia program

This report is focused on describing and discussing the process and challenges inherent in measuring mental health concerns among alleged offenders in police custody. This is, in part, informed by the author's experience as the Site Manager responsible for DUMA data collection in New South Wales from 1999–2010; a role that included evaluating and improving the mental health information collected as part of the DUMA program.

Terminology

Throughout this report, the term *mental disorder* is used to refer to psychological states that meet diagnostic criteria according to the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR), which is the diagnostic classification system most commonly used by mental health professionals in Australia (APA 2000). The term *mental health* is used more broadly to refer to overall psychological states.

It should be noted that problematic substance use is classified by the DSM-IV-TR as a mental disorder under the category of Substance Use Disorders (APA 2000). Substance Use Disorders include both substance abuse and dependence (APA 2000). The term *substance* refers to a range of substances but most commonly alcohol, illicit drugs and pharmaceutical medications (APA 2000). In this report, discussion is centred mainly on illicit drug use, which reflects the focus of the DUMA program. The co-existence of two or more mental disorders is generally referred to as *comorbidity*. In this report, comorbidity will be used specifically to refer to the co-existence of a substance use disorder and another category of mental disorder (eg a mood disorder, schizophrenia, anxiety etc). Comorbidity has been found to be associated with more severe ill health, poor treatment outcome and high service utilisation (Teesson & Proudfoot 2003). Comorbidity in conjunction with criminal offending presents many challenges for criminal justice systems (Day & Howells 2008).

The literature

Illicit drug use, offending and gender

A number of recent Australian studies have found strong links between illicit drug use and offending among both adult and juvenile prisoners (Johnson 2004; Makkai & Payne 2003; Prichard & Payne 2005). In one of these studies, 62 percent of the adult male prisoners reported regular drug use prior to their current imprisonment; cannabis, amphetamines and heroin were the three most commonly used drug types, with around one-third reporting poly drug use (ie using 2 or more drug types; Makkai & Payne 2003). For the majority of male prisoners, offending tended to precede illicit drug use; however, those who became addicted to drugs reported more frequent property offending (Makkai & Payne 2003). Similarly, a study based on police detainees found that heavy illicit drug use was associated with higher levels of property offending (Bradford & Payne 2012).

An Australian study of female prisoners found rates of regular and poly drug use similar to those among male prisoners (Johnson 2004). The three most commonly used drug types were also the same but the proportion of women using cannabis was lower than men (40% of women *cf* 53% of men), while the proportions using amphetamines (37% of women *cf* 31% of men) and heroin (27% of women *cf* 21% of men) were higher. In addition, 15 percent of female prisoners had been using illegally obtained benzodiazepines prior to their imprisonment. Women's' illegal drug use had either preceded their criminal offending or occurred within the same year (Johnson 2004).

High levels of illicit drug use have also been found among Australian police detainees (Loxley & Adams 2009). This study also found some gender differences in the types of drugs used prior to current arrest—cannabis, alcohol and ecstasy were used by larger proportions of male detainees, while amphetamines, heroin, other opiates and benzodiazepines were used by larger proportions of female detainees (Loxley & Adams 2009). Women reported regular use of illicit drugs prior to their first arrest, while men's substance use was more likely to be limited to alcohol and cannabis prior to their first arrest (Loxley & Adams 2009).

These findings suggest a strong relationship between illicit drug use and offending, as well as gender differences in the type of drugs used and the order of initiation into illicit drug use and offending.

Mental disorder, offending and gender

Recent Australian studies have found very high rates of mental disorders among imprisoned offenders

(AIHW 2012; Butler & Allnutt 2003; Kraemer, Gately & Kessell 2009). For example, Butler and Allnutt (2003) found that 74 percent of adult prisoners in New South Wales had experienced a mental disorder during the prior 12 months, compared with 22 percent of people in the overall Australian population. Similarly, 88 percent of young offenders in juvenile detention in New South Wales were found to have symptoms consistent with at least one clinical disorder (Allerton & Champion 2003). In both of these prison-based studies, female prisoners had higher prevalence rates of mental disorder than male prisoners. Among adult prisoners, 86 percent of women had experienced a mental disorder in the previous 12 months compared with 72 percent of males (Butler & Allnutt 2003). Among young people in custody, a larger percentage of girls than boys had clinical disorders with severe, moderate and mild symptoms—61 percent of girls compared with 48 percent of boys had disorders with symptoms in the severe range, 89 percent of girls and 67 percent of boys had disorders with symptoms in the moderate range, and 78 percent of girls and 58 percent of boys had disorders with symptoms in the mild range (Allerton & Champion 2003). Gender differences in mental disorders have also been found in the general Australian population but the prevalence rates are much lower than among prisoners. For example, a recent survey of the Australian population found that 22 percent of women had experienced a mental illness in the preceding year, compared with 18 percent of men (ABS 2007). Higher proportions of women than men had experienced anxiety and affective disorders, while the converse was found for substance abuse disorders (ABS 2007).

Comorbidity, offending and gender

In addition to high prevalence rates of mental disorders, many offenders have been found to have comorbid mental disorders and substance use disorders. For example, a recent study found that over half of male prisoners and two-thirds of female prisoners with a substance use disorder also experienced a comorbid disorder (Butler & Allnutt 2003). Similarly, studies based on detainees suggest high prevalence rates of comorbidity (Baksheev, Ogloff & Thomas 2010; Heffernan et al. 2003), with female detainees more likely to report a comorbid psychiatric condition in addition to a substance use disorder (Heffernan et al. 2003). Increasingly, the issue of comorbidity among people in the criminal justice system is being highlighted for attention from research, treatment and prevention perspectives (Byrne & Howells 2002; Forsythe & Adams 2009; Jones & Crawford 2007; Smith & Trimboli 2010; Teesson & Proudfoot 2003).

A number of studies have suggested that poor mental health may be a contributing factor to criminal offending, either independently or comorbidly with substance abuse (Mullen 2001; Ogloff et al. 2007). This view is supported by evidence from a recent study of prisoners released from NSW jails, which found those with comorbidity had significantly higher rates of reoffending than those with mental disorder alone or substance use alone (Smith & Trimboli 2010). Comorbidity has also been identified as particularly salient for female offenders (Byrne & Howells 2002). Andrews and Bonta (2010), on the other hand, have argued strongly that mental disorder is not functionally related to offending behaviour. They argue that the only role mental disorder plays is to limit an offender's ability to respond to rehabilitation programs that aim to reduce reoffending (Andrews & Bonta 2010).

The importance of criminal justice system-based mental health information

Whether mental disorder is functionally related to offending behaviour, or mediated by other factors such as substance abuse, or related to an offender's ability to respond to rehabilitation efforts, there is enough evidence to suggest that it is an important factor to measure. Accurate data is imperative to enable research to further elucidate the nature of the relationship between mental disorders and offending. This is particularly the case as mental disorders are amenable to treatment. If there is a causal relationship between mental disorders and offending, and/or if mental disorders limit the ability of an offender to make the behavioural changes targeted by rehabilitation programs, then treatment may be expected to have a crime reduction effect.

The recent establishment of specialist or problem-solving courts specifically set up to deal with people whose offending is related to substance dependence or mental disorder are testament to both community and government concern that traditional criminal justice system approaches are inadequate for dealing with drug dependent and/or mentally disordered offenders (Payne 2006).

Specialist courts are based on the theory of therapeutic jurisprudence, which posits that legal decisions, roles and processes have therapeutic, anti-therapeutic or neutral impacts (Wexler 1990). In general, Australian courts operate within an adversarial paradigm. By contrast, courts with a therapeutic mandate are based on the principles of trust, procedural fairness and narrative competence, place a high value on relationship and relational stability, and recognise the important roles played by emotions in cognition and behaviour (Freiberg 2002). Australian drug courts are designed to achieve therapeutic outcomes—reducing drug dependency and associated criminal activity through treatment and rehabilitation programs that are closely monitored by the court (Freiberg 2002; Payne 2006). Similarly, specialist mental health courts and mental health liaison services aim to reduce offending by people who have been identified as mentally impaired (Bradford & Smith 2009; Payne 2006). These initiatives, as well as others such as the Compulsory Drug Treatment Prison in New South Wales, forensic hospitals and community-based offender treatment programs all aim to reduce offending by targeting mental disorders (Birgden & Grant 2010; Butler & Allnutt 2003; Henderson 2003; Justice Health & Forensic Mental Health Network 2011). Quality and timely data on mental disorders, illicit drug use and offending would enhance the evidence base to inform these and other services and programs.

Sources of information about mental health, illicit drug use and crime

Large-scale epidemiological studies such as the National Survey of Mental Health and Wellbeing (ABS 2007) provide information about prevalence rates of disorders and related health data for the whole Australian population. However, particular subsets of the population can sometimes be difficult to identify; for example, it would not be possible to identify offenders (as questions about criminal offending are not asked), so it is not possible to compare the mental health of offenders with that of the general population using such studies.

Most information regarding specific populations is yielded by research studies conducted on a 'one off' basis, such as the prisoner studies referred to earlier (eg Johnson 2004; Makkai & Payne 2003; Prichard & Payne 2005 among others) or the study conducted with arrestees in a Queensland watchhouse (Heffernan et al. 2003). Such studies are designed to seek very specific information from a specified group of people at a particular time.

Some issues, however, are prone to change or are known to differ between locations. In these cases, one-off studies are limited in their ability to provide information that can be generalised across time or location. For example, illicit drug markets have been found to be dynamic and localised (Raskin White & Gorman 2000) so any information collected in any one place or point in time may be expected to date quickly and may not be indicative of other locations. To meet this challenge, there are two major sources of regular national data collection on illicit drug use and drug markets in Australia—the Illicit Drug Reporting System (IDRS) and the DUMA program. Both the IDRS and DUMA are monitoring programs that comprise ongoing data collection about specific aspects of drug use and drug markets. The IDRS is a national survey of injecting drug users, coordinated by the National Drug and Alcohol Research Centre and provides information on the use, price, purity and availability of heroin, methamphetamine, cocaine and cannabis (Stafford & Burns 2009). The DUMA program is coordinated by the AIC and collects information on drug use, drug purchasing and offending from people who have been detained in police custody (Makkai 1999; Sweeney & Payne 2012).

While the illicit drug use and drug market information generated by IDRS and DUMA is quite wide ranging, neither has, to date, incorporated the collection of comprehensive or regular mental health information. Both collections have included some mental health-related questions but these have typically been limited to a specific aspect of mental health and/or been incorporated on an occasional basis. For

example, the IDRS periodically asks respondents whether they have experienced any mental health problems in the six months prior to interview and if so, what types of problems they have experienced (de Graaff & Bruno 2007). The DUMA survey has regularly incorporated questions about admission to a psychiatric hospital and recent psychoactive medication use, and on two occasions questions about psychological distress were included (Forsythe & Adams 2009; Schulte, Mouzos & Makkai 2005).

The fact that different studies utilise different measures of mental health makes it difficult to make comparisons between studies and highlights the conceptual issue of what is actually measured by each approach. The AIC recently reviewed the mental health measures incorporated into its DUMA program with a view to improving the quality of the mental health information collected. The DUMA program already incorporates detailed information about both offending and drug use, so the addition of mental health data provides a unique opportunity to further elucidate the relationships between these three factors. A unique feature of the DUMA program is that it is ongoing and therefore has the facility to measure change. The experiences from the review are used throughout this report to illustrate some of the complexities and challenges inherent in the measurement of mental health in criminology research.

The DUMA program

DUMA was established in 1999 by the AIC as a national monitoring program of illicit drug use among people who have been arrested and detained by police (detainees) at police stations and watchhouses around Australia (Sweeney & Payne 2012; Makkai 1999). Data are now collected nationally at nine sites on a quarterly basis from alleged offenders who have been detained in police custody making DUMA the largest and most comprehensive program of data collection on alleged offenders in Australia. Approximately 4,000 detainees are interviewed annually at nine sites across six states (Sweeney & Payne 2012).

DUMA data is comprised of an interviewer-administered survey and a urine specimen, which is analysed for seven different classes of drugs. The survey is divided into two parts—core questions that are asked every quarter and addendum questions that vary each quarter to allow data collection on different topics. Participation in the research is voluntary and confidential. The unique aspects of the DUMA program are its ability to quickly highlight changes in drug use or drug market patterns and corroborate self-report information with urine analysis (for more information see Sweeney & Payne 2012 and http://www.aic.gov.au/en/about_aic/research_programs/nmp/duma/about.aspx).

Data collection covers the areas of drug and alcohol use, drug purchasing patterns, medication use, and drug and alcohol treatment. It also develops offending profiles, as well as recording demographic information such as age, gender, marital status, employment, education level, income and housing.

The detainees who participate in the DUMA program represent a very broad range of alleged offenders including people who have been detained for the first time, through to those who have been through the criminal justice system many times previously, as well as those detained for minor offences through to those detained for the most serious offences. Many of the DUMA detainees spend only a matter of hours in police custody, while some are refused bail and remanded in custody until their matter appears before the court.

A further unique feature of the DUMA program is that it provides a large enough dataset to allow gender-based analysis. Women form a minority of offenders in the Australian criminal justice system, with estimates suggesting they constitute approximately seven percent of the prison population (AIC 2008) and approximately 17 percent of police detainees (Sweeney & Payne 2012). Most criminology studies are either based exclusively on male offenders or do not include enough women to allow gender-based

analysis (Mazerolle 2008). As poor mental health and in particular substance abuse, have been shown to be more strongly related to offending among female compared with male offenders (Byrne & Howells 2002; Johnson 2004; Loxley & Adams 2009; Teplin et al. 2007), DUMA data provide a unique and valuable vehicle through which to improve our understanding of issues that may be associated with women's offending behaviour.

It should be noted that as the DUMA program is based on a cross-sectional design, there is no facility for offender tracking. Information about past events is elicited from detainees by self report. Therefore, associations between variables are largely temporally bound to the current custody episode. Relationships between factors (such as causal or mediating) may be suggested by the data but inferences that can be drawn are limited by the research design.

Quite early during the DUMA program, the prevalence of two psychological factors among detainees became evident—drug and alcohol dependence (as opposed to use/abuse) and mental disorder. From 2003, a drug and alcohol dependency measure was incorporated into the core DUMA survey (Schulte, Mouzos & Makkai 2005) and in more recent years is included on a rotational basis. However, the inclusion of mental health measures remained limited.

Early mental health measures in DUMA

From the inception of the DUMA program, there were two questions in the core survey that provided some information about mental health.

- detainees were asked whether they had ever been in a psychiatric hospital for at least one overnight stay; and
- detainees were asked whether they had taken any prescription or over the counter medications during the past fortnight. If they had, the names of such medications were recorded.

The information elicited by these questions can provide an indicator of whether the detainee may have experienced a mental disorder. However, having stayed overnight in a psychiatric hospital does not necessarily indicate a mental disorder, as a person may be admitted for an assessment and then not diagnosed with any disorder. Conversely, it may indicate a very serious mental disorder episode and involuntary confinement. Similarly, the reported use of psychoactive medications may be indicative of a diagnosed mental disorder; however, these medications may also have been prescribed for pain relief or other conditions that are not necessarily classified as mental disorders. Further, taking psychoactive medications may result in amelioration of the disorder, therefore, it cannot be assumed that the person was unwell at the time of detention.

Overall, these existing DUMA questions provide quite limited information about mental health. For detailed analysis of the mental health information produced by these measures see Forsythe and Adams (2009).

How else to measure mental health?

As a part of this review process that aimed to improve mental health measurement for the DUMA program, a literature review was conducted to identify instruments and questions that had been utilised in comparable studies. Researchers working on relevant criminological studies were also contacted regarding their experiences and suggestions. Instruments and questions that appeared at face value to be suitable were evaluated from a conceptual and pragmatic perspective; the findings of these reviews are outlined and discussed below.

Timeframe

When measuring mental health/disorder, a timeframe needs to be defined, depending on the purpose of the research. For example, is a disorder being experienced now, during the past 12 months or over a person's lifetime? If an objective of the research is to estimate the mental health services likely to be required by the population, then lifetime prevalence may be of most relevance in order to enable estimation of service needs. If, however, the research aim is to identify the mental health service

needs of newly incarcerated prisoners, then current incidence and unmet need may be more relevant.

Standardised measures

While in clinical practice a variety of methods for diagnosis may be appropriate, a standardised method is required for research to ensure comparability of diagnostic classifications. Typically, in research, a structured interview such as the Composite International Diagnostic Interview (CIDI) is utilised (Andrews & Peters 1998). However, many of the standardised clinical interview protocols require significant time to complete and require interviewers to have some clinical training. These features mean that the CIDI or other standardised measures are not feasible to incorporate into criminological research projects such as DUMA, where time is limited (detainees are typically available for DUMA participation for approximately half an hour) and data collectors typically do not have clinical training.

Researchers working on large-scale epidemiological research projects have developed a variety of short instruments to estimate the prevalence of mental disorders in populations. Some of these instruments have been validated. *Validation* refers to a process where the short instrument and a full diagnostic instrument (such as the CIDI) are both administered to the same group of people and the results are compared. The three key factors of a validation study are whether the short instrument correctly identifies the people who met diagnostic criteria for a mental disorder (referred to as *sensitivity*), whether the short instrument correctly identifies people who did not meet diagnostic criteria for a mental disorder (*specificity*) and the characteristics of the population of people the validation study was based on (eg see Ford et al. 2009; Furukawa et al. 2003). Several short instruments will be discussed, focusing on their conceptual underpinnings and feasibility for use in the DUMA program.

Instruments such as the Mental Health Inventory (MHI-I), Kessler 6 (K6) and the Kessler 10 (K10) comprise between five to 10 questions, measure non-specific psychological distress and have been developed as indicators of mental disorder (Andrews & Slade 2001; Kessler et al. 2002; Rumpf et al. 2001). Elevated levels of psychological distress have been found to be associated with the presence of diagnosable mental disorders in general population studies when they have been compared with the results of a full diagnostic interview (Andrews & Slade 2001; Furukawa et al. 2003; Kessler et al. 2002; Rumpf et al. 2001). While these psychological distress measures have been validated as indicators of mental disorder in the general population and have been widely used in criminology research, they do not appear to have been validated for offender populations. This raises the question of whether they accurately identify diagnosable mental disorders among offenders.

The K10 was trialled on two occasions with subsets of detainees the DUMA program (Mouzos et al. 2007; Schulte, Mouzos & Makkai 2005) and its use in this context was found to be problematic. First, one of the questions (regarding feelings of worthlessness) elicited an emotionally upsetting response in some detainees, leading to the discontinuation of the use of the K10 on ethical grounds. Second, detainees typically participate in the DUMA research within a few hours of being placed into police custody. The question arises as to whether, in this context, a measure of psychological distress may be measuring the immediate psychological distress in response to the arrest and custody situation rather than longer term and continuing psychological distress indicative of a mental disorder. Therefore, despite widespread use of the K10 in criminology research it was found to be problematic in the DUMA context, highlighting the importance of contextual factors in the use and validity of measurement instruments.

Another mental health indicator used in a variety of studies is a measure of functional impairment. Instruments such as the SF-36 and SF-12 canvas the extent to which a person's ability to engage in everyday activities has been impaired due to physical and mental health problems (Sanderson & Andrews 2002). The SF-12 has been found to correlate with diagnosable mental disorders in studies of the general population (Gill et al. 2007; Sanderson & Andrews 2002); however, it is unclear whether these measures are equally indicative of mental disorder in offender populations. For example, it could be argued that functional impairment may be reflective of lifestyle factors among people who are heavily

involved in illicit drug use and criminal activity rather than necessarily reflecting mental disorder. Without validation studies based on appropriate populations, it is difficult to tease out these distinctions and have confidence in the validity of the concepts being measured.

Screening instruments provide another standardised method of obtaining a measure of mental disorder; they are evidence-based sets of questions designed to identify apparently well people who probably have a diagnosable disorder and therefore warrant a comprehensive assessment (Alexander et al. 2008). Some screening instruments have been developed to screen for specific disorders (eg alcohol or drug dependence) while others are designed to screen more broadly for the likely presence of any mental disorder. Screening instruments vary substantially in length and the skills required for administration and interpretation (Dawe et al. 2002). One important benefit of screening instruments is that they identify current morbidity (or unmet need) as distinct from needs that may have already been identified and addressed (Andrews & Slade 2001).

Several screening instruments have been developed specifically for people entering prison, to facilitate identification of those requiring a comprehensive mental health assessment (Gonzales, Schofield & Hagy 1997). Some of these instruments have been validated against full diagnostic interviews and have been found to accurately classify people. These include the Jail Screening Assessment Tool (JSAT; Grisso 2006), Modified Mini Screen (MMS; Alexander et al. 2008), Brief Jail Mental Health Screen (BJMHS; Steadman et al. 2005) and the Corrections Mental Health Screen (CMHS; Ford et al. 2009). While not designed specifically for research purposes, the fact that these instruments have been validated on offender populations (and thus have demonstrated accuracy in indicating mental disorders among offenders) is an appealing feature for their use in criminological research. However, as all of these measures have been validated on US populations, the degree to which these results are transferable to an Australian context is largely unknown.

Only one Australian study could be found that utilised the JSAT and the BJMHS; it was conducted with detainees in Melbourne and found that both performed well in identifying Australian detainees with serious mental disorders (Baksheev, Ogloff & Thomas 2011). However, this study did not analyse the results by gender, which leaves the question of their effectiveness for use with female detainees unresolved. Differential results were reported for the BJMHS in US studies, which found that this instrument did not screen as effectively for women as it did for men (Steadman et al. 2007, 2005). Additionally, questions have been raised about the effectiveness of the BJMHS among Australian Indigenous people.

A recent Western Australian pilot prison health study (Kraemer, Gately & Kessell 2009) incorporated the BJMHS and found that Indigenous women interpreted two questions differently than intended. The first two questions of the BJMHS are designed to screen for symptoms of psychosis; they ask about mind control, other people knowing your thoughts and putting thoughts into your mind (Steadman et al. 2005). The Indigenous women in the Western Australian pilot prison health study overwhelmingly answered yes to these questions and their comments to interviewers suggested that they had interpreted these questions in a literal way. That is, because they were in prison, these women considered that every aspect of their lives was controlled, including their mind (Jason Payne personal communication 2009). This demonstrates how different interpretations of a concept on which questions are based may lead to invalid results—in this instance, false positive results.

Another issue that suggests caution in assuming that tools validated in the United States will be equally valid in the Australian context arises from jurisdictional differences. When the CMHS was administered by Ford et al. (2009), the inmates had been in jail for between 24 and 72 hours; presumably intoxication and distress levels may have reduced compared with earlier during the custody episode. In the DUMA research, many participants are interviewed within the first few hours following detention. While severe intoxication is an exclusion criteria from the DUMA program, some intoxication may remain and the effect of this on the validity of the screening tool is unknown. While a recent trial of the CMHS on the DUMA program did not test

validity, in other respects, it does appear suitable for both the Australian context and the DUMA program (Forsythe & Gaffney 2012); the process of this trial will be discussed in more detail below.

Purpose-designed questions

Mental health information can also be elicited with purpose-designed questions embedded within the broader survey instrument. While this approach can enable flexibility in investigating mental health concerns or histories, there are clear issues of validity to resolve. Question wording can unintentionally influence what information is reported and cultural factors and ethnic background have been found to influence the interpretation of questions (Warnecke et al. 1997).

For example, mental health has different facets and the terminology used in a question may mean different things to different people. The DUMA program recently piloted a free recall and cued recall version of a question asking detainees to identify mental health problems with which they had been diagnosed. In response to the cued recall version, Attention Deficit Hyperactivity Disorder (ADHD) was frequently mentioned, while it was less often mentioned in response to the free recall version. Several reasons may account for such a discrepancy, but it is likely that some respondents did not consider ADHD a mental disorder until cued with a list in which it was included. This highlights the importance of careful and considered question design, as well as a comprehensive piloting and revision process. Needless to say, the question could only identify diagnosed ADHD, as opposed to ADHD that a detainee may have experienced but that was undiagnosed.

In summary, each way of measuring mental health and mental disorder has benefits and limitations. The choice of instrument should be informed by what information is deemed of most use and will by necessity be constrained by conceptual, pragmatic and psychometric limitations that are important to acknowledge.

Mental health measures trialled in the DUMA program

Taking into consideration time limitations, the police custody environment within which DUMA operates and our research experience, a combination of a screening instrument and purpose-designed questions were chosen for piloting.

Following a comprehensive literature review of mental disorder screening instruments, all those discussed so far in this report were considered. The CMHS instrument developed by Ford et al. (2009) was selected for trial for the following reasons:

- It had demonstrated good psychometric properties with offender populations (Ford et al. 2009).
- It was designed to be administered by non-clinical staff (DUMA interviewers are drawn from a variety of backgrounds and most are not clinically trained; Ford et al. 2009).
- Being a screening instrument, it was designed to identify people with undetected mental disorders and therefore could generate data on current and unmet need.
- The question wording seemed, at face value, suitable for DUMA. Specifically, there were no questions about feelings of worthlessness (which had previously led to emotional upset among some detainees in response to the K10). There were no questions about mind control (the mind control questions on the BJMHS had been found problematic when asked of Indigenous women in a prison context).
- The CMHS included a question about ever having been in a hospital for non-medical reasons, such as a psychiatric hospital. This would allow some comparability with data generated by a similarly worded question that had been incorporated into earlier versions of the DUMA survey.
- The CMHS comprised a gender-specific format—the CMHS-M for men and the CMHS-F for women. Gender-specific questions are important, as research indicates that symptoms of mental disorder can manifest differently in men and women (Fleming 2004; Smith et al. 2008; Tolin & Foa 2008) and gender-neutral screening instruments have been found to perform differentially for men and women (Steadman et al. 2007, 2005).

In addition to the CMHS, a question was designed and inserted into the core DUMA survey asking whether the detainee had ever been diagnosed with a mental health problem by a doctor, psychiatrist, psychologist or nurse. Mental health professionals were specified in the question to try and avoid self-diagnosis and/or diagnosis by family and friends.

The term *mental health problem* was selected instead of *mental disorder,* as the latter is not frequently used in colloquial language and it was thought that it may be misunderstood by detainees. This question was designed to collect information about mental health needs already identified by mental health professionals, as well as data about diagnoses received. If the detainee responded that they had been diagnosed by a mental health professional, they were asked to specify what they were diagnosed with; all diagnoses they mentioned were recorded. The question was trialled in two versions—the free recall version just described and a cued recall version that was administered using a response card that listed categories of mental health disorders based on the DSM-IV-TR. Detainees were first asked the free recall version of the question and then showed a cue card listing categories of mental disorders and asked to indicate any they had been diagnosed with. Finally, people who indicated that they had been diagnosed with a mental health problem were asked how old they were the first time they were diagnosed (see *Appendix 1* for a copy of the pilot questions). The age at first diagnosis was included in order to allow temporal comparisons with age of first drug and alcohol use and first arrest.

Findings

The mental health measures detailed above were trialled during the first quarterly data collection of 2010. They were incorporated into the DUMA survey as a set of addendum questions. Data were collected at the Queensland (Southport and Brisbane), New South Wales (Bankstown and Kings Cross), Western Australia (East Perth) and Northern Territory (Darwin) DUMA sites. Details of the methodology and data have been published elsewhere (Forsythe & Gaffney 2012) and as such, this report will focus on conceptual and pragmatic issues.

It became apparent during data collection that the Indigenous people who constituted the majority of Darwin detainees either did not understand the mental health questions or found them inappropriate. The Northern Territory DUMA Site Manager reported that the Indigenous detainees at the Darwin site tended to have English as their second or subsequent language and limited English literacy. In addition to the actual language limitations, the terms *mental health* and *diagnosed* seemed conceptually unfamiliar to the majority of Indigenous detainees. These issues resulted in a large amount of missing data and questions about the validity of the data recorded. Given these quality issues, the data collected at the Darwin site were excluded from analysis (Forsythe & Gaffney 2012). This experience highlights the importance of developing culturally valid mental health measures for Indigenous people and in hindsight, it is clear that Indigenous expertise is vital to such a process (Vicary & Westerman 2004).

The CMHS (see *Appendix 1*) was completed by 690 detainees. Interviewers reported that the questions were quite long and some detainees required the questions to be repeated. Overall however, the questions appeared to be understood and were readily answered by detainees. The CMHS was easily scored—'yes' responses being given a score of one (1). A cut-off of five or more 'yes' responses for men and four or more 'yes' responses for women was used to determine detainees who screened in, with 46 percent of male detainees and 64 percent of female detainees subsequently qualifying as 'screened in' (see Forsythe & Gaffney 2012 for more details).

The authors of the CMHS provide supplemental tables detailing the predictive utility of a variety of cut-off points to allow those using the tool to set the cut-off points at the most appropriate level for their purpose (Ford et al. 2009). For example, if using the CMHS as a clinical tool to identify detainees to be referred for detailed psychiatric assessment, the cut-off may be set at a lower level. This may mean some false positives screen in; however, if the aim is to maximise the chance of mentally ill

Table 1 Mental disorders reported by detainees—free recall versus free plus cued recall

Diagnostic category	Free recall only	Free plus cued recall
Learning disorders	2	34
ADHD and behavioural disorders	37	71
Substance-related disorders	3	39
Schizophrenia and other psychotic disorders	21	36
Mood disorders	185	226
Anxiety disorders	40	103
Sleep disorders	3	33
Personality disorders	9	17
Other disorders	0	22
Total diagnoses	300	581

Source: AIC DUMA Q1 2010 [computer file]

people being referred and minimise the chance of mentally ill people not being referred then this would be appropriate. Alternatively, if the CMHS is to be utilised by researchers to estimate the prevalence of mental disorders, then higher cut-off may be used in order to avoid inflated estimates. Overall, the CMHS appeared to perform well and it would be useful to conduct a validation study in order to test whether it performs as accurately in the Australian context as it has in the United States.

The purpose-built question asking whether a detainee had ever been diagnosed with a mental health problem by a doctor, psychiatrist, psychologist or nurse appeared at face value to be understood by detainees. Six hundred and eighty-seven detainees answered the free recall question—281 said they had been diagnosed with a mental health problem while 406 detainees indicated no previous diagnosis had been given.

When cued with the list of mental disorders, 29 detainees who originally indicated that they had not been diagnosed recognised at least one disorder they had been diagnosed with. Therefore, cueing increased the number of detainees who indicated that they had been diagnosed with a mental health problem from 281 to 310.

Of the 29 detainees who were reminded by cueing that they had been diagnosed with a mental health problem, seven reported diagnosis of a learning disorder, eight reported diagnosis of attention deficit or other behavioural disorder, six reported substance-related disorder, four reported mood disorder, three reported eating disorder, two reported sleeping disorder, two reported anxiety, and one each adjustment disorder and psychotic disorder (some respondents reported more than 1 diagnosis).

Of the 281 detainees who reported they had been diagnosed with a mental health problem in response to the free recall question, nine were not able to recall what disorder they had been diagnosed with, even with the aid of cueing.

Table 1 shows a comparison of diagnoses reported in response to the free and cued recall response versions of the question. Up to three responses could be recorded.

It is hypothesised that learning, behavioural and substance-related disorders may not have been recognised by some detainees as mental health problems and therefore not mentioned in response to the free recall version of the question.

This trial suggests that cueing responses served two functions; first, it defined what was meant by the term *mental health problems* and therefore increased the number of detainees who reported having been diagnosed and second, it appeared to remind detainees of additional diagnoses. The data generated by the free recall version of the question would appear to suggest that most detainees who experienced a mental illness were given a single diagnosis. However, the cued recall data is more suggestive of a high prevalence of comorbidity. This

suggests that if the information sought relates to the types and number of diagnoses, then the cued response version of the question is more likely to yield this information. If the aim is simply to identify respondents who have been diagnosed, then the free recall question is adequate.

The final question on this trial asked detainees who had reported being diagnosed to report how old they had been the first time they were diagnosed with a mental health problem. This information was found to be of very limited use as there are some disorders that by definition can only be diagnosed in childhood (eg some developmental and behavioural disorders). In hindsight, if age at diagnosis is of research interest, better data would be generated if age diagnosed was recorded for each diagnostic category.

Conclusion

Measuring the prevalence of mental disorders is not a straightforward task and is all the more complex in field research that takes place in the criminal justice system. It is unclear how well population mental health measures perform with offender populations and whether all offender populations can be assumed to be the same. The physical and legal environment in which criminological research takes place poses additional challenges that need to be anticipated, analysed and accounted for when designing instruments and interpreting results.

It would be useful to develop mental health screening instruments that have demonstrated validity with Australian offenders of both genders, Indigenous backgrounds and across custody situations. Accurate screening instruments can assist with the identification of current and unmet need, which is arguably one of the most relevant issues from a health planning perspective. Identifying and monitoring the prevalence of mental disorder to enable a better understanding of the associations between mental disorder, drug use and offending would provide useful data for current therapeutic jurisprudence initiatives (which aim to reduce recidivism by addressing the factors contributing to offending behaviour) as well as other crime prevention and rehabilitation initiatives. At a broader level, disproportionately high rates of mental disorder among offenders, or certain groups of offenders, may also be reflective of alienation, powerlessness and poverty experienced disproportionately by some members of the community (Eriksen & Kress 2008; Horsfall 2001). Seen from this perspective, the information provided by a large ongoing source such as the DUMA program may not only inform individually focused rehabilitative efforts, but also solutions situated at a broader societal or systemic level.

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All URLs correct at November 2012

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Appendix

Appendix 1

Mental health survey pilot

TRANSITION STATEMENT—READ BEFORE STARTING THE ADDENDUM: The next series of questions are about mental health. As with the rest of the survey, anything you say is confidential and no information will be used to identify you in any way

Part A—Men	0 No	1 Yes
A1. Have you ever had worries that you just can't get rid of?	0	1
A2. Some people find their mood changes frequently—as if they spend every day on an emotional rollercoaster. For example, switching from feeling angry to depressed to anxious many times a day. Does this sound like you?	0	1
A3. Do you get annoyed when friends and family complain about their problems? Or do people complain you are not sympathetic to their problems?	0	1
A4. Have you ever felt like you didn't have any feelings, or felt distant or cut off from other people or from your surroundings?	0	1
A5. Has there ever been a time when you felt so irritable that you found yourself shouting at people or starting fights or arguments?	0	1
A6. Do you often get in trouble at work or with friends because you act excited at first but then lose interest in projects and don't follow through?	0	1
A7. Do you tend to hold grudges or give people the silent treatment for days at a time?	0	1
A8. Have you ever tried to avoid reminders of, or to not think about, something terrible that you experienced or witnessed?	0	1
A9. Has there ever been a time when you felt depressed most of the day for at least two weeks?	0	1
A10. Have you been troubled by repeated thoughts, feelings, or nightmares about something terrible that you experienced or witnessed?	0	1
A11. Have you ever been in the hospital for non-medical reasons, such as a psychiatric hospital? (Do NOT include going to an Emergency Room if you were not hospitalised)	0	1
A12. Have you ever felt constantly on guard or watchful even when you didn't need to, or felt jumpy and easily startled?	0	1

Part B—Women	0 No	1 Yes
B1. Do you get annoyed when friends and family complain about their problems? Or do people complain you are not sympathetic to their problems?	0	1
B2. Have you ever tried to avoid reminders of, or to not think about, something terrible that you experienced or witnessed?	0	1
B3. Some people find their mood changes frequently—as if they spend every day on an emotional rollercoaster. For example, switching from feeling angry to depressed to anxious many times a day. Does this sound like you?	0	1
B4. Have there ever been a few weeks when you felt you were useless, sinful, or guilty?	0	1
B5. Has there ever been a time when you felt depressed most of the day for at least 2 weeks?	0	1
B6. Do you find that most people will take advantage of you if you let them know too much about you?	0	1
B7. Have you been troubled by repeated thoughts, feelings, or nightmares about something terrible that you experienced or witnessed?	0	1
B8. Have you ever been in the hospital for non-medical reasons, such as a psychiatric hospital? (Do NOT include going to an Emergency Room if you were not hospitalised)	0	1

Part C—All Respondents			0 No	1 Yes
C1.Have you ever been diagnosed by a doctor, psychiatrist, psychologist or nurse with a mental health problem? If no skip to C2			0	1
C1B.What were you diagnosed with? Enter verbatim, list all mentioned				
C2. Is there anything (else) from this list that you have been diagnosed with by a doctor, psychiatrist, psychologist or nurse? Show flash card and circle all that apply. If 'No' at C1 and 'None' at C2—skip C3 and end	1 Learning disorder 2 Developmental disorder 3 Attention deficit or behavioural disorder 4 Substance related disorder 5 Schizophrenia and other psychotic disorder 6 Mood disorder 7 Anxiety disorder 8 Somatoform disorder	9 Dissociative disorder 10 Sexual and gender identity disorder 11 Paraphilias 12 Eating disorder 13 Sleep disorder 14 Adjustment disorder 15 Personality disorder 16 Other disorder		
C3. How old were you the first time you were diagnosed with a mental health problem? Enter age in whole years	_____ years			

Notes: All respondents were asked Question C1. If at least 1 mental health problem was mentioned in C1, then the wording of C2 would include the word *else,* which is imbedded in the question in brackets. If the respondent answered no to C1, then the wording of C2 excludes the word *else*. Only respondents who answered yes to C1 and/or C2 were asked C3