The National Study of Psychiatric Morbidity in New Zealand Prisons

An Investigation of the Prevalence of Psychiatric Disorders among New Zealand Inmates

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The National Study of Psychiatric Morbidity
In New Zealand Prisons

Prepared by

Dr A I F Simpson, *MBChB, BMedSci, FRANZCP*

Senior Lecturer and Director, Academic Forensic Psychiatry Unit, Department of Psychiatry and Behavioural Science, Faculty of Medicine and Health Sciences, University of Auckland

Dr P M J Brinded, *MBChB, FRANZCP*

Senior Lecturer in Forensic Psychiatry, Department of Psychological Medicine, Christchurch School of Medicine, University of Otago

Dr T M Laidlaw, *MSc, PhD*

Research Manager, Academic Forensic Psychiatry Unit, Department of Psychiatry and Behavioural Science, Faculty of Medicine and Health Sciences, University of Auckland

Mr Nigel Fairley, *MA, DipClinPsych, MNZCP*

Director of Regional Forensic Psychiatry Services, Capital Coast Health, Wellington

Ms Fiona Malcolm, *MA, MNZCP*

Psychologist, Regional Forensic Psychiatry Services, Capital Coast Health, Wellington

Our Ref: 7105

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1. ABSTRACT

The Department of Corrections and Ministries of Justice and Health commissioned a national study of the prevalence of psychiatric disorders amongst inmates in New Zealand prisons. Following a pilot study, the national study commenced in June 1997.

The objective of the study was to interview all female inmates, all male remand inmates and 15 percent of the sentenced male inmates, for an approximate sample size of 1300 from a total population of approximately 5500. All prisons were sampled. Interviews took place between October 1997 and June 1998.

The interview methodology involved gaining informed consent and demographic details. This was followed by a structured interview using the Composite International Diagnostic Interview – Automated (CIDI-A), a World Health Organisation (WHO) interview protocol for trained interviewers. This diagnoses a comprehensive range of mental disorders. A screening questionnaire for personality disorders, the Personality Disorder Questionnaire 4+ (PDQ4+), and questions regarding suicidal ideation and action since being in prison followed the interview.

All female inmates and all remand male inmates were approached. Fifteen percent of sentenced male inmates were sampled randomly, with refusals being replaced until 15 percent of the prison population had consented. The overall response rate for female, remand male, and sentenced male inmates was 80 percent. Based on recent prison census data, the groups studied were not significantly different from the population they represent in terms of age, ethnicity, security status and offence characteristics. All female inmates were treated as one population.

Of the 1287 patients completing the consent and demographic form, 1248 valid CIDI-A diagnoses were completed, comprised of 162 women, 441 remand men and 645 sentenced men.

When compared to the community sample (as presented in the Christchurch Epidemiological study of Wells et al (1989) and Oakley-Browne et al (1989)) a number of conditions were significantly elevated. These were:

- Major depressive disorder,
- Bipolar disorder, especially current episode of mania,
- Schizophrenia and related conditions,
- Substance abuse and dependence, especially in women,
- Post traumatic stress disorder,
- Obsessive compulsive disorder,
- Personality disorder.

- Disorders that had a similar incidence to that of the community sample were:
- Eating disorders,
- Panic disorder and simple phobia,
- Agoraphobia,
- Generalised anxiety disorder.

Frequent suicidal thoughts were common among inmates (20.5% of the sample), with 4.5 percent having plans for self harm and 2.6 percent having made some act of self harm since being in prison.

Those with major mental disorders (mood disorder, or psychotic illness) were similar in age to the main prison population. Approximately 50 percent of these inmates had received some form of mental health treatment since being in prison, least for those with schizophrenic and related disorders. Of those with major mental disorders, 90 percent also had a substance abuse disorder. Of the 83.4 percent of inmates who have a substance abuse or dependence diagnosis, 34.9 percent have received some treatment for the substance abuse disorder since they have been in prison.

The increased rates of mental disorder amongst inmates argues strongly for increased service provision to inmates, both to treat the treatable mental disorders these inmates suffer and to contribute to reducing the risk of re-offending, which is strongly correlated with active substance abuse disorders.

2. INTRODUCTION

BACKGROUND TO STUDY

The identification and treatment of mentally ill persons within the prison system has long posed major difficulties for both Corrections and Health personnel. The development of regional forensic psychiatry services arose, inter alia, from the failure of health services to provide adequate treatment to inmates, associated with a sharp increase in the rate of prison suicide. The first Mason Report (Mason et al, 1988) found that there were no forensic psychiatric services in New Zealand due to:

- a lack of trained staff
- inadequate funding
- reluctance of staff to manage potentially dangerous patients in the absence of facilities and support
- the ‘open door’ policy, with implicit movement away from the provision of secure care.

The Mason Report made the important philosophical statement that mentally ill people are the responsibility of the Health sector. Being a prisoner did not diminish the right to proper psychiatric care. The report recommended the establishment of five Regional Forensic Psychiatry Services. A further service was added following the report. One of the functions of these services was to provide care to inmates, both within prison and on transfer to hospital if necessary. Such services were linked with court liaison, secure provision and follow up roles, to ensure that mentally ill people anywhere in the criminal justice system could be properly assessed and treated.

Ten years have elapsed since the Mason Report. This has seen the development of a national network of Regional Forensic Psychiatry Services, which provide inpatient psychiatric care, community follow-up, liaison and secondary consultation to general mental health services, prisons and court liaison services.

The six Regional Forensic Psychiatric Services provide the prisons with specialised services including out patient mental health clinics within the prison environment and when necessary the transfer of mentally ill inmates into medium secure hospital facilities (pursuant to Sections 45 and 46 of the Mental Health [Compulsory Assessment and Treatment] Act 1992).

The development of Regional Forensic Psychiatry Services has undoubtedly improved the provision of mental health services for inmates. However, resources are being used without important data being available to ensure the most effective and efficient use of those resources. Practitioners in the justice sector have also held considerable concerns regarding what it has viewed as a change in the demographic profiles of people entering prison. With the closure of most large psychiatric hospitals, concern has developed that many who were previously cared for in hospital now may reside in prison, but clear evidence of this possibility is lacking. Questions regarding an apparent rise in the rate of suicide and deliberate self-harm has also fuelled this concern. The Department of Corrections has developed specialised units at Mt Eden and Auckland Prisons for the care of inmates with mental disturbance. The size and nature of the problem of the incidence of mental disorder amongst inmates has remained unquantified however.

The main aim of this study is to rectify this important gap in information. It is hoped this will lead to a stronger base for future planning and initiatives concerning the care and treatment of mentally ill inmates. Furthermore, the data obtained from this study will provide a vital platform for further analysis regarding the particular difficulties being experienced by various populations of inmates.

1.1.1 **International Literature Review**

Epidemiological studies looking at prevalence rates for psychiatric disorders within prison populations worldwide were sparse prior to 1980. A review by Monahan and Steadman (1988) found only six studies in the literature relating to true prevalence studies in U.S. prison populations before 1982. Since that time there has been an increase in interest and a proliferation in prevalence studies reported in the psychiatric literature. A number of studies on the prevalence of psychiatric disorders among inmates have been carried out in other countries. Results vary according to research objectives, methodology and measures used. James et al. (1980) surveyed a random sample of 246 male inmates in the US for which prevalence rates for personality disorder were 35 percent, substance abuse 25 percent, and schizophrenia 2.5 percent. Steadman et al. (1989) sampled sentenced male inmates and concluded that 8 percent had a severe mental disability (unspecified). Dvoskin and Steadman (1989) reviewed 9.4 percent of the 36,144 inmates in New York State looking at the degree of disablement in mentally ill inmates rather than specific diagnoses. They found that 5 percent were severely psychiatrically disabled and a further 10 percent significantly disabled. These figures rose to 8 and 16 percent respectively when measures of functional disability were also considered which were felt likely to reflect the existence of mental illness, retardation or other developmental disabilities.

These studies reflected a general increase in the interest in the level of psychiatric disorder within the United States prison system during the 1980s. Steadman et al. (1989) went further and reviewed 265 correctional institutions in the United States providing mental health care. This study contributed significantly to the development of the principles and standards of health care delivery in correctional institutions and the American Psychiatric Association guidelines for such treatment. In contrast to the earlier studies, Monahan and Steadman (1988) concluded that "the weight of the evidence appears to support the assertion that the true prevalence of psychosis amongst inmate populations does not exceed the true prevalence of psychosis amongst class matched community populations". It was acknowledged that even if this were the case, this would still represent major mental health care problems for the prison authorities particularly given the rapid growth of the prison population. In 1990, Teplin published studies showing prevalence rates of schizophrenia within a jail population of 3 percent, mania 1 percent and current major depression 4 percent, increased for mania but otherwise not dissimilar to the community sample (a description of these terms is included in Appendix 7.1). Similar studies were performed in Canada. Typical of these is a study performed by Bland et al. (1990) in Alberta. They surveyed 180 randomly

selected male inmates using the Diagnostic Interview Schedule[1]. Their results were compared with a randomly selected non-inmate population. Their findings were that compared with the community sample, inmates were less likely to be married and were less well educated. They found a higher proportion of aboriginal Canadians in the prison sample and also reported that inmates were twice as likely to have a life time psychiatric disorder compared to the community sample. All individual disorders that were investigated were more common in the prison population and six month prevalence rates were even greater compared with the community sample, indicating recent symptoms. They also found that the number of individual disorders per prisoner was higher than for the community sample and that lifetime suicide attempts were seven times more frequent in inmates than the community sample.

Hodgins and Cote (1990) made similar findings amongst penitentiary inmates in Quebec. They surveyed this population using the Structured Clinical Interview for DSM IIIR[2], reviewing 495 inmates. They found rates of schizophrenia seven times, major depression twice and Bipolar Disorder four times that of the community sample.

Remand prison populations tend to pose even greater mental health problems for institutions than sentenced populations. This is no doubt because remands are intensely involved in the Court process or experiencing the first shock of incarceration, are unknown to the prison authorities, are separated from their normal lives and may be withdrawing from drugs or abuse. Remands are not usually screened from a psychiatric perspective. Dell and her colleagues in 1993 observed that some remands had already been identified as mentally ill and had been sent to prison as a way of obtaining treatment through forensic psychiatric referral. In the United Kingdom Coid (1988) found high levels of psychiatric illness amongst the remand population reviewed retrospectively. He found that of the 362 mentally abnormal men he investigated, 242 suffered from schizophrenia, most having a chronic illness. Many had never been previously hospitalised. Overall, 96 percent of this population were deemed to have been in need of psychiatric care. Taylor and Gunn (1984) looked at the remand population in Brixton Prison in London. They found 9 percent of the men in the remand wing exhibited major psychiatric symptoms. The more recent work of Birmingham et al (1996), Hardie et al (1998) in England and Teplin et al (1996) in the United States confirm these trends.

Gunn et al. (1991) studied the prevalence of psychiatric disorder of the sentenced inmate population in England and Wales. This study focussed on

[1] The Diagnostic Interview Schedule is a structured questionnaire, similar to the CIDI used in this study, where lay interviewers ask structured questions. It generates diagnoses of the DSM diagnostic system of the American Psychiatric Association. Internationally, the other commonly used classification system is the International Classification of Diseases of the World Health Association. These two systems in their most recent editions (DSM IV and ICD 10) are quite closely aligned.

[2] DSM, or Diagnostic and Statistical Manual, is the diagnostic system of mental disorders developed and continuously revised by the American Psychiatric Association. It is the most commonly used system in international research. The designation "III R' refers to the edition of the classification used. The current edition is DSM IV

the treatment needs of a 5 percent cohort of sentenced inmates. They reviewed 1,151 men using a semi-structured diagnostic interview and showed current prevalence rates of 1 percent for schizophrenia and 0.4 percent for affective psychosis. A current diagnosis of substance abuse occurred in 23 percent and personality disorder in 10 percent. Overall it was the authors' view that the prevalence rate of psychiatric disorders in the prison system were sufficiently high to necessitate urgent attention. There was a need for greater co-operation between justice and health services in treating inmates within the prison system, transferring them to psychiatric facilities, and in post-discharge planning for inmates who had shown psychiatric disorder. Many of these inmates were viewed as "multiple agency" users who were often involved simultaneously with the criminal justice and mental health systems.

A number of authors have attempted to estimate the treatment needs of prisoners from the diagnoses made by lay or clinical interviewers. An estimate of the magnitude of this unmet need has been measured by two major means. The first is to use psychiatric interviewers to make assessments of need at the same time as performing a diagnostic interview. These studies have two levels of complexity. Firstly are studies such as that of Hardie et al (1998) who in a study of 277 consecutive, male remand prisoners found 4.8% with a diagnosis of schizophrenia but 16, or 5.8% who were acutely psychotic requiring hospital treatment, clearly some with other diagnoses. They stated that all acutely ill prisoners necessitated transfer to hospital.

Secondly, at a greater degree of sophistication are the studies of Gunn's group (Gunn et al, 1991; Brooke et al, 1996) in sentenced and remand prisoners respectively. In these studies prisoners were allocated to one of four treatment options: prison health services, motivational interviewing for substance misuse, hospital transfer and assessment for therapeutic community. Need for hospital transfer was defined as a clinical judgement reserved for those prisoners who were mentally unwell and unable to be safely managed in prison on the basis of their risk to themselves or others. Hospital admission was recommended for 88.2% of the psychotic prisoners (whether a schizophrenic or affective psychosis) in sentenced group (Gunn et al, 1991) and in 80.6% of psychotic prisoners in the remand group (Brooke et al, 1996). These were the majority (80% in the sentenced study and 66% in the remand study) of those mentally ill prisoners who required hospital transfer.

The second method is to use diagnosis, particularly current diagnosis as a proxy for treatment need. This is necessary in the current study as non-clinical interviewers can only reliably interview for diagnosis, not symptom severity using the CIDI. This has two methodological difficulties. The first is whether diagnoses arrived at by lay interviewers accurately reflects the rate of disorder diagnosed by trained clinicians. As noted in greater detail below, the CIDI may over diagnose in some areas, whereas clinicians are well recognised as underdiagnosing in others (especially personality disorder and substance use disorders, see Gunn et al, 1991). In relation to psychotic diagnoses, the CIDI

over diagnoses least in young male subjects, typical of the current population. Of interest is the study of Singleton et al (1998). In a sample of 3142 prisoners in England and Wales, they had a subsample of subjects who received clinical and lay interview methodologies. Clinicians diagnosed marginally more prisoners with a psychotic illness than did the lay interviewers using the SCID. For these reasons, we believe a current diagnosis of a manic or schizophrenic and related disorder is likely to be similar to clinician-rated diagnosis in this New Zealand population.

1.1.2 **Australasian Studies**

There have been few studies looking at the level of mental disorder within prisons in Australia or New Zealand. Glaser (1985) studied 50 consecutive admissions to the psychiatric unit in Pentridge Prison in Melbourne comparing his results with other Australian studies that had not been published in the international literature. He found a striking similarity in diagnostic groups with 42 percent suffering schizophrenia, and 16 percent affective disorders. Schizophrenia and affective disorders were the most frequent diagnoses. Glaser's population of course comprised inmates admitted into a psychiatric unit resulting in the very high proportions of severe psychiatric disorder in his group compared with prevalence studies for general prison populations. At this time he stressed the need for a large-scale epidemiological survey in Australian prisons to establish not only the type and extent of psychiatric disturbance but also what the prison services were likely to be able to do about it.

Hurley and Dunne (1991) found high levels of psychological distress amongst women inmates in the Brisbane Women's Prison. They estimated that the prevalence of severe disturbance in inmates was approximately 150 percent greater than women living in the community. They noted the very high rate of psychoactive substance use disorders in their population.

Herrman et al. (1991) reported a study estimating the prevalence of severe psychiatric disorder in a group of sentenced male inmates in a Melbourne prison. They used the Structured Clinical Interview for the DSM IIIR, with 158 men and 38 women. They found 3 percent with psychotic disorders, and 12 percent a current mood disorder (mainly major depression). Many of these were untreated. Comparable to international studies, 69 percent of inmates received a lifetime diagnosis of dependence or abuse of alcohol or other psychoactive drugs.

There were no published studies estimating the prevalence of major psychiatric disorder in the New Zealand prisons prior to the Canterbury Prison Study performed in 1995-1996 by Brinded, Fairley and Malcolm. There is no completed prevalence study on a New Zealand prison population, although there have been two pilot studies. Tripp and Lougmore began a pilot research project based in Dunedin Regional Prison (as reported to the Annual

Conference of the New Zealand Psychological Society, 1991) and Bushnell and Bakker (unpublished) carried out a pilot study on consecutive arrivals at Christchurch Prison during 1989. The Canterbury Prison Study was the pilot study for this national epidemiological study into prevalence rates of mental disorder in New Zealand prisons. The results of the Canterbury Prison Study have been submitted for publication and are summarised below in Section 2.4.1.

SUICIDE IN PRISON

1.1.3 **International Literature Review of Prison Suicide**

Suicide in prison has been the subject of study in a number of countries (eg Backett, 1987; Dooley, 1990; Hurley, 1989; Pounder, 1986; Smith, 1984). It has always been acknowledged that it is difficult to predict which persons will commit suicide. Pokorny (1986) concluded after a prospective study of 4800 patients in a psychiatric hospital that "identification of particular persons who will commit suicide is not apparently feasible, because of the low sensitivity and specificity of available procedures and the low base rate of this behaviour". Prison inmate populations are further complicated by the abnormal environment in which they find themselves and the demographic characteristics of the majority of prison inmates which show them to have an excess of known risk factors for suicide relative to the community sample (Topp, 1979; Dooley, 1990). These risk factors include previous psychiatric history, alcohol and drug abuse, being male and social isolation. Often the fact that they had previously attempted suicide had been poorly documented or missed. Studies looking at the rate of suicide attempts in prisons have generally shown greatly increased levels in the inmate populations compared with a community sample. Inmates sentenced to lengths of imprisonment greater than one-and-a-half years were found to have a six-fold increase in suicide risk and many inmates who successfully committed suicide were found to be already in treatment.

Liebling (1995) found that prison suicide attempters could be differentiated from other inmates by the presence of more severe social disadvantage, violence and family problems, and more frequent contact with criminal justice and social support agencies. Attempters found prison life more difficult in almost every respect considered. Although such factors are more common in the suicide attempters, these factors are sufficiently common in the total population as to lack sufficient specificity for suicide to be clinically predictive in individual cases. It needs to be emphasised that parasuicide, or self harming behaviour is very difficult to separate from behaviour actually motivated to end one's life. Parasuicidal behaviour may be motivated by a desire to signal one's distress to others, and not be about a desire to die. The inclusion of both parasuicidal and suicidal subjects in some of these studies complicates the understanding of the risk of suicide itself.

1.1.4 **Suicide in New Zealand Prisons**

The incidence of suicide in New Zealand prisons has been a source of major concern. In the mid 1980s there was a series of 13 completed suicides in Auckland Prison which was deemed to be due to the failure of psychiatric hospital provision for mentally ill offenders (Mason et al, 1988; Skegg and Cox, 1993). The work of Skegg and Cox (1993) investigated the issues both within prison and police custody, finding a major over representation of Maori men amongst those who died. They found evidence of "contagious" effects of suicides occurring in distinct clusters and showed how detrimental policy decisions can cause significant fluctuations in suicide rates (Cox and Skegg, 1993).

In 1994, following a sudden rise in suicide numbers the Department of Justice called together a Suicide Prevention Working Group to study the reasons for this increase. A background paper for this working group (Le Quesne, 1995) described a series of trends. These were:

- Suicide rate in prisons increased sharply in the early 1980s, peaking in 1985 then falling through until 1993. In 1994 there was a sharp increase in the rate once more.

- The declining rate per total prison numbers between 1985 and 1993 occurred largely because of a sharp rise in the overall prison muster, while the total number of deaths declined only modestly.

- The suicide rate for sentenced inmates has declined significantly in recent years while the rate for remandees has increased and has been higher than sentenced inmates since 1991.

- Inmates kill themselves 4-6 times more often than the community sample (age adjusted), especially so for Maori inmates. While in the community sample, Maori suicide rates are lower than the Pakeha, this is reversed in prison statistics.

- New Zealand's prison suicide rate is comparatively high internationally, but this appears proportionate to our relatively high suicide rate as a nation.

- Between 1969 and 1994, 76 inmates suicided, 2 were women.

- Younger inmates (15-19) are at greatest relative risk.

- Inmates with a maximum or medium security rating account for 93 percent of completed suicides, but this figure is distorted by the problems of the mid 1980s.

- 84 percent of suicides occur within the first year in custody, 64 percent in the first 6 months.

- 91 percent of completed suicides are by hanging.

- The larger receiving institutions have the greatest number of suicides.

The Working Group noted that there appeared to be shifting trends in the 2 peak periods of suicidal behaviour. The first, in 1984 to 1986 was of sentenced inmates with mental illness who had been denied access to appropriate care. The design and provision of Regional Forensic Psychiatry Services aimed to reduce this problem. The shift to remand inmates and a younger age of suicides has been noted in recent years. It is unclear if existing services are appropriate to address the risk of suicide in a younger group of inmates. Fewer of the recent suicides suffered major mental illness. They were more likely to suffer a mixture of substance use disorders, adjustment disorder and personality difficulties, in the context of facing the huge problems of adjustment that incarceration brings.

One of the Working Group's recommendations was to include in a survey of prisoner's questions regarding the pattern of any suicidal thoughts or behaviour since being in prison.

The high rate of Maori amongst the completed suicides was of particular concern, and a further working group was established to consider the issue from a Maori perspective. The Report of the Maori Suicide Review Group (1996) noted that the rate of suicide amongst Maori was much greater than expected, with 47 Maori inmates dying by suicide between 1971 and 1995. The Report makes 39 recommendations that it believed would reduce the frequency of suicide by Maori.

The two key themes to the recommendations were:

- An acknowledgement of cultural factors in the assessment and management of Maori inmates,

- The involvement of whanau in the management of Maori inmates at risk of suicide or self-harm.

These points have been emphasised in other Government reports (eg, the Ministry of Health's Policy Guidelines for Maori Health 1996/7, and Bridgman and Dyall, 1996).

The volatility of New Zealand data indicates that it is not clear that internationally derived risk factors will be predictive here, nor that service responses that met the needs of previous clusters of suicides will be useful again now.

1.1.5 **The Pilot Study (Canterbury Prison Study)**

The Canterbury Prison Study aimed to remedy the lack of information regarding prevalence rates of common psychiatric disorders in the prisons of the Canterbury province. The aims of the study were:

1. To act as a pilot study for the proposed national study estimating prevalence rates of psychiatric disorder in New Zealand prison population as a whole.
2. To determine prevalence rates of psychiatric disorder in the prison population
3. To provide epidemiological information that could be used to plan and improve psychiatric service in prisons.

The study aim was to complete 225 interviews with inmates in Christchurch Men's prison (Addington and Paparua) and Christchurch Women's Prison. The study design involved a census of all female inmates at the Christchurch Women's Prison and all male remand inmates in the Christchurch men's prison. Male sentenced inmates were randomly selected for interview. The sample consisted of 50 inmates from the Women's Prison, 50 remand inmates and 125 sentenced male inmates from the Christchurch Men's Prison. This constituted approximately 25 percent of the total sentenced inmate population at that prison.

1.1.5.1 Method

Consent and demographic data was gained from inmates to take part in the study. A second interviewer then interviewed the inmate using a structured clinical interview, the Composite International Diagnostic Interview - Automated (CIDI-A)[3]. This computer programme was loaded onto laptop

[3] The CIDI A is the Composite Interview for Diagnosis International A, a structured clinical interview which can generate diagnoses in either the International Classification of Diseases system of the World Health Organisation, or the DSM system of the American Psychiatric Association. Lay interviewers in either a computerised or hard copy format can administer CIDI.

computers into which data was entered directly by the interviewer while the interview was progressing. The interview included sections on anxiety disorders, depression, mania, schizophrenia, eating disorders, alcohol and drugs, and obsessive compulsive disorder.

Personality variables were assessed using two questionnaire type assessments. Firstly the short form of the Temperament and Character Inventory (Cloninger, 1994) was administered. This is a dimensional assessment of personality done through self-report. Another assessment tool called the "4A's" (Mulder and Joyce, 1997) was also administered. This is a four-factor analysis of personality disorder symptoms based on the DSM IIIR diagnostic system.

The Ravens Progressive Matrices was used to assess intelligence. Inmates who scored below a certain cut off rate were reassessed using the Weschler Adult Intelligence Scale - Revised[4].

1.1.5.2 Summary of Pilot Study Results

Results were reported to the Department of Corrections and the Ministries of Health and Justice, in 1996 (Brinded et al., 1998). Interviews were completed on 43 male remands, 36 sentenced female inmates and 101 sentenced male inmates. When compared to the results reported for community samples (Wells et al., 1989; Oakley-Browne et al., 1989) the results demonstrated elevated one month and lifetime prevalence rates within the prison population for almost every diagnostic category.

These refer to whether the person has suffered the particular disorder in the last month or ever in their life, respectively.

Over all, the Pilot Study showed one month and lifetime prevalence rates for psychiatric disorder reported in community samples in New Zealand to be much lower than the prevalence rates found within the prison system for all psychiatric disorders with the exception of generalised anxiety disorder.

The disorders showing greatest elevation were:

- One month and lifetime prevalence rates for drug and alcohol abuse and/or dependence were grossly elevated compared to the community.
- One month and lifetime prevalence rates for major depression were also elevated, particularly in the sentenced male population being approximately double that found in the community.

[4] The Raven's Progressive Matrices is a screening test for intellectual disability, and the Weschler Adult Intelligence Scale-Revised is the standard psychologist administered evaluation of intelligence.

- Bipolar I and Bipolar II Disorder were elevated in the sentenced male population
- Lifetime prevalence rates of schizophrenia were elevated in both sentenced male and remand populations.

Many of the inmates diagnosed as suffering from a major mental disorder also suffered from one month and lifetime drug and alcohol abuse/dependence disorders, in keeping with the international literature.

The remand prison population showed one month prevalence rates for psychiatric disorder for major depression and Bipolar I and II Disorders greater than that found in the sentenced male population. This suggests that the remand male population is more psychiatrically disturbed than the sentenced inmate population. Given the increasing size of the prison inmate population in New Zealand it was felt that the results showed the existence of a large number of psychiatrically disturbed individuals within the prison system which should be of significant concern to Mental Health Services as well as the Department of Corrections.

It was not surprising to find high levels of anti social personality disorder within the prison inmate population as the diagnostic test for this disorder relies considerably on rule violation (ie offending) to arrive at the diagnosis. The results of the Temperament and Character Inventory and 4 A's are to be found in the Pilot Study report (Brinded, Fairley, Malcolm and Siegert 1996). The assessment of intellectual function encountered difficulties resulting in the intellectual disability component of the pilot study being dropped from the methodology used in the national study, a separate study having been completed by Brandford (1997).

1.1.6 **Intellectual Disability among New Zealand Prison Inmates**

A methodology different from that used in the pilot study was adopted to assess the prevalence of intellectual disability amongst inmates (Brandford, 1997). Prison officers screened all inmates using a functional measure which correlates with intellectual disability and identified 273, or 6.42 percent of inmates, who were suspected as being possibly of low intellectual function. Of these, 77 percent consented to being formally assessed by psychologists employed by the Psychological Service of the Department of Corrections with the WAIS-R. Using strict criteria of an IQ of less than 70 and showing functional impairment, 13 people were found to have an intellectual disability, or a point prevalence rate of between 0.3 percent and 0.37 percent, rather lower than noted in comparable overseas studies. This may be due to improved assessment procedures used in this study or problems in the screening procedures. Further, the study did not seek to identify those of borderline intellectual function, a group often included in overseas studies of intellectual disability in prison.

3. METHODOLOGY OF THE NATIONAL STUDY OF PSYCHIATRIC MORBIDITY IN NEW ZEALAND PRISONS

Approximately 1300 inmates from every prison in New Zealand were to be approached for informed consent to participate in this study to identify the proportions of inmates who were having problems with their mental health.

These included:

- 15 percent of male sentenced inmates selected by random numbers from the muster list and stratified by 'security rating'[5]. The stratification ensured that 15 percent of inmates from each security rating were included, to ensure adequate sampling of those at higher security levels. Should a selected prisoner be transferred, be unavoidably unavailable or refuse, then the next name on the list for that security classification would be included.
- All women sentenced and remand inmates.
- All male remand inmates.
- If remand or female prisoner refused to participate or did not complete the interview, he or she was not replaced. A 20 percent refusal rate was expected, based upon the Pilot data.

Advice on sampling was obtained from the Health Research Council statistician, Mr Alistair Stewart, University of Auckland.

PERSONNEL

The day-to-day running of the project was co-ordinated by the Research Manager of the Academic Forensic Psychiatry Unit at the University of Auckland, Dr Tannis Laidlaw. Four regional teams were established in Auckland, Hamilton, Wellington and Christchurch. Each of these teams had a team leader who supervised 8-14 interviewers and their data collections from 220-350 inmates.

The interviewers ranged from those with qualifications such as clinical psychology students and senior psychiatric nurses, to lay people with interviewing skills. All interviewers received the same 2-day training in how to ask the questions reliably and consistently. All were instructed in how to raise any concerns about the well being of any prisoner they interviewed with the team leader (all team leaders being experienced clinicians) or with the clinical

[5] Security rating refers to the rating of each sentenced prisoner according to a protocol developed by the Department of Corrections. It allocates the prisoner to maximum, medium, or minimum-security level according to a mixture of offence, sentence and behavioural criteria. Having a mental illness contributes to a higher security rating.

co-ordinator of the team. Interviewers were paid per interview. An audit process was employed to ensure that all interviews were completed in the appropriate manner. As a consequence we are confident that all included interviews were properly conducted.

PROCEDURES

Procedures used in the Pilot Study and its recommendations for change in procedure were examined closely prior to finalising the design for the National Study. The report on the pilot study noted that prison officers were not adequately prepared for the study to take place. In response to this, the Department of Corrections, the Investigators and Team Leaders of the four centres made contact with the administration of each prison. This contact was expanded to include some or all of the unit managers, Prison Officers' Association, and in one instance, Gang contacts, to ensure a safe and co-operative atmosphere for the interviewers. A high level of co-operation was experienced from the staff and inmates of all prisons.

The final design comprised five sections: informed consent, demographic data, diagnostic interview for mental illness, screening diagnostic interview for relevant personality disorders, and specific information about suicidal thoughts or actions.

INFORMED CONSENT

A consent form and subject information sheet was prepared for the Human Ethics Committee of the University of Auckland and subsequently adjusted to meet specific requirements of the committee prior to its acceptance for use in the Auckland area. The various Ethics Committees in other regions were provided with the model prepared for the Auckland Region as a basis, though they often required changes prior to accepting the forms for use in the local prisons.

Team Leaders approached each potential subject individually, explained the study, gave the prisoner a copy of the subject information sheet, obtained a signed consent form and made an arrangement for an interviewer to meet with him or her in the next few days (these forms are attached as Appendix 7.2).

DEMOGRAPHIC DATA

Once consent was gained, the Team Leader asked 18 demographic questions (see Appendix 7.3). The demographic sheet was considerably more concise than that used in the pilot study. The new demographic information sheet took approximately 10 minutes to complete. The Team Leader scheduled the interview times, and provided names and demographic sheets to the interviewer.

DIAGNOSTIC INTERVIEW FOR MENTAL ILLNESS

The pilot study methodology used the Comprehensive International Diagnostic Interview (CIDI – Auto) for identifying the various mental disorders that are part of the American Psychiatric Association's diagnostic criteria, the 'DSM' system. After freshly considering other diagnostic instruments, the CIDI-A was again chosen as meeting the various requirements of this study. Lay interviewers could be trained in its use, it was an international instrument devised by the World Health Organisation (WHO) and it was fully computerised. A new version designed for the latest diagnostic criteria, DSM-IV (American Psychiatric Association, 1994) was available and employed in this study. The CIDI – Auto 2.1 data were scored for DSM IV diagnosis using the WHO SPSS scoring algorithms (Release 2.1, May, 1998). All interviewers in each centre were trained in the CIDI-A by Dr Laidlaw, who herself received training at the World Health Organisation's CIDI training centre in Sydney, Australia.

The version of the CIDI-A was chosen which comprised sections examining Anxiety Disorders, Depression, Mania, Psychosis, Eating disorders, Alcohol, Drugs, Obsessive-Compulsive Disorder, Post-traumatic Stress Disorder, and the Mini-Mental State examination. These disorders were chosen as the common and clinically most significant disorders in the prison setting, on the basis of previous research in prison populations. The interviewer met with each subject individually, and read the questions as they appeared on the computer screen, typing in the answers, which were saved onto the hard discs of the laptop computers.

The CIDI-A has been shown to have good reliability and inter-rate agreement. The validity of CIDI-A diagnoses, when compared to clinical interviewing is similar to, or better than, other structured clinical interviews (such as the Diagnostic Interview Schedule used in the Christchurch Epidemiology Study of Wells et al., 1989). Results have shown good clinical validity in the areas of affective psychosis, mania, depression and drug and alcohol disorders.

Results for schizophrenia and related disorders need to be evaluated with a little more care with clinical re-interviewing suggesting that CIDI-A diagnoses may have less significance when compared to clinical reassessment. This does not suggest that diagnoses for non-affective psychoses are invalid, rather that clinical validity of these diagnoses needs to be considered when evaluating these results.

DIAGNOSTIC INTERVIEW FOR RELEVANT PERSONALITY DISORDERS

The diagnosis of personality disorder[6] usually relies on a normal clinical interview, interview with others who know the person well and a review of any clinical records available. There have been a number of attempts to develop a semi-structured interview format to reliably diagnose personality disorder. A few self-report or non-professional researcher directed questionnaires have been developed in an attempt to simplify and make practical an assessment that does not require clinician input. The Pilot Study had used two separate diagnostic instruments to identify personality disorders: one was insufficiently recognised internationally (The Four A's); and the other was too long for widespread use with this population (the Temperament and Character Inventory).

A literature search was performed to find a questionnaire that could be subdivided into sections so that the disorders of interest (specifically Borderline, Antisocial, Narcissistic, Histrionic and Paranoid personality disorders) could be assessed. The PDQ-4+ (Hyler et al., 1989) has been employed in more than 50 scientific publications (as assessed from a Medline search), can be computer programmed, can be subdivided into components, has high face validity with DSM, and can be completed in 10-15 minutes if only the major personality disorders are considered. It appeared to the study team to therefore be the best available and well-researched instrument for the purposes of this study.

Several studies attest to the high sensitivity and only modest specificity of the PDQ (that is, the PDQ picks up almost all people with personality disorder who complete the questionnaire but also picks up a moderate number of people who do not have a personality disorder). The main use of the PDQ is as a screening instrument. Clinicians diagnose far fewer people as personality disordered than do questionnaires. The PDQ questionnaire seems particularly over-inclusive, with high rates of false positives (Dowson and Berrios, 1991; Hyler et al., 1990; Zimmerman and Coryell, 1990; Hyler et al., 1992). The originators of the CIDI-A had solved a similar problem by asking

[6] See Appendix 7.1 for a description of personality disorder.

each subject to confirm whether the answers given were truly representative of the symptoms being inquired into. That approach was adopted with the CIDI A, and we adopted the same check questions in this study for the PDQ4+ also. These questions are listed in Appendix 7.4. This was anticipated to cut some of the over-diagnosis problem, although to what extent is unclear. In order to use non-professional research personnel and the questionnaire format, it appears the problem of false positives is one that is being accepted internationally.

To limit the time involved, we only asked about the five most relevant personality disorders from the groupings which DSM IV refers to as the cluster A and B disorders, specifically Borderline, Antisocial, Narcissistic, Histrionic and Paranoid personality. Each interviewer, on completion of the CIDI-A, closed that programme and opened the PDQ4+, which was programmed in New Zealand specifically for this study using the same format as the CIDI-A (question to be read out, answer typed in, computer saving the results to the hard-disc of the laptop computer). Dr Laidlaw trained all interviewers in the computerised version of the PDQ4+.

SPECIFIC INFORMATION ABOUT SUICIDAL THOUGHTS OR ACTIONS

The final questions in the interview were on the subject of suicidal thoughts, feelings, plans or past actions. Concern about prison suicides described earlier determined that more than the usual questions about suicide that are embedded in the depression sub-section of the CIDI-A were warranted. Questions were designed specifically for this study based on the suicidality questions from the CIDI-A by simply adding, “since you have been in prison” to the questions (attached as Appendix 7.5).

The suicidality questions followed the completion of the PDQ4+ seamlessly, and again were programmed into the same format as all the others. At the conclusion of the suicide questions, the interview was formally brought to a close.

DATA COLLECTION

On completion of the interview, the interviewer accessed the summary programmes for each of the CIDI-A, the PDQ4+ and the suicidality results. As soon as the data collection was complete for each subject, a complete record was automatically stored on the laptop computer's hard disc.

The Team Leaders were available for de-briefing after intense interviews, technical help and supervision. This system, when followed precisely, offered day-to-day contact between the Team Leaders and their interviewers. Interviewing occurred from October 1997 until June 1998, with a suspension of interviews over the period 12 December 1997 until 26 January 1998 as it was recognised that pre Christmas release and the holiday break might distort the study population during this period.

DATA HANDLING

Data was collated into Excel spreadsheets, then Access tables by the Research Manager and data entry personnel. Matching between demographics and computerised files for the CIDI-A and PDQ4+ resulted in master-data files that were convertible to the Statistics Package for the Social Sciences (SPSS), for analysis.

4. RESULTS OF NATIONAL STUDY OF PSYCHIATRIC MORBIDITY IN NEW ZEALAND PRISONS

RESPONSE RATES AND SAMPLE REPRESENTATIVENESS

1.1.7 **Acceptance and Completion Rates**

To achieve an estimated 1300 interviews from a population of 200 remand and sentenced women inmates, 540 remand male inmates and 4447 sentenced male inmates, all female inmates and remand male inmates were approached and 15 percent of the sentenced male inmates were approached to participate in the study. Of these, 170 women, 452 male remands and 660 male sentenced inmates consented to enter the study and completed the consent and demographic forms. Of the sentenced men, 826 prisoners were approached to gain 660 (response rate of 79.9%), or 14.8% of the sentenced prisoners entering the study. Response numbers and rates are presented in Table 1. There were 34 who either later did not consent or were not available to complete the CIDI, resulting in 1253 completed demographic and CIDI interviews. A further 94 did not complete the PDQ 4+ or suicidality questions, resulting in 1159 completed interviews for those sections.

TABLE 1. ACCEPTANCE AND COMPLETION RATES

Population	Number in Population	Number & percent consenting		Number completing CIDI		Number completing CIDI and PDQ 4+	
Women*	200	170	85.0%	162	81.0 %	158	79.0%
Remand Men*	540	452	83.7%	441	81.7%	405	75.0%
Sentenced Men**	4447	660	**79.9%	645	78.0%	592	71.6%
Men uncertain		5		4		4	
Total	5187	1287		1252		1159	

* All members of these populations were approached.

** A random sample of 15 percent of the sentenced male population was approached, calculated as 15 percent of each security group, maximum, medium and minimum secure. If one prisoner declined consent a further prisoner was approached, with a response rate of 79.9 percent .***826 prisoners were approached to achieve the inclusion of 660 sentenced prisoners in the study

Three problems were encountered with acceptances. Firstly, there was a problem of re-sampling of women interviewed in the pilot study in Christchurch Women's prison who did not wish to be re-interviewed. This prison is unique for women in having a number of women serving long sentences. Secondly, there was a policy initiative to reduce drug use in prison launched during the study period, which some inmates associated with the research project and

resulted in some inmates declining to participate. Finally, one remand wing believed that the research team was using space intended for visitors and some inmates were encouraged not to co operate with the study. Such effects were largely local, and did not involve large numbers of inmates.

1.1.8 **Representativeness of the Sample**

To assess the representativeness of the sample, the study group was compared with the prison census data from November 1997 (Ministry of Justice, unpublished results). The two groups were compared for age, ethnicity, security status and offence profile. The results of these comparisons are presented in Tables 2 and 3. Table 2 shows that the age structure of the sentenced female and male inmates and the study population are similar.

TABLE 2. AGE STRUCTURE OF SENTENCED POPULATIONS: COMPARISON OF STUDY AND PRISON CENSUS RESULTS.

Age Grouping	Sentenced Women, study		Sentenced Women, Census		Sentenced Men, Study		Sentenced Men, Census	
-17	10	5.9%	10	4.8%	18	2.7%	120	2.6%
18-19	16	9.4%	21	10.1%	68	10.3%	340	7.2%
20-4	39	22.9%	39	18.8%	159	24.1%	1097	23.2%
25-9	32	18.8%	34	16.4%	123	18.6%	967	20.5%
30-4	27	15.9%	36	17.4%	97	14.7%	746	15.8%
35-9	23	13.5%	30	14.5%	74	11.2%	502	10.6%
40-9	13	7.6%	21	10.1%	77	11.7%	580	12.3%
50-9	10	5.9%	14	6.8%	26	3.9%	237	5.0%
60+	0	0.0%	2	1.0%	18	2.7%	139	2.9%
Total	170	100.0%	207	100.0%	660	100.0%	4728	100.0%

Table 3 demonstrates that the profile of the current offences of the sentenced inmates for the census and in the study population is similar. The women in the study population have proportionately fewer property offences and more violent offences than the Census population. A similar pattern is found in the male sentenced prisoner group. The definition of violence may have been different between the study and census methodologies.

TABLE 3. OFFENCE TYPE: CURRENT AND MOST SERIOUS CONVICTIONS OF THE STUDY AND PRISON CENSUS* GROUPINGS.

	Sentenced Women, study		Sentenced Women, Census		Sentenced Men, Study		Sentenced Men, Census	
Violence	39	25.0%	70	33.8%	278	42.1%	2698	57.1%
Other violence against the person	31	19.9%	3	1.4%	173	26.2%	105	2.2%
Property	42	26.9%	83	40.1%	71	10.8%	941	19.9%
Drug Offence	30	19.2%	29	14.0%	48	7.3%	331	7.0%
Against Good Order	0	0.0%	0	0.0 %	9	1.4%	32	0.7%
Against Justice	0	0.0%	7	3.4%	11	1.7%	101	2.1%
Traffic	11	7.1%	13	6.3%	58	8.8%	475	10.0%
Not recorded or other	3	1.9%	2	1.0%	12	1.8%	45	1.0%
Total	156		207	100%	660		4728	100%

* Data obtained from Ministry of Justice, November 1997 Prison Census.

Table 4 presents the security status of the female and male inmates. This shows marked similarity between the study group and the census data, supporting the representativeness of the study group. The male inmates were sampled evenly but the research population shows a trend towards higher security status than the Prison Census.

TABLE 4. SECURITY STATUS OF THE CENSUS* AND STUDY POPULATIONS

	Sentenced Women, study		Sentenced Women, Prison Census		Sentenced Men, Study		Sentenced Men, Prison Census	
Maximum	1	0.6%	1	0.5%	17	2.6%	55	1.3%
Medium	31	18.1%	27	13.2%	296	44.8%	1594	36.6%
Minimum	114	66.7%	161	78.0%	334	50.6%	2615	60.0%
Not Classified	10	5.8%	16	7.8%	13	2.0%	92	2.1%
Missing data	3	1.8%	0	0.0%	0	0.0%	0	0.0%
Total	159		205		660		4356	

* Data obtained from Ministry of Justice, November 1997 Prison Census.

1.1.9 **Age Structure**

The age distributions of the male and female populations are displayed in Figures 1, 2 and 3. The mean age of the total population was 29.7 years, with a range of 15 to 81 years. There was no statistical difference in age between the gender groups (Mann-Whitney, p = 0.87) but the male remands are significantly younger by 2.1 years than the sentenced male sample (Mann-Whitney, p = 0.01).

FIGURE 1. AGE DISTRIBUTION OF SENTENCED MALE SAMPLE

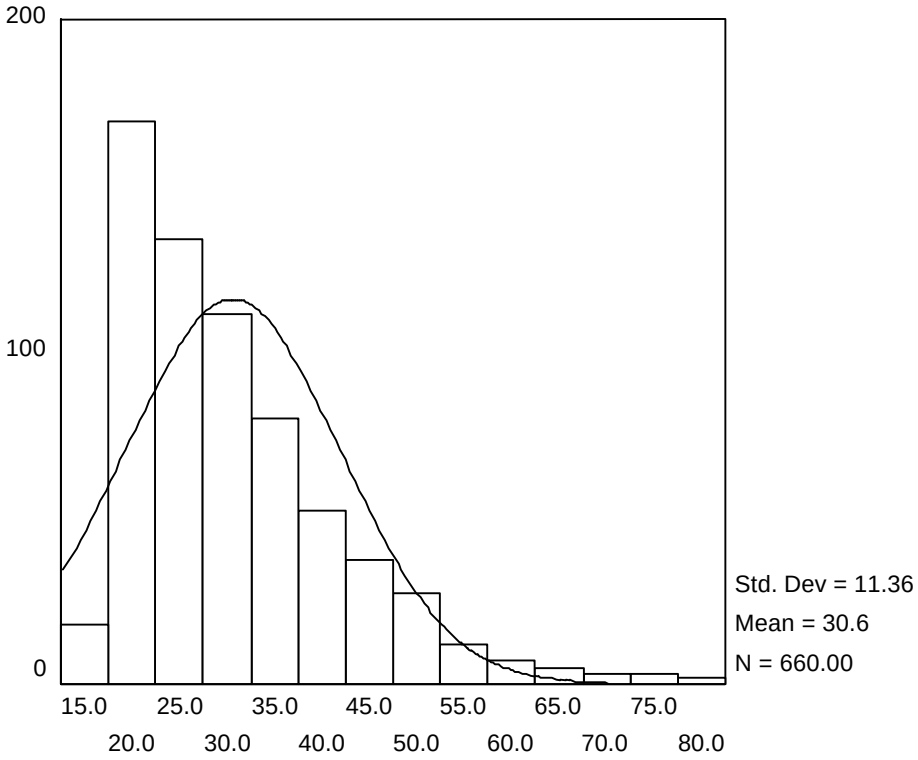


FIGURE 2. AGE DISTRIBUTION OF REMAND MALE POPULATION

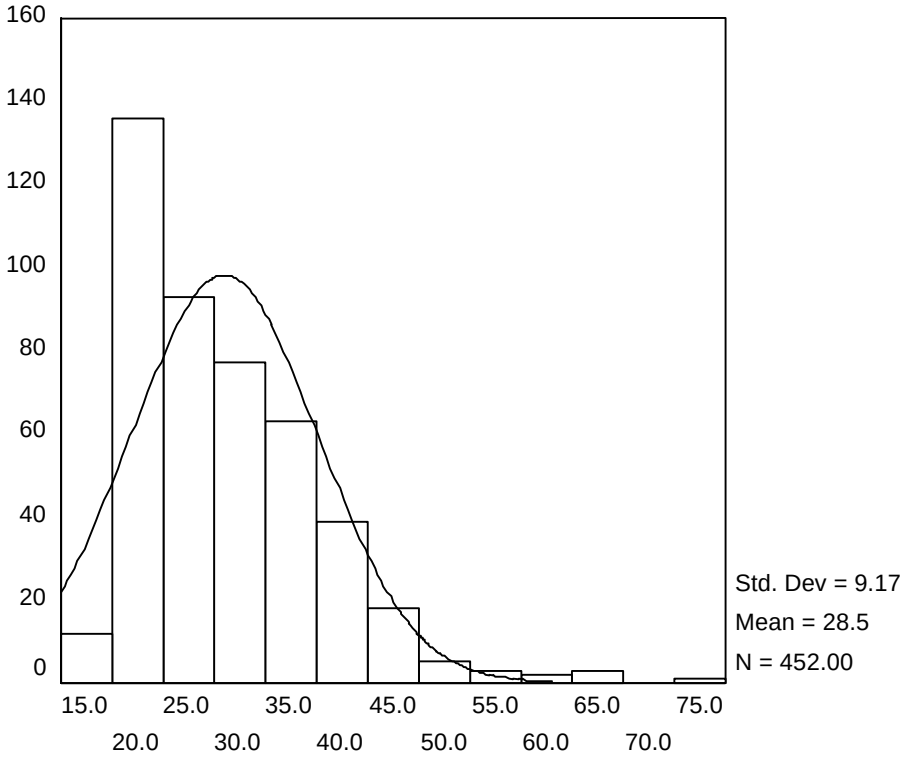
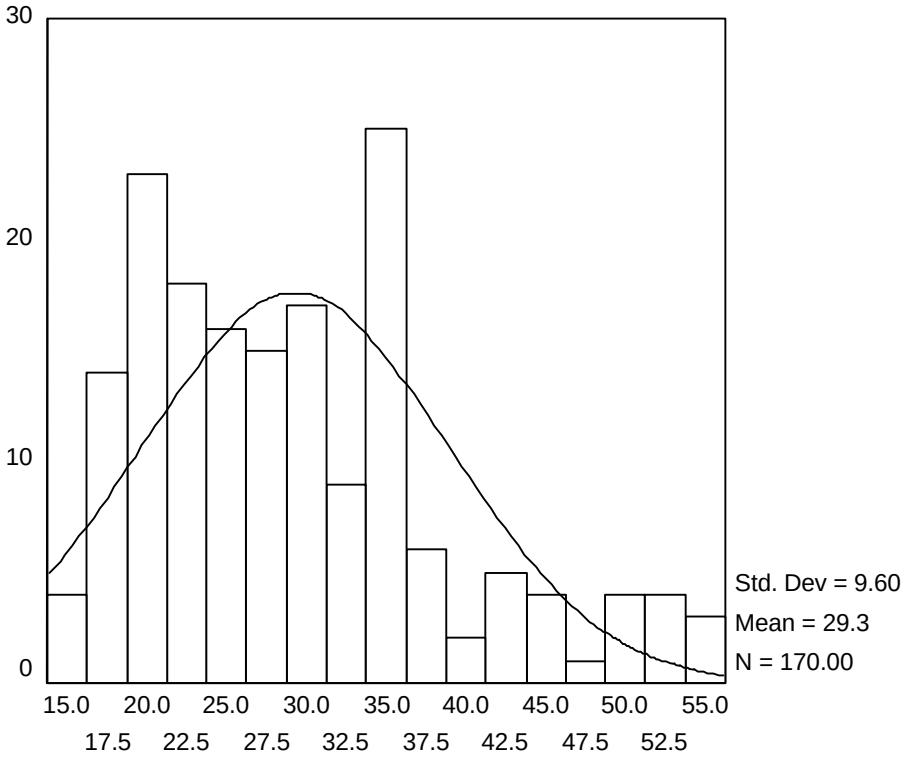


FIGURE 3. AGE DISTRIBUTION OF REMAND AND SENTENCED FEMALE POPULATIONS



1.1.10 **Combining Female populations**

Given that there were only 12 remand women in the female study group, the comparability of this group with the sentenced women was addressed to determine if the remand and sentenced groups could be combined for the purpose of further analysis.

The mean age of the remand and sentenced female populations were 27.3 years (SD 11.3) and 29.2 years (SD 9.2) respectively. There is no significant difference between these means (2 Tailed Mann-Whitney, p = 0.35). In terms of ethnic distribution, there was no difference between these using a CHI Squared Test (p = .491). Given these findings and the small remand numbers, the female sample will be handled as a single population for the purposes of further analysis.

Comment

The sample has a high response rate of 80 percent over all, and similar in the remand and sentenced men, and in the female samples. The study groups do not differ significantly from the most recent prison census data in terms of age, ethnicity, security status and offence characteristics. This gives grounds for reasonable confidence that the study group is representative of the current prison population. As the small number of remand women did not differ in terms of age and ethnicity, the remand and sentenced women will be treated as one sample.

SOCIO-DEMOGRAPHIC STRUCTURE

1.1.11 **Ethnicity**

The ethnic identity of the population is presented in Table 5. Approximately half identify themselves as Maori, highest amongst the female group. Few women of Pacific origin are detained, but at least 8 percent of the male population are of Pacific origin. The “other” group included people who identified themselves as ‘kiwi’ or a ‘New Zealander’.

TABLE 5: SELF-IDENTIFIED ETHNIC AFFILIATION

	Women		Remand Men		Sentenced Men		Total	
Maori	89	52.4%	225	49.8%	305	46.2%	622	48.4%
Pacific peoples	5	2.9%	46	10.2%	56	8.5%	107	8.3%
Pakeha	56	32.7%	127	28.2%	213	32.3%	398	30.9%
Other	20	11.7%	54	12.0%	84	12.7%	158	12.3%
Refusal	0	0.0%	0	0.0%	2	0.4%	2	0.2%
Total	170	100.0%	452	100.0%	660	100.0%	128	100.0%

1.1.12 **Marital status**

Approximately half of the inmates in each sample were single. Eleven percent are married and a further 19 percent in de facto relationships. More women (14.7%) than men (10%) were separated or divorced, and 1 percent of the total population were widowed.

TABLE 6: MARITAL STATUS

	Women		Remand Men		Sentenced Men		Total	
Single	92	53.8%	269	59.6%	382	58.1%	744	57.8%
Married	22	12.9%	36	8.0%	79	12.0%	139	10.8%
De facto Relationship	29	17.0%	102	22.6%	117	17.8%	249	19.3%
Separated / divorced	25	14.7%	44	9.7%	70	10.6%	140	10.9%
Widowed	2	1.2%	1	0.2%	10	1.5%	13	1.0%
Refusal/ missing	0	0.0%	0	0.0%	2	0.3%	2	0.2%
Total	170	100.0%	452	100.0%	660	100.0%	1287	100.0%

1.1.13 **Living Circumstances**

The normal living circumstances of the inmates prior to entering prison is presented in Table 7. The most common living circumstance prior to entering prison was living with a partner (31.2% of the female and 42% of the remand and sentenced men). Living with parents was the next most common for men, and living alone with children for the women. Only 6.4 percent of women but 14.2 percent of remand and 13.2 percent of sentenced men were living alone.

TABLE 7. LIVING CIRCUMSTANCES PRIOR TO ENTERING PRISON

	Women		Remand Men		Sentenced Men		Total	
Alone	11	6.4%	64	14.2%	87	13.2%	164	12.8%
With Partner	53	31.2%	188	41.6%	277	42.0%	521	40.5%
With Parents	27	15.8%	77	17.1%	114	17.3%	218	17.0%
Flatting	23	13.5%	48	10.6%	68	10.3%	139	10.8%
With Relatives	10	5.8%	39	8.6%	54	8.2%	103	8.0%
Boarding	2	1.2%	16	3.5%	16	2.4%	34	2.6%
No Fixed Abode	4	2.3%	9	2.0%	10	1.5%	23	1.8%
Alone with children	38	22.2%	8	1.8%	13	2.0%	59	4.6%
Other	2	1.2%	2	0.4%	20	3.0%	24	1.9%
Missing	0	0%	1	0.2%	1	0.2%	2	0.2%
Total	170	100%	452	100%	660	100%	1287	100%

1.1.14 **Usual Occupation of Inmates**

Table 8 lists the usual occupation of the inmates. Homeworker was the most common occupation of the women, followed by unemployed, unskilled/manual, and beneficiary. Only 5.3 percent stated their usual occupation was professional or managerial. The remand and sentenced men showed similar patterns, with unskilled/manual and unemployed accounting for over half of the sample, with supervisor/clerical being more common than a beneficiary. The non-unemployed beneficiary group (that is, sickness, invalid's and ACC) is 6 percent for the male and 11.8 percent for the female populations.

TABLE 8: USUAL OCCUPATION OF INMATES

	Women		Remand Men		Sentenced Men		Total	
Student	9	5.3%	25	5.5%	28	4.3%	62	4.8%
Homeworker	56	32.7%	8	1.8%	12	1.8%	76	5.9%
Unskilled /manual	25	14.6%	168	37.3%	256	38.8%	450	35.1%
Supervisor, skilled, clerical	14	8.2%	62	13.7%	93	14.1%	171	13.3%
Managerial, professional	9	5.3%	23	5.1%	20	3.0%	52	4.1%
Disabled, sickness, ACC beneficiary	20	11.8%	32	7.1%	39	5.9%	92	7.2%
Unemployed	28	16.4%	121	26.8%	160	24.2%	310	24.2%
Other	8	4.7%	13	2.9%	48	7.3%	69	5.4%
Missing	1	0.6%	0	0.0%	4	0.6%	5	0.4%
Total	170	100.0%	452	100.0%	660	100.0%	1287	100.0%

* N.B. The variations in the horizontal totals here are due to the Remand or Sentenced status of some men not having been recorded.

1.1.15 **Education**

The highest level of education achieved is shown in Table 9. Approximately 5 percent of all groups received only primary education. Whilst 2/3 of all groups received some secondary school education, approximately one fifth actually completed secondary school. Nine percent went on to some form of tertiary education, more commonly technical institute based than university. The 3 study populations showed great similarity in their educational achievement.

TABLE 9. HIGHEST LEVEL OF EDUCATION ACHIEVED

	Women		Remand Men		Sentenced Men		Total	
Primary school	8	4.7%	25	5.5%	40	6.1%	74	5.8%
Some Secondary School	112	65.9%	296	65.5%	445	67.5%	857	66.8%
Completed Secondary School	34	19.9%	86	19.1%	108	16.4%	228	17.8%
Non university Tertiary	9	5.3%	23	5.1%	39	5.9%	71	5.5%
University	7	4.1%	16	3.5%	20	3.0%	43	3.4%
Other	0	0%	3	0.7%	7	1.1%	10	0.8%
Missing	0	0%	3	0.7%	1	0.2%	4	0.3%
Total	170	100.0%	452	100.0%	660	100.0%	1287	100.0%

* N.B. The variations in the horizontal totals here are due to the Remand or Sentenced status of some men not having been recorded.

PAST AND PRESENT TREATMENT EXPERIENCE

All inmates were asked whether they had received treatment for mental health problems prior to or since being in prison. Their responses are shown in Tables 10 and 11.

Just over half the women and remand men had never received treatment prior to entering prison, whilst 68.8 percent of the sentenced men had received no prior treatment. Of those who had received treatment, the majority was from a primary health care or community agency only. Of out patient specialist care, 9.9 percent of the women, 7.8 percent of the remand men and 6.4 percent of the sentenced men had received such care. The same percentage of women (9.9%), 15.3 percent of the remand men and 9.9 percent of the sentenced men had received inpatient mental health care previously.

TABLE 10. SELF REPORT OF PAST TREATMENT FOR A MENTAL HEALTH PROBLEM PRIOR TO ENTRY TO PRISON

	Women		Remand Men		Sentenced Men		Total	
No Treatment	99	58.2%	255	56.4%	454	68.8%	812	63.1%
Primary and Community Agency	37	21.6%	92	20.4%	98	14.8%	228	17.7%
Out patient or CMHC*	17	9.9%	35	7.8%	42	6.4%	94	7.3%
Inpatient	17	9.9%	69	15.3%	65	9.9%	151	11.8%
Missing		0.0%	1	0.2%	1	0.2%	2	0.2%
Total	170	100.0%	452	100.0%	660	100.0%	1287	100.0%

* CMHC = Community Mental Health Centre

** N.B. The variations in the horizontal totals here are due to the Remand or Sentenced status of some men not having been recorded.

In Table 11, it was necessary to combine psychologists and psychiatrists into one category as the respondents had difficulty distinguishing the two professions.

Women reported receiving slightly more treatment for mental health problems from health staff working in prison, especially from nursing staff, although fewer (one woman only as opposed to 2% of the men) had at some stage been transferred to a forensic psychiatry unit. Of the male samples, fewer in total had been seen for a mental health problem but not unexpectedly, more had been in special prison units and equivalent numbers of the sentenced men, 20.8 percent, had been seen by a psychologist or psychiatrist. Approximately 2 percent had been transferred to a forensic psychiatric facility at some time in the past.

The prison census results suggested somewhat different figures. Of the women surveyed in the Census, 15.6 percent had been seen by a psychologist and 17.1 percent a psychiatrist, as opposed to 20.5 percent in total in this study. The Prison Census found 8.8 percent of the sentenced men had seen a psychologist and 4.7 percent a psychiatrist, as opposed to 20.8 percent in total in this study seeing either a psychologist or a psychiatrist. This might be explained by the trend in the research sample towards inmates of higher security rating, or by missing data in the prison census.

TABLE 11. SELF REPORT OF TREATMENT FOR MENTAL HEALTH PROBLEMS IN PRISON

	Women		Remand Men		Sentenced Men		Total	
None	106	62.4%	347	76.8%	461	69.8%	918	71.3%
Nurse	22	12.9%	16	3.5%	22	3.3%	60	4.7%
Psychologist / psychiatrist	35	20.5%	58	12.9%	137	20.8%	231	17.9%
In Special Unit	1	0.6%	20	4.4%	16	2.4%	37	2.9%
Transferred to Forensic Unit	1	0.6%	9	2.0%	14	2.1%	24	1.9%
Referral Pending to Forensic Unit	5	2.9%	2	0.4%	10	1.5%	17	1.3%
Total	170	100.0%	452	100.0%	660	100.0%	1287	100.0%

* N.B. The variations in the horizontal totals here are due to the Remand or Sentenced status of some men not having been recorded.

The provision of treatment for alcohol and drug related problems in prison was enquired about and the results shown on Table 12. A high proportion (42.7%) of the sentenced male inmates reported receiving such care at some point, as opposed to 20.8 percent of the remand men and 22.2 percent of the female inmates.

TABLE 12. SELF REPORT OF TREATMENT FOR ALCOHOL OR DRUG RELATED PROBLEMS IN PRISON

	Women		Remand Men		Sentenced Men		Total	
No treatment	131	77.1%	357	79.9%	374	56.7%	863	67.1%
Treatment in prison	38	22.2%	94	20.8%	282	42.7%	418	32.5%
Missing	1	0.6%	1	0.2%	4	0.6%	6	0.5%
Total	170	100.0%	452	100.0%	660	100.0%	1287	100.0%

* N.B. The variations in the horizontal totals here are due to the Remand or Sentenced status of some men not having been recorded.

The current provision of medication to inmates for mental health problems is described in Table 13. Twenty-nine point two percent (29.2%) of the female inmates, 10.6 percent of the remand male inmates and 8.3 percent of the sentenced male inmates reported being on such medication. These results are quite different from the Prison Census, which, if one combines the categories of “psychiatric” and “both general and psychiatric” from the Census Tables, give comparable figures of 21 percent of the female inmates and 4.2

percent of the sentenced male inmates. For the remand male population, the Census produced uncertain results because of missing data, but estimated the figure at approximately 8 percent, all figures being about two-thirds to one-half lower than the current study's findings.

TABLE 13. SELF REPORT OF INMATES ON CURRENT USE OF PSYCHIATRIC MEDICATION

	Women		Remand Men		Sentenced Men		Total	
Non medication	120	70.6 %	403	89.2%	604	91.5%	1132	88.0%
On Medication	50	29.2%	48	10.6%	55	8.3%	153	11.9%
Missing	0	0.0%	1	0.2%	1	0.2%	2	0.2%
Total	170	100.0%	452	100.0%	660	100.0%	1287	100.0%

N.B. The variations in the horizontal totals here are due to the Remand or Sentenced status of some men not having been recorded.

DIAGNOSIS OF MAJOR MENTAL CONDITIONS

Of the 1287 patients completing the consent and demographic form, 1248 valid CIDI-A diagnostic interviews were completed, comprised of 162 women, 441 remand men and 645 sentenced men. The following section provides the current and lifetime rates of a series of important mental conditions of these inmates. The CIDI A records whether a diagnosis is met, and also records when there is possibly another cause for the symptoms. An example of this is of a psychotic illness or a major mood disorder diagnosis resulting from the use of substances such as alcohol or cannabis. We present both the rates of certain diagnoses and where another cause may be present as there is controversy over this question. For instance, the people who become psychotic when taking cannabis frequently have a family history of psychotic illness and may be vulnerable to developing such an illness, with the drug effect being to precipitate, not cause, the illness. By presenting figures of actual diagnosis and figures where another cause is possible, we are attempting not to make premature assumptions about the cause of the person's symptoms.

1.1.16 **Overall Lifetime Rates of Axis I Mental Disorder**

Of the 1248 respondents, 10.6 percent had no diagnosis when substance misuse was included, rising to 47.8 percent when only non substance use disorders diagnoses (psychotic, mood or anxiety disorder) were considered. Of the 441 remand male population, 10.3 percent had no diagnosis when substance misuse was included and 45.9 percent when only non-substance use disorders were considered. Of the 645 sentenced male respondents, 10.6 percent had no diagnosis when substance misuse was included and 52.4

percent when only non-substance use disorders were considered. For the 162 women inmates, 11.0 percent had no diagnosis when substance misuse was included and 31.2 percent when only non-substance use disorders were considered. For a drug or alcohol misuse diagnosis 83.4 percent of the total population suffer such a diagnosis. In terms of personality disorder, 59.6 percent have at least one personality disorder diagnosis.

1.1.17 **Schizophrenia and related disorders**

Schizophrenia and related disorders (schizophreniform, delusional, schizoaffective disorders) are major mental disorders that cause severe disruption to an inmate's thought processes. They are often lifelong illnesses requiring long term psychiatric treatment.

For the analysis of the major psychotic disorders, we have combined the major and closely related diagnoses of schizophrenia, schizoaffective disorder, schizophreniform disorder and delusional disorder into one category.[7] The lifetime prevalence of schizophrenic disorders is presented in Table 14 and prevalence in the last month in Table 15. Twelve inmates did not complete this component of the interview. The lifetime prevalence of the schizophrenic disorders was 6.7 percent in women, 6.8 percent in male remands and 6.0 percent in sentenced men. There may be another 1.8 percent of female and 1 percent of male inmates who may meet the diagnostic threshold. It seems probable that between 6 percent and 8 percent of the prison population will have suffered such a disorder in their lifetime. Of the 92 who meet criteria, 21 are currently on mental health medication.

TABLE 14. LIFETIME PREVALENCE OF SCHIZOPHRENIA AND RELATED DISORDERS

	Women		Remand Men		Sentenced Men	
Not Asked	1	0.6%	5	1.1%	6	0.9%
No Diagnosis	147	90.7%	401	90.9%	596	92.4%
Other explanation**	3	1.8%	5	1.1%	4	0.6%
Meets Criteria	11	6.7%	30	6.8%	39	6.0%
Total	162		441		645	

** Meets criteria but possibly due to another explanation

[7] Schizophrenia, schizo affective disorder, schizophreniform disorder and delusional disorder are all major psychotic disorders which share many clinical features in common and share genetic, causative and treatment implications. They differ in terms of their time course (schizophreniform disorder is the same as schizophrenia except that it is of shorter duration) or clinical features (schizoaffective disorder differs from schizophrenia only in having mood disorder components as well psychotic features, and delusional disorder has many similar features to schizophrenia except that the presentation is primarily of delusional beliefs).

The data for the last month prevalence of schizophrenic disorders in presented in Table 15. The prevalence of such disorders within the last month is 3.6 percent of women, 2.7 percent of the remand men and 1.9 percent of the sentenced men. A further six inmates meet criteria for diagnosis but another explanation might exist to explain it. Of the 36 people who meet criteria for a schizophrenia or a related disorder in the last month, 11 are currently receiving mental health medication.

TABLE 15. PREVALENCE OF SCHIZOPHRENIA AND RELATED DISORDERS IN THE LAST MONTH

	Women		Remand Men		Sentenced Men	
Not Asked	1	0.6%	5	1.1%	6	0.9%
No Diagnosis	154	95.1%	421	97.1%	625	96.9%
Other explanation**	1	0.6%	3	0.7%	2	0.3%
Meets Criteria	6	3.6%	12	2.7%	12	1.9%
Total	162		441		645	

** Meets criteria but possibly due to another explanation

Comment

The presence of schizophrenia or a related disorder in the last month describes those inmates who are currently psychotic (severe mental illness), whilst the lifetime diagnosis describes those who have been psychotic, or may currently be so, and frequently suffer ongoing disability. All with a life time diagnosis require psychiatric assessment and treatment at some time, and many require ongoing psychiatric treatment. Those with a positive diagnosis in the last month are currently actively unwell, and require current assessment and treatment. Some patients frequently require inpatient care, others very active supervision by mental health professionals and a supportive environment not available in prison.

It is possible from the last month diagnoses to estimate the numbers of inmates who require acute mental health care. Seven women and 15 remand men are people diagnosed with one of these disorders, both being approximately 80 percent of these populations, meaning approximately 26 such inmates require acute treatment. Of the sentenced men, 14 meet criteria for the presence of such a diagnosis in the last month, being 15 percent of the total population of male sentenced men. Therefore, 95 sentenced men and 26 female inmates and remand male inmates equates to 121 inmates with current active psychotic illness in need of active intervention. This figure does not include those inmates already defined as requiring inpatient psychiatric care and transferred to hospital pursuant to Sections 45 or 46 of the Mental Health (Compulsory Assessment and Treatment) Act.

This figure is higher than the results of the Gunn et al. (1991) study of English prisons. They found that 1.5 percent of sentenced men and 1.1 percent of sentenced women currently suffered schizophrenia as assessed using a clinical interview. This measure is a similar to one month prevalence of the CIDI.

The Christchurch Psychiatric Epidemiology Study (Wells et al., 1989; Oakley-Browne et al., 1989), the only large scale New Zealand study we can benchmark against, found a prevalence rate of schizophrenia of 0.1 percent and a lifetime rate of 0.3 percent in the community. The findings in the prison study are therefore grossly elevated in relation to those results.

1.1.18 **Bipolar Affective Disorder**

Bipolar affective disorder is a major mental illness where the person suffers extreme mood swings, from mania (high energy, no sleep, expansive ideas etc.) to depression. These mood swings cause severe disruption to the person's functioning and require ongoing psychiatric treatment. This is usually a life-long illness.

The lifetime prevalence of bipolar affective disorder is presented in Table 16, prevalence in the last month in Table 17. Five inmates did not complete this component of the interview. The lifetime prevalence of bipolar disorder was 1.2 percent in women, 2.3 percent in male remands and 2.2 percent in sentenced men. Most community studies find approximately 1 percent of the adult population have a diagnosis of bipolar disorder.

TABLE 16. LIFETIME PREVALENCE OF BIPOLAR AFFECTIVE DISORDER

	Women		Remand Men		Sentenced Men	
Not Asked	1	0.6%	2	0.5%	2	0.3%
No Diagnosis	159	98.1%	429	97.3%	629	97.5%
Meets Criteria	2	1.2%	10	2.3%	14	2.2%
Total	162		441		645	

The data for the last month prevalence of bipolar disorder in presented in Table 17. The prevalence of this disorder within the last month is 1.2 percent of women, 1 percent of the remand men and 1.1 percent of the sentenced men. All of the inmates who met criteria in the last month were suffering from

a manic episode. Of these, two suffered or were suffering an episode of mania of mild severity, and 11 of moderate severity.

TABLE 17. PREVALENCE OF BIPOLAR DISORDER IN THE LAST MONTH

	Women		Remand Men		Sentenced Men	
Not Asked	1	0.6%	2	0.5%	2	0.3%
No Diagnosis	159	98.1%	435	98.6%	625	98.6%
Meets Criteria	2	1.2%	4	1.0%	7	1.1%
Total	162		441		645	

Comment

Patients with moderate or severe mania commonly require hospitalisation, and the remainder acute psychiatric intervention, possibly manageable in prison. Two women and four (4) remand men are people diagnosed with an episode of mania, both being approximately 80 percent of these populations, meaning approximately seven (7) such inmates require acute treatment. Of the sentenced men, seven (7) meet criteria for the presence of such a diagnosis in the last month, being 15 percent of the total population of male sentenced men. Therefore, 47 sentenced men and seven (7) female inmates and remand male inmates equates to 54 inmates with a current or recent episode of mania in need of active intervention. If those with episodes of moderate severity are likely to require inpatient care, there are 46 inmates who may require inpatient care and the remainder active acute psychiatric care.

These rates are higher than the comparable study of Gunn et al (1991) which may relate to the different diagnostic methods used (the Gunn study employed the ICD 9 diagnostic system and clinical interview rather than a screening methodology). The Christchurch Psychiatric Epidemiology Study (Wells et al, 1989; Oakley-Browne et al, 1989) found a prevalence rate of bipolar disorder of 0.1 percent and a lifetime rate of 0.7 percent in the community. The findings in the prison study is therefore of an approximately 10-fold current rate of disorder and a two- to three-fold increase for lifetime prevalence. The Christchurch study is similar to the current study in that it employed a screening instrument of similar type to the CIDI, which used an earlier version of the DSM diagnostic system.

Commentary in relation to acute treatment needs of those prisoners with a schizophrenic and related disorder or a current diagnosis of mania

As noted in the literature review, Gunn's group (Gunn et al, 1991 and Brooke et al , 1996) determined that 88.2% of the sentenced prisoners and 80.6% of the remand prisoners with current psychotic diagnoses required hospital

transfer. We calculate that 121 prisoners had a current schizophrenic and related disorder diagnosis, and 46 prisoners had a current diagnosis of a moderately severe manic episode, or 167 acutely ill prisoners. If we apply the more conservative estimate of 80.6% requiring hospital transfer, this equates to 135 prisoners in need of hospital transfer.

This likely to be an over estimate for three reasons. Firstly, current diagnosis refers to symptoms in the last month, some of which may have abated. Secondly, lay interviewers may over estimate the prevalence of such disorders, but the work of Singleton et al (1998) suggests this effect may not be great. Thirdly, this should not be interpreted as the number of acute beds required as if treatment services were more sophisticated many of these prisoners could receive treatment and not develop the more acute illness presentation. Nonetheless, the study suggests a high level of acute psychiatric treatment need amongst all groups of prisoners.

1.1.19 **Major Depression**

Major depression is a disorder in which a person experiences episodes of markedly depressed mood associated with sleep, appetite, energy and cognitive disturbances. If they occur in someone who also experiences manic episodes it is diagnosed as part of a bipolar illness, but much more commonly is manifested as episodes of lowered mood. The lifetime prevalence of major depression is presented in Table 18 and prevalence in the last month in Table 19. Five inmates did not complete this component of the interview. The lifetime prevalence of major depression was 31.9 percent in women, 22.3 percent in male remands and 20.6 percent in sentenced men. A small number of respondents were noted to have a second problem that may account for this diagnosis.

TABLE 18. LIFETIME PREVALENCE OF MAJOR DEPRESSION

	Women		Remand Men		Sentenced Men	
Not Asked	1	0.6%	2	0.5%	2	0.3%
No Diagnosis	108	66.7%	335	76.0%	506	78.4%
Other explanation**	1	0.6%	5	1.1%	4	0.6%
Meets Criteria	52	31.9%	99	22.3%	133	20.6%
Total	162		441		645	

** Meets criteria but possibly due to another explanation

The data for the last month prevalence of major depression is presented in Table 19. The prevalence of this disorder within the last month is 11.1 percent of women, 10.2 percent of the remand men and 5.9 percent of the sentenced

men. Those who have a prevalence of such a disorder in the last month are suffering from an episode of major depression, a disorder associated with significant morbidity and suicidal risk.

TABLE 19. PREVALENCE OF MAJOR DEPRESSION IN THE LAST MONTH

	Women		Remand Men		Sentenced Men	
Not Asked	1	0.6%	2	0.5%	2	0.3%
No Diagnosis	143	88.3%	392	88.9%	605	93.8%
Other explanation**	0		2	0.5%	0	
Meets Criteria	18	11.1%	45	10.2%	38	5.9%
Total	162		441		645	

** Meets criteria but possibly due to another explanation

Comment

The clinical significance of these rates of major depressive disorder is that such people feel pervasively depressed in mood, at risk of suicide and function significantly lower than they would normally. The condition is treatable in most cases. The lifetime prevalence of major depression of 32.1 percent of women and over 20 percent of men (remand and sentenced) makes it a very common condition, higher than the community sample of Wells at al (1989) who found comparable rates of 16.3 percent of women and 8.8 percent for men. Comparing current findings, this study detected 11.1 percent of women, 10.2 percent of remand men and 5.9 percent of sentenced men with current major depression. The data of Oakley-Browne et al (1989) had comparable rates of 7.1 percent for women and 3.4 percent for men. Therefore many more inmates have a history of major depression, and approximately twice as many have a current depression than their community sample.

1.1.20 **Dysthymic disorder**

This is a chronic disorder of low mood, of at least 2 years duration. As such it is of concern because of the persistent nature of the disturbance. Lifetime prevalence only is presented because of its chronicity, and results are presented in Table 20. Thirteen inmates did not complete this component of the interview. The results are more difficult to interpret than those already presented because many respondents who met the criteria for the diagnosis had another condition, namely substance abuse or dependence, which can also cause this clinical picture. Thus, all that can be said is that many inmates suffered a condition of chronic low mood, often associated with substance use but at times not. The life time prevalence of dysthymic disorder was 1.9

percent in women (with a further 0.6% meeting the criteria but another explanation applying), 0.9 percent in male remands (3.9% meeting criteria but another explanation applying) and 1.1 percent in sentenced men (3.9% meeting criteria but another explanation applying). The high proportion of those diagnoses possibly caused by another condition makes definition of the true rate uncertain.

TABLE 20. LIFETIME PREVALENCE OF DYSTHYMIC DISORDER

	Women		Remand Men		Sentenced Men	
Not Asked	6	3.7%	4	0.9%	3	0.5%
No Diagnosis	152	93.8%	416	94.3%	610	94.6%
Other explanation**	1	0.6%	17	3.9%	25	3.9%
Meets Criteria	3	1.9%	4	0.9%	7	1.1%
Total	162		441		645	

** Meets criteria but possibly due to another explanation

Comment

Five per cent of sentenced men, 4.8 percent of remand men and 2.5 percent of women inmates have a chronic and persistent depression of mood of uncertain cause. Although the cause of this lowered mood is unclear, such chronic depression is known to have a significant morbidity and predisposes the person to episodes of major depression. There is an extensive literature on the treatability of dysthymic disorder with both medication and psychological therapy. As such, these inmates should be seen to have a clinically important and treatable disorder. The prevalence of this disorder is of a similar frequency to that of the Christchurch community sample, who had an overall lifetime prevalence of 6.4 percent (Wells et al, 1989).

1.1.21 **Eating Disorders**

Eating disorders refer to the conditions of anorexia nervosa and bulimia. Twelve inmates with a lifetime diagnosis of eating disorders were identified, 1 percent of the total sample. Of these, five (5) were women (3.1% of the population), two (2) remand men (0.5%) and five (5) sentenced men (0.8%). Only four (4) inmates met criteria for the diagnosis in the last month.

Comment

Eating disorders are clinically very important but uncommon in this population. Wells et al (1989) found 2.1 percent of women and 0.2 percent of men had a life time prevalence of such a diagnosis in the Christchurch community sample. The prevalence of the disorder is quite sensitive to the age of the population being studied, being more common in young people.

ANXIETY DISORDERS

These disorders cover the syndromes of panic disorder, phobias, agoraphobia, obsessive compulsive disorder and post traumatic stress disorder.

1.1.22 **Obsessive Compulsive Disorder (OCD)**

Obsessive compulsive disorder (or OCD) is a condition of recurrent intrusive patterns of thought and/or behaviour, which seriously impair a person's ability to function. The lifetime prevalence of OCD is presented in Table 21 and prevalence in the last month in Table 22. Twenty-five inmates did not complete this component of the interview. The lifetime prevalence of OCD was 9.9 percent in women, 7.5 percent in male remands and 5.6 percent in sentenced men. No respondents were noted to have a second problem, which might account for this diagnosis.

TABLE 21 LIFETIME PREVALENCE OF OBSESSIVE COMPULSIVE DISORDER

	Women		Remand Men		Sentenced Men	
Not Asked	3	1.8%	8	1.8%	14	2.2%
No Diagnosis	143	88.3%	400	90.9%	595	92.2%
Meets Criteria	16	9.9%	33	7.5%	36	5.6%
Total	162		441		645	

The data for the last month prevalence of OCD in presented in Table 22. The prevalence of this disorder within the last month is 4.3 percent of women, 5.0 percent of the remand men and 4.8 percent of the sentenced men.

TABLE 22. PREVALENCE OF OBSESSIVE COMPULSIVE DISORDER IN THE LAST MONTH

	Women		Remand Men		Sentenced Men	
Not Asked	3	1.8%	2	0.5%	2	0.3%
No Diagnosis	152	93.3%	417	94.7%	622	94.8%
Meets Criteria	7	4.3%	22	5.0%	21	4.8%
Total	162		441		645	

Comment

OCD is one of the most significant and debilitating of the anxiety disorders. Such people are rarely hospitalised, often suffer in silence and others around them frequently accommodate the others' disability. The lifetime and current prevalence rates confirm the findings of the pilot study. Comparable figures are not available from the Gunn et al. (1991) study. Wells et al. (1989) found a lifetime prevalence of only 2.2 percent in the community sample, higher in women than men.

1.1.23 **Panic Disorder**

This is a disorder characterised by episodes of overwhelming anxiety. The lifetime prevalence of panic disorder is presented in Table 23 and prevalence in the last month in Table 24. Five inmates did not complete this component of the interview. A number of respondents were noted to have a second problem, which might account for this diagnosis. The lifetime prevalence of panic disorder was 1.8 percent (8.6%[*]) in women, 2.3 percent (4.7%[*]) in male remands and 1.1 percent (2.8%[*]) in sentenced men.

TABLE 23 LIFETIME PREVALENCE OF PANIC DISORDER

	Women		Remand Men		Sentenced Men	
Not Asked	1	0.6%	2	0.5%	2	0.3%
No Diagnosis	144	88.9%	408	92.5%	618	95.8%
Other explanation[**]	14	8.6%	21	4.7%	18	2.8%
Meets Criteria	3	1.8%	10	2.3%	7	1.1%
Total	162		441		645	

[**] Meets criteria but possibly due to another explanation

[*] The figure in brackets represents a further proportion of inmates who meet criteria for the diagnosis but for which there is possibly another explanation.

The data for the last month prevalence of panic disorder is presented in Table 24. A number of respondents were noted to have a second problem, which might account for this diagnosis. The prevalence of this disorder within the last month is 1.2 percent (1.8%[*]) of women, 0.7 percent (2.7%[*]) of the remand men and 0.6 percent (1.4%[*]) of the sentenced men.

TABLE 24. PREVALENCE OF PANIC DISORDER IN THE LAST MONTH

	Women		Remand Men		Sentenced Men	
Not Asked	1	0.6%	2	0.5%	2	0.3%
No Diagnosis	156	96.3%	424	96.1%	630	97.7%
Other explanation[**]	3	1.8%	12	2.7%	9	1.4%
Meets Criteria	2	1.2%	3	0.7%	4	0.6%
Total	162		441		645	

[**] Meets criteria but possibly due to another explanation

Comment

Panic disorder is found in similar rates to the community sample. Wells et al. (1989) found a lifetime prevalence of panic disorder of 2.2 percent, and current of 1.0 percent, being quite similar to the findings of the current study of inmates.

1.1.24 **Generalised Anxiety Disorder (GAD)**

GAD is a disorder characterised by a high sense of anxiety in a variety of situations and without discreet episodes of panic symptoms. The lifetime prevalence of GAD is presented in Table 25 and prevalence in the last month in Table 26. Five inmates did not complete this component of the interview. A number of respondents were noted to have a second problem, which might account for this diagnosis. The lifetime prevalence of GAD was 1.2 percent (1.2%[*]) in women, 1.4 percent (0.2%[*]) in male remands and 1.1 percent (0.5%[*]) in sentenced men.

[*] The figure in brackets represents a further proportion of inmates who meet criteria for the diagnosis but for which there is possibly another explanation.

TABLE 25 LIFETIME PREVALENCE OF GAD

	Women		Remand Men		Sentenced Men	
Not Asked	1	0.6%	2	0.5%	2	0.3%
No Diagnosis	157	96.9%	432	98.0%	633	98.1%
Other explanation**	2	1.2%	1	0.2%	3	0.5%
Meets Criteria	2	1.2%	6	1.4%	7	1.1%
Total	162		441		645	

** Meets criteria but possibly due to another explanation

The data for the last month prevalence of GAD is presented in Table 26. A number of respondents were noted to have a second problem, which might account for this diagnosis. The prevalence of GAD within the last month is 1.2 percent (1.2%*) of women, 0.5 percent (0.2%*) of the remand men and 0.3 percent (0.5%*) of the sentenced men.

TABLE 26. PREVALENCE OF GAD IN THE LAST MONTH

	Women		Remand Men		Sentenced Men	
Not Asked	1	0.6%	2	0.5%	2	0.3%
No Diagnosis	156	96.3%	436	98.9%	638	98.9%
Other explanation**	2	1.2%	1	0.2%	3	0.5%
Meets Criteria	2	1.2%	2	0.5%	2	0.3%
Total	162		441		645	

** Meets criteria but possibly due to another explanation

Comment

Generalised anxiety disorder was one of the few disorders found to be less common in the prison population than in the community sample. Wells et al. (1989) found a lifetime prevalence of GAD of 31.1 percent, and current of 3.4 percent, comparing with rates of approximately just over or just under 1 percent in the prison population.

1.1.25 **Agoraphobia**

Agoraphobia is an anxiety disorder, with or without the presence of panic attacks, where there is a fear of places especially out of the home in which the person fears they may be trapped or suffer an episode of panic. The lifetime prevalence of agoraphobia is presented in Table 27 and prevalence in the last month in Table 28. Five inmates did not complete this component of the interview. A number of respondents were noted to have a second problem, which might account for this diagnosis. The lifetime prevalence of

agoraphobia was 1.8 percent (4.9%[*]) in women, 1.1 percent (3.4%[*]) in male remands and 0.5 percent (2.8%[*]) in sentenced men.

TABLE 27 LIFETIME PREVALENCE OF AGORAPHOBIA

	Women		Remand Men		Sentenced Men	
Not Asked	1	0.6%	2	0.5%	2	0.3%
No Diagnosis	150	92.6%	419	95.0%	622	96.4%
Meets Criteria, possible other explanation	8	4.9%	15	3.4%	18	2.8%
Meets Criteria	3	1.8%	5	1.1%	3	0.5%
Total	162		441		645	

The data for the last month prevalence of agoraphobia is presented in Table 28. A number of respondents were noted to have a second problem, which might account for this diagnosis. The prevalence of agoraphobia within the last month is 0 percent of women (1.2%[*]), 0.5 percent (1.5%[*]) of the remand men and 0.3 percent (0.8%[*]) of the sentenced men.

TABLE 28. PREVALENCE OF AGORAPHOBIA IN THE LAST MONTH

	Women		Remand Men		Sentenced Men	
Not Asked	1	0.6%	2	0.5%	2	0.3%
No Diagnosis	159	98.1%	431	97.7%	636	98.6%
Meets Criteria, possible other explanation	2	1.2%	6	1.5%	5	0.8%
Meets Criteria	0	0.0%	2	0.5%	2	0.3%
Total	162		441		645	

Comment

Agoraphobia was also found to be less common in the prison population than in the community sample. Oakley-Browne et al. (1989) reported current prevalence of 2.7 percent, compared to a rate of approximately 1 percent in the prison population.

[*] The figure in brackets represents a further proportion of inmates who meet criteria for the diagnosis but for which there is possibly another explanation.

1.1.26 **Phobic Disorder**

Phobic disorder is an anxiety disorder in which the person has excessive anxiety in relation to particular objects, places or activities. The lifetime prevalence of phobic disorder is presented and described in Table 29. Five inmates did not complete this component of the interview. A number of respondents were noted to have a second problem, which might account for this diagnosis. The lifetime prevalence of phobic disorder was 30.9 percent (7.4%[*]) in women, 17.9 percent (5.9%[*]) in male remands and 13.3 percent (2.0%[*]) in sentenced men.

TABLE 29. LIFETIME PREVALENCE OF PHOBIC DISORDER

	Women		Remand Men		Sentenced Men	
Not Asked	1	0.6%	3	0.7%	2	0.3%
No Diagnosis	99	60.7%	334	75.7%	544	84.3%
Other explanation[**]	12	7.4%	25	5.7%	13	2.0%
Meets Criteria	50	30.9%	79	17.9%	86	13.3%
Total	162		441		645	

[**] Meets criteria but possibly due to another explanation

1.1.27 **Post Traumatic Stress Disorder (PTSD)**

One of the more serious anxiety disorders, PTSD, is a syndrome of recurrent memories and re-experiencing a past traumatic event or experience, with increased arousal, psychic numbing and avoidance of things which remind one of the trauma. The nature of the trauma must be life threatening or likely to result in serious harm. The lifetime prevalence of PTSD is presented in Table 30 and prevalence in the last month in Table 31. Twenty-two inmates did not complete this component of the interview. The lifetime prevalence of PTSD was 37.0 percent in women, 22.7 percent in male remands and 19.2 percent in sentenced men.

TABLE 30. LIFETIME PREVALENCE OF PTSD

	Women		Remand Men		Sentenced Men	
Not Asked	3	1.8%	7	1.6%	12	1.9%
No Diagnosis	99	61.1%	334	75.7%	509	78.9%
Meets Criteria	60	37.0%	100	22.7%	124	19.2%
Total	162		441		645	

[*] The figure in brackets represents a further proportion of inmates who meet criteria for the diagnosis but for which there is possibly another explanation.

The data for the last month prevalence of PTSD is presented in Table 31. The prevalence of PTSD within the last month is 16.6 percent of women, 9.5 percent of the remand men and 8.5 percent of the sentenced men.

TABLE 31. PREVALENCE OF PTSD IN THE LAST MONTH

	Women		Remand Men		Sentenced Men	
Not Asked	3	1.8%	7	1.6%	12	1.9%
No Diagnosis	132	81.5%	392	88.9%	578	89.6%
Meets Criteria	27	16.6%	42	9.5%	55	8.5%
Total	162		441		645	

Comment

PTSD has been little studied in other applicable epidemiological research. It was not sought in the Pilot study, the Christchurch epidemiological study or specifically reported by Gunn et al. (1991). Davidson et al. (1991) using the same type of methodology as Wells et al. (1989) found a lifetime prevalence of 1.3 percent and 6 month prevalence rate of 0.44 percent in a large community sample in the United States. Thus the current findings are grossly elevated relative to the community at large and more in keeping with the findings in high risk populations such as victims of criminal offences and combat veterans.

SUBSTANCE ABUSE DISORDERS

One of the most common and troublesome group of disorders, both for their relationship with offending and other mental disorders, is the group of substance use disorders. We present substance abuse (where use of a psychoactive substance results in some degree of psychosocial harm) and substance dependence (where more serious substance use is associated with tolerance and withdrawal symptoms). The CIDI is an effective screening tool for such conditions. It is not as sensitive as some other screening tools, for these conditions; that is, it is less likely to over-diagnose. We can therefore be confident that it provides a reasonably accurate if possibly slightly conservative estimate of the true rate of substance misuse disorder. The results are presented in three (3) groups: alcohol abuse and dependence; cannabis abuse and dependence; and abuse or dependence on other substances.[8]

[8]Some respondents met criteria for alcohol or cannabis abuse but the explanation for meeting criteria was not clear. These people have been excluded from the figures presented here. We present only those people who met criteria for abuse unequivocally.

Of those inmates meeting criteria for an alcohol or drug abuse or dependence problem, (1045 inmates), 365 or 34.9 percent stated that they had received or were receiving alcohol or drug treatment services in prison.

1.1.28 **Alcohol Abuse and Dependence**

The lifetime prevalence of alcohol abuse or dependence is presented in Table 32 and prevalence in the last month in Table 33. Fifteen inmates did not complete this component of the interview. The lifetime prevalence of Alcohol Abuse and Dependence was 69.1 percent in women, 74.7 percent in male remands and 76.0 percent in sentenced men.

TABLE 32 LIFETIME PREVALENCE OF ALCOHOL ABUSE AND DEPENDENCE

	Women		Remand Men		Sentenced Men	
Not Asked	1	0.6%	5	1.1%	9	1.4%
No Diagnosis	49	30.1%	107	24.3%	146	22.6%
Alcohol Dependence	58	35.8%	157	35.6%	228	35.3%
Alcohol Abuse	54	33.3%	172	39.0%	262	40.6%
Total	162		441		645	

The data for the last month prevalence of Alcohol Abuse and Dependence is presented in Table 33. The prevalence of Alcohol Abuse and Dependence within the last month is 6.7 percent of women, 10.0 percent of the remand men and 1.7 percent of the sentenced men.

TABLE 33. PREVALENCE OF ALCOHOL ABUSE AND DEPENDENCE IN THE LAST MONTH

	Women		Remand Men		Sentenced Men	
Not Asked	1	0.6%	5	1.1%	9	1.4%
No Diagnosis	150	92.6%	392	88.9%	625	96.9%
Alcohol Dependence	4	2.5%	19	4.3%	3	0.5%
Alcohol Abuse	7	4.3%	25	5.7%	8	1.2%
Total	162		441		645	

1.1.29 **Cannabis Abuse or Dependence**

The lifetime prevalence of Cannabis Abuse or Dependence is presented in Table 34 and prevalence in the last month in Table 35. Twenty-five inmates did not complete this component of the interview. The lifetime prevalence of Cannabis Abuse or Dependence was 43.3 percent in women, 53.7 percent in male remands and 55.7 percent in sentenced men.

TABLE 34. LIFETIME PREVALENCE OF CANNABIS ABUSE OR DEPENDENCE

	Women		Remand Men		Sentenced Men	
Not Asked	1	0.6%	11	2.5%	13	2.0%
No Diagnosis	91	56.2%	193	43.8%	273	42.3%
Cannabis Dependence	32	19.8%	95	21.5%	145	22.5%
Cannabis Abuse	38	23.5%	142	32.2%	214	33.2%
Total	162		441		645	

The data for the last month prevalence of Cannabis Abuse or Dependence is presented in Table 35. The prevalence of Cannabis Abuse (Cannabis Dependence was nil in all groups) within the last month is 3.7 percent of women, 8.6 percent of the remand men and 4.2 percent of the sentenced men.

TABLE 35. PREVALENCE OF CANNABIS ABUSE OR DEPENDENCE IN THE LAST MONTH

	Women		Remand Men		Sentenced Men	
Not Asked	1	0.6%	11	2.5%	9	1.4%
No Diagnosis	155	95.7%	392	88.9%	609	94.4%
Cannabis Dependence	0		0		0	
Cannabis Abuse	6	3.7%	38	8.6%	27	4.2%
Total	162		441		645	

1.1.30 **Other Substance abuse or dependence**

The lifetime prevalence of abuse or dependence upon agents other then alcohol or cannabis is presented in Table 36 and prevalence in the last month in Table 37. The other major substances of abuse were hallucinogens (by 15.3 percent of the total study sample), sedatives (8.5%), opioids (6.4%), cocaine (6.1%), amphetamines (4.1%), inhalants (5.7%). Twenty-five inmates

did not complete this component of the interview. The life time prevalence of abuse or dependence upon agents other then alcohol or cannabis was 46.2 percent in women, 38.4 percent in male remands and 36.9 percent in sentenced men.

TABLE 36. LIFETIME PREVALENCE OF ABUSE OR DEPENDENCE UPON AGENTS OTHER THAN ALCOHOL OR CANNABIS

	Women		Remand Men		Sentenced Men	
Not Asked	1	0.6%	11	2.5%	13	2.0%
No Diagnosis	86	53.1%	261	59.2%	394	61.1%
Meets Criteria	75	46.2%	169	38.4%	238	36.9%
Total	162		441		645	

The data for the last month prevalence of abuse or dependence upon agents other then alcohol or cannabis is presented in Table 37. The prevalence of abuse or dependence upon agents other then alcohol or cannabis within the last month is 3.7 percent of women, 6.1 percent of the remand men and 1.9 percent of the sentenced men.

TABLE 37. PREVALENCE OF ABUSE OR DEPENDENCE UPON AGENTS OTHER THAN ALCOHOL OR CANNABIS IN THE LAST MONTH

	Women		Remand Men		Sentenced Men	
Not Asked	1	0.6%	5	1.1%	9	1.4%
No Diagnosis	155	95.7%	409	92.7%	624	96.7%
Meets Criteria	6	3.7%	27	6.1%	12	1.9%
Total	162		441		645	

Comment

In all the substance use disorders, it is likely that the prisoner's current use is underestimated. The reasons for this are, firstly, that all substance abuse populations under-report their use, and secondly, that there might be repercussions for inmates admitting they are using substances in prison. It may also relate to the contemporaneous publicity regarding reducing substance misuse in prison, resulting in inmates under reporting their actual current use. Therefore, the lifetime rates are more likely to be accurate.

The Canterbury Pilot [Brinded] found that Current Month drug dependency figures were 19 percent for sentenced women and 38 percent for sentenced

men, and were 51 percent for remand men. The current month alcohol figures in the same Pilot were 19 percent for women and 12 percent for men.

The study has found that substance abuse and dependence are relatively common disorders among the prison population. The lifetime rates of alcohol or drug abuse/dependence found in the pilot study are confirmed, with an overall lifetime rate of 83.4 percent for meeting criteria for one or more of these diagnoses. Alcohol dependence was 35 percent and cannabis dependence approximately 20 percent. Such rates are of concern. It appears that only a little over a third of affected inmates have received some treatment for this problem.

In the Christchurch study (Wells et al, 1989), a lifetime prevalence of alcohol abuse or dependence was 32 percent in men (as against 77% in this study) and 6.1 percent in women (69.1% in this study). The rates for drug abuse or dependence were 7.2 percent in men (as against 55% for cannabis abuse or dependence alone in this study) and 4.1 percent in women (43.8% for cannabis abuse or dependence alone). Therefore, all rates are grossly elevated, especially for women.

PERSONALITY DISORDERS

Personality disorders are pervasive patterns of thinking, feeling, interacting or behaving that are fixed and inflexible and result in impairment in the person's ability to function in one or more key aspects of their life. Personality disorders are pervasive and begin to be evident by adolescence.

There are, by the DSM IV classificatory system, 3 major groups of personality disorders:

- Cluster A: schizoid, schizotypal and paranoid.
- Cluster B: antisocial, narcissistic, borderline and histrionic.
- Cluster C: avoidant, dependent and passive aggressive.

The first two clusters are of greatest interest in the prison setting as it is these types of personality disorder that are associated most clearly with mental health problems of a psychotic type, and with re-offending. We have screened for Borderline, Antisocial, Narcissistic, Histrionic and Paranoid personality disorders, the more relevant personality disorders in this group.

As already noted, the PDQ4+ may over screen for personality disorders in high-risk populations. In our analysis, the inclusion of the verification questions (asking those who responded positively to personality disorder variables if those variables truly were typical of their usual way of being) reduced the overall rate of personality disorder diagnosis by approximately 20 percent (see Appendix 7.5). We therefore present only the verified results, a rather more conservative estimate of personality disorder diagnosis but one which is more likely to approximate to the rate of clinical diagnosis of personality disorder.

The PDQ4+ was asked following the CIDI A. As a consequence, 1159 inmates completed this component of the study, 158 women, 405 remand men and 595 sentenced men. Forty point four percent (40.4%) of the sample did not have a verified personality disorder, with 59.6 percent having at least one verified personality disorder diagnosis.

Rates of verified personality disorder diagnosis are presented in Table 38.

TABLE 38. RATES OF VERIFIED PERSONALITY DISORDER

Personality Disorder	Women (n=158)		Remand Men (n=405)		Sentenced Men (n=592)	
Antisocial	56	35.4%	181	44.7%	243	41.0%
Borderline	32	20.3%	104	25.7%	106	17.9%
Histrionic	6	3.8%	51	12.6%	50	8.4%
Narcissistic	15	9.5%	96	23.8%	101	17.1%
Paranoid	64	40.5%	201	49.8%	236	39.9%
No diagnosis	74	46.8%	143	35.4%	248	41.9%

The overall rate of personality disorder was much as anticipated, but the high rate of paranoid personality disorder was not expected. The personality disorders generally thought to be more common in women (borderline and histrionic) were little different from the men. Indeed, there was no significant difference in rates of borderline personality disorder between male and female samples (Chi Squared p= 0.80 NS). The personality disorders more common in men than women were histrionic (Chi Squared p= 0.01) and narcissistic (Chi Squared p= 0.002), and there was a trend to significance for antisocial being more common in men (Chi Squared p= 0.088 NS). Paranoid personality disorder was equally common in each gender group.

Within the male samples, personality disorder was more common in the remand than sentenced groups. Borderline (Chi Squared p= 0.003), histrionic (Chi Squared p= 0.032), narcissistic (Chi Squared p= 0.009) and paranoid (Chi Squared p= 0.002) were all significantly more common in remand than sentenced men. There was no difference in the rate of antisocial personality disorder (Chi Squared p= 0.240 NS).

Comment

Paranoid personality disorder was diagnosed with a frequency that was higher than expected. On considering the seven (7) questions which went in to making up the diagnosis, three (3) were scored positively by in excess of 70 percent of the population, particularly referring to whether or not others could be trusted and whether one had to be suspicious of others. Such questions are probably not very discriminating within this population and thus are oversensitive in contributing to a diagnosis of paranoid personality disorder.

The rate of antisocial PD is also much lower than in the pilot study and in other studies. This is because the diagnostic criteria have changed significantly between the DSM IIIR criteria used in the Pilot and DSM IV criteria used in this study. The former relied largely on offending behaviour, resulting in many inmates scoring positively for this diagnosis, but this is of limited clinical use as the diagnosis was seen as almost tautological (if you

are a recurrent offender you necessarily have an antisocial PD, and vice versa). This use of the diagnosis has been criticised and the concept of psychopathy (Hare et al., 1991) is increasingly seen as being of greater clinical and predictive validity, resulting in the inclusion of more interactive or affective criteria in the diagnosis. This results in a lower rate of antisocial PD but identifies people who are at higher risk of re-offending or poorer outcome in treatment.

In the Christchurch community sample, Wells et al. (1989) reported a diagnosis of antisocial personality disorder in 4.2 percent of the men and 1.9 percent of the women, 10 fold lower than the current results. Using clinical interview, a process which the authors state certainly under diagnosed personality disorder, Gunn et al (1991) reported lifetime prevalence of personality disorder in 7.3 percent of adult male, 11.4 percent of juvenile male and 8.4 percent of female sentenced inmates.

SUICIDE

We asked five questions regarding suicidal ideation or behaviour. We asked if people had a lot of thoughts of death and of suicide, whether the person had talked to a nurse or doctor regarding suicide, had made plans to harm themselves or had made a suicide attempt, all since being in prison. These questions followed the completion of the PDQ4+ questions. As for the PDQ4+, 1159 inmates completed this component of the study, 158 women, 405 remand men and 595 sentenced men.

A Chi Squared comparison of the remand and sentenced male samples showed no significant difference for any of the variables. Between the male and female samples, only thoughts of death were significantly more common in the men than women (Chi Squared p= 0.036). Given these similarities, grouped data for the whole sample are presented in Table 39.

TABLE 39. SUICIDAL THOUGHTS AND BEHAVIOUR SINCE BEING IN PRISON (N=1159)

	Present	Not Present	Percentage Present
Thoughts of death	323	836	27.9
Thoughts of suicide	238	921	20.5
Reported thoughts to doctor or nurse	80	1079	6.9
Suicidal plans	52	1107	4.5
Suicidal attempts	30	1129	2.6

The suicidal population is defined as those who had at least thought a lot about suicide since being in prison (n=238). We examined this group relative to the remaining population. The percentage of each ethnic group who thought a lot about suicide is presented in Table 40. All figures are similar except for Maori who report significantly lower rates of thoughts of suicide (Chi Squared p=0.007).

TABLE 40. SUICIDAL THOUGHTS BY ETHNIC GROUP.

A lot of thoughts of Suicide	Pakeha	Maori	Pacific Peoples	Own specification or other	Total
No	279	462	72	108	921
Yes	86	90	23	39	238
Percentage suicidal	23.6%	16.3%	24.2%	26.5%	20.5%

Thinking a lot of suicide since being in prison was analysed by age group, and this data was presented in Table 41. The extremes of age were associated with somewhat lower rates of suicide, but none of the differences between the age groupings reached statistical significance (Chi Squared p=0.138).

TABLE 41. PERCENTAGE OF INMATES WHO THOUGHT A LOT ABOUT SUICIDE BY AGE GROUP.

Thoughts of Suicide	-20	20-24	25-29	30-34	35-39	40-49	50-59	60+	Total
No	125	153	153	138	113	91	34	21	921
Yes	24	68	47	37	26	29	7	0	238
Percent suicidal	16.1%	21.7%	23.5%	21.1%	18.7%	24.2%	17.1%	0.0%	20.5%

Comment

These results indicate that approximately one fifth of inmates think about suicide a lot but fewer than one third of these people talk to any of the available professional staff about their thoughts. About one quarter of those thinking of suicide have gone further and developed a plan, about half have attempted to kill themselves since being in prison.

There are no obvious factors demarcating the suicidal. Such ideas are similar across the age range and ethnic profile of the population. It may not be the presence of suicidal thoughts of themselves that are predictive of risk. If the population is especially vulnerable for other reasons (such as the young) the

presence of suicidal thoughts may not be more common but may be much more likely to lead to suicide attempts, if present.

Further study is needed to determine if there are particular factors that may usefully distinguish those who may act on their suicidal ideas from those not suicidal.

AGE, COMORBIDITY, TREATMENT EXPERIENCE AND SECURITY RATING OF THOSE WITH MAJOR MENTAL DISORDERS

1.1.31 **Relationship of Age to Major Mental Disorder**

The age structure of those with a life time diagnosis of major mental disorders is presented in Table 42. There is no significant difference in age of any diagnostic group from the overall mean age of the study (29.7 years).

TABLE 42. AGE AND MAJOR MENTAL DISORDER

Disorder	Number	Mean Age	Range
Bipolar disorder	26	33.2	19-56
Major depression	295	31.5	17-75
Schizophrenia and related disorders	92	30.2	16-60
Obsessive compulsive disorder	85	29.7	16-52
Post traumatic stress disorder	285	29.8	16-56

1.1.32 **Self Report of Treatment by those with Major Mental Disorders**

Those inmates who had a lifetime diagnosis of a major mental disorder were examined to see whether they were in receipt of treatment for a mental health problem. The results are presented in Table 43. Bipolar disorder sufferers are best recognised. The lower rate for major depression may not be of concern given that it is an episodic disorder, but the rate of only 37 percent for those with schizophrenia and related disorders is of concern.

TABLE 43. SELF REPORT OF TREATMENT BY THOSE INMATES WITH A LIFETIME DIAGNOSIS OF MAJOR MENTAL DISORDER.

Disorder	Number	No Treatment	Professional Treatment	Percentage in Receipt of Treatment
Bipolar disorder	26	5	21	80.8%
Major depression	295	158	137	46.4%
Schizophrenia and related disorders	92	58	34	37.0%
Obsessive compulsive disorder	85	38	47	55.3%
Post traumatic stress disorder	285	167	118	41.4%

1.1.33 **Co-morbidity of Major Mental Disorders and Substance Abuse or Dependence**

The coexistence of major mental disorder and substance misuse has been noted as a major problem in the management of those with major mental disorder. Substance abuse or dependence may both precipitate an episode of illness, or worsen the course of the illness. The rate of co-morbidity of lifetime diagnosis for these conditions is presented in Table 44. All major diagnostic groups have a higher rate than the study population in general, most markedly for OCD and bipolar disorder.

TABLE 44. COMORBITY OF A LIFETIME DIAGNOSIS OF MAJOR MENTAL DISORDER AND SUBSTANCE ABUSE OR DEPENDENCE.

	Total Number	Number with Comorbid substance abuse	Percentage with comorbid conditions
Bipolar disorder	26	24	92.3%
Major depression	295	258	87.5%
Schizophrenia and related disorders	92	78	84.8%
Obsessive compulsive disorder	85	82	96.5%
Post traumatic stress disorder	285	257	90.2%
Total study population	1253	1045	83.4%

1.1.34 **Prevalence of Major Mental Disorders By Prisoner Security Rating**

We examined whether any of the major mental disorders were more common in any particular security level. Results are presented in Table 45. Major depression, substance abuse or dependence, PTSD, and OCD were all evenly distributed between maximum, medium and minimum-security ratings. Bipolar disorder and schizophrenia and related disorders were disproportionately common in medium and maximum-security levels with 80 percent of the bipolar patients and 66 percent of the schizophrenia and related disorders patients being so found. This may relate to their behaviour being disturbed resulting in a higher security level or their diagnosis being recognised which carries with it a loading in the security classification system within prison for higher security.

TABLE 45. PREVALENCE OF MAJOR MENTAL DISORDERS BY PRISONER SECURITY RATING

Security ratings:	Minimum		Medium		Maximum		Totals	
Diagnostic groups	LT	Month	LT	Month	LT	Month	LT	Month
Bipolar	3	1	9	5	3	2	15	8
Alcohol	317	12	243	7	14	0	574	19
Cannabis	225	15	175	13	9	1	409	29
Major Depression	108	30	65	20	7	2	180	52
OCD	29	15	19	10	2	1	50	26
PTSD	92	41	77	30	4	4	173	75
Schiz-like	18	4	34	14	1	1	53	19

5. DISCUSSION

The overall results of this study can be summarised as demonstrating that a significant number of inmates suffer significant morbidity from a range of psychiatric disorders. Eighty-nine percent (89.4%)of inmates have at some time in their life suffered a substance abuse disorder, primarily alcohol and cannabis abuse and dependence, but about one third suffered a range of other disorders. Approximately one quarter has suffered a major depressive disorder, with almost 10 percent suffering a current episode of major depression. It is estimated that there may be 121 inmates who are currently suffering from either a schizophrenia or related disorder, and another 54 inmates may be suffering a manic episode of a bipolar affective disorder. Two anxiety disorders, PTSD and OCD, are more common than expected. About 60 percent of inmates have one of the personality disorders from Clusters A or B of DSM IV.

METHODOLOGY

How reliable are these results? There are a number of points that may guide the interpretation of these results. Firstly, we are confident that the study samples are representative of the total prison population on the basis of age, offence and security status. The response rate of 80 percent is most satisfactory and better than most large-scale epidemiology studies of this type. The high level of co-operation by inmates and prison staff allowed such a good result. We are therefore confident that the sample gained is representative of all inmates.

Does the CIDI make diagnoses that are reliable and valid in relation to clinical diagnoses made by psychiatrists? This question is difficult to answer with certainty. There is abundant evidence that the CIDI provides reliable diagnoses. This means that if a person is re-interviewed, either by the same person or another, the results are highly likely to be the same. Much work has been undertaken to detect if these diagnoses are the same as those made by clinicians. As already stated, the CIDI may over diagnose some disorders, especially non-affective psychoses, but less so in populations such as the current population. Therefore the results may be slightly in excess of the true rate, but not grossly so. It is the opinion of the study team that these results are reliable in estimating true rates of disorder.

There are 2 areas where they will be least like clinical diagnoses, namely in substance misuse diagnoses and personality disorder as screened for by the PDQ 4+. These conditions are commonly under diagnosed by clinicians as

acknowledged by Gunn et al (1991). Diagnoses of substance abuse disorders derived from instruments such as the CIDI A have been commonly used in the literature to define populations with damaging use of substances of abuse. This is a variable commonly known to contribute to poorer prognosis of mental disorders and to contribute to re-offending amongst offender populations. Therefore the prevalence found in this study is a source of major concern. The rate of diagnosis of personality disorder is in excess of that expected by clinical interview but broadly in line with the data from the pilot study that used a different instrument. This result needs more careful analysis but can be considered a measure of a considerable degree of social maladjustment.

RESULTS

The results indicate a markedly elevated rate of mental disorder over that in the general community. This is especially so for substance misuse, but also strongly for psychotic illnesses, major depression, bipolar disorder, OCD and PTSD. All these conditions are associated with high levels of distress and disability, especially during the acute phases of the illness. These conditions are readily treatable in most cases. It should be noted that the New Zealand reference point for community prevalence of mental disorder is the Christchurch Epidemiology study, which is now 10 years old. Further, Christchurch is not representative of much of the rest of New Zealand from an ethnicity perspective. There is, however, no other community study of adequate quality and similar methodology with which to compare our results. Until such a study is completed these are the best comparisons we are able to make.

All inmates who have a current diagnosis of schizophrenia or related disorder (121 inmates by our calculation) and bipolar disorder (54 inmates) require active psychiatric treatment. We would anticipate that many should require hospital admission, approximately 135 if we apply the same rates of need for hospital transfer that Gunn's group found. We do not believe that quite all this number require transfer, but it should be remembered that these people are in addition to all inmates *currently* being treated in hospital at the time of the study. A significant increase in mental health provision for this group of people can be recognised as necessary. This will involve increased provision of primary medical, psychiatric clinics and inpatient beds to address this unmet need. Ideal treatment would be assessment and treatment in prison by psychiatrists and nursing staff from regional forensic services, in liaison with prison health staff, for all these inmates, and probable hospital admission for, perhaps, the majority of them.

Those with other major disorders, current major depression, approximately 10 percent of inmates, or 500 inmates, those with current OCD (approximately

5%) and PTSD (approximately 16% of female and 9% of male inmates) all require detection, assessment and treatment planning that may be performed by primary medical staff, psychologist or nursing staff and referral as appropriate for psychiatric evaluation. Some of those with major depression will require inpatient care. Many should receive ongoing therapy which may be psychological or by medication.

Such a level of service provision is quite beyond the capacity of current forensic psychiatric services, Department of Corrections Psychological Service or prison nursing and medical officers. The high rates of the common disorders argue for the use of screening techniques, which can be followed up with formal assessment if a problem is identified.

The same issues arise for substance misuse disorders. Approximately 35 percent of those with such a diagnosis have had some treatment for substance misuse disorders in prison. Whilst many are on remand and thus could not be expected to have been fully assessed in terms of their treatment needs, the very high rate of such disorders suggests a policy of exposing all inmates to some degree of basic drug and alcohol education, with a mechanism for identifying at least those with substance dependence disorders (about half of all those with misuse diagnoses).

Suicidal ideation is also common (in 20%) but its precise relationship to other risk factors, and correlation with the risk of acting on such ideas requires further study.

As over half of all inmates in the study are Maori, these results clearly have particular relevance for the mental health needs of Maori. Has the methodology adequately addressed the needs of Maori? We were unable to subject the basic interview processes to full cross cultural validation but the CIDI A and PDQ 4+ have both been used cross culturally. Maori were consulted at a number of points during the development of the study design, interview process and at times with interviewers themselves. There is a clear imperative to ensure that should any increase in service provision arise from these results that Maori are centrally involved with the development of such services as envisaged in the Mason Report (1988).

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7. APPENDICES

GLOSSARY OF PSYCHIATRIC TERMS AND DIAGNOSIS

The structured clinical interview used in this study (the Composite International Diagnostic Interview – Automated or CIDI-A) derives diagnoses for each inmate according to the Diagnostic and Statistical Manual for Mental Disorders of the American Psychiatric Association (DSM-IV). The diagnosis of mental disorder in an inmate does not necessarily indicate the severity of disorder nor the type of treatment required.

Mental disorders can be divided into the major mental illnesses (such as schizophrenia), which will require medical intervention and treatment in every case; minor mental disorders (such as anxiety disorders), which are less severe and may require medical or psychological intervention in some cases; and personality disorders which are not illnesses but describe characteristics of the inmate's personality and are usually best treated through cognitive / behavioural management.

Schizophrenia, schizo affective disorder, schizophreniform disorder and delusional disorder are all major psychotic disorders which share many clinical features in common and share genetic, causative and treatment implications. They differ in terms of their time course (schizophreniform disorder is the same as schizophrenia except that it is of shorter duration) or clinical features (schizoaffective disorder differs from schizophrenia only in having mood disorder components as well psychotic features, and delusional disorder has many similar features to schizophrenia except that the presentation is primarily of delusional beliefs). These are major mental disorders that cause severe disruption to an inmate's thought processes. They are often lifelong illnesses requiring long term psychiatric treatment.

Bipolar affective disorder is a major mental illness where the person suffers extreme mood swings, from mania (high energy, no sleep, expansive ideas etc.) to depression. These mood swings cause severe disruption to the person's functioning and require ongoing psychiatric treatment. This is usually a life-long illness.

Major depression is a major mental illness where persons experience a profound drop in mood, energy and initiative, often becoming so distressed as to consider or attempt suicide. It is a treatable disorder but episodes of depression are often recurrent throughout life. The potentially serious consequences of untreated depression and the success of treatment make this an important mental illness to identify.

Dysthymia is a less severe condition characterised by persistent low mood that is not severe enough to constitute major depression. It may require treatment – some people responding to antidepressant medication.

Anxiety disorders are a group of disorders usually considered as more minor illnesses that may occasionally present in severe form. Some individuals with anxiety disorders may need treatment if the symptoms are causing particular problems in their normal functioning. *Obsessive compulsive disorder* (with continual hand washing and obsessional checking routines) can be very debilitating and require medical intervention as can *panic disorder*. Other anxiety disorders such as *generalised anxiety disorder*, *agoraphobia* or other phobic disorders will only require treatment in their more severe forms.

Post-traumatic stress disorder is an anxiety disorder that follows the person experiencing a particularly traumatic (usually life threatening) event. Patients with *post-traumatic stress disorder* can suffer quite severe distress and will often require psychiatric or psychological treatment.

Eating disorders consist of starving (*anorexia*), binging and purging (*bulimia*) or a mixture of both presentations. Eating disorders are debilitating for the person and can be life threatening. They require psychiatric treatment.

Drug and alcohol abuse and dependence describe levels of severity of drug and alcohol problems. Whilst some people diagnosed as 'abusing' will require treatment, all those diagnosed as dependant on substances should have treatment regimes available to them.

Personality disorders are pervasive patterns of thinking, feeling, interacting or behaving that are fixed and inflexible and result in impairment in the person's ability to function in one or more key aspects of their life. Personality disorders are pervasive and begin to be evident by adolescence. Treatment knowledge for such conditions is limited and management is usually confined to behavioural management and attempts to help patients gain insight into their condition and learn to ameliorate their own behaviour.

CONSENT FORM AND INFORMATION TO PARTICIPANTS

Consent Form

Project Title

Psychiatric Morbidity in Prisons: An investigation of the prevalence of mental disorders among New Zealand inmates.

Principle Investigators

Dr A I F Simpson
Dr T M Laidlaw
Dr P M J Binded
Mr Nigel Fairley
Ms Fiona Malcolm

Name of Subject:_____
(please print)

English	I wish to have an interpreter	Yes	No
Maori	E hiahia ana ahu ki tetahi tangata hei korero Maori	Ae Kao	ki ahau
Samoan	Oute mana'o e iai se fa'amatala upu	Io	Leai
Tongan	Oku fiema'u ha fakatonulea	Io	Ikai
Cook Island	Ka inangaro au i tetai tangata uri reo	Ae	Kare
Niuean	Fia manako au ke fakaaoga e tagata fakahokohoko	E Nakai	Vagahau

I have heard and understood an explanation of the research project I have been invited to take part in. I have been given, and I have read, a written explanation of what is asked of me, and I have had an opportunity to ask questions and to have them answered.

I understand I may withdraw from the project at any time and it will not affect my treatment in any way.

I consent to take part as a subject in this research.

Signed:_____Subject

Date:_____

Subject Information Sheet (Example Employed in the Auckland Region)

Mental Distress and Disorder in Prison: a study to find out how many inmates have mental health problems

Purpose of the Study

You are invited to participate in a study about the type and nature of mental health problems which inmates suffer.

Selection

All women, all remand and about 15 percent of the sentenced male inmates are being asked to participate, some from every prison in New Zealand. The sentenced male inmates are selected randomly. You have been chosen to be part of this survey.

Procedures

There will be 2 interviews: this one which will take a few minutes to check that you understand what the study involves and are happy to take part. The second interview will be with a trained interviewer who will use a computerised set of questions. This set of questions has been used all round the world, and asks about feelings and problems, and a second part which asks you about how you are as a person. This interview will take about one hour.

Discomforts and Benefits

Apart from asking for your time, we do not think you will suffer any discomfort or risk from taking part in the study. If problems are uncovered as a result of these interviews you can get a referral from the nursing and medical staff of the prison for further help from a psychiatrist. The interviewer will not discuss anything you say with the prison staff. Participation will not affect your parole or prison status in any way.

You are under no obligation to participate in this study. You can pull out of it at any time if you wish and this will not affect you in any way.

Confidentiality and Privacy

All information collected in the study will remain confidential between you and those involved in the study. All data will be presented to others as group data and you will not be identified in any way.

If you have any queries or concerns about your rights as a participant in this study, you may wish to contact a Health and Disability Services Consumer Advocate on freephone number 0800 801482.

Contact person for further information:

Your Auckland Team Leader: Mr Brain MacKenna, 09 3737599.

The Research Manager for the Study is Dr Tannis Laidlaw, Academic Forensic Psychiatry Unit,

School of Medicine, University of Auckland, 09 3737599 ext 6097.

DEMOGRAPHIC DATA SHEET

PRISON STUDY - DEMOGRAPHICS

(Not to be read verbatim)

Site

ID Number: ☐☐☐☐ 1 **Date:** (dd mm yy) ☐☐☐☐☐☐

Name:_____

Date of birth: (dd mm yy) ☐☐☐☐☐☐

Gender: (1 = male, 2 = female) ☐ **4** **Age this year:** (in years) ☐☐

Person to complete assessment:

_____ID: ☐☐☐ 6

Current Security Status: ☐ 7

1 = on remand
2 = sentenced Minimum
3 = sentenced Low-Medium
4 = sentenced High-Medium
5 = sentenced Maximum
6 = not classified

Subject's Culture: ☐☐ 8

10 = European
20 = Maori
Iwi:_____
31 = Samoa
32 = Tonga
33 = Fiji
34 = Cook Island
35 = Nuie
36 = Tokelau
40 = Asian
45 = No response
50 = Other (specify):_____

Marital Status: ☐ 9

1 =not married or equivalent
2 = currently married
3 = living with partner
4 = separated/divorced
5 = widowed

Comments: _____

_____

Usual Occupation: Specify:_____ ☐ 10

Living situation prior to prison: ☐ 11

1 = student
2 = homemaker/child care
3 = unskilled/manual work (labourer, driver, waiter, shop assistant
4 = work supervisor, clerical and skilled crafts (secretarial, artisan, foreman, shopkeeper)
5 = managerial/professional
6 = not employed : disabled
7 = not employed : able to work
0 = other (specify) _____

1 = alone
2 = partner
3 = parents
4 = flatmates
5 = relative
6 = boarding house
7 = no fixed abode
8 = alone with children
0 = other (specify)
_____

Education: ☐ 12 **Most serious offence (conviction):** ☐ 14 **Present charge:** ☐ 13

1 = primary school only
2 = some secondary school
3 = completed secondary school
4 = tertiary (not university)
5 = university
6 = other (specify)

1= violence
2= other offences against person
3= property
4= involving drugs

5= offences against good order
6 = traffic
7 = against justice*
8 = misc
0 = none
* eg breach of bail

1= violence
2= other offences against person
3= property
4= involving drugs

5= offences against go order
6 = traffic
7 = against justice*
8 = misc
0 = none
* eg breach of bail

Treatment for mental health :

Problems in prison: ☐ 15

Past psychiatric history: ☐ 16 **On medication:** (5=yes, 1=no) ☐ 17

(Circle those applicable and enter highest number)

0 = none
1 = by nurse (specify): _____
2 = by psychiatrist / psychologist
3 = in special unit Drugs and alcohol treatment, or other non- psychiatric treatment
4 = transfer to Forensic Psychiatry

0 = none
1 = Treatment by GP,
2 = Community Clinic
3 = Outpatient
4 = Hospital
5 = request pending

Why treated (diagnosis if known):

15:_____

16:_____

17:_____

INTERVENTION FROM DRUG AND ALCOHOL SERVICES IN PRISON?

(5=YES, 1=NO) ☐ 18

QUESTIONS ASKED REGARDING SUICIDAL IDEATION

To determine the presence, persistence and severity of suicidal thoughts, help seeking and actions during the person's current period of imprisonment, questions used in the CIDI A which ask about these same issues were adapted to apply directly to the prison setting. Five questions were asked each requiring a yes/no response. They were:

1. Since you have been in prison, have you at any time thought a lot about death?
2. Since you have been in prison, have you at any time felt so low you thought a lot about committing suicide?
3. Did you tell the prison nurse or doctor about feeling suicidal?
4. Did you make a plan as to how you might do it?
5. Since you have been in prison have you attempted suicide?

Interviewers were instructed to emphasise thinking "a lot" about the issues in the first two questions, to ensure that it was not fleeting thoughts that were being identified. These questions were asked after the completion of the PDQ4+ questions.

PERSONALITY DISORDER QUESTIONNAIRE 4+ VERIFICATION QUESTIONS

As noted, clinicians diagnose far fewer people as personality disordered than do questionnaires (the modest specificity). The PDQ 4 questionnaire has been over-inclusive, with high rates of false positives sample (Dowson and Berrios, 1992; Hyler et al., 1990; Zimmerman and Coryell, 1991; Hyler et al., 1992). The originators of the CIDI-A had solved a similar problem with the CIDI A by asking each subject to confirm whether the answers given were truly representative of the symptoms being inquired into. Similar questions were developed from the CIDI A to reduce the same over-diagnosis problem with the PDQ4+. The process was as follows:

1. If the person had responded positively to any questions on the PDQ4+, the responses were read back to the person followed by the question "Are these answers really true for you?"
2. If they replied yes to this, they were further asked, "Do you think they apply since before you were 18 and for most of your life?"
3. If they replied yes to this, they were further asked, "Do these things only apply when you feel down, anxious, ill or when drinking or using drugs? In other words, are they part of your basic personality?"
4. If they replied that they were part of their personality they were then asked: "Do you think that any of these things have caused problems for your home, work, in relationships or any other area?" If the person responded positively to this the diagnosis of personality disorder was confirmed.
5. If confirmed, they were further asked, "Do any of these things bother you?"

Table 46 shows the reduction of the rate of diagnosis for each personality disorder with the use of these questions. All diagnoses reduced by between 25 and 30 percent.

TABLE 46. REDUCTION IN NUMBER OF PERSONALITY DISORDER DIAGNOSIS USING THE VERIFICATION QUESTIONS (N=1159)

Personality Disorder	Raw PDQ4+ Diagnosis	Verified PDQ4+ Diagnosis	Percentage Reduction
Antisocial	678	480	29.2%
Borderline	324	242	25.3%
Histrionic	150	107	28.7%
Narcissistic	303	212	30.0%
Paranoid	718	503	29.9%