

MENTAL HEALTH SCREENING IN JAIL:  
THE PREDICTIVE VALIDITY OF A SYMPTOM LEVEL INSTRUMENT

Lisa Karen Brown

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Mental Health Screening in Jail: The Predictive Validity of

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Author: \_\_\_\_\_  
(signature)

Lisa Karen Brown  
(name)

Nov 21 / 96  
(date)

Approval

NAME: Lisa Karen Brown

DEGREE: Master of Arts (Psychology)

TITLE OF THESIS: Mental Health Screening in Jail: The Predictive  
Validity of a Symptom Level Instrument

EXAMINING COMMITTEE:

Chair: David Cox

~~James~~ R. R. Oglott, J.D. Ph.D.  
Senior Supervisor  
Associate Professor

Stephen D. Hart, Ph.D.  
Associate Professor

Raymond R. Corrado, Ph.D.  
External Examiner  
Department of Criminology  
Simon Fraser University  
Professor

Date Approved: Sept 23/96

## Abstract

The effectiveness of a symptom rating scale, the Brief Psychiatric Rating Scale (BPRS), in predicting behaviour in jail was examined. Two studies were conducted at a pretrial facility. The first study (n=74) investigated whether severity ratings of current psychological symptomology were related to diagnosis, measured by the Structured Clinical Interview for the Diagnostic and Statistical Manual of Mental Disorders (SCID). Symptom ratings were found to be related to lifetime and current diagnosis of mental disorder. The second study (n=206) examined whether symptom ratings predicted adjustment to jail, measured by officers' ratings of inmate behaviour and by information gathered from correctional records. Symptom factors were found to be significantly related to officers' ratings, particularly of aggressive behaviour and overall problems. The relationship between symptom ratings and information coded from correctional records was not as strong, but there were some significant findings. Overall, symptom level ratings were found to be predictive of adjustment to jail, suggesting that mental health screening can be conducted using symptom level instruments.

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## Introduction

It is becoming evident that the prevalence of mentally disordered people in the criminal justice system is high and increasing. These people can have a difficult time adjusting to incarceration, which can pose management problems for staff who are working with them. Obviously the mental health of the inmate is an important concern, as incarceration may exacerbate existing symptoms. These inmates may engage in behaviour that is dangerous to other inmates or staff, and they are more likely to harm themselves or attempt suicide than non-mentally ill offenders. These inmates are also at increased risk for victimization by other inmates, particularly if their illnesses cause them to act in an unusual or bizarre fashion. Correctional officers generally are not trained to deal with mental illness, and they tend to find it stressful and unpleasant to work with inmates who are mentally ill. Because of these problems, it is necessary that mentally ill inmates are identified upon admission to a correctional facility and classified appropriately within the institution based on their needs and level of risk. This thesis examines the problem of how to identify mentally disordered offenders. Before discussing specific techniques for screening inmates for mental illness, the literature describing the prevalence of mental illness in an incarcerated population and some of the difficulties surrounding this population will be reviewed.

Many people believe the terms jail and prison are synonymous, but they refer to different types of facilities. In Canada, jails house unsentenced inmates (both before and during the trial process), inmates who are being transferred to a sentenced facility, and inmates who are serving short sentences. Prisons house inmates serving sentences greater

than two years in duration. Provincial jails are more similar to prisons in that they hold sentenced inmates, albeit for shorter sentences, and this allows for more comprehensive screening and treatment. For the purposes of this thesis, jail will refer only to a pretrial facility holding unsentenced inmates.<sup>1</sup> This type of facility likely holds the highest percentage of mentally ill offenders, because sentencing is an opportunity to divert inmates to secure psychiatric institutions if it is deemed necessary. Further, for many inmates, admission to a pretrial institution is, in some ways, more stressful than admission after sentencing.

In contrast to the admission of sentenced inmates to a correctional institution, admission to jail often occurs in chaotic circumstances. People are brought in directly from court or after a period of lock-up, which often occurs in holding cells in local police stations with few amenities or services. Inmates can spend two or three days in lock-up with inadequate bedding, no shower, and no phone access. Some of them are still intoxicated when they arrive at the jail, and others are in the first stages of withdrawal. They often do not know how long they will be in jail, or what their legal situation is. They are worried about their jobs and families. Circumstances surrounding the arrest might have been upsetting; for example, a domestic dispute or altercation with a police officer or other person may have occurred.

All of this is in contrast to admission to a sentenced stay. These generally start with a known date of admission and length of stay, allowing the inmate to talk to his

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<sup>1</sup>This study was conducted with male inmates, as is almost all of the research in this area. Because the findings should not be generalized to female offenders, who may be a substantially different population, the masculine pronoun will be used throughout the paper.

family and his employer and to prepare for incarceration. Sentencing also is temporally removed from the situation at the time of arrest, so inmates will have had time to adjust the their situation. Simply by considering the factors which can be involved in an unsentenced jail admission as opposed to a sentenced admission, it is apparent that this can be highly stressful and some offenders might require mental health services.

As a result of all of the difficulties that may occur regarding having mentally ill inmates in jails, it is necessary to screen inmates entering the jail for the presence of mental illness. Given the stressful nature of being admitted to a jail, it is also necessary to screen inmates to identify those who require mental health intervention.

### Mentally Ill Offenders

Mental health screening can be used to identify both inmates who require crisis intervention due to life stressors and mentally ill inmates. Mentally ill inmates are increasingly a subject of concern in the criminal justice system. Although research evidence is hard to come by, there is much speculation that deinstitutionalization has resulted in a higher rate of arrest for the mentally ill (Palermo, Smith, & Liska, 1991; Teplin, 1983). Simply living in the community rather than an institution places more mentally ill people at risk for criminal behaviour than in the past. Problematic behaviour may be made more likely by a lack of treatment and services, which leave very disordered people out on the streets without housing or medication (Belcher, 1988; Teplin, 1990b). While it is not clear whether mentally ill people offend at a higher rate, or are more likely to be arrested for minor offences, than non-mentally ill people, it is becoming clear that they are overrepresented in the criminal justice system.

### *Prevalence of Mental Illness In the Incarcerated Population*

Studies have been done to investigate the prevalence of mental illness in the criminal justice system, and, while there is disparity in the methodology, it is evident that the rate of major mental disorders and substance abuse is higher in incarcerated populations than it is in the general population (see Hodgins, 1995; Jemelka, Rahman, & Trupin, 1993). Furthermore, it is likely that the prevalence of mental disorder is higher in the jail population than the prison population (Teplin & Swartz, 1989). To get an accurate estimate of the epidemiology of mental illness, it has been necessary to conduct field studies in institutions. These studies differ in the way the assessment of individual inmates is carried out, but the most recent studies use structured or semi-structured diagnostic interviews.

Studies using structured diagnostic interviews have been conducted at both pretrial facilities in the Lower Mainland of British Columbia. Both of the following studies were conducted on volunteers using a measure based on criteria from the Diagnostic and Statistical Manual of Mental Disorders, Third Edition, Revised (DSM-III-R; American Psychiatric Association, 1987). This interview, the Structured Clinical Interview for the DSM-III-R, Axis I (SCID-I), takes one to two hours to administer. It provides lifetime and current diagnoses of major mental disorder. Ogloff, Roesch and Hart (1994) report findings from a study conducted at the Vancouver Pretrial Services Centre. They estimated that the rate of major mental disorder, which included affective and psychotic disorders, in this population was 15.6%. The prevalence of affective disorders as diagnosed according to the DSM-IV in men in the community is less than

3%, and less than 2% of the general population suffers from a psychotic disorder (American Psychiatric Association, 1994). The rates of substance abuse in the pretrial facilities were very high. The rate of alcohol abuse or dependence was 77%, and 63% of the population met the criteria for a diagnosis of substance abuse or dependence. Analyzing results from a population in a suburb of Vancouver, Turner (1994) estimated that 68.4% of the jail population at the Surrey Pretrial Services Centre suffered from substance abuse or mental disorder, with 27.7% of the population having an affective, psychotic or anxiety disorder. These rates indicate that a substantial level of psychopathology is present in a pretrial population. As is evident from the high rate of substance abuse, a number of inmates suffer from co-occurring mental disorder and substance abuse. The increased prevalence of mental disorder in this population suggest that the obligation to provide mental health services is a pressing one, as there is a clear need.

#### *Problems Encountered By Mentally Disordered Offenders*

In addition to evidence that a substantial proportion of the incarcerated population is mentally ill, there also is evidence that mentally ill offenders do not fare well in the correctional environment. Identifying mentally ill offenders upon admission is important because they have been found to have difficulty in the correctional environment. Evidence exists to show that mentally ill offenders have higher rates of security incidents than other offenders, including being more likely to refuse to leave their cells, and to engage in fire setting or self harm (Adams, 1986). These behaviours are likely to be regarded as bizarre by officers and inmates, and cell extractions (removing an inmate

from his cell) are dangerous for all involved. Perhaps because of these unusual behaviours, mentally ill offenders are viewed unfavourably by officers and other inmates.

Both officers and other inmates find it difficult to cope with mentally ill inmates. The mentally ill prison inmate typically is regarded as a problem by correctional officers (Kropp, Cox, Roesch, & Eaves, 1989), as is the mentally ill jail inmate (Hart & Hemphill, 1989). As well as causing disturbances and being difficult to manage, mentally ill offenders also can be at risk for victimization by other inmates (see Ogloff et al., 1994). Inmates whose behaviour is noticeable and possibly irritating to others can be singled out for abuse. Due to the short length of stay in jail, there is less of an established power hierarchy amongst inmates. This can result in increased tension on the living units, resulting in even less tolerance for abnormal or irritating behaviour. To be useful, screening must correctly identify those inmates who will have difficulty or cause problems on the living units.

#### Purposes of Mental Health Screening

Screening in jail serves two main purposes, one of control and one of treatment. Because the setting is a correctional one and not a mental health one, security is the primary concern. Inmates who will cause disturbances or have difficulty adjusting to jail ideally should be identified as they enter the jail so that they may be classified and housed accordingly. Depending on the size and nature of the facility, inmates can be placed in segregation or in units specially designated for mentally ill offenders. This placement can allow for a lower ratio of inmates to officers, and for officers who have additional training or skill in dealing with mentally ill people.



### *Placement of Mentally Disordered Offenders*

The primary purpose of screening is identifying inmates who will require assistance in adjusting to jail, and taking steps to minimize problems by classifying and placing them accordingly. As was mentioned above, many larger jails have special housing units for inmates who are mentally ill or who require additional attention. Virtually all jails have facilities for placing an inmate in segregation, and these can be used for agitated inmates. Unfortunately, there is no research examining whether placing inmates in these types of special units succeeds in reducing problems within institutions. This type of research has important implications, because classifying inmates incorrectly can result in unnecessarily restricting their freedom and privileges within the institution (Brennan, 1987).

While there is no research evidence suggesting that special placement within institutions can reduce security incidents, it is likely that it reduces tension. Placement in special units may reduce some of the difficulties officers have in dealing with mentally ill offenders. Officers working on those units can seek additional training and be more tolerant to some odd behaviour than regular living unit officers. Obviously, placing mentally ill inmates in special living units reduces the contact they have with other inmates who are likely to victimize them, so it is likely that special placement reduces this problem.

### *Suicide Screening*

Inmates who are at risk for suicide or self harm must be identified at intake so they can be monitored carefully or placed on suicide watch. Because suicide is a low

base rate behaviour, it is very difficult to evaluate a screening program's success at identifying suicidal inmates. There is some information about correlates of suicide in an incarcerated population. While the rate varies depending on the study, suicide is more common in an incarcerated population than it is in the general population (see Arboleda-Florez & Holley, 1988). Although the need to screen for suicide risk exists, there are no reliable, well-validated suicide risk assessments. The existing literature on suicide provides some information that is useful for developing screening interviews. Given some of the unusual features of the jail setting, general clinical knowledge about suicide may not always be applicable there.

To begin with, it is particularly important that suicide screening take place early because research suggests jail suicides often occur shortly after admission (Dvoskin, 1990). Retrospective research conducted in the United States provides some information about jail suicides. Hayes (1989) collected information about 339 jail suicides, but 30% of these suicides occurred in lock-up rather than in detention centres. Findings that may be of interest for screening were that 60% were intoxicated at the time of arrest (78% of this group died within the first 24 hours of incarceration), 75% were held for non-violent offences, and that, while 58% of the detention facilities had suicide prevention programs, 89% of the total sample did not undergo any screening. It is impossible to know whether these findings are generalizable, but they suggest that intoxicated individuals may be at increased risk for suicide, and that individuals being held for less serious offences should be screened for suicide just as carefully as those being held for more serious offences.

Correctional staff often suspect inmates of threatening suicide to gain privileges or attention. In one study, inmates who attempted suicide were asked about their motives, and inmates who had manipulative goals in their attempts were not distinguishable on the basis of lethality of attempt from inmates who had intent to kill themselves (Haycock, 1989). While malingering and deception always should be suspected in the incarcerated population given the high proportion of psychopaths, inmates who make attempts for manipulative purposes also stand a chance of gravely injuring themselves, so the tendency to dismiss threateners may be a dangerous one.

Although it is a low base rate behaviour and one that is difficult to predict, suicide screening must be incorporated into interviews given upon admission to jail. Suicide occurs more frequently in incarcerated populations than it does in the general population, and it is most likely to occur just after admission, so inmates should be screened for suicide risk shortly after intake into jail.

#### *Referrals for Mental Health Intervention*

Screening can be used also to make referrals for further evaluation, treatment, or crisis intervention. A brief initial interview is a time and cost efficient way to determine which inmates require further assessment. The subgroup of inmates who are identified as requiring further assessment or treatment then can be given a more lengthy interview or assessment to determine their needs. This two tier model requires that the initial interview is overinclusive, because it is better to refer some inmates who actually do not require further evaluation or assessment, rather than to miss those inmates who do (Ogloff et al., 1994). While mental health treatment is not a priority in correctional

settings, particularly in a jail where the majority of inmates stay very briefly, most urban jails at least have access to psychiatric medication.

As Ogloff, Tien, Roesch, and Eaves (1991) describe, mental health programs should be developed in jails. Because jail is often the point of entry to the criminal justice system, later difficulties can be avoided if mental health problems are detected at this point. Jail also is an ideal place to find people in the criminal justice system who are in need of treatment, assess them and plan post-release treatment with community mental health care (Ogloff et al., 1991). Jails are part of the community because most inmates will be released within a few days of their admission, either because they make bail or on their own recognizance. Many of these people also have had previous contact with mental health services, and they will require further contact upon release. During their jail stay, a community care plan can be drafted, and appointments with appropriate agencies can be made. In fact, this type of program may help to combat the 'revolving door' problem encountered with people who need mental health treatment but do not access it, end up living on the streets and frequently being admitted to mental hospitals and jails when their behaviour deteriorates to the point where they become a risk to themselves or others. If resources are available to provide extensive services in jail, the initial screening interview provides the basis for a mental health program. Having these types of services available is ideal, but it remains a secondary component of a mental health program in this setting because security concerns take precedence. Whether additional services are available or not, some type of mental health screening must be utilized to make placement decisions.

## Screening Procedures

Screening inmates for mental illness and crisis needs upon admission to jail is a necessity for the reasons mentioned above. To summarize, a substantial proportion of inmates suffer from a mental illness or arrive at jail during a time of crisis. These inmates must be identified before they are placed, as they are high risk for a number of problems. Mentally ill inmates pose management problems within the jail. They are more likely to be involved in incidents which breach security. They may stand out and be at risk for victimization by other inmates. Staff who are dealing with them find it stressful, and they should have additional training. Finally, all inmates must be screened for suicide risk immediately upon intake as suicide occurs more often in inmates than the general population. All of these factors must be considered and included in a screening program.

Despite the need for some type of screening, many jails do not routinely screen new intakes or use inadequate procedures. Because it differs between jurisdictions, it is difficult to get an accurate estimate of what percentage of jails provide some screening. The major problem with screening is that it does not occur on a routine basis in many jails (Ogloff et al., 1991), and when it does occur the procedures are often inadequate. Jemelka (1990) summarized the American research and concluded that 70% of jails conducted some type of screening, but most of this was carried out by jail deputies. If this is the only option, it is probably preferable to no screening, but it leaves much to be desired. Not only are correctional staff less equipped to recognize signs of mental disorder than mental health workers, inmates are less likely to be forthcoming to an officer about personal issues. There is also no consensus in the literature about what

screening tool to use, indeed many jails still screen inmates for mental illness by simply asking them if they have ever been hospitalized in a psychiatric facility or whether they intend to harm themselves. In a study of 43 jails in the United States that either had a model mental health program or were under court order to provide mental health services, only 70% reported that intake screening procedures were in place (Steadman, McCarty, & Morrissey, 1989). Given that not even all jails that have a mental health program, or are under court order to put one in place, screen inmates, it is likely that the percentage of jails providing some screening is not high. Even when a screening program is in place, it may not be successful at identifying mentally disordered inmates.

Teplin (1990a) evaluated an existing mental health program and found that many mentally ill inmates were not being identified. The Diagnostic Interview Schedule (DIS; Robins, Helzer, Croughan, & Ratcliff, 1981) was administered to a sample of inmates to evaluate whether inmates in need of services were being detected by screening. This screening program was a two tiered one, with the first stage being a brief interview with correctional staff trained to recognize psychiatric illness. Only 32.5% of the inmates found to be severely ill- having a psychotic disorder or a severe affective illness- with the DIS were referred on by the screening program. The rate was slightly better for schizophrenic detainees, 45% of whom were detected, but it dropped substantially for depressed inmates, only 7% of whom were referred for the second interview. Because the initial interview was not described, it is difficult to hypothesize why this screening program was not effective at identifying inmates with mental illnesses. The use of a standardized assessment tool may have improved the hit rate. It also is possible that

inmates are less likely to disclose personal information to a correctional officer than they would be to a mental health worker. This study demonstrates the need for standardized, valid, screening tools; however, it also raises an important issue in the evaluation of screening, and that is what should the criteria for a successful screening process be? Is it necessary to identify all inmates who meet diagnostic criteria for a major mental illness, or only to identify those inmates who will have problems in jail? The research conducted in the past has not examined how screening interviews are related to later behaviour, but rather evaluated whether screening interviews predict the presence of mental illness as assessed using diagnostic interviews.

#### *Diagnostic Screening Interviews*

##### *Diagnostic Interview Schedule (DIS).*

Research has been conducted in jails using a number of different interview protocols or schedules. There is no consensus as to which interview would be the most effective for screening purposes. Diagnostic information has been gathered using the DIS. This instrument is structured, and it provides diagnoses from the Diagnostic and Statistical Manual of Mental Disorders. It takes one to three hours to administer. There are very few published studies using the DIS with male detainees, one of which was conducted by Hodgins and Côté (1990). The subjects were 495 penitentiary inmates in Quebec. Because the DIS requires participation, only those inmates who agreed to be interviewed were included in the sample. The interviewers all took part in an intensive training program on the administration of the DIS. The lifetime prevalence rates for major mental disorder were high, with 22.7% of inmates having suffered from an

affective or psychotic disorder. The results were calculated so that subjects could only receive one diagnosis of major mental disorder, thus this study can be used to obtain an overall estimate of the level of mental illness in this population, but cannot be used to determine the prevalence of specific disorders. An important finding was that 75% of those inmates who met the criteria for a lifetime incidence of a mental disorder did so prior to incarceration. This is relevant because it suggests that a fairly high proportion of inmates are arriving at institutions with a history of mental illness. The DIS takes too long to administer to be used as a screening interview, but an abbreviated version, the Referral Decision Scale (RDS), has been created for this purpose.

*Referral Decision Scale (RDS).*

The RDS consists of 18 items taken from the DIS, and was developed as a screening tool for use with an incarcerated population (Teplin, 1990a). Most of the questions pertain to symptoms of major mental disorder. These items were selected for their ability to predict DIS psychotic or affective disorder diagnoses. This instrument was developed for use by correctional personnel, in contrast to most other interviews which must be administered by mental health professionals. As reviewed below, there have been a few studies conducted examining the effectiveness of this instrument.

Using both an already incarcerated sample and one of jail admissions, Teplin and Swartz (1989) found that the RDS accurately predicted DIS diagnosis of major mental disorder; however, the validity of this finding is somewhat questionable because the RDS was scored from the information gathered for the DIS rather than being administered separately. In part to address this concern, Hart, Roesch, Corrado, and Cox (1993)



conducted a study in which the RDS was administered and compared to three other measures. They found that the interrater reliability of the measure was good; however, it is important to note that it was being administered by graduate students not by correctional staff, so this should not be generalized to other types of interviewers.

Initially the RDS had a false positive rate that was too high, with 39% of inmates scoring above the cutoff for Depression. This would mean too many inmates would be referred on for further contact, placing an unnecessary burden on mental health services. Once the cutoff was adjusted, the rates were acceptable, indicating that the RDS may be a useful screening tool.

Rogers, Sewell, Ustad, Reinhardt, and Edwards (1995) examined the construct validity of the RDS by comparing it to the Schedule of Affective Disorders and Schizophrenia -Change Version (SADS-C), a diagnostic interview. They found the RDS had acceptable convergent validity with the SADS-C, except for scales measuring mania. Unfortunately, the RDS scales were found to be highly intercorrelated, indicating that the discriminative validity of this measure was not acceptable. On the basis of this, they concluded that the RDS was not suitable for a screening tool. However, it is important to note that the sample in this study was mentally disordered offenders; a group that may have a high proportion of people suffering from more than one mental disorder. Thus the intercorrelations on the scales might have reflected a high incidence of comorbidity in this population. An addition criticism was that the RDS does not assess problematic behaviour such as aggression, nor does it measure suicidal ideation. A screening tool for use in this population needs to measure both aggressive and suicidal tendencies. They

suggest that the SADS-C would be a more useful screening tool than the RDS, but acknowledge that the 15 to 30 minute time commitment may be too lengthy for a screening interview.

Thus the research evidence indicates that the RDS, even with adjusted cutoff scores, shows limited utility as a screening tool, although it was developed for use as such. The RDS provides neither a diagnosis nor a detailed symptom pattern. Many symptoms which are relevant to a jail population, such as agitation and hostility, are not even rated. Furthermore, this instrument cannot be used alone for screening in a jail, because there is no provision for suicide screening, so an additional brief screen for suicidality would have to be included. The problems with the validity of the RDS, in conjunction with the limitations on the information it provides, indicate that this is not an effective screen for mental disorder.

The line of research above, examining how well one measure of mental disorder predicts another, does not address the main issue of screening: can we identify inmates who will have difficulty in the jail environment due to their mental health problems? Of course, if there is treatment available within the jail, it is important to detect those inmates suffering from a diagnosable, treatable mental disorder; however, not all jails have access to these services. Furthermore, the real concerns when an inmate is booked into a jail are not whether he is suffering from depression or schizophrenia, but whether he will attempt suicide or behave in an unpredictable manner. To demonstrate the validity of a screening tool, one needs to examine if it predicts the behaviour of inmates, in addition to merely identifying the presence of mental illness.

### *Symptom Level Screening*

There has been a tendency in the literature to emphasize the importance of diagnosis in the assessment of mentally ill offenders. Hodgins (1995) provides an extensive review of the literature on mental disorders among inmates. The focus of this article is the importance of using more reliable diagnostic measures when doing research with offenders. Although this type of research will allow for a more accurate understanding of the scope of the problem we are facing by giving us epidemiological information, it does not shed light on the applied concern of screening inmates. There is a need for studies examining the utility of screening interviews. Diagnostic interviews do have the advantage of assessing inmates in a fashion that allows for the application of a label that simplifies communication between clinicians; however, they are far too lengthy, generally taking at least one hour, to be used as a screening tool. Moreover, as discussed below, symptoms may be a more useful indicator of inmates' functioning than diagnosis, and they can be rated in the course of a brief interview, which is an important consideration for screening.

Detailed symptom ratings describe current problems well. Not all persons who qualify for a diagnosis will be disruptive, or in need of immediate intervention, and not all disruptive persons will qualify for a diagnosis (Rice & Harris, 1993). There are a number of reasons to believe that this is true. Diagnostic information typically is the lifetime occurrence of a mental disorder, and this may not impact on current functioning during a short term jail stay. Furthermore, to meet criteria for a diagnosis according to the DSM-IV there are very specific rules, such as the necessity for feeling down nearly

every day for two weeks to receive a diagnosis of Major Depression. Although this may be due solely to weaknesses of our current diagnostic system, it nevertheless means that some inmates who are having difficulty functioning would not receive a diagnosis, for example an inmate who had been depressed and suicidal for only two days. In fact, it is symptoms that interfere with day-to-day existence, and diagnosis is simply a framework into which we organize symptoms. For decision-making purposes, it may be better to rely upon detailed symptom ratings rather than on diagnosis, which reduces information.

A symptom rating scale can rate affect, psychotic process, and other symptoms which are typically included in a diagnostic interview, but it also can include important areas which are not directly rated by diagnosis. Observable behaviours can be rated, such as agitation or psycho-motor retardation. Issues which typically would be measured in terms of personality function, and thereby not included in an Axis-I diagnostic interview, can also be rated (e.g., hostility and aggressiveness). Symptoms which would be addressed under diagnosis, but are problematic even in absence of a diagnosis, can be measured, such as bizarre behaviour and poor hygiene. In summary, diagnostic information is a condensing of symptoms which is of limited use as a screening tool, because the symptoms themselves are of concern.

*Brief Psychiatric Rating Scale (BPRS).*

While it seems that symptoms can be used to describe and quantify current functioning, it is important to consider whether they can be used to predict behaviour, as this is the main purpose of screening. Although there is little published research looking at the relation between symptoms and behaviour in an incarcerated sample, there has been

some research conducted in hospitals examining the symptom patterns of patients who are physically assaultive. Dickerson, Ringel, Parente, and Boronow (1994) examined the ability of the BPRS (Overall & Gorham, 1962) to predict behaviour during the entire hospitalization. The sample was made up of 120 inpatients, 81 of whom were male. The time elapsed between the administration of the BPRS and release from the hospital varied, but it was typically lengthy, as the BPRS was given during the first week after admission, and the mean length of stay for the patients was 166 days. They found that patients who scored higher on the BPRS (Overall & Gorham, 1962) items measuring hostility and delusions were more likely to engage in assaultive behaviour. They also found that the duration of time these patients were held in seclusion was predicted by the initial assessment of agitation made using the BPRS. This study suggests that BPRS items can be used to predict problematic behaviour, even over the course of a few months.

Factors made up of BPRS items have also been used to predict inpatient behaviour. Lowenstein, Binder, and McNiel (1990) found that three of five factors from the BPRS predicted assaultive behaviour. The sample was made up of 127 patients, 69 of whom were male. These patients were diagnosed with a variety of disorders, and stayed an average of 12 days in the inpatient unit. Problematic behaviour was defined as any type of physical or verbal aggression, and it was measured both by incidents recorded in the hospital files and ratings completed by nurses each shift. The rationale for using two dependent measures was to increase reliability and validity because incidents are typically under-estimated if only formal reports are used. The factors that were found to

be related to problematic behaviour in the unit were thought disorder, hostility/- suspiciousness, and agitation. Thus symptom rating with the BPRS, both items and factors, have been found to be related to problematic behaviour within hospital settings.

### The Present Study

Mental health screening must be brief and occur upon the day of admission. It must occur upon admission because the risk for suicide is highest during the initial period of incarceration, and it is less stressful for staff and inmates to classify inmates and place them in suitable living units immediately, rather than transferring them after an incident has occurred. The screening must be brief to ensure that all inmates are screened. The number of people admitted to the jail depends on the number arrested and on the court schedule, so it can vary widely. This means that some days there will be a very heavy intake load, and the interviewer must be able to complete the interviews quickly. The screening should take place upon admission, otherwise a number of inmates will not be seen. The length of stay in jails vary, but it is typically short. Previous research found the modal length of stay in jail was 2-3 days (Ogloff & Otto, 1989), although the average stay has been found to be about nine days (Hart & Hemphill, 1989). These requirements make it a bit more difficult to develop a screening program in a jail setting, as the interviewers must be prepared to work on a flexible schedule.

A comprehensive, interministerial mental health program was initiated in 1991 at the Surrey Pretrial Services Centre (SPSC). The goals of this project are to identify and manage mentally disordered offenders within the jail, and to provide treatment and

services within the jail and post-release, in the hope of reducing recidivism (Ogloff et al., 1991). The foundation for this program is an initial semi-structured intake interview.

This interview takes between five and 30 minutes to conduct. The initial part of the interview consists of some questions about the current living situation, providing information about the inmate's family life, housing and work. This serves to build rapport, as well as to provide information about the inmate's level of functioning and any current problems he may be having. Questions are then asked about current or past drug and alcohol use, and any treatment the inmate has received for substance abuse. Psychiatric treatment history, including any hospitalizations or prescriptions for psychotropic medication, is then covered. The last questions asked are done so to complete the Brief Psychiatric Rating Scale and concern any symptoms of depression, anxiety or psychosis. Suicidality and violence risk are then rated by asking the inmate about current ideation or intent to hurt himself or others, and any past suicide attempts or fights in jail. This interview is used to provide a number of ratings, including the BPRS as well as global predictions of adjustment problems.

Based on the interview, recommendations for placement and referrals are made. The interviewer works closely with the correctional officer responsible for placing inmates in living units. Inmates can be placed in regular living units, in living units for mentally disordered offenders, in segregation, or in isolation if they are at high risk for harm to themselves or others. Inmates also can be placed in a glass cell and monitored by an officer if it is deemed they are at extremely high risk for suicide. This usually occurs if they have attempted suicide while in holding cells or make statements that they want to

commit suicide. Referrals can be made to psychology, alcohol and drug rehabilitation, psychiatry, and social work. Typically when a referral is made, the psychiatric nurse who coordinates the program sees the inmate the next day to determine if a further referral is necessary and how urgent the referral is. This project began as a demonstration program with periodic evaluation being one of the tenets of the project.

This research was undertaken to assist in evaluating the effectiveness of the screening interview, and to determine if symptoms can be used to predict institutional behaviour. To evaluate how successful this program is at flagging inmates who will have adjustment problems, two studies were conducted. The first study examines the concurrent validity of the BPRS, and the second study examines its predictive validity. Many people working in the field still feel that rating scales must be validated by comparing them to diagnostic interviews. Rogers et al. (1995) suggest that to evaluate rating scales, the relationship between them and diagnostic interviews must be demonstrated. Study 1 addresses this issue using a sample of inmates who were administered both a diagnostic interview and a symptom rating scale. It was hypothesized that elevation on the total score of the BPRS would predict diagnosis, and that symptom patterns would be related to specific diagnoses.

Study 2 examines the ability of symptom information to predict adjustment difficulties. Study 1 was limited by a relatively small sample, which would have been insufficient to examine the predictive validity of the symptom level screen; Study 2 added additional, randomly selected inmates to the same sample, making it larger. Also, Study 1 provides little useful information about the clinical significance of symptoms; whereas,



Study 2 considers this issue more directly. It was hypothesized that an elevation on the total score of the rating scale would be related to problems within the jail, and that certain symptom patterns would predict different types of problem behaviour.

## Study 1

### *Method*

*Participants.* Subjects were 74 male jail inmates, aged 18 and older. The study was conducted at the Surrey Pretrial Services Centre. This facility is a pretrial jail housing approximately 160 inmates. A random sample of new admissions to the jail was approached to participate. Written consent was required, and the consent form reiterated that participation was voluntary. Those who gave informed consent were included in the study.

*Measures.* To assess symptomology and determine diagnosis, two measures were administered. Upon their arrival to SPSC, the mental status of all inmates is assessed using the Brief Psychiatric Rating Scale (BPRS; Overall & Gorham, 1962). This is a semi-structured interview which takes five to 30 minutes to administer. Ratings are made based on the past month only. As displayed in Table 1, the revised BPRS consists of 24 items, each rated on a 7-point scale (Lukoff, Liberman, & Nuechterlein, 1986). This scale was selected because it provides a detailed symptom profile encompassing a wide range of problems. As well as rating symptoms typically associated with mental illness, the BPRS assesses symptoms which are generally characteristic of personality disorders and may impact on adjustment.

Table 1

*Items in the 24-Item Brief Psychiatric Rating Scale (BPRS)*

---

Item	Item
1. Somatic Concern	13. Motor Retardation
2. Anxiety	14. Blunted Affect
3. Depression	15. Tension
4. Guilt	16. Mannerisms and Posturing
5. Hostility	17. Uncooperativeness
6. Suspiciousness	18. Emotional Withdrawal
7. Unusual Thought Content	19. Suicidality
8. Grandiosity	20. Self-Neglect
9. Hallucinations	21. Bizarre Behavior
10. Disorientation	22. Elevated Mood
11. Conceptual Disorganization	23. Motor Hyperactivity
12. Excitement	24. Distractibility

---

Factor analyses have been carried out on the BPRS scale with data gathered from inpatient samples, resulting in a five factor structure (Krakowski & Czbor, 1994; Overall & Hollister, 1986, cited in Lowenstein, Binder, & McNiel, 1990). Because the population in this study differs from a clinical population, it was unclear whether the factor structure would be the same. As displayed in Table 2, a principal component analysis of this scale using a varimax rotation, based on a sample 5,628 inmates from SPSC, has identified six orthogonal factors: dysthymia, psychosis, hypomania, paranoia, alienation, and hostility. Six factors were determined to describe the data best because a five factor solution was complex, with some factors being bipolar, and a seven factor solution was unstable, with the factor structure changing depending whether the analysis was orthogonal or not.

As indicated in Figures 1 and 2, symptoms are not distributed normally in the sample. Figure 1 displays the distribution of the raw BPRS scores for each of the six factors. Because the factor scores are all scaled differently (e.g., fewer items on some scales), the data was transformed to a ratio scale to allow direct comparisons between the factors. The distribution of standardized scores is shown in Figure 2. As would be expected from a non-clinical sample, and as the figures confirm, relatively few items were endorsed across the sample. Depressive symptoms are the most prevalent, having the highest median score and the largest number of inmates suffering from some symptoms. Symptoms of psychosis and hypomania are also somewhat represented, this is likely due to acute withdrawal symptoms as many of the inmates are substance abusers. Paranoia, alienation and hostility are not distributed in the sample, but there are a number

Table 2

*Factor Structure of the BPRS*

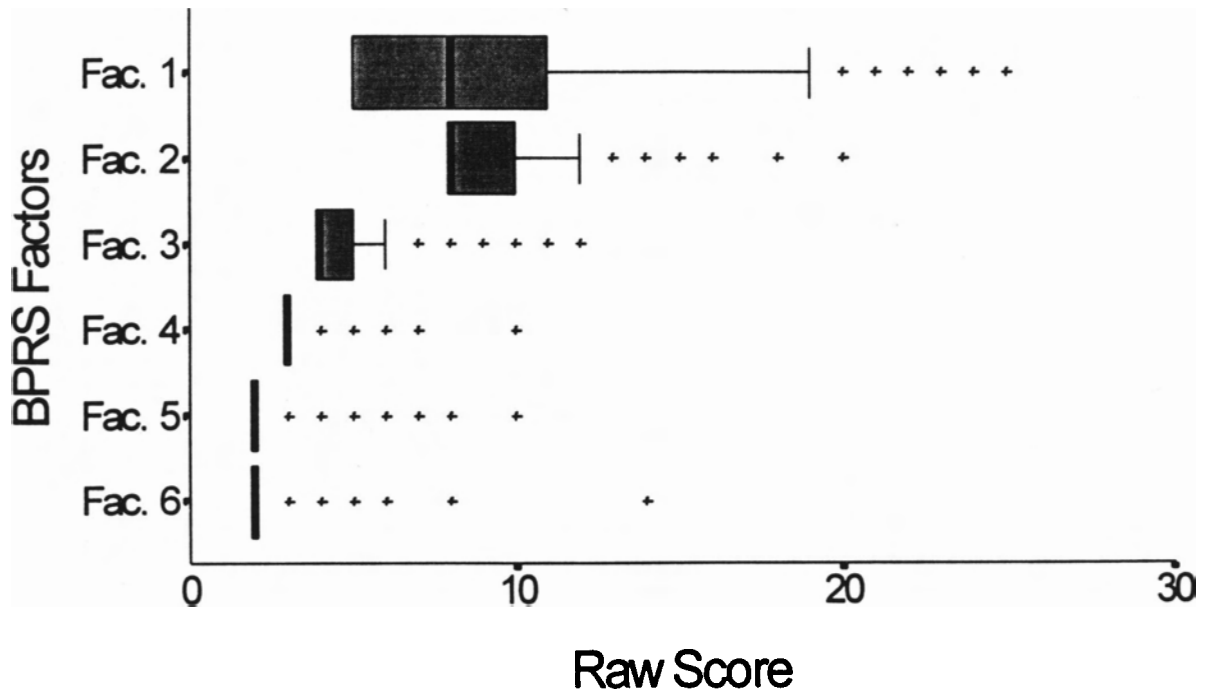
Item	Factor					
	1 Dysthymia	2 Psychosis	3 Hypomania	4 Paranoia	5 Alienation	6 Hostility
1	<b>.42</b>	.17	.05	-.02	.06	-.24
2	<b>.79</b>	.03	.12	.07	-.02	.16
3	<b>.76</b>	.12	-.09	.00	-.06	.14
4	.35	.22	.15	.09	-.03	<b>.62</b>
5	.25	.15	.23	<b>.34</b>	<b>.30</b>	<b>.42</b>
6	.20	.12	.05	<b>.76</b>	.20	.12
7	.13	.25	.04	<b>.81</b>	-.02	-.08
8	-.17	.01	.25	<b>.47</b>	.04	.01
9	.18	<b>.40</b>	-.11	.30	-.25	-.09
10	.10	<b>.64</b>	.02	.11	-.03	-.07
11	.16	<b>.62</b>	.23	.28	.06	.09
12	.10	-.02	<b>.79</b>	.16	.04	-.05
13	.14	<b>.62</b>	-.29	-.11	.30	.23
14	.25	<b>.56</b>	-.27	-.07	.36	.29
15	<b>.65</b>	-.02	.36	.05	.25	-.02
16	.17	<b>.36</b>	.26	.13	.13	-.55
17	.02	.02	.07	.16	<b>.77</b>	-.14
18	-.03	.28	.00	.03	<b>.74</b>	.05
19	<b>.61</b>	.24	-.03	.06	-.05	.00
20	.09	<b>.50</b>	.20	.05	.15	-.06
21	-.02	<b>.44</b>	.26	.26	.13	-.06
22	-.28	.14	<b>.56</b>	-.02	-.23	.19
23	.19	.05	<b>.76</b>	.11	.11	.02
24	.13	.32	<b>.49</b>	.06	.10	-.39

*Note.*  $N = 5,628$ . Values in bold faced print represent the largest factor loading

for that item.

Figure 1

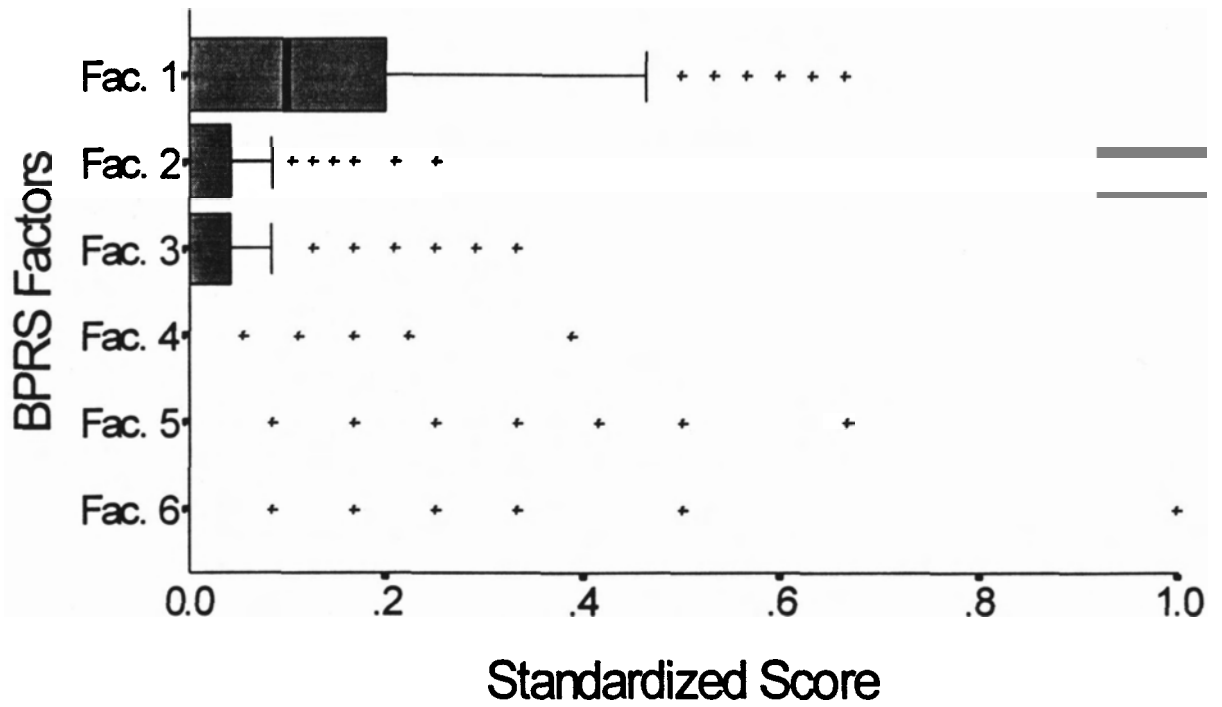
*Distribution of Raw Factor Scores on the BPRS*



Note.  $N = 201$ .

Figure 2

*Distribution of Standardized Factor Scores on the BPRS*



Note.  $N = 201$ . Scores standardized to a ratio scale.

of inmates who receive elevated scores on these factors. Overall, this pattern of more typical depressive or physical symptoms being distributed more widely and unusual psychiatric symptoms being present only in a few individuals is what would be expected in a non-clinical sample.

Participants also were administered sections of the Structured Clinical Interview for the DSM-III-R, Axis I (SCID-I). The Axis I disorders assessed using the SCID-I were mood disorders, psychotic disorders, and substance abuse; these disorders were selected because they are known to be related to institutional difficulties (Flannery, Hanson, & Penk, 1994; Le Brun, 1989, cited in Jemelka, 1990). All sections of the SCID were not given because the interview was too lengthy to be included in its entirety. As it was, the SCID-I interview took between 30 and 60 minutes to administer.

*Procedure.* The BPRS is administered as part of the routine screening interview conducted at the SPSC. Mental health screening occurs upon admission to the jail. Intake interviewers, who are graduate students in clinical psychology, work in admissions from Monday to Friday. Statistics compiled for the Mental Health Project indicate that more than 95% of inmates are screened during their stay at SPSC. For this study, inmates were contacted on or after the second day of their stay at SPSC by a research assistant. This was done because it was too difficult to access the inmates on the day they were admitted. The study was described to them and they were invited to participate. If they agreed to participate, subjects signed a consent form and a research interviewer then administered the SCID interview. Both the BPRS and the SCID were administered by graduate students in clinical psychology who received extensive training in the use of

these instruments. Registered psychologists familiar with both the forensic area and these instruments were available for supervision of the students when necessary.

### *Results*

The information from the SCID was collapsed to create five categories: bipolar disorder, depression, psychotic disorders, alcohol abuse or dependence, and substance abuse or dependence. This was done because very few inmates suffered from bipolar disorders or psychotic disorders. The incidence of various disorders is displayed in Table 3. There is a provision that allows for a subthreshold lifetime diagnosis. This can be given if there is evidence that many symptoms of a particular disorder were present, but there are not enough symptoms to meet criteria for the disorder. Due to the low base rate of bipolar disorder and psychotic disorder, inmates who were subthreshold on these disorders were included in the relevant diagnostic group. The SCID provides lifetime and current diagnoses, so each diagnostic category was analyzed twice, once using current and once using lifetime information.

The BPRS has some ability to predict SCID diagnosis, both lifetime and current. The correlations between the BPRS factors and lifetime SCID diagnosis is displayed in Table 4, and the correlation between the BPRS factors and current SCID diagnosis is displayed in Table 5. The higher the elevation on the BPRS, the greater the likelihood of receiving a lifetime or current SCID diagnosis. The total BPRS score predicted a number of diagnoses, both lifetime and current. It predicted primarily those diagnoses with a higher base rate, namely depression, alcohol and drug abuse. In fact, for some of these diagnoses, the effect size is moderate according to Cohen (1988). Small to moderate



Table 3

*Diagnostic Prevalence as Assessed by the Structured Clinical Interview for the Diagnostic and Statistical Manual of Mental Disorders, Third Version-Revised (SCID)*

Diagnosis	Lifetime		Lifetime-subthreshold		Current (past month)	
	n	%	n	%	n	%
Bipolar Disorder	3	4	1	1	1	1
Other Bipolar Disorder	2	3	0	0	2	3
Major Depression	24	32	4	5	13	18
Schizophrenia	0	0	1	1	0	0
Schizophreniform Disorder	0	0	1	1	0	0
Schizoaffective Disorder	2	3	0	0	2	3
Psychotic Disorder-NOS	1	1	0	0	0	0
Alcohol Dependence	52	70	1	1	23	31
Drug Dependence	50	68	5	7	31	42

N=74

Table 4

*Correlations Between BPRS Scores and Lifetime Axis I Diagnoses*

BPRS Score	Bipolar	Depression	Psychotic	Alcohol	Drugs
Total	.13	.28**	-.10	.26*	.20*
Factors:					
Dysthymia	.08	.35***	-.18	.15	.13
Psychosis	.06	.25*	.17	.30**	.14
Hypomania	.03	.01	-.04	.04	.05
Paranoia	.43***	-.11	-.10	.18	.24*
Alienation	.09	.11	-.12	.10	.14
Hostile	-.00	-.02	-.07	.18	.16

*Note.*  $N = 74$ . BPRS = Brief Psychiatric Rating Scale. \*  $p \leq .05$ ; \*\*  $p \leq .01$ ; \*\*\*  $p$

$\leq .001$  (all one-tailed).

Table 5

*Correlations Between BPRS Scores and Current Axis I Diagnoses*

BPRS Score	Bipolar	Depression	Psychotic	Alcohol	Drugs
Total	.14	.31**	-.02	.13	.29**
Factors:					
Dysthymia	.16	.39***	-.13	.10	.27**
Psychosis	.05	.23*	.25*	.14	.12
Hypomania	.02	-.03	.02	.26*	.15
Paranoia	.13	.09	-.07	-.02	.14
Alienation	.01	.15	-.09	-.15	.18
Hostile	.06	-.01	-.05	.02	.14

*Note.*  $N = 74$ . BPRS = Brief Psychiatric Rating Scale. \*  $p \leq .05$ ; \*\*  $p \leq .01$ ; \*\*\*  $p \leq .001$  (all one-tailed).

effect sizes would be expected given that the measures are different assessment methods. Studies examining the concurrent validity of psychological measures typically find effect sizes of this magnitude (for example Hart et al., 1993; Rogers et al., 1995).

BPRS factor scores also predicted SCID diagnoses, although caution should be used when interpreting these results given the number of correlations calculated. Dysthymia predicted both lifetime and current depression. This finding remained significant even after controlling for Type I errors using a Bonferoni procedure. These were among the three largest effects in this study, which could be expected on the basis of the clear relationship between the theoretical constructs of depression and dysthymia as well as the higher incidence of depressive disorders in comparison to the other categories of illness in the sample.

A noteworthy finding is that there is a high correlation between lifetime, but not current, bipolar disorder and paranoia. The symptoms of paranoia- suspiciousness, unusual thought content and grandiosity- may be found in bipolar disorder, which would account for the strength of the relationship with lifetime bipolar disorder. The absence of a relationship with current bipolar disorder may be an artifact of the sample size, which is small for current bipolar but larger for lifetime incidence of this disorder.

Smaller effects were found with some other factors. Relationships between hypomania and dysthymia and current alcohol and drug abuse probably can be accounted for by withdrawal symptoms, as these factors contain a number of physiological symptoms such as somatic concern and motor hyperactivity. The relationship between psychosis and both current and lifetime depression is unexpected, and could be accounted

for in a number of ways. It is possible that inmates with low-level perceptual disturbances and flat affect resulting from personality structure rather than mental illness may be more susceptible to depression over the course of their lifetime. It is also possible that these inmates actually were suffering from schizoaffective disorders, but that the interviewers were conservative in diagnosing these types of illness. There also was a correlation between paranoia and lifetime drug use which is open to interpretation. However the correlation is small in magnitude and not present for current drug use, so does not merit interpretation given the number of correlations performed in this study.

In summary, the BPRS shows moderate concurrent validity with the SCID, particularly given the limitation imposed by the small sample size. The BPRS total predicted SCID diagnosis for more common disorders. There also were a number of significant relationships between BPRS factors and SCID diagnoses, generally for disorders with a higher base rate in this population.

## Study 2

### *Method*

*Participants.* Subjects were 206 male jail inmates, aged 18 and older. Subjects included those from the first study with an additional, randomly selected sample of 132 inmates added. The second sample of inmates was added by randomly selecting a day and including the entire intake of new inmates arriving at the institution on that day. The desired sample size was 200. To reach the final sample size, nine days of intake were needed. Because the study was archival in nature, no contact with the inmates was

required. No consent by inmates was required because no participation on their part was needed and the research has no connection or impact on them as individuals.

*Measures.* The independent measure for this study was the revised, 24-item BPRS (see Study 1). There were two dependent measures.

Inmate adjustment was determined through both “soft” (security staff ratings) and “hard” (progress log entry) measures. Ratings were obtained from the correctional staff using a measure adapted from two earlier measures designed to assess jail adjustment (Cooke, 1993, reviewed in Ogloff, Roesch, & Hart, 1993; Hart & Hemphill, 1989). The adapted measure, the Officers' Rating Form for Inmates (ORFFI), comprises 13 symptoms or behaviours that are indicative of poor adjustment and two overall ratings of interactions with staff. All items are rated on a 4-point scale (0 = *no problems*, 3 = *severe problems*).

Items on this measure were summed into three scales based on item content. The items and scales are displayed in Table 6. Scale scores were used when analyzing the data rather than items because it made the range less restricted. About 70% of all items were scored zero; therefore, summing them into scale scores increased the chance that the score would be one or more. The inter-item correlations within each scale were calculated and found to be above .20. This indicates that items within each scale tend to go together, and provides some support for the decision to form conceptual scales. If an inmate has one elevation on a scale, he is likely to have others. The measure was completed by living unit officers because they have the most prolonged contact with inmates, and are the staff members in the best position to comment on behavioural

Table 6

*Items in the Officers' Rating Form for Inmates (ORFFI), Divided into Scales*

---

Scale	Item
Aggression	I/M is verbally abusive towards other inmates
	I/M manipulates or victimizes other inmates
	I/M is verbally abusive toward staff
	I/M tries to manipulate staff
	I/M has a quick temper
	I/M behaves in an unpredictable or inconsistent manner.
Anxiety	I/M appears frightened of other inmates, or is victimized
	I/M appears frightened of staff
	I/M appears tense or anxious
Withdrawal	I/M appears lethargic or dazed and confused
	I/M appears sad and depressed
	I/M spends a lot of time in cell

---

concerns. Cooke (1996) has determined that this type of measure can predict future offences against discipline while in custody, suggesting that it is a valid measure of adjustment.

Progress logs were used to provide a second, more objective measure of adjustment. A progress log is made up for each inmate in provincial corrections. Officers use this file to make notes about the inmate's behaviour and record any difficulties he encounters when he is in jail. Progress log information could not have been used as the sole dependent measure because information is not always noted, and only more serious incidents are recorded in these files. The files were used to determine whether there were any institutional charges, which are laid infrequently because they are reserved for a more serious breach of rules during incarceration. The progress logs also provided the number of days the inmate spent locked down or in isolation, actions which are taken if an inmate is unmanageable or is being punished for infractions. Incidents recorded in the progress logs were also coded into five categories: (1) harm to self, (2) harm to others, (3) damage to property, (4) verbal abuse towards others, or (5) victimization by others.

*Procedure.* As in Study 1, the majority of inmates are screened upon admission. All admissions who consented to the screening interview on a randomly selected day were followed up during their stay at SPSC. The sheet recording the intake from the previous day was used to determine which inmates would be included in the sample. Correctional officers were contacted once a week by phone to complete the ORFFI on inmates in their unit who had participated in the research project. Ratings were



completed on a weekly basis for the entire time an inmate was at SPSC. For the purposes of this study, the week with the highest rating was entered into the analysis. This was done because the screening interview would be most useful if it could predict the worst week of behaviour an inmate had during his stay at jail. If an inmate attacks and injures somebody, but is calm and well-behaved otherwise, it is more important that we are able to predict the attack rather than the good behaviour. When it was possible to obtain progress log information, the other adjustment variables were coded from the progress logs after the inmate was discharged.

### *Results*

Before examining the ability of the BPRS to predict adjustment, an examination of the dependent measures was warranted. The ORFFI was developed to provide a more sensitive measure of adjustment, as it was expected that not many inmates would engage in behaviours problematic enough to be reported in the progress log. Table 7 displays the frequency of incidents recorded in progress logs for the sample. Table 8 displays the scores on the ORFFI scales for the sample. A comparison of Tables 7 and 8 shows that that a larger number of inmates had elevated scores on the ORFFI than were reported in progress logs. Overall, 107 inmates, 51% of the total sample, had no elevations on the ORFFI, whereas the majority of the sample did not have any progress log incidents.

The relationship between the ORFFI and progress log information was further investigated by correlating these two outcome measures, as displayed in Table 9. The progress log information was not strongly related to the ORFFI, except in the case of

Table 7

*Number of Incidents Reported in Progress Logs*

Progress Log Incidents	Frequency of Incidents Per Inmate			
	0	1-3	4-6	7-12
Harm to Others	160	6	0	0
Verbal Abuse	136	24	3	3
Property Damage	159	6	1	0
Harm to Self	165	1	0	0
Victimization	161	5	0	0
Locked Down	140	17	7	2
Formal Charges	159	6	1	0

*Note.* N = 166.

Table 8

*Scores on ORFFI Scales*

ORFFI Scale	Score			
	0	1-5	6-10	11-15
Aggression	148	37	17	4
Anxiety	134	70	2	0
Withdrawal	140	61	5	0

*Note.*  $N = 206$ .

Table 9

*Correlations Between Institutional Behaviour Reported in Progress Logs and ORFFI Scales, Controlling for Length of Stay*

Progress Log	Total	ORFFI Scale		
		Aggression	Anxiety	Withdrawal
Harm to Others	.14*	.15*	.11	.05
Verbal Abuse	.22**	.34***	.04	.02
Property Damage	.25***	.35***	.03	.10
Harm to Self	.20**	.24***	.14*	.06
Victimization	.18**	.19**	.15*	.05
Locked Down	.18**	.31***	-.03	.02
Formal Charges	.16*	.25***	-.04	.09

*Note.*  $N = 166$ . BPRS = Brief Psychiatric Rating Scale; ORFFI = Officer's Rating Form for Inmates. \*  $p \leq .05$ ; \*\*  $p \leq .01$ ; \*\*\*  $p \leq .001$  (all one-tailed).

aggressive behaviour as measured by the ORFFI. Inmates who were considered aggressive by officers tended to have the most incidents recorded in their progress logs. The ORFFI total was also significantly related to most of the progress log items, but this was largely due to the contribution of the aggression scale. Inmates who were anxious or withdrawn did not have many notes made in their progress logs, probably because this type of behaviour did not require intervention by correctional staff. Overall, the ORFFI is sensitive to somewhat different information than the progress logs, suggesting that the ORFFI scales have discriminant validity.

To determine whether the BPRS predicted behavioural problems, two correlation matrices were calculated and will be discussed below. As displayed in Table 10, one matrix correlates the BPRS and the ORFFI, partialling out length of stay. Length of stay was controlled for because it is more pathological if an inmate is in two fights during a one day incarceration than in a six month one. Inmates did have fairly different lengths of stay. 27% of the sample left after one day at the SPSC, and 52% of all inmates stayed seven days or less. The longest stay recorded was 472 days. The range of incarceration time supports the need to control for length of stay. The second matrix, shown in Table 11, correlates the information gathered from the progress logs with the BPRS, again controlling for length of stay. Incidents were coded by indicating the number of occurrences in any of the five categories recorded from the progress log. In a similar manner, formal charges were also coded by the number of charges laid during the inmates stay. Days spent locked down or in isolation were also recorded and entered into the data file.

Table 10

*Correlations Between BPRS Scores and ORFFI Scales, Controlling for Length of Stay*

BPRS Score	ORFFI Scale			
	Total	Aggression	Anxiety	Withdrawal
Total	.15*	.15*	.05	.12*
Factor:				
Dysthymia	.07	.06	.02	.09
Psychosis	.17**	.14*	.09	.17**
Hypomania	.19**	.24***	.09	.06
Paranoia	.09	.11*	.08	.01
Alienation	-.09	-.13*	-.04	-.01
Hostile	.08	.15*	-.05	.02

*Note.*  $N = 201$ . BPRS = Brief Psychiatric Rating Scale; ORFFI = Officer's Rating Form for Inmates. \*  $p \leq .05$ ; \*\*  $p \leq .01$ ; \*\*\*  $p \leq .001$  (all one-tailed).

Table 11

*Correlations Between BPRS Scores and Institutional Behaviour Coded From Progress Logs, Controlling for Length of Stay*

BPRS Score	Harm to Others	Verbal Abuse	Harm to Property	Harm to Self	Victimization	Locked Down	Formal Charges
Total	-.06	-.07	-.03	.03	.05	-.10	-.07
Factor:							
Dysthymia	-.08	-.11	-.11	-.02	.01	-.13*	-.03
Psychosis	.08	.03	.17**	.04	.08	.07	-.03
Hypomania	-.10	.13*	.07	.00	.11	.03	-.05
Paranoia	.02	.07	-.05	.41***	.20**	-.06	-.09
Alienation	-.01	-.11	-.04	-.04	-.06	-.13	-.03
Hostile	-.08	-.10	-.07	-.02	-.07	-.11	-.10

*Note.*  $N = 166$ . BPRS = Brief Psychiatric Rating Scale. \*  $p \leq .05$ ; \*\*  $p \leq .01$ ; \*\*\*  $p \leq .001$  (one-tailed).

*Adjustment as measured by the ORFFI.*

The BPRS total score has a limited ability to predict adjustment as measured by the ORFFI; however, the predictive ability is improved when using factor scores. The total BPRS score predicted an overall elevation on the ORFFI, as well as predicting aggression and withdrawal. The size of these findings is reasonable given the nature of what was being predicted. First, the prediction was being made over time, in some instances over the course of months. Second, a psychological measure was being used to predict behaviour, which in some instances was closely related to symptoms, for example for the item concerning sadness, but in other instances was not. More interesting results emerge when looking at BPRS factors; however, they again should be interpreted with caution as a number of correlations were computed which inflates the Type I error rate.

The ORFFI total was related to both psychosis and hypomania. The size of this relationship is large enough that it would remain significant even if Type I errors are controlled for using a Bonferoni procedure. This is an important finding because it indicates that inmates who are having hallucinations or other psychotic symptoms and inmates who are agitated have poorer adjustment to jail than inmates with other types of problems.

Aggression was predicted by a number of factors. Hypomania had moderate predictive power for aggressive behaviour, indicating that agitated, overactive inmates are more likely to be verbally or physically abusive toward others. Psychosis, paranoia, hostility and alienation showed a small relationship with aggression (with alienation having negative predictive power) but likely not enough to be of clinical significance.



Again because a number of correlations were calculated, the smaller ones should be interpreted cautiously.

The final factor that showed a moderate ability to predict behaviour was psychosis, which was significantly related to withdrawal. Inmates who are actively psychotic are likely to spend a great deal of time in their cells and appear lethargic, sad and confused. This does not interfere too much with the daily operation of the jail, although officers may become frustrated with inmates who do not or cannot respond promptly to instructions. Psychotic individuals may maintain a low profile on the living unit because of their tendency to be withdrawn, but it is important to remember that they are also more likely to pose problems overall than other inmates.

Interestingly, dysthymia was not predictive of any types of adjustment problem seen by officers. This is one of the more common presenting problems, and one that often requires a referral to psychology. This suggests that while interviewers may wish to make a referral for these inmates, they may not require special placement unless they are at high risk for suicide.

*Adjustment as measured by progress logs.*

The information coded from progress logs was the second measure of adjustment. It is important to note that the sample size drops by 20 % because of the difficulty of locating these files for many inmates, somewhat reducing the power of the study. Furthermore, many of the inmates stay only one day, so notes made in the progress log are minimal. The BPRS total did not predict any of the progress log variables. The BPRS factors can be used to make some predictions.

Notably, although psychosis and hypomania were the most powerful predictors of inmate behaviour as rated by officers, paranoia was the strongest predictor of problems noted in the progress log. Hypomania demonstrated limited ability in predicting verbally abusive behaviour on the living unit. Psychosis was a moderate predictor of property damage inflicted by inmates. The inconsistency between the ORFFI and progress log information may be in part due to different standards of behaviour for the dependent variables. The ORFFI measurement of aggression was fairly broad, encompassing threats and manipulation, while progress log information is generally limited to physical fights or serious verbal aggression.

Paranoia was a strong predictor of self harm in this sample, and a moderate predictor of victimization. As well as being suspicious, paranoia includes having unusual beliefs and being grandiose. It is not surprising that these inmates would be singled out for victimization because they are not as bizarre as floridly psychotic individuals, who are often placed in segregation or left alone by other inmates, yet they may show poor judgement and irritate other inmates. The strong relationship with self harm existed because only one inmate in the sample had an incident of self harm noted in his progress log, and this inmate showed a slight elevation on dysthymia but a substantial elevation on paranoia. This finding is not likely to generalize to other samples.

In summary, the BPRS shows a moderate ability to predict inmate adjustment to jail. The total score can be used to predict officers' ratings of inmate behaviour during incarceration. BPRS factors are related to inmate behaviour. Paranoia is a strong predictor in this study, but may be due to a single outlier. Psychosis and hypomania are

the most powerful, consistent predictors of inmate behaviour. These results suggest that the BPRS shows some predictive validity for inmate adjustment.

### Discussion

The utility of a symptom-level scale as a screening instrument to identify inmates who are mentally ill or who may have management problems in jail was supported by this study. Symptoms can be rated quickly, and provide a detailed assessment of current functioning. This study supports the ability, albeit somewhat limited, of symptom patterns to predict behavioural adjustment in incarcerated individuals. The BPRS is brief and relatively easy to administer. This makes it practical for screening purposes performed by individuals trained in the assessment of mental illness because there may be a large number of interviews to conduct. Not only are the scores on this scale predictive of diagnostic ratings, they are also predictive of adjustment problems while in jail.

The hypothesis that the BPRS would be effective at identifying mentally ill inmates was supported. Study 1 demonstrated that the BPRS ratings were associated with psychopathology as measured by the SCID. The BPRS total score predicted a number of diagnoses, namely depression and drug and alcohol abuse. BPRS factors also were able to predict some mental illnesses, both lifetime and current. The ability to predict diagnosis was strongest in the diagnostic categories with a higher incidence, for example depression and lifetime rather than current bipolar disorder. This suggests that a larger sample might have yielded more significant results. Despite this limitation, the BPRS demonstrates concurrent validity with the SCID.

The demonstrated relationship between symptom ratings and diagnosis strengthens the argument that symptom measures are useful for mental health screening. There have been comments in the literature about the importance of using diagnostic interviews with incarcerated populations (Hodgins, 1995), and the need to validate rating scales in respect to diagnostic measures (Rogers et al., 1995). If a symptom rating scale is being used solely for mental health screening in jail it is not too important whether the scale predicts diagnosis, as it is used to predict behaviour; however, it is an additional strength of the scale if it is related to other measures of mental illness as well as being a predictor of behavioural adjustment. The demonstrated relationship between the BPRS and a diagnostic interview was sufficiently strong, particularly given the relatively small sample of inmates who were administered the diagnostic interview, to address concerns surrounding the validity of using the BPRS to screen for mental illness.

The hypothesis that the BPRS would predict inmate behaviour in jail also was supported. Study 2 indicates that the BPRS is an adequate predictor of adjustment to jail. The total score on the scale was of limited utility in predicting behaviour. The total score on this scale can be used to predict difficulties that correctional officers will have in managing inmates, but did not predict incidents that are recorded in official correctional records. BPRS scale scores were more useful in predicting behaviour, and elevations on scales, particularly psychosis and hypomania, are related to both officers' perceptions of difficulties and to recorded incidents. These findings suggest that symptoms are a useful predictor of behaviour in this setting, and that symptom-level information may be adequate for screening purposes.

The BPRS predicted behaviour even though it is already being used to make placement decisions, and thereby may be resulting in a decreased incidence of problems. In fact, false negatives may have reduced the power of the study. That is to say, inmates who appear agitated are already being placed in units that reduce their contact with others, limiting their ability to act aggressively. Protecting the safety of staff and inmates is of utmost importance, so random placement of inmates to living units would not be ethical; however, this would be a more fair test of the predictive power of the BPRS.

The BPRS is a good screening tool in this setting for a number of practical reasons. It is an economical way (both in terms of time and money) to assess inmates upon intake. While it cannot be administered by laypersons, it can be administered by graduate students or psychiatric nurses trained in the use of the scale. In contrast to structured diagnostic measures (e.g., SCID, DIS), it is brief, which is of practical value when there is a large number of individuals to assess.

Another important, and somewhat unique, feature of the BPRS is that most of the items can be rated even if the interviewee is non-compliant. Some items, such as unusual thought content, cannot be rated without some interview contact, but most of the items can be rated based on observation only. This makes it ideal for use in correctional settings, as inmates can be uncooperative. It gives an additional advantage in the jail setting of allowing for the rating of inmates who are in such severe withdrawal from drugs or alcohol that an interview is impossible.

Having demonstrated the concurrent and predictive validity of the BPRS in the jail setting, these data also can be used to refine the use of the BPRS in aiding decision

making. Elevations on the BPRS total score at admission suggest that those inmates will be seen as problematic by officers, and this score is already used to aid the interviewer in making placement decisions. The present study supports the use of scores on BPRS factors to aid decision making.

Based on the present findings, some specific guidelines can be suggested.

Inmates who have the most difficult time adjusting to jail are those who are hypomanic or psychotic upon admission. Individuals who present with physical restlessness and elevated mood tend to be more aggressive and are seen as difficult to manage by officers. Individuals who arrive at the institution with psychotic symptoms such as hallucinations and bizarre beliefs or behaviour, in spite of their tendency to keep to themselves, are more likely to damage property and to be viewed as problematic by officers. Thus individuals who receive elevations on the hypomania or psychotic scale should be classified and placed carefully while in jail, and monitored by mental health staff if possible.

Inmates who present as dysthymic, the most common scale elevation, are not at increased risk for problematic behaviour. Interviewers should use their discretion in placing these inmates and making referrals to a psychologist or other mental health professionals based on the risk of self harm. Due to the low base rate of this type of behaviour, it is almost impossible to predict suicide attempts on the basis of an empirical study like this, so current clinical knowledge should guide the interviewers in rating risk of self harm.

Individuals who receive elevations on the alienation factor will be unpleasant and withdrawn with the interviewer, making it difficult to determine placement. The findings

of this study suggest that these inmates are less likely to be aggressive than other inmates. Special placement may not be warranted for these inmates.

This study has important implications for jail assessments and inmate management. Diagnostic assessment takes considerably longer than symptom rating, and could be forgone if the assessment is being used to aid decisions for classification within the jail. Inmates who are likely to require extra attention or management could be placed where they can be monitored closely. Of course treatment has not been addressed here, so it is possible that diagnosis may be necessary to determine treatment; however, given the relatively short time people spend in jail, treatment decisions are often not made here. Rather than putting the time and effort into diagnostic assessment, perhaps it would be useful to rate symptomology and make jail related decisions on the basis of the rating, then connect those inmates with high BPRS scores with community based resources for further assessment and treatment planning.

### *Limitations*

This study is somewhat limited by the sample size. Due to the expense and difficulty of arranging diagnostic interviews, the sample size for this part of the study was small. It is possible that increasing the power of the study by a larger sample would have resulted in a stronger relationship between the BPRS and diagnostic information. Given that the relationship was strongest for the more prevalent diagnoses, it is likely that a larger sample would have produced more significant results. The sample size was also smaller than desired for the progress log information. Because the information had to be coded at the end of an inmate's stay, it was difficult to obtain progress logs for inmates

who were transferred to other institutions. These logs accompany the inmate in his journey through the correctional system, and can be hard to locate and access.

The validity of the findings could have been strengthened if completion of the ORFFI was incorporated into the living unit officers' regular duties. Especially at the outset of the study, it was difficult to get cooperation from the officers in completing these ratings. A few inmates had to be dropped from the sample because it was not possible to obtain any ratings for them before they were released from SPSC. Ratings were obtained as many times as possible for each inmate, and this was done to allow a number of different officers to rate the inmate. Had the form been part of the regular paperwork completed at the end of each shift, this would have increased the validity of the results as the inmates would all have been rated at regular intervals; however, this was not possible. It is difficult to determine if this would have skewed the results in any way. It is possible that the officers' were more likely to remember and rate inmates who were problematic.

#### *Future Directions*

Steps could be taken to improve the present study if it were to be replicated. As mentioned above, the ORFFI could be completed nightly on all inmates. This would ensure that inmates were rated by a number of different officers during their incarceration. It would also increase the sample size. It is difficult to suggest a way to access the progress logs after an inmate was released from the jail but before the log was moved, so some subjects inevitably would be lost due to an inability to access the progress logs. A second suggestion would be to examine the inter-rater reliability of the



BPRS. Five different interviewers administered the BPRS during the study period. Due to the scope and focus of the present study, the inter-rater reliability was not assessed. A future study could incorporate an assessment of the interviewers reliability in administering the rating scale.

An extension of the study into post-release behaviour could also be interesting. It is possible that the BPRS could be used to predict recidivism. Most of the inmates admitted to the jail are released back into the community within a week of their intake date. It is possible that inmates who present as hypomanic or psychotic will not only have difficulties adjusting to the jail but also to the community, resulting in recidivism. An ambitious study could look at the utility of the BPRS in aiding community referrals. Many of these inmates could benefit from contact with drug and alcohol counsellors, mental health professionals, or social workers. Because these services are precious and costly, it would be useful to refer only those individuals most likely to benefit from these services.

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