Mood disorders and psychotic disorders with co-occurring substance use disorders

Studies on prevalence and diagnosis in a Norwegian psychiatric hospital

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Abbreviations and definitions

AUDADIS: Alcohol Use Disorder and Associated Disabilities Interview Schedule

AUDIT: Alcohol Use Disorders Identification Test

CIDI: Composite International Diagnostic Interview

Comorbidity: Co-occurring mental disorders and substance use disorders; see below.

Co-occurring disorder (COD): A term interchangeably used with dual diagnosis or comorbidity; it refers to individuals who "have one or more substance-related disorders as well as one or more mental disorders" (Co-occurring Center for Excellence, 2007) (1).

DIS: Diagnostic Interview Schedule

Drugs: Prescribed medication used in a non-prescribed way, medication gained illegally, and the different illegal psychoactive drugs. Drugs include opioids, cannabinoids, sedatives/hypnotics, cocaine, stimulants, hallucinogens, and "other" drugs (e.g., volatile solvents, steroids, GHB).

DSM-IV: Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition

Dual diagnosis: Co-occurring disorder or comorbidity; see above.

DUDIT: Drug Use Disorders Identification Test

ECA: Epidemiologic Catchment Area Study

EuropASI: European version of the Addiction Severity Index

GAF: Global Assessment of Functioning scale

ICD-10: International Classification of Diseases, Tenth Edition

Independent mental disorders: Mental disorders that begin prior to the onset of heavy substance use or occur during extended abstinence.

LC-MS: Liquid chromatography-mass spectroscopy

Mental disorders: Disorders defined according to the nomenclature in the International Classification of Diseases (ICD-10, chapter F0-F9) and the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) (2;3).

MDE: Major Depressive Episode

MINI: MINI International Neuropsychiatric Interview

NESARC: National Epidemiologic Survey on Alcohol and Related Conditions

PANSS: Positive and Negative Syndrome Scale

PRISM: Psychiatric Research Interview for Substance and Mental Disorders

PTSD: Post-traumatic Stress Disorder

SCAN: Schedules for Clinical Assessment in Neuropsychiatry

SCID: Structured Clinical Interview for DSM-IV disorders

SMI: Severe Mental Illness

Substance: A collective term referring to both alcohol and drugs

Substance-induced mental disorders: Mental disorders that occur entirely during a period of heavy substance use or within the first weeks after cessation of use. The substance effects can cause symptoms mimicking the disorder being assessed, and the symptoms are greater than the expected effects of intoxication and/or withdrawal.

SUD: Substance Use Disorder is a collective term referring to the two diagnoses Substance Abuse and Substance Dependence according to the classification in DSM-IV, see criteria below.

WHO: World Health Organization

Criteria for Substance Dependence according to the DSM-IV criteria (3)

A maladaptive pattern of substance use, leading to clinically significant impairment or distress, as manifested by three (or more) of the following, occurring at any time in the same 12-month period:

(1) Tolerance, as defined by either of the following:
   (a) a need for markedly increased amounts of the substance to achieve intoxication or desired effect
   (b) markedly diminished effect with continued use of the same amount of the substance
(2) withdrawal, as manifested by either of the following:
   (a) the characteristic withdrawal syndrome for the substance (refer to Criteria A and B of the criteria sets for Withdrawal from the specific substances)
   (b) the same (or a closely related) substance is taken to relieve or avoid withdrawal symptoms
(3) the substance is often taken in larger amounts or over a longer period than was intended
(4) there is a persistent desire or unsuccessful efforts to cut down or control substance use
(5) a great deal of time is spent in activities necessary to obtain the substance (e.g., visiting multiple doctors or driving long distances), use the substance (e.g., chain-smoking), or recover from its effects
(6) important social, occupational, or recreational activities are given up or reduced because of substance use
(7) the substance use is continued despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by the substance (e.g., current cocaine use despite recognition of cocaine-induced depression, or continued drinking despite recognition that an ulcer was made worse by alcohol consumption)

Specify if:

With Physiological Dependence: evidence of tolerance or withdrawal (i.e., either Item 1 or 2 is present)

Without Physiological Dependence: no evidence of tolerance or withdrawal (i.e., neither Item 1 nor 2 is present)

Criteria for Substance Abuse according to the DSM-IV criteria

A. A maladaptive pattern of substance use leading to clinically significant impairment or distress, as manifested by one (or more) of the following, occurring within a 12-month period:

(1) recurrent substance use resulting in a failure to fulfill major role obligations at work, school, or home (e.g., repeated absences or poor work performance related to substance use; substance-related absences, suspensions, or expulsions from school; neglect of children or household)

(2) recurrent substance use in situations in which it is physically hazardous (e.g., driving an automobile or operating a machine when impaired by substance use)

(3) recurrent substance-related legal problems (e.g., arrests for substance-related disorderly conduct)

(4) continued substance use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of the substance (e.g., arguments with spouse about consequences of intoxication, physical fights)

B. The symptoms have never met the criteria for Substance Dependence for this class of substance.

Summary

Background: Substance use disorders (SUDs) often co-occur with mental disorders. Both epidemiological and clinical surveys have shown an increasing prevalence of this type of comorbidity in recent years. In clinical settings, comorbidity represents challenges for diagnosis and treatment. This is particularly serious in acute psychiatric wards where substance use is prevalent among the patients. When SUDs and mental disorders co-exist, a deteriorating clinical course often follows. Optimal treatment requires knowledge of the etiology and reciprocity of the different disorders and diagnostic accuracy. The biological effects of abused substances may independently cause psychiatric symptoms which make diagnosis especially challenging. Better methods for investigating SUDs in subjects with mental disorders and better comorbidity diagnostics are needed.

Objectives: The first aim was to investigate the rate and types of SUDs in a group of psychotic inpatients from a specific catchment area. We wanted to estimate the current and lifetime prevalence of problematic substance use and SUDs in this specific patient group. Also, we wanted to see whether patients' self-report of recent substance use was in concordance with the results of toxicology screens. The second aim was to study diagnostic issues in psychotic and mood disordered patients with substance use admitted to an acute psychiatric ward. The main focus in this regard was differentiation between independent disorders complicated with SUDs and substance-induced disorders.

Methods: This thesis consists of two studies. The first is a prevalence study that was conducted in 65 psychotic patients using the Addiction Severity Index (EuropASI), the Structured Clinical Interview for DSM-IV disorders (SCID-I) and blood and urine toxicology screens. Patients were 40 years and younger and they were admitted to Blakstad Psychiatric Hospital, Norway, in 2001. In the second study, the main focus was investigating the diagnostic issues when SUDs co-occur with mental disorders. The American semi-structured interview, Psychiatric Research Interview for Substance and Mental Disorders (PRISM), was translated into Norwegian. The translation was done according to recommended guidelines. The PRISM interview was then conducted on 61 patients admitted with substance use and presenting mood symptoms, psychotic symptoms, or both. Patients were aged 18-65 years and they were admitted to the acute psychiatric ward in Blakstad Hospital in 2007/2008. Variables pertaining to various feasibility measures of the PRISM were recorded. Further, the findings

of heavy substance use, SUDs, and independent versus substance-induced mood and psychotic disorders were recorded.

Results: In study I, we found that 54% of the younger psychotic patients reported having used one or more substances for intoxication during the month prior to admission. 40% of the patients had used illegal drugs, mostly cannabis and amphetamine. Toxicology screens confirmed patients' self- report of recent substance use. Current and lifetime rates of SUDs in patients were 50% and 70%, respectively. In study II, we found that it was possible to use the PRISM systematically with psychotic and mood disordered patients in a busy acute psychiatric ward. 51% of eligible patients were interviewed, and median interview time was 155 minutes. The PRISM showed that current major depressive episodes (MDEs) were substance-induced in 72% of patients with MDE, of which 57% were alcohol-induced. Current psychotic disorders were substance-induced in approximately one third of patients with psychotic disorders. The substances most often used heavily were alcohol, cannabis and stimulants.

Conclusion: Heavy substance use and SUDs are prevalent in psychotic patients. The level of comorbidity is comparable with that found in American studies, despite lower prevalence of substance use in the Norwegian population. The high rate of SUDs in psychotic inpatients has implications for the treatment and the organization of psychiatric care for these patients.

The PRISM was feasible in an acute psychiatric ward. The PRISM provided detailed, clinically significant diagnoses in patients hospitalized for acute mental disorder with concurrent substance use. It was possible to differentiate between independent and substance-induced mood and psychotic disorders. Diagnostic accuracy is important for targeted treatment.

List of papers

Helseth V, Lykke-Enger T, Aamo TO, Johnsen J. [Drug screening among patients aged 17-40 admitted with psychosis]. Tidsskr Nor Laegeforen 2005; 125: 1178-80.

Helseth V, Lykke-Enger T, Johnsen J, Waal H. Substance use disorders among psychotic patients admitted to inpatient psychiatric care. Nord J Psychiatry 2009; 63: 72-7.

Helseth V, Samet S, Johnsen J, Bramness JG, Waal H. Feasibility of the Psychiatric Research Interview (PRISM) in an acute psychiatric ward. Journal of Psychiatric Intensive Care 2012; 2: 96-104.

Helseth V, Samet S, Johnsen J, Bramness JG, Waal H. Independent or substance-induced mental disorders? An investigation of comorbidity in an acute psychiatric unit. Journal of Dual Diagnosis. In press.

1. Introduction

During the late 1990s, when I was working as a senior consultant in one of the wards specializing in long term treatment of psychotic disorders at Blakstad Hospital, we encountered a steadily rising increase in substance use problems among our patients. Even though there was no particular focus on substance use then, this problem area challenged both the individual therapies and the ward atmosphere. Further, I found little knowledge about this comorbidity in the Norwegian psychiatric field at that time. This provoked my curiousity since I regarded the increasing substance use as one of the main professional challenges in our daily clinical work. The focus was not on occasional substance use but on use which had clinical implications. First, I wanted to find out how many of the younger psychotic patients admitted to the hospital had substance use problems. During this investigation, the focus was on the methods used for detecting substance use in psychiatric patients. We found a high prevalence of this comorbidity; the prevalence was comparable to that of other Western countries. However, as we studied prevalence numbers, a diagnostic problem gradually emerged. When individuals with mental disorders also use substances, how can a differentiation be made between symptoms complicated by substance use but basically caused by the primary (=independent) mental disorders, and those symptoms which are substance-induced? Clinically, this issue was regularly exemplified in the challenge of distinguishing schizophrenia with concomitant substance use from a substance-induced psychosis. These considerations led me to the US-developed Psychiatric Research Interview for Substance and Mental Disorders (PRISM) which was constructed to differentiate between primary and substance-induced mental disorders in subjects who abuse substances. PRISM was chosen as the structured diagnostic interview for further comorbidity research. The interview was translated into Norwegian and the Norwegian version was used at Blakstad Hospital to study its feasibility among acute psychiatric ward patients with mood and psychotic disorders and concurrent substance use. Independent and substance-induced disorders were diagnosed according to the PRISM. The results from this study will hopefully contribute to better understanding and a more nuanced picture of the comorbidity of mental disorders and substance use disorders, and better understanding leads to better treatment.

1.1 Prevalence of co-occurring substance use disorders (SUDs) and non-SUD mental disorders

During recent decades, there has been growing concern about the high prevalence of co-occurring SUDs and mental disorders. Epidemiological surveys have shown that individuals with mood disorders, psychotic disorders, anxiety disorders and personality disorders have high rates of SUD comorbidity (4-21). Numerous clinical studies have also shown a high prevalence of SUDs in patients with mental disorders; prevalence varies with methodology and type of clinical setting. In psychiatric emergency services and in acute psychiatric wards several studies have shown high prevalence of substance use among the patients admitted (22-28). In a Norwegian acute psychiatric ward study, psychoactive substances were detected by toxicology screening in 63% of admissions (28). Further, a study from Hordaland county showed that the annual number of inpatients with a drug/alcohol problem increased fivefold in the period from 1985 to 2003 (29). Clinical studies have shown SUDs to be prevalent in mood disorders (30-32). In this thesis, the prevalence of SUD in psychotic inpatients was one of the research questions. A vast number of studies exist on psychotic disorders and co-occurring SUDs. Studies from various clinical settings have shown high prevalence of substance use in these patients (33-40). The findings reported in European clinical surveys of psychotic patients vary to a degree that makes interpretation difficult (33;37;41;42). British clinical surveys, for instance, have shown rates of substance use problems or substance use disorders ranging from 7% to 49% (34;37;41;43;44). In French and German studies, lifetime prevalence of substance use disorders has been reported to range from 22% to 48% (33;45;46). Scandinavian studies have a more homogenous pattern, but few studies have been published. In a Swedish study of both inpatients and outpatients with DSM-IV diagnoses of schizophrenia, the lifetime prevalence of substance abuse was 48% (42). In a Danish study of psychiatric inpatients, the prevalence of co-occurrence between substance use disorders and mental disorders other than substance use disorder was 37% (47). Here, however, all types of diagnostic categories, not only patients with psychotic disorders, were included. Studies from first-episode psychosis and early intervention samples have shown substance abuse ranging from 15% to 74% (38;39;44;48-50). The prevalence rates vary according to whether current or lifetime numbers are reported, and whether alcohol or drugs are reported. Data from two British epidemiologically based first-episode studies have shown a highly significant rise in

the prevalence of all SUDs over the 1990s in females with a first-episode psychosis aged 16-29 (51).

Subjects with SUDs and patients from the substance abuse services often present with co-occurring mental disorders (52-55). In a Norwegian sample of alcohol dependent and poly-substance dependent patients, the frequency of current social anxiety disorder was found to be 42% (56). From the same sample of patients, the follow-up study showed that relapsers have an earlier onset of SUD, and more frequently have major depression and agoraphobia (57).

Overall, individuals with both SUDs and mental disorders are frequently seen in various clinical settings both in psychiatry and in the substance abuse field. There is no doubt that co-occurring substance use is a challenge in Norwegian inpatient psychiatric services as in other countries.

1.2. Theories about the comorbidity – explanations and possible causations

There are diverse and conflicting theories and associations which try to explain the high comorbidity of mental disorders and co-occurring SUDs (6;58-68). Patients may use substances to alleviate mental symptoms or side effects of medication; the abused substances might cause mental symptoms; there might be genetic risk factors and psychosocial risk factors, and there might be interactions between these different comorbidity mechanisms. The self-medication hypothesis explains patients' use of substances as an effort to reduce symptoms of the disorder (69;70), or to lessen the side effects of antipsychotic medication (71;72). The self-medication hypothesis, described by Khantzian, claims that individuals with SUDs suffer with their feelings. According to this theory, these individuals use substances to relieve painful affects, to experience desired emotions, or to control emotions when they are confusing (69;70). A recent paper reviewed the literature relating to self-reported reasons and motives for alcohol use in bipolar disorders (73). The findings there supported the notion that alcohol was used to relieve distressing mood states. Data from the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) revealed that approximately 20% of individuals with Post-traumatic Stress Disorder (PTSD) used substances in an attempt to relieve their symptoms (74). Also, NESARC data showed comorbid Major Depressive Episode (MDE) to be associated with higher prevalence of drinking to enhance depressed

mood (75). The biological effects of the abused substances may independently cause psychiatric symptoms (3;76-78) and brain changes that develop during substance dependence may express psychiatric symptoms (79;80). Further, advances in neurobiology suggest that the neuropathology of schizophrenia affects the neural circuitry mediating drug reward. This leads to an increased vulnerability to both addiction and psychotic symptoms (81). In a population-based registry study, multivariate twin modeling analyses indicated that the pattern of lifetime comorbidity of common mental disorders and SUDs originates largely from genetic risk factors (82). In a recent study, abnormalities in fronto-striatal brain systems implicated in self-control were found in both stimulant-dependent individuals and their biological siblings without SUD (83). The authors therefore suggest an underlying neurocognitive endophenotype for stimulant drug addiction.

Mueser et al have previously reviewed the etiological theories on dual diagnosis (84). This review states that, "There is minimal support for the self-medication hypothesis, but the accumulation of multiple risk factors related to mental illness, including dysphoria, may increase the risk of substance use disorder". The authors claim that among secondary substance use disorder models, there is support for the supersensitivity model. This model suggests that some excess comorbidity of severe mental illness and SUDs can be accounted for by increased biological vulnerability to the effects of alcohol and drugs (60;84). However, a more recent study did not find support for the supersensitivity hypothesis (85). The various substances might have different impact on the etiological mechanisms involved in comorbid disorders. A recent paper reports variations in the reasons for use of different substances across people with different mental disorders (86). While alcohol was primarily used to cope, cannabis was primarily used for pleasure. For participants with psychotic disorders, tobacco played an important role; whereas for participants with depression, alcohol appeared to play an important role (86). In fact, mental disorders might be complicated by, but etiologically independent of, substance use, or mental disorders might be induced by substance use.

To summarize, the interaction model still seems to be the prevailing explanation for the highly prevalent co-occurrence of SUDs and mental disorders. There is an intricate interaction between substance use and mental disorders. SUDs might lead to mental disorders, and mental disorders might lead to SUDs. The combination of biological circumstances and mental problems linked to substance use take various forms in different subjects. Each person has their own mixture of these factors. Therefore, it is of vital importance to explore these

issues in dual diagnosis patients and thoroughly map the contribution of substance use and mental disorder symptoms in each patient. Appropriate diagnostic measures are of great importance in this.

1.3. Clinical course of co-occurring SUDs and mental disorders

Generally, in subjects with mental disorders, substance use complicates both diagnostic procedures and treatment, and a deteriorating clinical course often follows. Patients with mental disorder and co-occurring SUDs might be more difficult to reach for therapy, and substance use might interact negatively with underlying vulnerabilities. Studies have shown dual diagnosis patients to have higher frequencies of hospitalization (31;87;88). Symptoms of mental disorders might be induced or exaggerated by the chemical effects of the various substances; e.g., stimulants and cannabis can be causally linked to the development of psychotic symptoms (89-96). Studies have shown that substance use may cause functional impairment and more severe symptoms in schizophrenia (42;97;98). Findings from the CATIE study sample (Clinical Antipsychotic Trials of Intervention Effectiveness) suggested that drug-use-related impairment, comorbid with schizophrenia, may not be a function of use per se but rather, of the severity of use (99). A 15-year follow-up study from Denmark found patients with schizophrenia and SUD to have a significantly elevated usage of all types of hospital contacts except inpatient treatment for non-psychiatric disorders (100). A history of substance misuse has been shown to be associated with earlier age of onset of schizophrenia (101), and persistent SUD in first-episode psychosis reduced the likelihood of remission (39). Studies have shown that comorbid psychotic patients have a higher risk of involuntary hospitalization than patients with psychosis alone (88;102).

Study findings from an alcohol treatment setting showed that patients with comorbid anxiety and/or depressive disorders were more disabled and drank more heavily than those without these comorbid disorders at entry to treatment (103). In studies in people with bipolar disorder, SUD has been associated with more hospitalizations, medication non-compliance, greater risk of switch into manic, mixed, or hypomanic states and possibly an earlier onset of mood symptoms (104;105). Also, a study showed bipolar patients with SUD to have impaired social functioning, to the level observed in patients with schizophrenia, compared to bipolar

patients without SUD (106). Norwegian patients with bipolar disorder and excessive substance use had impaired functioning, but not a worse course of illness (107).

Numerous studies have shown increased risk of suicidal behaviour and suicide attempts in subjects with co-occurring substance use disorders and mental disorders (108-112). Among substance dependent Norwegian patients, 47% reported lifetime suicide attempts; early onset and long duration of SUD were independently associated with being a suicide attempter (113). In the same patient sample, a high prevalence of suicide attempts was also found at six years follow-up both in patients still abusing substances and in sober patients (114). The study concluded that treatment of both mood disorders and SUDs is important.

Increased risk of violent behaviour has been shown in individuals with bipolar disorder and schizophrenia with concomitant substance misuse/abuse (115-117). Hence, there should be routine risk assessments for violence and violence management when planning treatment for comorbid patients.

Some have found less severe negative effects of substance use than in the studies mentioned above (118). Some have, in fact, found more favourable outcomes, higher intellectual functioning and better social role functioning when comorbid patients were compared to those who never abused (119-121). Data from Norwegian patients showed that in bipolar disorder subjects, cannabis use was associated with better neurocognitive function, but the opposite was the case for the schizophrenia subjects (122). Further, less frontal impairment and fewer negative symptoms or no association with negative symptoms have been found when patients with psychosis and SUD have been compared with psychotic patients without SUD (102;123-126).

Generally, as far as inconsistencies in outcomes in patients with schizophrenia and SUD are concerned, the divergent findings can be attributed to methodological issues and the difficulty in differentiating aspects of SUD from schizophrenia symptoms. Also, studies mostly investigate ‘substance use’ as one entity, whereas use of cannabis only might have different a impact on the psychotic disorder than other substances (50). The proposed link between cannabis use and psychotic disorders (92;96;127;128), might lead to a subgroup of patients with better premorbid function than the vulnerable group. It is also obvious that, with proper interventions, the less serious substance-induced mental disorders might remit more easily than severe mental disorders without SUD.

Overall, substance use challenges the diagnostic and treatment considerations in subjects with mental disorders. Earlier studies have shown various areas of complexity in these comorbid patients. The psychiatric services, both inpatient and outpatient, need competence regarding the influence of SUD on diagnostics and treatment. Further, optimal treatment needs optimal diagnostics. This thesis focuses on investigating substance use and SUDs in psychotic and mood disordered patients and how best to diagnose the mental disorders when SUDs are present.

1.4. Methodology concerning the investigation of mental disorders with co-occurring SUDs

Detecting SUDs in subjects with mental disorders: A Norwegian study found that community mental health centres lacked sufficient diagnostic routines and specific instruments to identify SUD (129). It has been known for a long time that SUD diagnoses have often been missed in psychiatric patients (130). Screening instruments are used to identify subjects who may have a disorder, whereas diagnostic instruments are used to identify disorders (131). When using screening instruments, it is important to check if the screening instrument assesses current or past problems, or both. The Norwegian Knowledge Centre for the Health Services has reviewed accuracy studies (articles published up to April 2007) concerning screening and diagnostic tests to uncover SUD in a population with severe mental illness (SMI) and to uncover SMI in a population with SUD (131). According to the evidence, the CAGE test (Cut down, Annoyed, Guilty, Eye opener) and the AUDIT (Alcohol Use Disorders Identification Test) are both able to identify alcohol use disorders (131-133). AUDIT has previously been shown to be quite sensitive and specific as a screening test for alcohol problems (134). AUDIT has also been tested in people with schizophrenia and found to be a reliable and valid screening instrument in this patient sample (135). Regarding screening instruments for drug use disorders, the report did not find any instruments tested for diagnostic accuracy. A systematic review (articles published up to February 2010) of 13 screening instruments for detecting illicit drug use/abuse that could be useful in general hospital wards, concluded that there is lack of evaluation of these instruments (136). However, the findings in a more recently published study support DUDIT as a reliable and valid drug abuse screening instrument that measures a unidimensional construct (137). An AUDIT/DUDIT study of

Swedish suspected offenders with signs of mental health problems showed these screening tools to have moderate to high accuracy for identification of dependence diagnoses (138). On the other hand, the validity of self-reported substance use might always be questioned and the necessity of validating self-report against biological tests is often pointed out (139;140).

From the high comorbidity numbers, substance screening in various clinical settings seems warranted. An American study examined 16-year predictors of SUD diagnoses for patients with mental health disorders (141). Patients diagnosed with a SUD after baseline psychiatric hospitalization were more likely to have more medical hospitalizations and to be diagnosed with schizophrenia compared to those who were diagnosed with a SUD, including co-occurring disorders, at baseline hospitalization. The authors conclusion is that there is a need to refine the evaluation of inpatient screening for SUD in health and mental health care units, and a need to reevaluate substance use at various times during inpatient care (141).

The diagnostic instruments clarify whether the subject meets the diagnostic criteria for DSM-IV substance abuse (ICD-10: harmful use) and/or dependence. The WHO study on the reliability and validity of SUD instruments tested the CIDI, the Schedules for Clinical Assessment in Neuropsychiatry (SCAN), and a special version of the Alcohol Use Disorder and Associated Disabilities Interview schedule-alcohol/drug-revised (AUDADIS-ADR) (142). Overall the diagnostic concordance coefficients were good for dependence disorders, but were somewhat lower for abuse and harmful use categories (142). The validity and reliability of the abuse/harmful use diagnosis is repeatedly shown to be lower than for the dependence diagnosis (143;144). Several authors have emphasized the problems with the abuse diagnosis (145-147). Subjects might have substance dependence diagnosis without abuse of the same substance (146). Therefore, using abuse symptoms as a screen for dependence might underestimate the prevalence of dependence (146;148;149). A dimensional option for the SUDs in DSM-V has been proposed, and plans to revise the SUD criteria are under consideration (145;147;150-152).

Diagnosing mental disorders with co-occurring/complicating SUDs: Structured diagnostic interviews were first used to standardize data collection in epidemiology studies. Later they have been extensively used to ensure diagnostic precision both in research and in clinical work (153). In semi-structured interviews, the interviewer is allowed to use their own words or rephrase questions so the respondents can understand better.

The ECA study used the Diagnostic Interview Schedule (DIS) (154), but later studies have often used the Composite International Diagnostic Interview (CIDI) (155-158). Validity testing of diagnostic interviews often relies on acceptance of certain reference tests or procedures (e.g., "gold standard" or "lead standard") (159). Spitzer reviewed the 1980s diagnostic interviews and proposed the LEAD (Longitudinal Expert All Data) standard as a criterion measure (78;160;161). The LEAD standard deals with the need to do more than single examinations. Criterion diagnoses should be made by expert clinicians, and there should also be access to data from sources other than the patient to obtain the best possible quality of diagnoses.

In clinical research, various standardized interviews are used, both structured and semi-structured. A number of widely used diagnostic tools such as the CIDI (157), the Structured Clinical Interview for DSM-IV (SCID) (162;163) and the Mini International Neuropsychiatric Interview (MINI) (153;164) are also used for comorbid diagnoses (164;165). In clinical work, there is an increasing use of structured diagnostic interviews to complement clinical judgment. Some interviews need a clinician to make the diagnosis (e.g., the SCID); other interviews (e.g., the CIDI) can be used by non-clinicians following a structured training. The instruments used in clinical settings form the basis of interventions and planning of treatment. Thus, these instruments should be as valid, reliable and feasible as possible. However, diagnosing comorbid disorders is particularly difficult since symptoms caused by abused substances may mimic symptoms of other mental disorders (3;166). The clinical challenge is then to differentiate between those disorders which are independent of substance use and those which are secondary to substance use. The reliability of psychiatric diagnoses is reduced when psychoactive substance use is present (167-169). If a diagnosis is not reliable, it cannot be valid. Kranzler et al tested the SCID in substance abuse patients and found common comorbid disorders to have only moderate concurrent validity and poor predictive validity (170). The authors concluded that the diagnosis of comorbid mental disorders requires either additional expertise or the use of a diagnostic instrument specially designed for that purpose. Others have also found poor validity for psychiatric diagnoses in substance abusers (171).

Differentiation between independent and substance-induced mental disorders: Traditional diagnostic instruments rely mostly on the judgment of the clinician or the patient to differentiate independent disorders from substance-induced disorders (78;172). This may result in suboptimal diagnosis and treatment in this group of patients. The biological effects of

abused substances may independently cause psychiatric symptoms (3;76-78). In such cases, mental disorders might remit when subjects withdraw from substance use. Historically, the Feighner criteria distinguished between "primary" and "secondary" disorders according to the age of onset of each disorder (173). The Research Diagnostic Criteria (RDC), the DSM-III and the DSM-III-R used the categories "organic" and "non-organic" (174-176). However, specific guidelines for this differentiation were not provided and left the diagnostic process difficult since there was an increasing comorbidity of SUDs and mental disorders (78). Mark A. Schuckit, in the 1980s, suggested determining the independent disorder on the basis of the chronology of development of symptoms when alcoholism, anxiety and depression are concerned (177). According to the DSM-IV-TR nomenclature, there are three possible clinical presentations when subjects have co-occurring substance use and mental disorders. First, "independent disorders (=primary disorders)" are disorders which exist independently of substance use; however, these disorders might be complicated by SUD. Second, there are "substance-induced disorders" which have a causal connection with substance use. Third, there are the "expected effects" of the substances and these symptoms of intoxication and/or withdrawal should not be diagnosed as symptoms of a mental disorder (3). For example, according to the DSM-IV-TR criteria, a diagnosis of independent psychotic disorder in a patient with substance abuse requires "persistence of psychotic symptoms for a substantial period of time (i.e., a month or more) after the end of substance intoxication or acute substance withdrawal; the development of symptoms that are substantially in excess of what would be expected given the type or amount of the substance used or the duration of use; or a history of prior recurrent primary psychotic disorder" (3). Consequently, diagnosticians need to know the mental symptoms associated with the different classes of substances, and allow for assessments over time (76). The Psychiatric Research Interview for Substance and Mental Disorders (PRISM) was specifically designed to assess complex diagnoses in individuals with mental disorders who also abuse substances (178).

1.5. Treatment issues

Despite numerous studies on the high prevalence and deteriorating clinical course of mental disorders and co-occurring SUDs, advances in treatment have progressed slowly (179). Individuals with co-occurring disorders often remain untreated or undertreated (180-182). In

comorbid patients, psychoeducational approaches should motivate patients to reduce or stop their substance use to improve the clinical course of their other mental disorder (60;183). Studies have established the importance of integrating the treatment of patients with severe mental illness and co-occurring SUD to overcome the problems connected with care in separate systems (64;184-187). Further, findings from an integrated inpatient treatment programme showed that comorbid bipolar alcoholics and depressed alcoholics can be treated successfully, and benefits can last for up to two years (188). When studying data from five randomized controlled trials, it was concluded that it may be important to tailor interventions for dual diagnosis patients by substance type and type of mental disorder (86). A review showed group counselling, contingency management, and residential dual diagnosis treatment to have consistent positive effects on SUD in people with severe mental disorder (189). On the other hand, a Cochrane review (update 2007) found no compelling evidence to support any one psychosocial treatment over another to reduce substance use or to improve mental state in these comorbid patients (190). Methodological difficulties make interpretation of study results difficult. Further, existing guidelines concerning assessment and treatment of co-occurring disorders need to be improved (191). A UK randomized controlled trial compared integrated motivational interviewing and cognitive behavioural therapy with standard care alone for people with psychosis and substance misuse (192). Unexpectedly, the intervention group did not have improved outcomes in terms of hospitalization, symptom outcomes, or functioning; however, the intervention group reduced the amount of substance used. These results might reflect the improvements in standard care for dual diagnosis patients during the last decade (192). Finally, in a study which compared patients with comorbid disorder from mental health settings with comorbid patients from drug treatment settings, only minimal differences emerged between the groups and none of the differences indicated a need for specialized treatments in separate systems of care (193). To sum up, the treatment of mental disorders complicated with SUDs seems to be dependent on the willingness to recognize the dual diagnosis challenge. Adequate treatment needs competence from both psychiatry and the substance abuse field, and clinical benefit is probably not dependent on rigorous organizational systems.

1.6. Core areas: Research needs and clinically important questions

Literature shows that the comorbidity of mental disorders and co-occurring SUDs is highly prevalent; further, comorbid disorders are disabling and often go untreated. There is a need

for comprehensive assessment and treatment of these comorbid disorders (18). Acute psychiatric wards in particular need both knowledge of the substance use among their patients and competence in examining these comorbid patients. In this thesis; exploring the prevalence of substance use problems in psychiatric inpatients and studying if patients' self-report is confirmed by biological measures, is the focus of study I. In study II, the main focus is on improving the diagnostic methods since there is uncertainty when traditional methods are used in patients using substances.

2. Objectives

This thesis consists of two studies carried out at Blakstad Psychiatric Hospital.

Study I took place in 2001/2002

The main objectives were:

- To compare the results of toxicological substance screening at admission with patients' self-reported recent substance intake.
- To investigate prevalence of substance use problems among the younger psychotic patients admitted to the hospital from the catchment area in a specific time period.

The specific research questions were:

1) What is the concordance between self-reported recent substance use and toxicological screens in serum and urine (paper I)?
2) What is the magnitude of substance use problems during the month prior to admission when measured by a standardized interview and toxicology screens (paper I)?
3) What is the prevalence, the type and severity of SUDs using well-established and standardized methods in a group of psychotic patients admitted to a Norwegian psychiatric hospital (paper II)?

Study II took place in 2007/2008

The main objectives were:

- To translate the Psychiatric Research Interview for Substance and Mental Disorders (PRISM) into Norwegian.
- To test this first PRISM version on Norwegian patients in a psychiatric setting.
- To investigate the comorbidity in a sample of inpatients with concurrent substance use.

- To investigate the diagnostic issue of independent versus substance-induced mental disorders.

The specific research questions were:

1) Is the PRISM feasible in an acute psychiatric ward (paper III)?

2) What is the prevalence of different types of SUDs in different mental disorders (paper IV)?

3) To what extent are mood disorders and psychotic disorders independent and/or substance-induced in patients admitted to the acute psychiatric ward with substance use (paper IV)?

3. Material

3.1. Study samples

Study I included 65 patients aged 17-40 years (born 1961 or later) consecutively admitted to Blakstad Hospital with psychotic symptoms in 2001. The median age of the included patients was 26.7 years (range=17.6 – 40.2 years) and 59% were men. Most patients were admitted to the acute psychiatric ward; only three patients were electively admitted to other inpatient wards in the hospital. Of the study patients 89 % had emergency admissions and 52% were involuntarily admitted. The median number of admissions, including the current hospitalization, was 2 (range = 1-25). In three of the 65 included patients the hospital stay was too short to complete all the study measures (these were excluded from paper II).

To check for possible selection bias, at the end of the study period, the project leader went through all the admissions during the inclusion period of patients born 1961 or later. This was done through the patient administrative system CAPSY. Since the focus was to establish prevalence numbers of substance use problems among the patients, it might have been easy to overlook patients without substance use and "forget" to count them when the prevalence numbers were established. When scrutinizing the admission lists, no essential shortcomings were found.

Study II included 61 patients aged 18-65 years consecutively admitted to the acute ward in Blakstad Hospital between November 2007 and December 2008 who presented mood symptoms, psychotic symptoms or both at admission. All the included patients had misused substances during the 30 days prior to admission according to the results of screening with the Alcohol Use Disorders Identification Test (AUDIT) and the Drug Use Disorders Identification Test (DUDIT). The median age of the included patients was 33 years (range 21 – 59 years) and 71% were men. All included patients had emergency admissions, and 44% of study patients were involuntarily admitted. Median GAF function score was 38 (range 13-67). Median GAF symptom score was 40 (range 13-70). The median number of lifetime psychiatric admissions, including the current hospitalization, was 3 (range 1–33). In three of the 61 included patients the PRISM interview was not complete (these were excluded from paper IV).

Table 1 gives an overview of the two studies in relation to the four papers.

Table 1. Number of patients included in the two studies and number of patients in the different papers.

Study name	Eligible patients	Included patients	Paper I	Paper II	Paper III	Paper IV
Study I	77	65 (84%)	65	62		
Study II	119	61 (51%)			61	58

3.2. Inclusion and exclusion criteria

Study I: The basic inclusion criteria were positive psychotic symptoms reported in the referral, in the admission interview, or both – regardless of the existing information at admission on possible substance use problems. In addition, we included patients with an already established diagnosis of psychotic disorder, regardless of symptoms at presentation. Only patients admitted directly to the hospital were included. In the inclusion period no other institution in the catchment area admitted this type of patients. Exclusion criteria were transfer from other hospitals (n=6), no knowledge of Scandinavian language or no knowledge of a European language known to the interviewers (n=2).

Study II: Patients with possible or likely substance misuse were screened with the Alcohol Use Disorders Identification Test (AUDIT) and the Drug Use Disorders Identification Test (DUDIT). Male patients with an AUDIT score ≥ 8, female with an AUDIT score ≥ 6 and/or patients with DUDIT score ≥ 2 were invited to participate in a PRISM interview. Patients currently on opiate maintenance treatment (OMT) were asked to participate regardless of their current substance use. Exclusion criteria were insufficient knowledge of Norwegian or English, severe cognitive dysfunction, or patients being in sheltered environments during the whole previous month. That means we excluded patients admitted to other 24 hour care for the whole month before admission to the acute psychiatric ward and patients incarcerated in

the same period. Patients who met the inclusion criteria and who had been outside sheltered care for at least three days during the previous month were asked to participate.

4. Methods

4.1. Study I - Laboratory analyses

Urine and blood samples for toxicology screening were taken within 24 hours as part of the admission procedure. Urine sampling was observed by staff so patients could not manipulate the samples. The urine samples were screened for ethanol, barbiturates, benzodiazepines and benzodiazepine-like drugs, cannabis, carbamates, opioids, amphetamine and amphetamine-like drugs, cocaine and hallucinogens. Blood was tested for the substance(s) found positive in the urine. We used liquid chromatography/mass spectrometry analysis (LC/MS), which was the most accurate screening method available for our study at that time (194).

4.2. Study I - Standardized interviews

The Addiction Severity Index (EuropASI version) (195) was used on all the included patients regardless of information of substance use beforehand. The ASI had previously been shown to be a generally reliable and valid assessment tool in dual diagnosis patients (196). The Norwegian version of the EuropASI has been found to be beneficial as an instrument for clinical use and for research purposes (197). We chose the EuropASI as a thorough measure for obtaining the patients' possible current and lifetime substance use history. This multidimensional semi-structured interview examines problems and their severity in various areas of functioning. EuropASI consists of the following problem areas: medical status, employment and support status, drug/alcohol use, legal status, family history, family/social relationships, and psychiatric status. We excluded the medical status and the psychiatric status problem area from our ASI interviews, since we did not focus on medical status and did SCID interviews for psychiatric diagnoses. In each of the different problem areas a severity score, based on the evaluation from both patient and interviewer, is made. We recorded severity scores, but these scores are not published. We did not record composite scores. In the drug/alcohol use area, age of onset of substance use refers to the year the patient started using the substance at least three days a week (irrespective of dosage) or in "binges" for at least two consecutive days per week, i.e.to the point where substance use compromises normal activities. This criterion is repeated for each substance. The duration of substance use is counted as the number of years altogether where the relevant substances have been used in

this heavy way. The patient is also asked about use of substances during the preceding 30 days. In paper I, the EuropASI was used to investigate substance misuse during the 30 days prior to the current admission. In paper II the EuropASI was used only to investigate demographic data (living arrangements, marital status, educational status and employment status) and criminal record. Data from other modules are not published.

The Structured Clinical Interview for DSM-IV axis I disorders (SCID-I) was used to diagnose mental disorders (163). The SCID-I module A-D was used for acquiring the best possible diagnoses of patients' psychotic disorders. The different diagnoses of psychotic disorders possible to obtain from these modules are the following: mood disorders with psychotic symptoms, schizophrenia, schizophreniform disorder, schizoaffective disorder, delusional disorder, brief psychotic disorder, psychotic disorder due to a general medical condition, substance-induced psychotic disorder, and psychotic disorder not otherwise specified (NOS). When the ASI interview had revealed substance use, the SCID-I E module was added. This module diagnoses the substance abuse and dependence in the different substance classes; it also has a polydrug category. We investigated lifetime and current (criteria present in the last month) SUDs.

4.3. Study II - Screening of substance use

Patients where there was suspicion of substance use were given the Alcohol Use Disorders Identification Test (AUDIT) and the Drug Use Disorders Identification Test (DUDIT) (132;198). This screening was mostly done the day after admission, but was delayed if patients had to be stabilized before completing the tests. A member of staff who was working with various screening procedures in the acute ward helped the first author identify the patients to be approached by the PRISM interviewers. These patients were asked to participate in the study on the basis of their AUDIT and DUDIT score. AUDIT and DUDIT are designed for self-administration by patients and, in our study, patients filled in their answers by themselves if they were capable of doing so. However, some patients were helped by the person in charge of the screening procedures.

4.4. Study II - Standardized interview

The Psychiatric Research Interview for Substance and Mental Disorders (PRISM) is a semi-structured diagnostic interview specifically designed to assess complex diagnoses in individuals with mental disorders who abuse substances (178). The PRISM was developed at Columbia University in New York City in the 1990s to overcome the difficulties of distinguishing between independent and substance-induced mental disorders. PRISM follows the DSM-IV criteria and assesses 20 Axis I diagnoses (substance use disorders, mood disorders, psychotic disorders, anxiety disorders and eating disorders) and two Axis II diagnoses (antisocial and borderline personality disorder). The PRISM obtains a thorough history of heavy drug and alcohol use prior to other diagnostic sections. Unlike a number of other SUD assessments, the PRISM does not skip the dependence section when a subject does not meet the abuse criteria. The problem of missing SUDs when using abuse symptoms as a screen for a dependence diagnosis has been emphasized (146;148;149). The main purpose of the PRISM is to provide valid and reliable diagnosis of DSM-IV disorders by differentiating between the expected effects of intoxication and withdrawal, substance-induced disorders, and independent mental disorders. Specific guidelines throughout the interview aid in this differentiation. Substance-induced mood and psychotic disorders, as PRISM defines them, are rigorous diagnoses that require a full DSM-IV syndrome which exceeds the expected effects of intoxication or withdrawal. For instance, in the sections on depression, when the subject meets the symptom criteria but this coincides with an increase or decrease in substance use, this response is considered to be the expected effects of intoxication and/or withdrawal (199). On the other hand, when exploring a possible depressive episode during a period of steady-state use of a relevant substance (i.e., a substance which might induce depressive symptoms), the specific depressive symptoms are explored further. In the psychosis section, when the subject is aware that their substance use has caused psychotic symptoms; e.g., hearing voices while high on stimulants and not acting on the voices, this psychotic symptom is coded as an expected effect of intoxication and does not count towards a diagnosis of psychotic disorder (199). Throughout the PRISM interview, there are numerous places in the probes where the subject's own words or expressions are to be used whenever possible ("SOE"; subject's own equivalent). For example, the subject's own expression for being depressed (sad, blue, depressed, down etc.) is used when depression is the focus in the interview.

We chose the PRISM as the diagnostic interview because we wanted to differentiate between substance-induced mood and psychotic disorders and independent mood and psychotic disorders complicated with SUD. We translated the PRISM from English into Norwegian according to the recommended guidelines (200-203). We used the development of the Spanish PRISM version as a model (204) and consulted the Head of the Drug Abuse Unit at Hospital del Mar, Barcelona. The PRISM interview (English, DSM-IV paper version) (205) was translated into Norwegian by a professional translation firm (Ganesa Tekst AS, Oslo, Norway). This first Norwegian version was reviewed by the first author in collaboration with clinical and research colleagues at the Norwegian Centre for Addiction Research, SERAF. Discussions were held to reach consensus on numerous words and expressions. Thereafter, the corrected Norwegian version was translated blindly into English (back translation) by an American psychologist fluent in written Norwegian (Deborah Lynn Reas, Oslo, Norway). The back translated version was then compared to the original version and discrepancies were corrected. The PRISM developers at Columbia University checked and approved the final back translated English version. The translation was a time consuming process since the paper version of the interview consists of approximately 80 000 words.

Earlier studies of the English and Spanish versions of the PRISM have shown high reliability and validity for substance use disorders and other mental disorders in patient samples (178;204). However, the interview has, so far, mainly been used in research rather than daily clinical practice. The feasibility of using it in acute psychiatric wards has not been studied sufficiently.

PRISM certification is based on participation in a 2-day workshop where an experienced PRISM interviewer evaluates a recorded interview submitted by the trainee. Fortunately, a computer assisted version (PRISM-CV) is currently available and has been translated into Norwegian. The PRISM-CV has the potential to be more user friendly in clinical settings, and beta testing to study this is underway.

4.5. Ethical considerations

Both studies were conducted in accordance with the declaration of Helsinki (206). Both studies were approved by the Regional Committee for Medical and Health Research Ethics

and the Norwegian Data Inspectorate. Patients gave their written consent after obtaining both oral and written study information.

In study I the Regional Committee of Ethics was asked to comment specifically on the ethical considerations concerned with including psychotic patients in the study. Psychotic patients might be disorganized to the extent that their ability to consent might be questionable. The committee answered that psychotic patients could be included even if their ability to consent might be questioned; however, patients must have understood the meaning of study. The committee concluded that professional judgment must be the basis for obtaining informed consent from the patients. Research data on substance use among Norwegian psychiatric inpatients was scarce in 2001. The declaration of Helsinki states that, "populations that are underrepresented in medical research should be provided appropriate access to participation in research" (206).

In study II, the clinicians in charge of the treatment signed declarations saying that patients were capable of giving a valid consent for participation. For each patient a summary report, based on the PRISM interview indicating substance use and diagnoses, was made. Most patients (84%) gave written consent to include this summary report in their medical record. In this way, patients and clinicians could benefit from the extensive information gained through the research interview.

The payment from the Norwegian Centre for Addiction Research (300 NOK) given to patients after completing the PRISM interview, was accepted by the Regional Committee of Ethics. Nevertheless, the committee recommended that the circumstances around payment were considered carefully so as to avoid unnecessary pressure on patients to participate. The money given was regarded as a payment for the time patients spent participating in addiction research. We did not face difficult ethical considerations since almost all patients reacted positively to the interview and found it useful in improving their understanding of their own disorders.

4.6 Statistical analyses

Both studies were descriptive studies with the aim of exploring clinical issues. We did not aim at proving any specific hypothesis and did not do any power calculation of sample sizes

before starting the studies. Both studies consisted of small clinical samples and therefore only simple statistical analyses have been performed. The Statistical Package for the Social Sciences (SPSS) version 11.0 and 16.0 respectively, was used for data analyses. In both studies SPSS was used for finding descriptive data on the included patients. In study I, Pearson's chi-squared test was used for studying substance use with regard to demographic and other parameters. In study II, Pearson correlation coefficient was used for studying total PRISM interview time with regard to relevant parameters. Linear regression was used to study the relation of total PRISM interview time to the number of non-SUD psychiatric diagnoses, number of SUDs, and to the DUDIT score.

5. Results

Self-report of substance use versus toxicology screens

In 63 of the 65 patients (97%), we found agreement between self-reported recent substance intake and the findings in the toxicological screens (paper I). Included in this number are 11 patients (17%) where their toxicology screens were negative on illegal substances which the patients reported having used during the month prior to admission. Only one patient had a positive substance screen for a drug of abuse not reported in interview.

Prevalence and pattern of substance use in the patient sample

Thirty-five patients (54%) reported having used one or more substances for intoxication during the month prior to admission (paper I). Of these, 26 patients (40% of total study group) had used illegal drugs, while nine patients (14% of total study group) had used only alcohol for intoxication. Laboratory analyses revealed use of illegal drugs, mostly cannabis and amphetamine, in 22 patients (34%). Benzodiazepines were found in 27 of 65 laboratory tests. In only two of these tests the benzodiazepine level was above the therapeutic level. We did not find any difference in current substance use between voluntarily admitted patients and those admitted involuntarily. There was a tendency towards more substance use among men than women.

Sixty patients had complete SCID-I assessments for diagnosing current and lifetime SUDs and current psychotic disorders (paper II). The lifetime rate of SUDs was 70% when all psychotic disorders were included and 62.5% when substance-induced psychotic disorders were excluded. Fifty percent of all the patients studied had current SUDs. In the patients with independent psychotic disorders and co-occurring SUDs, two-thirds had lifetime substance dependence diagnoses, while one third had lifetime abuse diagnoses without meeting the dependence criteria. Alcohol, amphetamine and cannabis were the substances most frequently found in the dependence disorders. Ten patients (16.7%) had more than one illegal substance involved in their SUDs. None of the patients had benzodiazepine use disorders without the abuse of, or dependence on, other substances. The dominant pattern was the use of illegal substances.

Feasibility of the PRISM

Sixty-one of the 119 eligible patients (51%) were included for feasibility measures (paper III). The main reasons for non-inclusion among eligible patients were too short a stay in hospital (n=29) or refusal (n=13). A complete PRISM interview was obtained from 58 of the 61 patients. Median total interview time was 155 minutes. The median number of interview sessions per patient was three. The median time from admission to start of interview was nine days. The median time from first to final interview session was four days. According to the AUDIT and DUDIT scores, 21 patients (34%) misused alcohol only, 17 patients (28%) misused drugs alone and 23 patients (38%) misused both alcohol and drugs.

Total interview time was related to the DUDIT score, the number of substances misused the number of SUDs, and the number of non-SUD psychiatric diagnoses. The interviewers noted very few problems when conducting the interviews. Patients mainly had positive reactions to the extensive PRISM interview.

Types of SUDs. Independent or substance-induced disorders

Patients had extensive and long-standing substance use (paper IV). The substances most often heavily used were alcohol (71%), cannabis (52%) and stimulants (38%). Cannabis had the earliest median age of onset of heavy use (age 17); the median age of onset of heavy use for all other substances was age 22.

The four most common current diagnoses were major depressive episode (MDE) (50%), schizophrenia (21%), manic episode (10%), and mood disorder with psychotic symptoms (9%) (paper IV). Forty percent of the participants had current substance-induced mood or psychotic disorders. Substance use seemed particularly important in relation to current depression. The large majority of diagnosed current MDEs were substance-induced (21/29; 72%), and over one third (36%) of all study participants received a current substance-induced MDE diagnosis. In the current substance-induced MDEs, 57% were alcohol-induced.

Current psychotic disorders were less often substance-induced. Current schizophrenia was independent of substance use in 11 of the 12 patients who received a schizophrenia diagnosis.

In one patient, schizophrenia was cannabis-induced. Non-schizophrenia psychotic disorders were substance-induced in five of seven patients.

6. Discussion

6.1. Discussion of main results

Self-report of substance use versus toxicology screens

We found patients admitted with psychotic symptoms to be reliable in reporting their substance use during the last month before admission (97% concordance between self-reported recent substance intake and the findings in the toxicological screens). Seventeen percent of patients had negative toxicology screening even if these patients had reported illegal substance use during the previous month. This comes naturally from the different time frames; the EuropASI measured self-reported substance use during the previous 30 days, whereas the toxicology screening we used might detect substances in urine roughly 2-7 days after intake. Earlier studies in this patient group had found somewhat conflicting results when comparing self-report with toxicology screening. In an American study of psychotic patients only 21% of those with positive urine test self-reported substance use (207). In another American study where the utility of drug screening in an urban psychiatric emergency service was studied, 88% of those who admitted use had positive drug screens (208). In a Swiss study of psychiatric inpatients, good agreement was found between self-reported substance use and urine screens (23). Other authors also found relatively high concordance rates between self-report and urine screens in people with co-occurring mental disorders and SUD (209). Literature has also shown that self-reports of substance use are valid and reliable among both injecting drug users (210) and university students (211). Australian researchers have recently published a meta-analysis of self-reported substance use compared with laboratory substance assay in various psychiatric services (212). Our study findings are included in that meta-analysis. They found a strong association between self-report of any substance use and a positive substance screen for any substance. Unexpectedly, they found a stronger association between self-report and testing in studies with a higher proportion of patients diagnosed with psychotic disorder. They also found that the studies using a structured interview to assess substance use reported a significantly stronger association between any reported substance use and substance screening than did the studies assessing substance use using clinical methods. Furthermore, they presumed that the false negative tests (low sensitivity) are the main limitation of testing. This can be due to the lack of sensitivity of the substance assays and/or the time lag between substance intake and sampling (212).

In conclusion, our study showed that we can rely on self-reported substance use in psychotic inpatients. However, at the time of the interview, patients knew that toxicology screens were taken and that they were promised confidentiality. These issues probably increased the levels of agreement. Therefore; if patients feel safe and there is absence of sanctions, one might expect quite accurate substance use reports. Then there is less need for the toxicology screens.

Prevalence and pattern of substance use in the patient sample

We found that about half of psychotic inpatients had intoxicated themselves on various substances during the month prior to admission. The substances most commonly used in our survey were alcohol, cannabis and amphetamine. The prevalence of both current and lifetime SUDs was high in the patient sample. The lifetime rate of SUDs was 70% when all psychotic disorders were included, 62.5% when substance-induced psychotic disorders were excluded. We also found a high prevalence of current SUDs (50%). The relevance of our finding is also reflected in the fact that half of the current SUDs were dependence disorders. For lifetime SUDs the relevance is further strengthened, as the majority of these were dependence disorders. 10-year data from the New Hampshire Dual Diagnosis Study showed that participants with alcohol dependence rather than alcohol abuse were less likely to attain 6-month remissions and more likely to relapse after attaining remissions (213). This emphasizes the importance of establishing interventions in psychiatric services aiming at preventing substance use from developing into substance dependence.

Other Norwegian studies have also found SUDs to be prevalent in psychiatric inpatients. However, these patient samples also include patients other than psychosis patients. Fløvig et al found that acute psychiatric patients had used substances prior to admission in 82% of the admissions, and almost one-third of patients had a SUD (27). Mordal et al found in their acute psychiatry study that psychoactive substances were detected by laboratory analyses in 63% of the admissions (28). On the other hand, findings from a Swedish clinical psychosis unit showed much lower prevalence of SUDs than in our study: 18% harmful alcohol use and 9% drug-related problems (214). However, studies from numerous clinical settings have shown high prevalence numbers of substance use in patients with psychotic disorders (33-40).

Both toxicology screens and interviews revealed cannabis and amphetamine to be the most frequently abused illegal substances in psychotic inpatients. This is in accordance with other findings (33;36;214). A Swedish study has shown that the distribution of psychotic illness is high among abusers of amphetamine and cannabis, in contrast to the generally lower co-occurrence of psychosis among abusers of opiates (215). The fact that stimulants might induce psychotic disorders has been known for a long time (89;216;217). Further, studies have linked cannabis use to the development of schizophrenia and other psychotic disorders (92-96;127;128;218), and studies have suggested that cannabis use precipitates psychotic disorder in subjects who are vulnerable to developing psychosis (219;220). Also, a large cross-sectional analysis has found a dose-response relationship between the amount of cannabis used and the odds of psychiatric hospitalization (221). Early age cannabis use increased the odds. A Danish follow-up register study found that half of all patients treated for cannabis-induced psychosis will subsequently develop a schizophrenia-spectrum disorder (222). A review of 35 studies found evidence consistent with the view that cannabis increases risk of psychotic outcomes independently of confounding and transient intoxication effects (223).

We found that it was difficult to compare our prevalence findings to other European countries because of methodological differences. Our study focuses on the age group 18–40 years. As substance use disorders are associated with younger age (33;36;37;118;224-226), the age selection is likely to cause a higher prevalence than found in studies that include older age groups.

The high level of comorbidity is not easily explained by the substance use pattern in Norway. The patients in this study have a different pattern of use from the general population; illegal substances dominate patients' substance use while alcohol problems are the main problem in the general population (227). The pattern of substance use found in our study might also be influenced by the tendency of psychiatric services to refuse subjects with alcohol use disorders – at least at the time when study I was conducted. Anyway, as found by others, patients with schizophrenia have greater problems with substance use than the general population (228;229). Another noteworthy finding is that our prevalence numbers are similar to findings in US clinical studies (36;224), even if drug use disorders are more prevalent in

the US than in Norway (5). One explanation might be that the public health care system in Norway facilitates easier access to inpatient psychiatric care compared to other countries.

Our prevalence numbers are naturally a reflection of the 2001 organization of Blakstad hospital catchment area. In later years, more differentiated services have been established and more focus has been put on establishing better services for dual diagnosis patients. Probably, if a corresponding survey had been carried out in 2012 in the acute ward, prevalence numbers would have been somewhat lower. However, the prevalence numbers in the 2001 survey should reflect the real situation at that time since our findings resulted from a thorough sampling procedure and an in-depth inquiry into substance use.

In conclusion, the high prevalence and severity of SUDs found among psychotic inpatients, compared to the general population, are crucial findings for the planning of treatment. A high prevalence of current SUDs poses great challenges for the planning of further follow-up. We found substance use to be prevalent in an acute psychiatric ward. Studies from emergency departments have shown that these departments are important identification sites and should serve as important venues for cost-effective interventions (230-232).

Feasibility of the PRISM

An overriding research question in study II was to investigate a diagnostic method for use in dual diagnosis patients in a busy clinical setting. This study demonstrated that it was feasible to use PRISM in a busy acute psychiatric ward with a relatively high percentage of involuntary admissions. This is important because the feasibility of any complex diagnostic interview in everyday clinical work is questionable. We succeeded in doing PRISM in half of the eligible patients. The main reason for non-inclusion was too short a stay on the ward, which meant there was not enough time to stabilize the patients and establish the patient – interviewer alliance. We found that the amount of drug use and increasing psychiatric morbidity lengthened the interview. Others have also found that complicated substance use and psychiatric histories lengthen administration times (157;205).

As shown both in spontaneous comments and in interviewer observations, the patients seemed to appreciate the thoroughness of the examination. Some even expressed increased understanding of how substance use interfered with their mental health problems. Patients appreciated the structured way the PRISM interview made them recall their history of substance use and mental disorders. They expressed satisfaction about being diagnosed so thoroughly. The same kinds of experiences were confirmed in another Norwegian PRISM study (233). Furthermore, patients' satisfaction motivates investigators to carry out further psychiatric research.

The feasibility of the PRISM interview has been questioned because of its extensive and time-consuming nature. The Columbia group had a mean administration time of 2.03 hours when excluding the first five interviews done by each interviewer (205). In our study the PRISM interview was indeed time-consuming, with a median interview time of 2 hours 35 minutes. This is, however, comparable to the CIDI interview which in some studies has been described as taking up to two to three hours, with the substance use disorder section being especially time-consuming (156). The SCID interview has been shown to take less time, but this was found in a community mental health setting (234). However, as reviewed in the methodology section in this thesis, other diagnostic interviews have shortcomings when used in subjects who abuse substances. Thus, the PRISM interview may have advantages over these other diagnostic options. Shorter diagnostic instruments like the MINI have been developed, but will naturally give less information because of the shorter format (153;235). Studies have also shown that even the MINI interview has many of the same problems that we encountered with the PRISM interview; it is not feasible for all patients because of short stays on the ward, involuntary admissions, psychosis, and substance use (164). In conclusion; proper diagnosis of comorbid patients takes time. Earlier studies have shown that structured interviews enhance diagnostic accuracy, and diagnostic precision leads to cost-effective practices and better patient care (234;236).

Types of SUDs: In our combined psychotic and mood-disordered patients in study II; alcohol, cannabis and stimulants were the substances most often heavily used and associated with current SUDs. This pattern of substance use is in accordance to several other studies investigating substance use in psychiatric inpatients (25;27;33;36;214). The higher rates of

cocaine use reported in some studies is probably due to geographical drug preferences and availability. PRISM should give a reliable measure of all possible SUDs in the subjects interviewed since the PRISM diagnoses abuse and dependence independently (178).

Independent or substance-induced mental disorders: The PRISM revealed that the majority of current MDEs were substance-induced, and current psychotic disorders were substance-induced in about one third of the patients with a psychosis diagnosis. We found that alcohol plays an important role in acutely admitted patients with MDE. This comorbidity is supported by clinical, epidemiological, and neurobiological research which suggests an association and causal relationship between alcohol and depression (30;79;80;237;238). This association is complex (30;237;239). It has been shown that remission of alcoholism increases the remission of depression (240;241). Findings from a community study supported a causal model in which problems with alcohol led to increased risk of major depression (242). Another epidemiological survey found prior alcohol dependence to increase the risk of current major depressive disorder more than 4-fold (243). Concerning the other possible direction of this specific comorbidity, a prospective study demonstrated a modest role for independent depressive episodes in enhancing the risk for alcohol problems (62). Data from the Collaborative Study on the Genetics of Alcoholism was used to study independent and substance-induced major depressive disorders in alcoholics (244). Here, the majority of depressive disorders were substance-induced. A clinical study found that in substance-dependent patients both independent and substance-induced major depressive disorder predicted future depression (245). Furthermore, a previous clinical study concluded that substance-dependent patients with both independent and substance-induced MDEs have greater psychiatric severity than those with independent MDE only or substance-induced MDE only (246). A recent NESARC publication suggests that substance-induced depression and major depression with comorbid SUD may share underlying etiological factors since these conditions show similar patterns of comorbidity and risk factors (247).

In our study, past MDEs were most often independent, while current MDEs were mainly substance-induced. This is in accordance with a recent Norwegian study of mental disorders in first-time admitted SUD patients diagnosed with the PRISM (233). In that study, 69 percent of the patients with mood disorder had experienced one or more lifetime independent mood disorder episodes. Also, studies of clinical populations have shown that 25 to nearly 40% of

carefully diagnosed substance-induced MDEs assessed at baseline are later recategorized as independent depressive episodes (245;248). Knowledge of the patient's current and previous symptoms and disorders may be helpful in guiding the diagnostic process (249). Diagnosing patients with active SUDs and mood instability is challenging, bipolar disorders might be overdiagnosed (250). Conversely, a study found that bipolar disorder had not been previously diagnosed in approximately 50% of males admitted to an inpatient substance abuse programme (251). The PRISM does not have bipolar disorder as a distinct diagnostic category. However, from investigating various mood episodes, information about possible bipolar disorder might be obtained. To sum up, accurate assessments of depressive symptoms complicated with SUD seem necessary to give optimal treatment for both the depressive disorder and the SUD. Psychoeducative approaches seem warranted in these patients.

Most cases in the total group of current psychotic disorders were classified as independent. We found that schizophrenia, the most prevalent current psychotic disorder, was rarely substance-induced, while current non-schizophrenia psychotic disorders were mostly substance-induced. When making differential diagnoses in psychotic patients who abuse substances, it is important to establish the temporal relationship between substance use and psychotic symptoms (91). In clinical practice, a diagnosis of substance-induced psychosis is often given shortly after admission (252). This could deflect the clinical focus away from a current independent psychotic disorder. A longitudinal study of participants with early-phase psychosis from five psychiatric emergency departments in upper Manhattan used the PRISM for assessments (253). In this study, 56% of the psychotic disorders were diagnosed as independent at baseline. Further, the investigators identified three key predictors as being greater in the substance-induced group: parental substance abuse, a diagnosis of dependence on any drug, and visual hallucinations (253). However, they also demonstrated that as many as 25% of patients with baseline substance-induced psychosis were reclassified as having independent psychosis at one year follow-up (254). Consequently, even with thorough diagnostic assessment at one point in time, diagnoses might change over time. Substance abuse and noncompliance with medication regimens has been associated with higher relapse and hospitalization (87). Patients with substance-induced psychotic disorders and patients with co-occurring independent psychotic disorder and SUD should receive integrated treatment that includes psychoeducation and motivational techniques to address substance abuse and to improve the clinical course of both disorders (60;183).

The distribution of independent and substance-induced psychotic disorders in this study may also be influenced by the types of drugs abused in the study catchment area. In populations from catchment areas with higher rates of cocaine and stimulant use, we would expect more substance-induced psychosis than independent psychosis. Also, the organization of patient flow to psychiatric and substance abuse treatment systems may influence the rates of independent versus substance-induced psychotic disorder in acute psychiatric units. The level of severity of mental disorder managed in a substance abuse service will naturally depend on the psychiatric competence in that specific service.

In conclusion, we showed that it was possible to distinguish between independent and substance-induced mood and psychotic disorders in patients admitted to an acute psychiatric ward. This distinction has important consequences for the further treatment and follow-up of patients. Optimal treatment needs optimal diagnostics. Discussing disorder mechanisms in more detail and in a more personalized way with patients probably enhances the chance of initiating motivation for substance use reduction.

6.2. Methodological considerations

Toxicology screening

Toxicology screening was only used in study I. We used liquid chromatography/mass spectrometry analysis (LC/MS). A more recent Norwegian study compared urine on-site drugs of abuse screening test with LC/MS analyses in patients admitted to a psychiatric emergency unit (255). This study used the Department of Clinical Pharmacology at St.Olav University Hospital for the LC/MS analyses, as we did. Here, 75% of on-site tests were correct for the drug tested when compared to the chromatographic analyses, and the authors concluded that results from on-site screening tests should not be considered as the final conclusion. Therefore; our choice of toxicology screening method should give as accurate as possible results for patients' recent substance intake. Chromatographic analyses are subsequently supported as a routine screening which should be considered in acutely admitted psychiatric patients (256). Roughly, substances might be detected in urine 2-7 days after intake with the LC/MS method we used. Consequently, substances used during the last month before admission, can be missed. Our results confirmed this fact; more patients reported

substance use during the last month than the substance screening showed. If valid information about substance use over a longer time period had been wanted, hair analyses could have been used (257-259). However, this method was not available for our study. Nor was it necessary, since our main screening focus was to study the very recent substance use in psychotic inpatients.

Substance use screening instruments

In study II, we used the AUDIT and DUDIT as screening instruments to identify relevant patients to be interviewed with the PRISM. We decided to set the AUDIT cut-off at 8 for men and at 6 for women. This is a frequently used cut-off. A cut-off of 8 provides good sensitivity and specificity in the detection of current social and medical problems related to alcohol (260) and produced the highest level of correct classification in the schizophrenia sample (135). Women are more susceptible to the medical complications of alcohol. Therefore we chose an AUDIT cut-off at 6 for the female patients. This cut-off has previously been shown to be the most useful cut-off for detecting alcohol problems in a group of Spanish women (261). We decided to use a DUDIT cut-off at 2 for both genders since we wanted to reach all patients who may have substance-related psychiatric symptoms. In patients with schizophrenia/SMI, even lower levels of substance use might cause negative effects (84;262). Nesvåg et al concluded in their investigation in patients with first-episode psychosis that suitable cut-off scores were ten for men and eight for women on AUDIT and three for men and one for women on DUDIT (263).

Standardized interviews

EuropASI: The reliability and validity of the ASI in severely mentally ill patients have been questioned (264), and it has been stated that interviewers should have some clinical experience with psychiatric patients prior to conducting ASI interviews (265). In our study the ASI interviews were conducted by experienced clinicians (VH and TLE). An earlier study has shown that the ASI missed approximately 20% of SCID-positive psychoactive SUDs, but that the specificity was 95% to 98% (266). Findings from another study supported the use of the ASI drug and alcohol scales in public psychiatric hospitals (267).

We encountered problems with the severity scores in some of the problem areas. Many patients were unemployed and lived on disability benefits; consequently, judging problems with work was often irrelevant. Legal problems were also often irrelevant since patients' criminal cases were often dropped because of their severe mental illness. Problems with family and others might be misunderstood because of conflicts and paranoid symptoms. However, these assessments were not used in the publications from the study. We did not encounter any particular problems with the alcohol and drug section. Obviously some patients in this study group had problems remembering their substance use history because of cognitive impairment both from longstanding psychotic disorder (268) and longstanding substance misuse. However; patients' self-reported substance use during the previous 30 days as obtained by the ASI interview, was compared to the toxicology screening. Since the urine toxicology screens confirmed patients' self-report, the ASI seemed to be a reasonable method to get detailed information of current substance use even in psychotic inpatients. In another study ASI was used under naturalistic conditions and clients did not underreport their substance use when ASI information was compared with urinalysis (269). Further, a recent publication supports the use of ASI in clinical practice and research (270). In conclusion; we found the substance module in the ASI to be a good tool in finding the best estimate of current substance use in a group of psychotic patients.

SCID-I: The SCID- I module E complemented the ASI substance use history. Our ASI and SCID findings were in agreement: through the ASI interview we found that 54% of the total 65 patients had used substances to intoxication during the last month. In the 60 patients with complete assessments we found 50% to meet criteria for substance abuse or dependence the last month before admission.

Study I was primarily aimed at examining substance use and SUDs in a group of psychotic inpatients. All patients were interviewed with the ASI interview, including the drug/alcohol section, before the SCID-I interview. Patients knew that toxicology screens had been taken before they were interviewed. Thus, multiple methods of assessment of substance use in psychiatric patients were used, as often recommended (139;140;207;226;271). A previous study found that urine toxicology analyses supplemented with admission and discharge diagnoses were significantly less accurate in diagnosing psychoactive substance abuse than the SCID (272). Structured methods are found to be significantly better than unstructured traditional diagnostic assessment (236), combining structured interviewing with a review of

the medical record appears to produce more accurate diagnoses than routine clinical methods (234), and good diagnoses require clinical skills (273). In our prevalence study, both SCID interviewers were experienced clinicians. The conclusions of these other publications strengthen the credibility of our prevalence findings.

The problems with the validity and reliability of structured interviews when subjects abuse substances have been reviewed in the methodology section in this thesis (167-170). In study I, the types of psychotic disorders were subordinate to the prevalence question. However, our SCID-I experience was that the differentiation between an independent psychosis diagnosis and a substance-induced psychosis diagnosis had to, at least to some extent, be based on clinical judgment. These considerations point toward the necessity of using a diagnostic interview specifically designed to assess complex diagnoses in individuals with mental disorders who abuse substances. The Psychiatric Research Interview for Substance and Mental Disorders (PRISM) was developed for this purpose (178).

PRISM: Clinical interviews often yield inaccurate diagnosis when patients have co-occurring disorders (236;274); and the reliability and validity of psychiatric diagnoses is reduced when psychoactive substance use is present, even if structured interviews are used (167-171). Consequently, there is a need to improve diagnostic accuracy in clinical settings with instruments designed to disentangle the complex interactions between substance use and mental disorders. We wanted to find valid and reliable diagnoses in acutely admitted dual diagnosis patients; PRISM was therefore chosen as the diagnostic instrument in study II. Earlier studies of the English and Spanish versions of the PRISM had shown high reliability and validity for substance use disorders and other mental disorders in patient samples (178;204;205). Our results are also strengthened by the fact that all interviews were done by experienced clinicians; clinical skills ensure valid data when using structured diagnostic interviews (273).

With some of the polydrug users it seemed at first impossible to disentangle all their substance use in the thorough way that PRISM requires. However, when we were writing up the summary reports for the patients' medical records, things gradually fell into an order. This writing up also facilitated our learning process considerably.

We had translated the PRISM into Norwegian with a thorough process. Obviously, the validity of a translated diagnostic interview is dependent on a proper translation process.

Further, the reliability will be low if the diagnostic questions are not consistent and optimal in their linguistics. Besides, if the questions are difficult to grasp for the patients, the use of structured interviews might be misleading and a waste of time. Our translation was done in a professional milieu with both clinical and research knowledge in addiction medicine and psychiatry. However, there should always be cross-cultural considerations concerning the validity of translated research instruments (203;275).

6.3. Limitations

In both study I and II, the small sample sizes and single setting raises questions regarding statistical significance and generalizability. In study I; the demographic characteristics of the catchment area, the substance use pattern in the catchment area, and the current local organization of psychiatric services played an important part in the prevalence numbers obtained. In study II, local characteristics also influenced the findings. However, both studies were "real world" studies which naturally limited the generalizability.

Study II was cross sectional and therefore it was not possible to investigate clinical benefits of structured diagnostic assessment in acute psychiatric inpatients. Moreover, there was no follow-up on the diagnoses in the PRISM study. Since diagnoses might be reclassified over time, a diagnostic follow-up would have given a broader understanding of the patient sample.

We naturally encountered some difficulties performing the PRISM interview. Some psychotic patients experience cognitive deficits (268) or psychotic symptoms that render it difficult to recall previous specific illness episodes. Previous psychotic episodes reported by the patients were therefore verified by checking medical records to identify past psychiatric hospitalization. It was challenging trying to ascertain whether patients had been abstinent for at least four weeks when they had their previous psychotic symptoms. Antipsychotic medication during this time period complicated the differentiating of independent versus substance-induced psychotic disorders. Because episodes of mood disturbance do not always result in hospitalization, it was not possible to conduct similar validity checks for mood disorders. Further, there may always be recall bias concerning past symptoms.

Our PRISM findings will naturally have some limitations as far as diagnostics in acute psychiatric wards are regarded. The median time from admission to start of interview in this

study was nine days (range 1 – 55). Consequently, it was difficult to carry out the interview in short stay patients. All but two patients required more than one session on different days to complete the PRISM interview.

Our findings should be understood in the light of current developments in diagnostic understanding. The PRISM follows the DSM-IV criteria to distinguish between independent and substance-induced disorders, and the PRISM emphasizes the temporal relationship between substance use and mental symptoms. The DSM-IV criteria for substance-induced psychotic disorder have been questioned, and an alternative classification reflecting association with substance use rather than causation has been proposed (276). In a literature review for the years 1992 through 2007, the authors concluded that there has been a striking paucity of information concerning substance-associated psychotic episodes (276). Future research will certainly need to consider these diagnostic issues. An earlier literature review recommended that DSM-V should retain the independent and substance-induced categories but that the criteria should be refined since the DSM-IV leaves much of this differentiation to clinical judgment (277). However; in the PRISM, as opposed to the SCID-I, there are specific guidelines which try to elaborate and refine these independent/substance-induced diagnostic challenges.

6.4. Clinical implications and future research

Our study revealed a high prevalence of SUDs among psychotic inpatients. Both the current and lifetime prevalence of SUDs were high in this group of patients. This means that psychiatric services should be aware of this comorbidity from a patient's first contact with the treatment systems. There is no doubt that persistent SUD deteriorates the clinical course of psychotic disorders. Future research should further investigate methods for optimal detection of SUDs in subjects with mental disorders. A recent meta-analysis searched publications reporting data about the characteristics of current and former substance-using patients diagnosed with psychotic illness (278). The authors found significant improvements in symptoms among patients with first episode of psychosis who stopped using substances, while these improvements were not found in patients with a more established psychotic disorder. Hence, first episode patients should be informed about the benefits of giving up their substance use (278). Clinical experience has shown that it is often difficult to intervene when

the SUDs have persisted too long in psychotic patients. Psychiatric services should have proper screening and diagnostic guidelines for this comorbidity in order to give proper information and treatment options to the affected patients in due time.

We have shown that it was possible to use an extensive diagnostic interview in psychiatric inpatients with co-occurring SUDs. In addition to obtaining the substance use history and the various psychiatric diagnoses, the PRISM interview can also be regarded as a therapeutic intervention for the patients. Structured interviews might start patients' own reflections regarding their substance use. Awareness and reflection are first steps in initiating change. For clinicians, carrying out structured interviews like the PRISM facilitates consideration about what the important questions are. This knowledge can later be transferred into clinical consultations.

The PRISM interview provided detailed, clinically significant information on diagnoses in patients hospitalized for acute mental disorder with concurrent substance use. The high prevalence of current substance-induced depressive states indicates that targeted treatment for SUDs is particularly important for these patients. Further, an earlier prospective longitudinal study of people with both major depressive disorders and alcoholism suggested that "the beneficial effect of abstinence operates regardless of when it starts; it is never too late to benefit from achieving inactive alcoholism" (240). Current psychotic disorders were mostly independent. When mental disorder is independent, proper psychiatric treatment is important and should be integrated with substance abuse treatment to sustain recovery.

Future research should further explore methods to obtain the best possible diagnoses in subjects with mental disorders and SUDs since the diagnoses are the basis of treatment planning. Diagnostic accuracy in psychiatric services is important for targeted treatment. The Norwegian computer version of PRISM is currently undergoing pilot testing. This version has the potential to be more user friendly in clinical settings than the paper-and-pencil version we used in our study.

7. Conclusions

The main results in this thesis can be summarized in the following points:

- Examination through the EuropASI and the SCID-I interview showed that substance use and substance use disorders were highly prevalent in psychotic patients admitted to inpatient psychiatric care. Alcohol, amphetamine and cannabis were the dominant substances.

- Fifty percent of the psychotic patients had current SUDs. Lifetime rate of SUDs was 70% when all psychotic disorders were included and 62.5% when substance-induced psychotic disorders were excluded.

- Urine toxicology screens confirmed patients' self-report of recent substance use.

- The first Norwegian version of the Psychiatric Research Interview for Substance and Mental Disorders (PRISM) was tested in substance-abusing psychotic and mood disordered patients admitted to an acute psychiatric ward. The PRISM was feasible in this setting, and patients mainly had positive reactions to this extensive interview.

- Median total PRISM interview time was 155 minutes. The interview time was statistically related to the DUDIT score, the number of substances misused, the number of SUDs, and the number of non-SUD psychiatric diagnoses.

- The PRISM revealed that 40% of patients had current substance-induced mood or psychotic disorders. Current major depressive episode was substance-induced in 72% of patients with this diagnosis, of which 57% were alcohol-induced. Current psychotic disorders were substance-induced in about one third of the patients with a psychosis diagnosis. These substance-induced psychotic disorders were mainly induced by illegal substances.

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9. Appendices

Informasjon til vakthavende lege og akuttavdelingene angående prosjektet ***Forløpsstudie av alkohol, medikament-og narkotikamisbruk hos innlagte pasienter med psykosediagnose***

Fra og med 3.mai 01 gjennomføres en grundigere kartlegging av evt. rusmisbruk hos en gruppe innlagte pasienter. Alle pasienter i alder 16-40 år (d.v.s. født 1961 og senere) som innlegges med psykosediagnose får forespørsel om å delta i studien, helt uavhengig om det er mistanke om rusmisbruk eller ikke. Prosjektleder oppsøker pasientene raskt etter innleggelsen.

Vakthavende lege rekvirerer blod-og urinprøver ved innleggelse (delvis ferdig utfylte skjemaer ligger i medisinsk ekspedisjon over grønne skjemaer). Dersom pasienten står fast på medisiner ved innleggelse, føres dette opp på blodprøverekvisisjonen. Laboratoriet i Trondheim vil i tillegg til rusmiddelanalysen gjerne analysere nivå av evt. forordnet psykofarmaka. Det er derfor svært viktig å føre opp når siste dose er inntatt. Blodprøven skal i utgangspunktet tas medikamentfastende morgenen etter innleggelse. Ved fast medisinering, gi kveldsmedisin som vanlig. Dersom det i akutt situasjonen trengs evt.medisinering før blodprøve er tatt, bruk fortrinnsvis benzodiazepiner for å unngå interaksjonsproblematikk analysemessig. Innkomstblodprøver rekvireres på sykehusets laboratorieskjema som vanlig, husk å rekvirere ALAT og gammaGT på prosjektpasientene.

Avdelingens ansvar er å følge opp at blod-og urinprøvene tas.

Urinprøve tas så raskt etter innleggelse som mulig (overvåket prøve, se eget skriv). Urinprøve og rekvisisjon leveres til laboratoriet umiddelbart. Etter kl.15 og i helger settes urinprøven i kjøleskapet på laboratoriet.

Blodprøver tas altså morgenen etter innleggelse (obs.max. 24 timer etter innleggelsen). I helger og på helligdager tas blodprøver av Tone Lykke-Enger eller Valborg Helseth.

Blod-og urinprøver i prosjektet merkes på vanlig måte med navn og fødselsdato. Prøvene sendes ikke inn til analyse før pasienten har samtykket i å bli med i studien. Analysesvarene behandles konfidensielt, kun prosjektleder og prosjektmedhjelper får tilgang til disse. Det er viktig at pasienten opplyses om konfidensialiteten.

Informasjonsskriv og samtykkeerklæring vedlegges til orientering.

Denne studien er helt avhengig av innsats og positiv holdning fra mange parter. Sykehuset har behov for de opplysningene studien kan gi.

Takk for innsatsen!

Med hilsen Valborg Helseth, prosjektleder

REGISTRERINGSSKJEMA

Vakthavende lege / akuttavdeling: (dette skjema blir liggende i akuttavdeling til det hentes av prosjektleder)

Registrering for prosjektet: Forløpsstudie av alkohol, medikament-og narkotikamisbruk hos innlagte pasienter med psykosediagnose

Pasientnavn:……..

Fødselsår:……..

(født 1961 og senere)

Psykose?

	Sikker psykose
	Meget sannsynlig psykose
	Usikkert om psykose
	Ikke psykose

Hvis sikker psykose, meget sannsynlig psykose eller usikkert om psykose: Rekvirer blod-og urinprøver etter delvis ferdig utfylte skjemaer. Husk å føre opp fast medisinering og evt.tidspunkt for siste dose psykofarmaka.

Urinprøve tatt: Dato:…… Klokkeslett:……..

Blodprøve tatt: Dato:…… Klokkeslett:……..

RUTINER VED OVERVÅKET URINPRØVETAKING i forbindelse med rus/psykoseprosjektet.

OBS! Det brukes egne urinprøveglass for dette prosjektet. De oppbevares i hver akuttavdeling.
VIS TAKT OG RESPEKT OVERFOR PASIENTEN! Forklar at det er rutine med overvåket urinprøve ved innkomst nå.

Det er ønskelig at urinprøven tas så tett opp til innleggelsen som mulig. Den kan tas når som helst på døgnet (trenger ikke være morgenurin), tas innen 24 timer etter innleggelsen. Det anbefales at overvåket urinprøvetaking gjøres rutinemessig i samband med den øvrige kontroll ved innleggelsen (jfr. gjennomgang av pasientens eiendeler etc). Informer pasienten om at det pågår et prosjekt der riktig urinprøvetaking er svært viktig. Fortell pasienten at akkurat deres urinprøve er viktig for at sykehuset skal kunne forbedre rutinene sine på sikt (som igjen er til det beste for pasientene). Hvis pasienten lurer på hva prosjektet går ut på, fortell at de vil få mer informasjon dagen etter innleggelse. Hvis pasienten virker skeptisk, legg da vekt på at urinprøven behandles strengt konfidensielt, at det bare er prosjektleder som får vite analyseresultatet. Fortell også at urinprøven ikke vil sendes til analyse før de har samtykket etter samtale med prosjektleder.

Før prøvetaking:

1. Merk hvit etikett med pasientnavn, fødselsdato, prøvedato, avdelingsnavn og signatur.
2. Sjekk at rekvisisjonen er riktig utfylt.

Under prøvetaking:

1. Pasient og personale går inn på toalettet (best egnet er bad med toalett)
2. Pasienten får tildelt urinprøveglass og under diskret påsyn avlegger pasienten urinen i glasset. Pasienten setter fra seg glasset på vasken og går ut.

3. Personalet tar med seg urinprøveglasset inn på skyllerommet og trekker opp urinen i eget prøveglass (bruk vedlagte engangspipetter). Dette gjøres over vasken på skyllerommet. Husk hansker. Pass på at prøveglasset ikke blir helt fullt slik at lekkasjer unngås (glasset skal siden fryses ned på laboratoriet i Trondheim).

Etter prøvetaking:

Urinprøven merkes med hvit merkelapp. Urinprøven og rekvisisjonen leveres til laboratoriet umiddelbart. Etter kl. 15 og i helger settes urinprøven i kjøleskapet på laboratoriet.

VHe mai 01

Forespørsel om å delta i kartleggingsundersøkelse

Forløpsstudie av alkohol, narkotika – og medikamentmisbruk hos innlagte pasienter med mulig psykosediagnose

Prosjektleder: Valborg Helseth, overlege Blakstad sykehus

Undersøkelsen skal prøve å gi svar på hvor mange av pasientene i aldersgruppen 16-30 år med psykisk lidelse som har et nåværende eller tidligere rusmisbruk. Psykisk lidelse og samtidig rusmisbruk er et økende problem i dag. Kartlegging er viktig for å planlegge bedre behandlingstilbud på sikt. Alle pasienter som innlegges med mistanke om psykose i denne aldersgruppen kartlegges, helt uavhengig om det er opplysninger om rusmisbruk eller ikke.

Pasienter som inngår i studien gjennomgår to forskjellige intervjuer i tillegg til sykehusets rutinemessige journalopptak. Det ene intervjuet er et diagnoseintervju basert på vitenskapelig standardisering, det er noe mer omfattende enn et innkomstintervju. Dersom det er nødvendig for riktig diagnostisering, kan også opplysninger fra sykehusets journal innhentes. Den andre typen intervju kartlegger evt. rusmisbruk i tillegg til familiære/sosiale forhold etc. Ved innleggelsen tas det blod- og urinprøve som sjekkes med tanke på evt. alkohol/narkotiske stoffer. Dersom pasienten har stått på medisin utskrevet av lege, vil også nivået av medisin i blodet bli undersøkt. Disse prøvene inngår i sykehusets rutinemessige laboratorieprøver ved innkomst. Ved utskrivning gjentas diagnoseintervjuet for å se om det er endringer siden innkomst.

Deretter vil det følges opp med intervju ½ år etter den første kartleggingen. Dette oppfølgingsintervjuet legges opp slik at det verken økonomisk eller praktisk blir noen belastning for den enkelte. Samtidig tas nye blod- og urinprøver. Opplysninger om evt. rusmisbruk bringes ikke videre av prosjektleder. Hensikten med oppfølgingsundersøkelsen er å følge med på hvordan det går med pasienter som ble innlagt Blakstad sykehus i en bestemt tidsperiode. Slike undersøkelser er viktig for å kunne utvikle behandlingsopplegg som stadig kan bli bedre for pasientene.

ALLE OPPLYSNINGER SOM GIS I DENNE UNDERSØKELSEN ER TAUSHETSBELAGTE OG ALLE DATA BEHANDLES KONFIDENSIELT.

Ved prosjektavslutning blir alle data anonymisert.

I skriftlige rapporter fra prosjektet blir alle data anonymisert.

Behandlingen som gis under oppholdet følger sykehusets vanlige prosedyrer uavhengig om pasienten inngår i studien eller ikke.

Kontaktperson: Valborg Helseth, Blakstad sykehus, pb.143, 1371 Asker

Tlf. 66751505

SAMTYKKEERKLÆRING

Prosjekt: Forløpsstudie av alkohol, narkotika – og medikamentmisbruk hos innlagte pasienter med mulig psykosediagnose

Prosjektleder: Valborg Helseth, overlege Blakstad sykehus

Jeg er villig til å bli intervjuet av…….(navn på intervjuer) i en undersøkelse for å kartlegge evt rusmisbruk hos en gruppe innlagte pasienter.
Jeg er blitt orientert om hensikten med og innholdet i intervjuene samt den rutinemessige blod-og urinprøvetagingen.

Jeg er orientert om at alle opplysninger jeg gir, vil bli behandlet strengt konfidensielt. Opplysningene som gis vil ikke på noen måte virke negativt inn i forhold til mitt opphold på sykehuset. Behandlingen på sykehuset vil bli den samme om jeg blir med i undersøkelsen eller ikke.

Jeg er også orientert om at deltagelse i kartleggingsstudien er frivillig og at jeg derfor når som helst kan trekke meg fra videre intervjuer.

Sted:…… Dato:……

Navn:……(blokkbokstaver)

Signatur:…….

Forespørsel om deltakelse i forskningsprosjektet

"PSYKOSER OG STEMNINGSLIDELSER

MED RUSMIDDELBRUK"

Bakgrunn

Dette er et spørsmål til deg om å delta i en forskningsstudie for å utvikle kartleggings– og diagnoseverktøy som tar hensyn til de diagnoseproblemene som kan oppstå når pasientene bruker ulike rusmidler (dvs. alkohol, medikamenter, narkotika). Det er ofte usikkerhet rundt hvilke psykiske symptomer/plager som evt. kan skyldes rusmidlenes virkning – og hvilke symptomer som vil være tilstede også uten bruk av rusmidler (og som eventuelt forverres av rusmidler). Utvikling av et bedre diagnoseverktøy er derfor viktig for å gjøre denne usikkerheten mindre når man gir pasienter en diagnose. Det mest omfattende diagnoseintervjuet som hittil er utviklet er PRISM (Psychiatric Research Interview for Substance and Mental Disorders) som er utviklet ved Columbia-universitetet i USA. Senter for Rus- og Avhengighetsforskning ved Universitetet i Oslo, ved stipendiat Valborg Helseth, er ansvarlig for studien og ønsker nå å teste ut den første norske PRISM versjonen ved Blakstad sykehus. Vi ønsker også å kunne utarbeide en oversikt over forekomsten av rusmiddelbruk hos akuttinnlagte pasienter.

Hva innebærer studien?

PRISM vil brukes for å intervjue pasienter som innlegges ved akuttavdelingen Blakstad sykehus. Intervjuet er vitenskapelig standardisert og mer omfattende enn et innkomstintervju. Opplysninger som samles inn er en nøyaktig kartlegging av rusmiddelbruk (tidligere og nåværende), psykiatrisk diagnose og eventuelle tidligere straffbare forhold som kan belyse diagnostiseringen nærmere. Ved gjennomført intervju utbetales et honorar på kr. 300 fordi du bidrar til metodeutprøving i norsk rus- og psykiatriforskning.

Før PRISM intervjuet kommer vi til å be deg fylle ut to kortfattete spørreskjemaer om rusmiddelbruk.

Hva skjer med informasjonen om deg?

Informasjonen som registreres om deg skal kun brukes slik som beskrevet i hensikten med studien. Medarbeiderne i studien har taushetsplikt. Alle opplysningene vil bli behandlet uten navn og fødselsnummer/direkte gjenkjennende opplysninger. En kode knytter deg til dine opplysninger gjennom en navneliste. Det er kun autorisert personell knyttet til prosjektet som har adgang til navnelisten og som kan finne tilbake til deg. Det vil ikke være mulig å identifisere

deg i resultatene av studien når disse publiseres. Hvis du sier ja til å delta i studien, har du rett til å få innsyn i hvilke opplysninger som er registrert om deg. Du har videre rett til å få korrigert eventuelle feil i de opplysningene vi har registrert. Du kan når som helst få dine opplysninger slettet ved å kontakte prosjektleder. Bare medarbeidere som er direkte knyttet til prosjektet har tilgang til datamaterialet. Dersom en oppfølgingsstudie blir aktuelt senere, vil du bli kontaktet med en forespørsel om deltakelse i god tid før studien starter. Datamaterialet og navneliste blir oppbevart ved Universitetet i Oslo og blir senest slettet i 2020.

Frivillig deltakelse
Det er frivillig å delta i studien. Dersom du ikke ønsker å delta, trenger du ikke å oppgi noen grunn, og det får ingen konsekvenser for den videre behandlingen du får ved sykehuset. Du kan når som helst trekke deg fra studien. Deltakelse i studien kan bare få innvirkning på behandlingen dersom du ønsker at resultatet av diagnoseintervjuet formidles til behandleren din ved sykehuset.

Dersom du ønsker å delta, undertegner du samtykkeerklæringen nedenfor. Om du nå sier ja til å delta, kan du senere trekke tilbake ditt samtykke uten at det påvirker din øvrige behandling på sykehuset. Dersom du senere ønsker å trekke deg, kan du kontakte stipendiat/overlege Valborg Helseth (tlf. 66 75 19 10 / 23 36 89 34).

Samtykkeerklæring: Jeg er villig til å delta i studien	Jeg bekrefter å ha gitt informasjon om studien:
---------- (Signert av prosjektdeltaker, dato)	---------- ---------- (Signert, rolle i studien, dato)

Prosjektdeltaker er vurdert som samtykkekompetent i forhold til deltakelse i studien
---------- (Signert av faglig ansvarlig, dato)

Protokoll for prosjektet: Psykoser og stemningslidelser med rusmiddelbruk; utprøving av det diagnostiske intervjuet Psychiatric Research Interview for Substance and Mental Disorders (PRISM)

Prosjektleder: Valborg Helene Helseth, klinisk stipendiat UiO/overlege Sykehuset Asker og Bærum HF divisjon psykisk helse

TIDSPUNKT	**TILTAK**	**ANSVARLIG**
Innen ett døgn etter innleggelse	**Inklusjonsvurdering**: Pasienter 18-65 år • Psykose (positive psykotiske symptomer og/eller tidligere psykosediagnose) og/eller • Stemningslidelse	Prosjektleder og vakthavende lege
Innen ett døgn etter innleggelse	**Eksklusjonsvurdering**: • Språkproblemer • Stor kognitiv svikt • Organisk lidelse som påvirker utfall av intervju	Prosjektleder og vakthavende lege
Innen tre døgn etter innleggelse	**Screening**: AUDIT (Alcohol Use Disorder Identification Test) DUDIT (Drug Use Disorder Identification Test)	Prosjektleder og ”skjemaansvarlig” i avdelingen
Etter screening	**Informasjon** om prosjektet og **samtykkeerklæring**	Prosjektleder og prosjektmedarbeidere
Når samtykke er gitt og pasienten er klinisk tilgjengelig	**PRISM** (Psychiatric Research Interview for Substance and Mental Disorders) intervju	Prosjektleder og prosjektmedarbeidere
Når intervjuet er ferdigkodet	**Evt. journal** informasjon om PRISM resultat (forutsatt at pasienten har gitt skriftlig tillatelse)	Prosjektleder

Informasjon til Avdeling for akuttpsykiatri om forskningsprosjektet

"Psykoser og stemningslidelser med rusmiddelbruk; utprøving av det diagnostiske intervjuet Psychiatric Research Interview for Substance and Mental Disorders (PRISM)"

Vi ønsker å undersøke **pasienter mellom 18 og 65 år som innlegges p.g.a. psykose og/eller stemningslidelse og som har brukt rusmidler siste måned før innleggelsen.**

For inklusjon i psykosegruppen kreves positive psykotiske symptomer og/eller tidligere diagnostisert psykotisk lidelse.

I stemningslidelsegruppen inkluderes pasienter med depresjon/dystymi/cyclotymi/hypomani/mani.

Med rusmiddelbruk menes bruk av alkohol, narkotiske stoffer og/eller bruk av medikamenter utover det som er forskrevet av lege.

Formålet med prosjektet er en grundig diagnostisering av pasienter med kompliserende rusmiddelbruk. Vi ønsker å finne mer ut av hvor mange av pasientene som har rusmiddelinduserte lidelser og hvor mange som har primær psykiatrisk sykdom komplisert med rusmiddelproblemer.

Overlege Jon Johnsen, overlege Tone Lykke-Enger og stipendiat/overlege Valborg Helseth vil gjennomføre PRISM intervju på pasientene. Dette intervjuet er konstruert slik at man tar hensyn til de diagnostiske problemene som oppstår når pasienter bruker ulike rusmidler.

Forut for PRISM intervjuet skal det gjøres en rask screening på rusmiddelbruk (selvutfyllingsskjemaer). Vi vil sette stor pris på hjelp fra miljøkontaktene for å sikre at aktuelle pasienter fyller ut disse skjemaene. Trine Asskildt vil sammen med oss sørge for at aktuelle pasienter får skjemaene.

Selvutfyllingsskjema for alkohol er AUDIT, tilsvarende for stoff og medikamenter er DUDIT.

AUDIT fylles ut dersom det er opplysninger om alkoholbruk utover det som anses som vanlig, sosial bruk.

DUDIT fylles ut dersom det har vært pille- eller stoffmisbruk uavhengig av mengden.

For at vi skal vite hvilke pasienter selvutfyllingsskjemaene gjelder for, kan dere skrive med blyant pasientens initialer i omvendt rekkefølge (eks. Hans Norman Olsen blir ONH o.s.v.). Vi vil siden pusse ut initialene og gi skjemaene et referansenummer slik at skjemaene oppbevares avidentifisert.

Vi ser fram til et hyggelig og godt samarbeid de neste månedene!

Blakstad, 15.november 2007

Med vennlig hilsen fra

Jon Johnsen, Tone Lykke-Enger og Valborg Helseth

Hvis dere har spørsmål, ikke nøl med å kontakte oss:

Valborg Helseth tlf 66 75 19 10 eller 90 13 87 54

e-post: vhelse@sabhf.no

Tone Lykke-Enger tlf. 97 59 71 09

e-post: tone.lykke-enger@sabhf.no

Jon Johnsen tlf. 91 18 54 65

e-post. jon.johnsen@sabhf.no

SAMTYKKE-ERKLÆRING

Prosjekt: PSYKOSER OG STEMNINGSLIDELSER MED SAMTIDIG RUSMIDDELBRUK

Utprøving av det diagnostiske intervjuet PRISM (Psychiatric Research Interview for Substance and Mental Disorders)

Prosjektleder: Valborg Helseth, Universitetet i Oslo / Sykehuset Asker og Bærum

Jeg er villig til å bli intervjuet av …….

(navn på intervjuer) i en undersøkelse hvor hensikten er å forbedre diagnostiseringen innen rus/psykiatri feltet.

Jeg har mottatt skriftlig og muntlig informasjon og er villig til å delta i studien.

Jeg er orientert om at alle opplysningene jeg gir, vil bli behandlet strengt konfidensielt. Opplysningene som gis, vil ikke på noen måte virke negativt inn i forhold til mitt opphold på sykehuset.

Jeg er også orientert om at deltakelse i diagnosestudien er frivillig og at jeg derfor når som helst kan trekke meg fra intervjuet.

Sted: …… *Dato: ……..*

Navn: ……(blokkbokstaver)

Signatur ……

BEKREFTELSE

Jeg bekrefter å ha gitt tilstrekkelig informasjon om studien:

……(dato, signatur)

SAMTYKKE

I FORBINDELSE MED FORSKNINGSPROSJEKTET ”PSYKOSER OG STEMNINGSLIDELSER MED RUSMIDDELBRUK”

Undertegnede …….gir tillatelse til at totalskåren på selvutfyllingsskjemaene for rus (AUDIT og DUDIT) sammen med resultatet av diagnoseintervjuet PRISM føres inn i min pasientjournal ved Sykehuset Asker og Bærum divisjon psykisk helse.

Dato:……

Underskrift: ……

AUDIT Alcohol Use Disorder Identification Test

Saunders, JB., Aasland O.G., Babor T:F., De La Fuenta J.R., Grant, M.

Her er noen spørsmål om din bruk av alkohol siste 12 måneder. Vi er takknemlige om du svarer så grundig og ærlig som mulig ved å markere det alternativ som gjelder for deg.

1. Hvor ofte drikker du alkohol?	Aldri	Månedlig eller sjeldnere	2-4 ganger i måneden	2-3 ganger i uken	4 ganger i uken eller mer
	☐	☐	☐	☐	☐
2. Hvor mange alkoholenheter tar du på en typisk drikkedag? (En alkoholenhet er: 1 glass vin, 1 drink, en liten flaske pils, 33 l)	1-2	3-4	5-6	7-9	10 eller flere
	☐	☐	☐	☐	☐
3. Hvor ofte drikker du seks alkoholenheter eller mer på en gang?	Aldri	Sjeldnere enn månedlig	Noen ganger i måneden	Noen ganger i uken	Daglig eller nesten daglig
	☐	☐	☐	☐	☐
4. Hvor ofte har du i løpet av det siste året ikke vært i stand til å stoppe å drikke alkohol etter at du hadde begynt?	Aldri	Sjeldnere enn månedlig	Noen ganger i måneden	Noen ganger i uken	Daglig eller nesten daglig
	☐	☐	☐	☐	☐
5. Hvor ofte har du i løpet av det siste året unnlatt å gjøre ting du skulle gjort på grunn av drikking?	Aldri	Sjeldnere enn månedlig	Noen ganger i måneden	Noen ganger i uken	Daglig eller nesten daglig
	☐	☐	☐	☐	☐
6. Hvor ofte har du i løpet av det siste året trengt en drink om morgenen for å komme i gang etter sterk drikking dagen før?	Aldri	Sjeldnere enn månedlig	Noen ganger i måneden	Noen ganger i uken	Daglig eller nesten daglig
	☐	☐	☐	☐	☐
7. Hvor ofte har du i løpet av det siste året hatt skyldfølelse eller samvittighetsnag på grunn av drikking?	Aldri	Sjeldnere enn månedlig	Noen ganger i måneden	Noen ganger i uken	Daglig eller nesten daglig
	☐	☐	☐	☐	☐
8. Hvor ofte har du i løpet av det siste året ikke husket hva som hendte kvelden før på grunn av drikking?	Aldri	Sjeldnere enn månedlig	Noen ganger i måneden	Noen ganger i uken	Daglig eller nesten daglig
	☐	☐	☐	☐	☐
9. Har du eller noen andre blitt skadet som følge av drikkingen din?	Nei		Ja, men ikke det siste året		Ja, det siste året
	☐		☐		☐
10. Har en slektning eller venn, lege eller sykepleier, eller noen andre engstet seg over drikkingen din, eller antydet at du burde redusere?	Nei		Ja, men ikke i løpet av siste år		Ja, i løpet av siste år
	☐		☐		☐

DUDIT Drug Use Disorders Identification Test

Her vil vi stille deg noen spørsmål om bruk av stoff. Vi er takknemlige for at du svarer grundig og ærlig på de alternativene som passer for deg.

Mann □	Kvinne □			Alder:	
1. Hvor ofte bruker du andre rusmidler/stoff enn alkohol? (Se listen over andre rusmidler)	**Aldri** □	**1 gang i måneden eller sjeldnere** □	**2-4 ganger i måneden** □	**2-3 ganger i uken** □	**4 ganger i uken eller mer** □
2. Bruker du flere typer stoff samtidig?	**Aldri** □	**1 gang i måneden eller sjeldnere** □	**2-4 ganger i måneden** □	**2-3 ganger i uken** □	**4 ganger i uken eller mer** □
3. Når du bruker stoff, hvor mange ganger i løpet av en typisk dag tar du da stoff?	**0** □	**1-2** □	**3-4** □	**5-6** □	**7 eller flere** □
4. Hvor ofte blir du kraftig påvirket av stoff?	**Aldri** □	**Sjeldnere enn en gang i måneden** □	**Hver måned** □	**Hver uke** □	**Daglig eller nesten hver dag** □
5. Har du det siste året opplevd at suget etter stoff har vært så sterkt at du ikke kunne stå i mot?	**Aldri** □	**Sjeldnere enn en gang i måneden** □	**Hver måned** □	**Hver uke** □	**Daglig eller nesten hver dag** □
6. Har det i løpet av det siste året hendt at du ikke har klart å slutte å ta stoff når du først har begynt?	**Aldri** □	**Sjeldnere enn en gang i måneden** □	**Hver måned** □	**Hver uke** □	**Daglig eller nesten hver dag** □
7. Hvor ofte i løpet av det siste året unnlot du å gjøre ting du skulle ha gjort p.g.a. stoffbruk?	**Aldri** □	**Sjeldnere enn en gang i måneden** □	**Hver måned** □	**Hver uke** □	**Daglig eller nesten hver dag** □
8. Hvor ofte i løpet av det siste året har du startet dagen med å ta stoff etter stort stoffinntak dagen før?	**Aldri** □	**Sjeldnere enn en gang i måneden** □	**Hver måned** □	**Hver uke** □	**Daglig eller nesten hver dag** □
9. Hvor ofte i løpet av det siste året har du hatt skyldfølelse eller dårlig samvittighet fordi du har brukt stoff?	**Aldri** □	**Sjeldnere enn en gang i måneden** □	**Hver måned** □	**Hver uke** □	**Daglig eller nesten hver dag** □
10. Har du eller noen andre blitt skadet (psykisk eller fysisk) på grunn av din bruk av stoff?	**Nei** □		**Ja, men ikke det siste året** □		**Ja, det siste året** □
11. Har en slektning eller venn, lege eller annen helsearbeider (eller noen andre), vært bekymret over din bruk av stoff, eller foreslått at du bør slutte med stoff?	**Nei** □		**Ja, men ikke det siste året** □		**Ja, det siste året** □

LISTE OVER NARKOTISKE STOFFER (OBS! IKKE ALKOHOL)

Sett et kryss ved de stoffene du har brukt det siste året.

Skriv på linja under hvilket stoff/rusmiddel du har brukt mest det siste året?

……..

Cannabis	**Amfetamin**	**Kokain**	**Opiater**	**Hallucinogener**	**Løsningsmiddel**	**GHB och øvrige**
Marijuana Hasj Hasjolje	Metamfetamin Fenmetralin Khat Betelnøtt Ritalin	Crack Freebase Kokablad	Røykeheroin Heroin Opium	Ecstasy LSD Meskalin Peyote PCP Psylocibin DMT	Thinner Trikloretylen Bensin Gas Solution Lim	GHB Anabola steroider Lystgasss Amylnitrat (poppers) Antikolinergika

TABLETTER – LEGEMIDLER

Tabletter regnes som narkotiske stoffer når du tar:

- legemidler mer eller oftere enn legen har foreskrevet
- tabletter for å ha det moro, føle deg bra, bli "høy", eller prøve ut effekten av dem
- tabletter som du har fått av en slektning eller venn
- tar tabletter som du har kjøpt "svart" eller stjålet

Beroligende legemidler		Og/eller sovetabletter	Smertestillende legemidler		
Alprazolam Apodorm Apozepam Alopam Atarax Diazepam Dormicum Fenemal Flunitrazepam	Halcion Heminevrin Imovane Mogadon Nitrazepam Oxazepam Persedon Rohypnol Serepax	Sobril Somadril Sonata Stesolid Stilnoct Temesta Triazolam Valium Xanor	Adrinex Coccelana Citodon Dexodon Dexofen Dilauid Distalgesic Dolcontin Doleron Dolotard Doloxene	Durogesic Fortalgesic Hydromorfonklorid Ketodur Ketogan Kodein Metadon Morfin Scopolamin Nobligan	Norgesic Oxikon Panocod Paraflex comp Spasmofen Subutex Temgesic Tiparol Tradolan Tramadul Treo comp

Tabletter regnes ikke som narkotiske stoffer når de er foreskrevet av lege og du tar dem slik legen sier at du skal (både mengde og hyppighet).