Dual diagnoses – Substance Use Disorder and Severe Mental Illness.
Part 1 – Accuracy of screening- and diagnostic instruments

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The excerpt provides the report's main messages in English.

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Norwegian Knowledge Centre for the Health Services
Oslo, December 2007

Executive summary

Dual diagnoses – Substance Use Disorder and Severe Mental Illness
Part 1 – Accuracy of screening- and diagnostic instruments

BACKGROUND

This review summarises accuracy studies concerning screening and diagnostic studies for Substance Use Disorder (SUD) and Severe Mental Illness (SMI). The aim is:

- To determine which screening tests or diagnostic tests are better to uncover SUD in a population with SMI?

- To determine which screening tests or diagnostic tests are better to uncover SMI in a population with SUD?

In studies of diagnostic accuracy, the outcomes from one or more tests under evaluation are compared with outcomes from the reference standard. In such studies, measurements are undertaken in subjects who are suspected of having the condition of interest. Reporting of results of diagnostic accuracy vary, making it difficult to draw comparisons. Some tools may be more appropriate for one population (i.e. schizophrenic) than another (i.e. severe depression). The level of user friendliness of a particular tool for both patient and professional may be crucial, but might not be reported. In addition there is a need to define current and lifetime disease for people with SUD or SMI.

Prevalence

Population studies from Europe and USA show that mental illness and SUD often coincide (comorbidity). The more serious the SUD is, the higher the probability of mental illness (6;7).
Studies from *treatment* populations are mainly done for in-patients. Studies reporting prevalence of SMI from patients in SUD rehabilitation varies. The most common mental illnesses in the in-patient SUD population in Norway is anxiety (8-66 %, median 38 %), depression (16-44 %, median 30 %) and personality disturbances (11-100 %, median 61 %) (8).
Several studies have mapped harmful use, misuse or dependence of legal and illegal drugs and alcohol among people with SMI. Quite a few of these studies show an increased prevalence of SUD for SMI patients, especially for the most severe SMI diagnoses. (5;9-14).

RESULT

We appraised 121 studies in full text and 19 with high or moderate methodological were included.

Screening tests for SUD in patients with SMI:

Alcohol disorders
Eight studies, 1208 participants, investigated screening tools aiming to identify alcohol disorders. The following five tests used were:

- ASI (Addiction Severity Index), AUDIT (Alcohol Use Disorders Identification Test)
- CAGE (Cut down, Annoyed, Guilty, Eye Opener)
- CUAD (Chemical Use, Abuse and Dependence Scale)
- DALI (Dartmouth Assessment of Lifestyle Instrument)

According to the evidence, CAGE is best able to identify alcohol disorder (LR+ 13, 7), both current and lifetime. The rest of the studies did not report likelihood ratio or the likelihood was reported as low. The AUDIT reports an area under the curve (AUROC-curve) ROC-kurven of 0, 95. This means that the tests ability to identify patients with alcohol disorder and not identify those without, is high. The studies appraising ASI, CUAD and DALI did not report figures which could decide diagnostic accuracy.

Drug disorders
Five studies, including 1062 participants, investigated screening tools aiming to identify drug disorders. The five tests used were:

- ASI (Addiction Severity Index)
- CUAD (Chemical Use, Abuse and Dependence Scale)
- DALI (Dartmouth Assessment of Lifestyle Instrument)
- DAST (Drug Abuse Screening Test)
-SDS (Severity of Dependence Scale)

The studies reported on different drug abuse populations. The evidence base did not report figures which could decide diagnostic accuracy.

Substance use Disorder
Two studies, including 235 participants, investigated screening tools aiming to identify Substance Use Disorder in general. The two tests used were:

- CAAPE (Comprehensive Addictions and Psychological Evaluation) and
- RAFFT (Relax, Alone, Friends, Family, Trouble)

According to the evidence RAFFT had a LR+ of 2.5. Likelihood ratio was not reported for CAAPE.

Screening tests for SMI in patients with SUD:

Affective Disorders
Three studies, including 882 participants, investigated screening tools aiming to identify affective disorders. The four tests used were:

- ASI (Addiction Severity Index)
- BDI (Beck's Depression Inventory)
- PDSQ (Psychiatric Diagnostic Screening Questionnaire)
- SCL-90-R (Revised Symptom Checklist 90)

The evidence base suggests that PDSQs could identify mania well (SaR+ 21). The rest of the studies did not report likelihood ratio or it was reported as low. The ASI and BDI studies showed low ability to identify patients with affective disorders SCL-90-R reported an area under the curve (AUROC-curve) ROC-kurven of 0, 85 which isn't considered high.

Psychotic- and personality disorders
Two studies, including 447 participants, investigated screening tools aiming to identify psychotic- and personality disorders. The two tests used were:

- Addiction Severity Index (ASI)
- Psychiatric Diagnostic, Screening Questionnaire (PDSQ).

The evidence base did not report figures which could decide diagnostic accuracy.

Diagnostic tests

As reference standards CIDI, LEAD, MINI, SCID and thorough clinical evaluation were chosen. The reference standards were seen as good diagnostic tools.

Three studies, including 336 participants, investigated diagnostic tests. The three tests used were:

- C-DIS (Computerized Diagnostic Interview Schedule)
- MMPI (Minnesota Multiphasic Personality Inventory) and
- PRISM (Psychiatric Research Interview for Substance and Mental Disorders)

C-DIS-study reported diagnosing antisocial personality disorder and severe depression. The MMPI study reported depression. None of the tests showed good diagnostic accuracy (LR+ under 10). PRISM showed good concordance with reference standard, reporting a kappa between 0,63 and 0,90 (usually considered good) for borderline personality disorders, alcohol dependence, heroin dependence and severe depression.

DISCUSSION

The prevalence studies reporting on dual diagnoses vary widely, depending on methods and population, indicating that prevalence of comorbidity of SMI and SUD is difficult to screen and diagnose accurately. Different population might need different instruments.

This review aims to summarise the evidence of diagnostic accuracy for SMI and SUD. The review includes studies that use a reference standard and research methods which enable the calculation of diagnostic accuracy. This approach delivers a high level of accuracy and considerable precision in results, however it should be noted that some measurement tools that may be clinically relevant, may have been excluded from the review due to the research methodology employed.

The Norwegian Knowledge Centre for the Health Services summarises and disseminates evidence concerning the effect of treatments, methods, and interventions in severe depression health services, in addition to monitoring health service quality. Our goal is to support good decision making in order to provide patients in Norway with the best possible care. The Centre is organized under The Directorate for Health and Social Affairs, but is scientifically and professionally independent. The Centre has no authority to develop health policy or responsibility to implement policies.

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