Assessment of personality problems among patients with substance use disorders

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ABSTRACT
AIM – Several studies have shown that personality disorders (PDs) are frequently occurring among patients with substance use disorders (SUDs). A development from research of co-occurrence estimates in this patient group investigates personality problems as dimensional constructs, which seek to capture the core of personality pathology. The aim of our study was to explore whether personality problems might be assessed among SUD patients in early stages of treatment. We also sought to investigate personality problem severity among Norwegian adult SUD patients. – DESIGN – Personality problems were assessed using the self-report questionnaire Severity Indices of Personality Problems (SIPP-118). The study sample consisted of 155 SUD patients currently in treatment at detoxification sections at Oslo University Hospital. RESULTS – Though psychometric evaluation of the SIPP-118, we found that personality problems could be assessed with high levels of internal consistency and convergent validity in SUD patients during detoxification. This is an important contribution to the discussion concerning time and context of personality pathology assessment in the SUD treatment field. The results indicated that SUD patients have personality problems at a level of severity comparable to previously investigated PD patient samples, and significantly more severe than personality problems found in normal population samples. This indicates that personality problems are a common, as well as a detrimental, feature among SUD patients, which further points towards considering these in all aspects of SUD treatment. CONCLUSIONS – Assessing personality problems early in treatment may enable a more integrated approach to SUD treatment targeting personality problems and substance-related problems. KEYWORDS – assessment, personality problems, personality pathology, substance use disorders, SUD, SIPP-118, substance use disorder treatment

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Introduction
Co-occurrence of substance use disorder (SUD) and personality disorder (PD) is associated with greater functional impairment and mutual deterioration of the prognoses (Karterud, Wilberg, & Urnes, 2010; Trull, Sher, Minks-Brown, Durbin, & Burr, 2000), indicating a need for increased focus on creating effective treatments to meet the needs of these patients. With increased focus on patients with co-occurring SUD and mental disorders, it has become all the more important to assess personality pathology within the SUD field. A traditional assumption among clinicians working with patients with SUDs has been that one must wait until a period of abstinence before assessing personality pathology (Marlowe, Husband, Bonieskie, Kirby, & Platt, 1997). This corresponds to the DSM-5 PD diagnostic guidelines stat-
ing that a diagnosis of PD should be based not “…solely on behaviors that are consequences of substance intoxication or withdrawal or that are associated with activities in the service of sustaining substance use” (American Psychiatric Association, 2013, p. 649).

There are a number of recognised concerns regarding assessment of personality problems among SUD patients in early stages of treatment such as during detoxification, but there may also be several benefits to conducting personality problem assessment in an early treatment phase. One is the possibility of addressing personality problems when establishing a working alliance and thus preventing premature dropout, which is considered a problem when working with patients with co-occurring SUD and personality pathology (Brorson, Arnevik, Rand-Hendriksen, & Duckert, 2013; Kofoed, Kania, Walsh, & Atkinson, 1986; Ravndal, Vaglum, & Lauritzen, 2005; Verheul, 2001). Personality problem assessment may also inform the clinician of what further treatment will work best for whom, and may thus have treatment-matching implications (Verheul, 2001). Lastly assessing personality gives a more complete understanding of the functioning of the individual patient, which there is good reason to obtain as early as possible.

Discussing the relationship between PDs and SUDs is relevant when exploring both of these in a clinical sample. There has been research into whether SUDs can contribute to, or cause personality problems, or vice versa. Reviewing literature on the relationship between SUD and BPD, Trull et al. (2000) argue that SUD can contribute to aspects of personality problems. The substances’ neurological and neurotoxic effects are important to consider in this regard. Examples are serotonin depletion from high intake of alcohol, leading to impulsivity (Carver & Miller, 2006), or the substances’ effect on neurodevelopment, leading to difficulties with executive functions important for self-regulation and problem solving among other things (Trenz et al., 2012). Another explanation for the association is the possibility that individuals with personality problems may turn to substances to self-medicate affective or interpersonal disturbances, thus influencing the development of SUDs (Flores, 2001). Yet another possibility is that SUDs and PDs are both caused by a common factor, such as childhood traumas or genetic factors (Sher & Trull, 2002). A fourth option is that co-occurring SUDs and personality problems maintain each other. There is some evidence that SUDs increase the chronicity of BPD, and that BPD increases the chronicity of SUDs (Trull et al., 2000). To date, there is no evidence solidly supporting one influence over the other.

Personality consists both of traits and structures that characterise personality as well as the functions that these traits and structures perform, and the adaptive purposes they serve (Livesley & Jang, 2000). As stated by Allport (1937, p. 48): “Personality is something, and personality does something”. What personality does, the functional domain of personality, can be labelled adaptive capacities (Bastiaansen, De Fruyt, Rossi, Schotte, & Hofmans, 2013). When the adaptive capacities are maladaptive, they can be referred to as personality problems (Andrea et al., 2007). The dysfunction of the adaptive capacities – personality problems – are believed to
form the core components of PDs (Livesley & Jang, 2005). In the alternative criteria for PDs in the Diagnostic and Statistical Manual of Mental Disorders, 5th ed. (DSM-5), it is proposed that PDs are characterised by significant impairments in self- and interpersonal functioning (American Psychiatric Association, 2013). The adaptive capacities are also believed to be dimensional phenomena, meaning that more severe personality pathology is related to less adaptive capacities, and thus more severe personality problems. When assessing personality problems in SUD patients, we are interested in the domains of personality that can instruct treatment and be the target for therapeutic strategies and change. Adaptive capacities may be a theoretical construct that can help us do that.

The theoretical construct adaptive capacities is in accordance with a perspective that normal and pathological personality functioning is distributed dimensionally, a view currently held by many researchers (Arnevik, Wilberg, Monsen, Andrea, & Karterud, 2009). This is a conceptualisation different from a categorical model of PDs, with normal and abnormal personality belonging to qualitatively different domains. A clinical instrument used widely in the categorical model of personality pathology is the Structured Clinical Interview for DSM-IV Personality Disorders (SCID-II), corresponding to DSM-IV diagnostic criteria for PDs. During the last years, several models have been developed in accordance with the dimensional understanding. Many of these share an assumption that personality pathology and the severity of this pathology is manifested in a person’s maladaptive behaviour related to self as well as in interpersonal relations (Berghuis, Kamphuis, & Verheul, 2014). Among instruments corresponding to these models is the Dimensional Assessment of Personality Pathology – Basic Questionnaire (DAPP-BQ) (van Kampen, 2002), the General Assessment of Personality Disorders (Berghuis, Kamphuis, Verheul, Larstone, & Livesley, 2013) and the Severity Indices of Personality Problems (SIPP-118).

The Severity Indices of Personality Problems (SIPP-118) is an instrument that aims to measure the individual’s levels of adaptive capacities at a given time, and can indicate in which areas of personality functioning treatment is needed and which areas are adaptive and resourceful (Verheul et al., 2008). Furthermore, the SIPP-118 can be used as a measure of change due to treatment, indicating which capacities have improved and become more adaptive (Verheul et al., 2008). The SIPP-118 has so far been tested within six populations. In the initial validity study of the SIPP-118, personality problems were assessed in a Dutch PD sample (N=555), a Dutch normal population sample (N=478) and a sample from a psychiatric outpatient unit (N=157) (Andrea et al., 2007). Personality problems in a Norwegian PD sample (N=114) were assessed in the Ullevål Personality Project (Arnevik et al., 2009). The SIPP-118 has also been tested with a Dutch clinical and non-clinical adolescent sample (Feenstra, Hutsebaut, Verheul, & Busschbach, 2011). Overall, the SIPP-118 shows promising psychometric properties, is widely used for assessing personality problems at specialised treatment facilities for patients with PDs throughout Norway, and addresses the adaptive capacities not formally limited to abstinence.
Important questions concern when and where assessment of personality problems should and could be conducted. As questionnaire administration context can affect response accuracy (Del Boca & Noll, 2000), we wanted to investigate whether we could assess personality problems, with high internal consistency and convergent validity, using the SIPP-118 among SUD patients in detoxification. We sought to explore the severity of personality problems among our study sample by comparing their personality problems to personality problems among one normal population sample and two clinical samples.

Method
Sample
The study sample consists of 155 participants, with a mean age of 42 years (SD=11.7). Of the sample, 61% were male (see table 1). Participants were inpatients at two detoxification sections at the Oslo University Hospital. Before admission to treatment, an interdisciplinary team evaluates the patients. Patients who meet diagnostic SUD criteria according to the ICD-10 diagnostic system and meet additional criteria regarding need for treatment, severity and prospects of improvement according to the national guidelines (Helsedirektoratet, 2012b) are given legal right to specialist health care treatment. All the study participants were evaluated and admitted to SUD specialist health care treatment. The sample was divided into five subgroups based on the nature of their primary preferred substance (Campbell et al., 2013; Fridell & Hesse, 2006) for statistical analyses. These five groups were alcohol, opiates (including heroin, Methadone/Subutex and other opiates), stimulants (amphetamines, cocaine and cannabis (Stewart, Dewit, & Eikelboom, 1984)), tranquilisers (medicines, pills) and other substances. Two thirds of the sample reported daily polysubstance use.

The sample was divided into six groups with regard to route of administration for primary preferred substance; oral administration, nasal administration, smoking, non-intravenous injection, intravenous injection and multiple routes of administration. Age of substance use debut was split into three groups for analyses: very low age of debut (earliest age (7 years) → 13 years), low age of debut (14–16 years) and moderate to high age of debut (17 years → oldest (52 years)).

Because of limited time and resources, as well as concerns regarding accuracy of self-report, no data on co-occurring axis I or axis II pathology was collected for the present study. A number of previous studies have found that there is a high prevalence of mental disorders among SUD patients in treatment, including mood disorders, anxiety and post-traumatic stress disorder and PDs (Conway, Kane, Ball, Poling, & Rounsaville, 2003; Flynn & Brown, 2008; Folkehelseinstituttet, 2014).

One normal population sample and one clinical sample from the initial validity study of the SIPP-118 as well as one Norwegian clinical sample were used for comparing levels of personality problem severity to the SUD sample. The Dutch normal population sample included 478 individuals who participated in a postal personality survey. The sample had a mean age of 36 years (SD = 11.6), and 32% were men. The Dutch clinical sample comprised 555 patients diagnosed with PD who at the time of participation were admitted.
Participants were recruited through weekly participation at collective afternoon meetings at the detoxification sections, where patients were given brief information about the study and participation. No incentive was offered, and the voluntary nature of participation was emphasised. Patients were explicitly informed that choice of participation would have no consequences for further or current treatment (Del Boca & Noll, 2000). Patients with insufficient command of the Norwegian language, in acute crisis or other severe condition were not requested to participate. All data was treated without name, national identity number or other pieces of identifying information.

The usual length of treatment at the detoxification sections is approximately 10 days. For some patients, this is their first encounter with SUD treatment, while other patients have been through several earlier detoxification stays as well as longer duration treatments. The detoxification sections each have 15 beds, and patients are replaced each day, making the patient groups unstable. In addition to internal insecurity and an unstable external context, many detoxification patients may struggle with abstinence pains, withdrawal symptoms and other physical problems due to recent substance use, which may impact their functioning.

**Design and questionnaire**

The study used a cross-sectional design based on self-report questionnaires. The questionnaire, with 133 items, was developed for the current study to match the research questions of interest. The main part of the questionnaire was the Severity Indices of Personality Problems (SIPP-118),

Table 1. Characteristics of study participants (N=155).

| Characteristic               | N (%) |
|------------------------------|-------|
| Gender, male                 | 94 (61) |
| Education, 12 years or more  | 101 (66) |
| Preferred substance          |       |
| Alcohol                      | 46 (30) |
| Opiates                      | 34 (22) |
| Stimulants                   | 17 (11) |
| Tranquillisers               | 5 (3)  |
| Other/multiple               | 53 (34) |
| Polysubstance use            | 90 (62.5) |
| Route of administration      |       |
| Oral                         | 51 (36) |
| Nasal                        | 9 (6)  |
| Smoking                      | 18 (13) |
| Non-intravenous injection    | 4 (3)  |
| Intravenous injection        | 41 (29) |
| Multiple                     | 18 (13) |
| Age of debut                 |       |
| 7 → 13                       | 58 (38) |
| 14 → 16                      | 58 (38) |
| 17 →                         | 36 (24) |

to outpatient, day hospital or inpatient treatment for personality pathology. This sample had a mean age of 33.9 years (SD = 10.4); 40% were men. The Norwegian sample consisted of 114 poorly functioning day hospital patients with diagnosed PDs at a unit specialised in PD treatment at the Ullevål University Hospital, Oslo. The mean age for this sample was 31 years (SD = 7.4), and 26% of the sample were male.

**Data collecting procedure and context**

Questionnaire data was collected from July 2014 to January 2015. The research protocol was approved by the Regional Ethics Committee (REK) prior to data collection.
used in the operationalisation of personality problems. Five questions asked for demographic data such as gender, age and level of education. The last 10 questions were adapted from the widely used questionnaire European Addiction Severity Index (EuropASI) (Kokkevi et al., 1994). These questions concerned age of substance use debut, primary and secondary preferred substance, polysubstance use, route of administration, age of injection debut, longest period of abstinence and previous treatments.

Operationalisation of personality problems

Personality problems were assessed using the SIPP-118, a self-report questionnaire developed by Dutch and British clinical experts in the field of personality and PDs (Verheul et al., 2008). The questionnaire was primarily developed for research purposes, but is also useful in clinical contexts (Andrea et al., 2007). The SIPP-118 assesses the personality problem profile of an individual at a given time and the severity of these personality problems. In accordance with the alternative perspective for PDs in the DSM-5, the perspective underlying the SIPP-118 is based on a dimensional approach to core components of personality pathology rather than type-based classification systems. The basis of the SIPP-118 is made up of 16 facets, which are unidimensional, generalisable across various types of PDs, have good internal consistency and have shown good test–retest reliability in previous studies on the instrument (Andrea et al., 2007; Verheul et al., 2008).

The SIPP-118 asks respondents to rate the extent to which they agree on 118 different statements when thinking back on the last three months. Examples of statements are: “I know exactly who I am and what I am worth” and “Some people think of me as a rude person”. The response is scored on a 4-point Likert scale, ranging from 1 (“completely disagree”) to 4 (“completely agree”). High scores on the SIPP-118 indicate higher levels of adaptive capacities, whereas lower scores indicate deficient levels of adaptive capacities and thus personality problems (Andrea et al., 2007). For the current study, a version of the SIPP-118 translated to Norwegian was used, showing good reliability at the facet level and good cross-national validity when used with a Norwegian PD patient sample (Arnevik et al., 2009).

Statistical analyses

Data was analysed by the Statistical Program for Social Sciences (SPSS, version 22.0). All predictor and criterion variables represent psychological constructs operationalised on the basis of the study questionnaire. All statistical tests were two-tailed, and an alpha level of .05 was employed.

Reliability analyses were conducted to investigate the internal consistency between the items included in the 16 facets of the SIPP-118, and was estimated using Cronbach’s alpha (α). Acceptable Alpha limits were set to 0.70 for the statistical analyses (DeVon et al., 2007). To compare the severity of personality problems in the study sample to two PD samples and a sample from the normal population, we conducted an analysis of variance (ANOVA) for each facet of the SIPP-118. The data available for conducting these ANOVAs were sample size, mean and standard
Table 2. Reliability of the 16 SIPP-118 facets for three different samples.

| Facets                  | Number of items | Norwegian substance use population (N=155) | Dutch normal population (N=478) | Dutch PD population (N=555) |
|-------------------------|-----------------|-------------------------------------------|---------------------------------|-------------------------------|
| Emotion regulation      | 7               | 0.76                                      | 0.82                            | 0.74                          |
| Effortful control       | 7               | 0.72                                      | 0.72                            | 0.79                          |
| Self-respect            | 8               | 0.80                                      | 0.83                            | 0.81                          |
| Stable self-image       | 7               | 0.76                                      | 0.82                            | 0.74                          |
| Self-reflexive functioning | 7           | 0.80                                      | 0.81                            | 0.74                          |
| Enjoyment               | 7               | 0.75                                      | 0.79                            | 0.75                          |
| Purposefulness          | 7               | 0.79                                      | 0.74                            | 0.74                          |
| Intimacy                | 7               | **0.59**                                  | 0.83                            | 0.80                          |
| Enduring relationships  | 7               | 0.69                                      | 0.75                            | 0.73                          |
| Feeling recognised      | 8               | 0.77                                      | 0.80                            | 0.77                          |
| Responsible industry    | 7               | **0.68**                                  | **0.68**                        | 0.73                          |
| Trustworthiness         | 8               | 0.70                                      | **0.69**                        | 0.78                          |
| Aggression regulation   | 8               | 0.84                                      | 0.79                            | 0.86                          |
| Frustration tolerance   | 8               | 0.78                                      | 0.78                            | 0.73                          |
| Cooperation             | 8               | 0.76                                      | 0.76                            | 0.76                          |
| Respect                 | 7               | **0.62**                                  | **0.65**                        | **0.69**                      |

Note: Low alpha scores are indicated in bold.

deviation (SD) retrieved from Andrea et al. (2007) and Arnevik et al. (2009). This enabled us to conduct ANOVAs using summary data. As SPSS cannot be used for performing these analyses, an online calculator was used (Interactive Statistics, 2015). To test where reliable differences between samples occurred, Tukey HSD post-hoc tests were carried out. To further compare SIPP-118 facet scores between the different samples, we calculated effect sizes, which are commonly used to measure the differences between two means. According to Cohen (1992), $d = .10$ is considered a small, $.50$ a medium and $1.0$ a large effect size. Small effect sizes ($>.10$) indicates no or insignificant differences between the means of the samples, while large effect sizes ($<1.0$) indicates significant differences between the means of the samples (Field, 2009). Cohen’s $d$ was calculated using an online effect size calculator (Psychometrica, 2015).

**Results**

**Internal consistency**

The facets showed alpha scores from 0.59 to 0.84, with a mean estimated alpha score
Figure 1. Mean scores for the 16 SIPP-118 facets in four different samples.

Figure 1 presents SIPP-118 facet scores for the study sample (N=155) compared to a Norwegian PD sample (N=114) (Arnevik et al., 2009), a Dutch PD sample (N=555) and a sample from the Dutch normal population (N=478) (Andrea et al., 2007).

The SUD sample differed from the Dutch normal population sample on a majority of the facets, with effect sizes (Cohen’s $d$) ranging from 0.28 to 1.92 (see table 3). The mean estimated effect size for all facets was 1.06. Comparatively, when looking at the scores between the study sample and Norwegian PD sample, these were similar on a majority of the facets. Effect sizes between these two samples had a range from 0.02 to 0.73, with a mean estimated effect size for all facets of 0.38. Thus, there was an overlapping facet profile and comparable facet scores, as indicated by low to moderate effect sizes, between the Norwegian PD sample (Arnevik et al., 2009) and the Norwegian SUD sample. We found a large mean effect size on all facets between the SUD patients’ scores and the scores of the Dutch normal population sample, in-
indicating that the majority of the 16 SIPP-118 facets were significantly different between these two samples.

**Discussion**

The aim of the study was investigating whether one could assess personality problems with high internal consistency and convergent validity among patients with SUDs during the stage of detoxification. Personality pathology in the study sample was assessed during detoxification despite the general assumption that it should be assessed in a stable phase after months of abstinence (Marlowe et al., 1997). Furthermore, the instrument applied to assess personality problems, the SIPP-118, has not previously been used with SUD patient samples. Both of these factors could affect the questionnaire’s ability to assess personality pathology reliably and validly in the study sample.

Contrary to the context of detoxification for the SUD sample, personality problems measured using the SIPP-118 among PD patients were assessed in a more stable phase, among inpatients receiving long-term day treatment in specialised PD treatment units (Arnevik et al., 2009). Despite a different context for participation as well as differences in sample characteristics, the instrument seems to assess personality functioning with the same level of internal consistency in SUD patients as with patients in specialised PD treatment units, as well as in a Dutch normal population sample. One of the facets with the lowest alpha levels in the current study was in-
timacy, which has shown adequate alpha levels in previous studies of the SIPP-118. This could indicate that the concept of intimacy may be perceived, characterised and understood differently among SUD patients than among other clinical and non-clinical populations. For SUD patients, intimacy might include negative references, such as the experience of shame related to being a substance user (Hughes, 2007; Rounsaville, Gawin, & Kleber, 1985), and ambivalence towards and fear of intimacy (Thorberg & Lyvers, 2006). These aspects might not be adequately captured by the SIPP-118 facet “capacity for intimacy”. Also the facet of respect had low alpha levels in the study. This facet has shown low internal consistency in other studies of the SIPP-118 (Arnevik et al., 2009) and should therefore be subject to further investigation. However, apart from these facets showing low alpha levels, the SIPP-118 seems to have adequate internal consistency when administered to SUD patients.

There are a number of concerns regarding personality problem assessment in SUD patients during detoxification. Among these are considerations concerning the possibility of longer duration abstinence and more distance to substance use, as well as factors concerning stability, security and order at later stages of treatment, which may all impact response accuracy (Del Boca & Noll, 2000). In the context of detoxification with emotional uncertainty and withdrawal states, patients might overestimate the severity of their personality problems (Del Boca & Noll, 2000), or may, on the contrary, underestimate their severity. Contrary to this, a study of Norwegian SUD patients’ levels of personality pathology found that use of the self-report instrument MCMI gave valid clinical information when administered within the first two weeks of treatment initiation (Ravndal et al., 2005). This supports the study findings that personality problems can be assessed during detoxification. There may be many ways to understand the finding that we can assess personality pathology this early. One might be that the instrument measures aspects related to personality pathology, but in a different way from other instruments. Personality pathology measured by the SIPP-118 might be more susceptible to change, more affected by recent substance use, context, withdrawal and abstinence as well as treatment than when measured by other instruments. This would mean that the instrument might be a measure of states rather than traits, which would be a strength of the instrument, making it clinically useful by highlighting aspects that can be targeted in the ongoing treatment as well as highlighting a patients’ current resources. Questions concerning what affects the states measured by the instrument, how sensitive the instrument is to change in state or context or to change due to treatment, is currently not investigated and lies outside the scope of this article. Although, if what the current study indicates is accurate – that personality problems can be assessed with high levels of internal consistency and convergent validity among SUD patients in detoxification – this might indicate that the general assumption that one must wait until a period of abstinence before conducting personality pathology assessment is erroneous. If our findings are replicated with studies using larger samples and more complex designs, this may indicate a need
for change in the clinical practice, where underlying problems, such as personality pathology and not only substance use problems, might be targeted at earlier stages than is the practice of today. This could possibly lead to better treatment.

Another aim of the study was to investigate the severity of personality problems among SUD patients. The comparison of different populations showed that the study sample differed from the normal sample. Differences in characteristics between the samples might be considered in this regard. Considering gender balance, there are significant differences between men and women in PD prevalence rates and patterns (Karterud et al., 2010). However, no significant differences between genders were found when investigating the severity of personality problems among PD patients (Arnevik et al., 2009), indicating that differences in gender balance between the samples does not account for the results. Overall, our results imply that SUD patients have personality problems at a level of severity comparable to PD patients, and significantly more severe than in the normal population. These results strengthen the assumption that the SIPP-118 is a measure of pathology, which means that the questionnaire measures what it was intended to measure (Arnevik et al., 2009), even in the early phase of SUD treatment. As our findings are in accordance with accredited studies showing high SUD-PD co-occurrence, it strengthens the assumption that personality problems are a common feature among SUD patients. Still, many questions concerning personality problems within this patient group remain.

A relevant question concerns whether the findings in the current study are generalisable and whether they can be used to make inferences about other samples of SUD patients. This is a question of the external validity of the study. Because of time and resource considerations, our sample was relatively small (N=155), and it may not be a representative selection from the population of SUD patients. The study sample was highly selected, consisting of patients who had requested SUD treatment, who were in detoxification and who were able to fill out an extensive questionnaire. To increase the generalisability of the finding that SUD patients have severe personality problems, our findings should be replicated with larger samples of SUD patients. However, the fact that our results, pointing towards severe personality problems among SUD patients, correspond to results from studies with larger samples and more extensive methods (Grant et al., 2004; Skodol, Oldham, & Gallaher, 1999) strengthens the trustworthiness and generalisability of our findings.

Limitations
Several limitations of the current study should be acknowledged. The first limitation pertains to the fact that the study is based on self-report questionnaires. An assumption behind this format is that the individual has enough expertise and self-knowledge to report both subtle and more apparent dimensions of themselves correctly. If participants incorrectly report aspects of their personality functioning, this may lead to an overestimation or underestimation of their personality problems.

As described in the data collection procedure, a detoxification stay is most
likely characterised by withdrawal states and abstinence pains. Typical symptoms of withdrawal are dysphoria, insomnia, anxiety and irritability. Del Boca & Noll’s (2000) study on the validity of self-report assessment in SUD patients found that factors such as stage of recovery, sobriety and withdrawal states can influence the trustworthiness of the collected data. As we did not assess the duration of abstinence before participation, possible residual substance effects and symptoms of withdrawal may have confounding effects not controlled for in the analyses, and thus challenge the validity of the results. None of the participants were under the obvious influence of their primary substance of use, but there is a possibility that some patients still were under the influence of psychoactive medicines, were impacted by their recent drug use, or were in a state of crisis during participation. Although one of the benefits of the SIPP-118 may be its sensitivity to states, what affects the assessed state is still unknown and represents a limitation to the study.

No data on co-occurring axis I and II pathology, with the exception of SUD diagnoses, was collected in the study. This follows a clinical practice based on research showing the benefits of assessing and diagnosing both axis I and axis II disorders at later treatment stages than detoxification (Marlowe et al., 1997). There is general agreement that there are high rates of Axis I disorders among SUD patients (Folkehelseinstituttet, 2014). Various axis I disorders may have impacted and confounded our results, one way being that the severity dimension in the SIPP-118 might measure symptomatic distress rather than core PD pathology (Arnevik et al., 2009). The fact that all characteristics of the study sample as well as characteristics of the samples used for comparison are not known, limits our ability to make causal interferences based on the data. Further studies should include more background variables in the analyses.

The exact number and description of persons who did not want to participate in the study is not known. This can be considered a limitation of the study, as these patients might differ on important characteristics from the study sample. The data collection procedure and nature of the study have possibly excluded the patients with the poorest functioning; lowest ability to read or concentrate, fewest years of education, lowest level of impulse control and delay of gratification. The average levels of personality problems in the sample may thus be positively skewed compared to the population of SUD patients, showing a more positive picture of this patient population than is the actual case. The fact that patients with the lowest levels of functioning might not be included in the study sample represents a limitation of the study, but if their exclusion is true, it accentuates our finding that SUD patients have severe personality problems.

Clinical implications
Our study implies that personality problems can be assessed during the stage of detoxification. Early assessment of co-occurring personality problems and SUD would make possible a more integrated approach to treatment. Integrated treatment is defined as treatments that combine, incorporate and modify aspects from one type of treatment with aspects from another so that the co-occurring disorders
receive treatment simultaneously from the same treatment provider (American Psychiatric Association, 2006; Morisano, Babor, & Robaina, 2014). Integrated treatment programmes seem to be cost-effective and have high rates of positive treatment outcome for SUD patients with co-occurring disorders (American Psychiatric Association, 2006; Helsedirektoratet, 2012a; Morisano et al., 2014). In the Norwegian national guidelines for treatment of patients with co-occurring SUDs and mental disorders, integrated treatment approaches are recommended (Helsedirektoratet, 2012a), but no recommendation is given for assessment of personality problems.

The current study indicates that the SIPP-118 is a promising questionnaire that may be used reliably for assessing personality problems in SUD patients. However, more research is needed for establishing SIPP-118 as an assessment of personality problems in the SUD population as well as targeting the potential for SIPP-118 to measure change after treatment. It is believed that a thorough understanding of the needs and problem areas of the individual patient may help staff and therapists work more effectively with SUD patients with co-occurring personality problems (Maslin et al., 2001). It is here that the SIPP-118 may be an effective tool. As well as assessing levels of personality problems, the SIPP-118 may also be used to assess an individual’s strengths and resources, which corresponds to the recommended focus on assessing and supporting a patient’s resources and strengths during and after treatment (Helsedirektoratet, 2012a).

Declaration of Interest None

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