

Cover Page



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Chapter Three

***The DAPP-SF
as a screener for
personality disorder
in a forensic setting***

Abstract

Studies on the Dimensional Assessment of Personality Pathology-Short Form (DAPP-SF) have shown its ability to identify treatment-seeking patients with personality disorders. The present study focuses on its screening potential for personality disorder in 89 criminal suspects (77 men, 12 women; mean age 37.0 years) undergoing residential pre-trial psychological assessments in a high-security setting. It was expected that Structured Interview for DSM-IV Personality (SIDP-IV) criteria met for personality disorder(s) would be associated with higher DAPP-SF scores. A floor effect was found in DAPP-SF scores: the forensic population reported less personality pathology than the general population. Only moderate associations between DAPP-SF and SIDP-IV outcome were found. ROC analysis showed that some DAPP-SF subscales did not exceed chance level in their ability to screen for personality disorders. It is concluded that the DAPP-SF has limited usefulness as a screener for personality disorders in a forensic pre-trial setting. Alternative forensic screening instruments are presented.²

Introduction

For an efficient assessment of personality psychopathology, a two-step approach is recommended (Widiger & Samuel, 2005). This approach entails first administering a self-report questionnaire to screen for the potential presence of personality disorders, followed by a standardized (semi-) structured diagnostic interview to verify the presence of the disorder, such as the Structured Interview for DSM-IV Personality (SIDP-IV; Pfohl, Blum, & Zimmerman, 2006). If the screening questionnaire were quick, efficient, and accurate, the amount of time required to confirm the presence or absence of a diagnosis would be shorter.

The Dimensional Assessment of Personality Pathology – Short Form (DAPP-SF; Van Kampen et al., 2008) meets the need for a concise measure to screen for personality pathology, as it takes on average only 20 minutes to complete. Studies have shown its reliability and validity in the general population as well as in patients seeking treatment for personality disorders (Van Kampen et al., 2008) and mood, anxiety, and somatoform disorders (De Beurs et al., 2009). A further study by De Beurs and colleagues (2010) concluded that the DAPP-SF was able to distinguish patients with personality disorders (ascertained by the SIDP-IV) from the general population.

The present study followed the example of De Beurs and colleagues (2010), but this time in a forensic sample, and focused on how well the DAPP-SF can screen for personality disorder in criminal suspects undergoing pre-trial psychological assessments in a high-security observation clinic, and whether it could determine correctly which suspects should and should not undergo the SIDP-IV interview in the two-step process proposed above. The outcome of the SIDP-IV was used to determine formal presence or absence of personality disorder and was compared to scores on the subscales of the DAPP-SF. It was expected that when SIDP-IV criteria were met for one or more personality disorders, the same individual would present with higher scores on subscales of the DAPP-SF.

Pre-trial assessment in the Netherlands

Previous studies examining the screening capacity of the DAPP-SF have used treatment-seeking patients. In contrast, the present study investigates the utility of the DAPP-SF in screening for personality disorders among individuals undergoing mandated forensic pre-trial evaluation. Article

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² Spaans, M., De Beurs, E., Rinne, T., & Spinhoven, P. (2015). The DAPP-SF as a screener for personality disorder in a forensic setting. *Journal of Personality Assessment*, 97(2), 172-181.

39 of the Dutch Criminal Law Code states: “Not punishable is he who commits a crime, that he cannot be held responsible for due to mental retardation or pathological impairment of his mental abilities”. In Dutch practice, this mental retardation or pathological impairment includes personality pathology (Barendregt, Muller, et al., 2008) and the offender can be ordered to undergo forensic psychiatric treatment. A person who is only partially responsible is considered partially punishable. Courts can order suspects of crimes that carry a penalty of four or more years of incarceration according to the Dutch Criminal Law Code to undergo a residential pre-trial psychiatric assessment to determine the presence of such defects or impairments at the time of the crime.

Depending on the severity of the disorder and the causality between the personality disorder and the crime, the criminal responsibility can be categorized in one of five degrees: full responsibility, slightly diminished responsibility, diminished responsibility, strongly diminished responsibility, and total lack of criminal responsibility. Each degree is translated by the judge into a different form of punishment. Fully responsible and slightly diminished responsible offenders will receive a prison sentence only. Offenders that are found fully not responsible, on the basis of a major psychiatric disorder that caused the crime, are discharged from punishment and ordered to undergo treatment in a high security forensic psychiatric clinic. Diminished and severely diminished offenders with a high risk of recidivism are usually given a shortened prison sentence, followed by imposed forensic treatment in a high security forensic psychiatric clinic that aims to treat the criminogenic defects or impairments in order to reduce the risk of re-offending (Koenraadt et al., 2007). An offender is released only when the risk of re-offending is sufficiently diminished.

The presence of personality disorders has somewhat of a unique role in determining criminal responsibility in the Netherlands compared to most other jurisdictions, where the presence of a personality disorder is not considered sufficient grounds for diminished responsibility or criminal insanity. Earlier research on Dutch forensic pre-trial assessments has shown that 78% of individuals with diminished criminal responsibility had a personality disorder, which was in turn associated with advice for enforced forensic treatment (Spaans, Barendregt, Haan, Nijman, & De Beurs, 2011).

Method

Assessment site

All participants were admitted to the Pieter Baan Center (PBC) in Utrecht (the Netherlands) for residential pre-trial criminal responsibility assessment and recidivism risk analysis. The PBC is the official forensic psychiatric observation clinic of the Dutch Ministry of Justice’s Netherlands Institute of Forensic Psychiatry and Psychology (NIFP), and has the legal status of a house of detention. The PBC administers close to 90% of all inpatient forensic assessments in the Netherlands, around 215 per year. These assessments cover 5% of all forensic pre-trial evaluations on adults carried out by the NIFP; the remaining 95% of forensic evaluations (roughly 4,200 per year) take place in a non-specialized forensic setting (usually in a regular house of detention). Possible reasons for the court to order a thorough inpatient assessment of defendants include the severity of the crime, the severity of the assumed psychopathology, the maximum-security level within the PBC, and potential societal disturbance or media attention associated with the defendant’s case. As a result, the population of the PBC covers the more severe criminological and psychiatric cases and cannot be seen as representative for the entire forensic population whose mental status is assessed.

All defendants are evaluated during a seven-week period by a multidisciplinary team consisting of a psychiatrist, a psychologist, two social workers, and a lawyer who supervises the assessment process along with a second psychiatrist. One of the social workers investigates the life history and social background of the defendant through interviews with informants such as family members; the other is a supervisor on the defendant's ward whose task is to observe and describe the activities and behavior of defendant during his or her stay in the institution. The psychologist and psychiatrist carry the final responsibility in the team for consensus in the PBC's conclusion in the final report to the judge concerning DSM-IV diagnoses, if any, and criminal responsibility (based on clinical judgment underpinned by structured instruments). The latter two experts also advise the court whether forensic treatment of the defendants is indicated if convicted of the charge.

Participants

The data collected in this study stemmed from a subset of all 839 criminal suspects who were admitted to the PBC between October 2007 and October 2011. Of these 839 suspects, 266 (31.7%) cooperated with the voluntary psychological testing procedure, which includes the administration of a variety of instruments. The study sample consisted of all 143 criminal suspects who had completed a DAPP-SF self-report questionnaire between October 2007 and October 2011. Of this total sample, 89 suspects had also completed the SIDP-IV interview during that time, and 54 suspects completed only the DAPP-SF. The data for this study was collected by test assistants and clinical psychologists who had completed a training session in administration and scoring of both instruments prior to data collection. Training for the SIDP-IV was provided by an academic and clinical expert, in the form of an in-company session lasting three hours. Reaching consensus on symptom criteria and weighing and interpreting results were trained and discussed. Inter-rater data on SIDP-IV administrations in the PBC is not available, as raters were trained to conduct independent and individual interviews. Any questions test assistants had in scoring criteria in individual interviews were discussed with the corresponding multidisciplinary team. The sample of 89 suspects who completed both the DAPP-SF and SIDP-IV interview consisted of 77 men (86.5%) and 12 (13.5%) women. The mean age at the time of the forensic assessment was 37.0 years ($SD = 11.6$ years; range 18.2-66.9 years). Intelligence of 77 participants (86.5%) was assessed with the Dutch version of the Wechsler Adult Intelligence Scale-III (WAIS-III; Uterwijk, 2000). Ten participants (11.2%) were assessed using the Dutch version of the Kaufman Adult Intelligence Scale (KAIT; Mulder, Dekker, & Dekker, 2004) because a WAIS-III had been administered elsewhere recently. One participant was assessed using the Multicultural Capacity Test (MCT; Bleichrodt & Van en Berg, 1999) because of insufficient knowledge of the Dutch language. Mean IQ total score was 95.0 ($SD = 14.2$). Of the 89 participants, six (6.72%) had an above average intelligence (a score between 110-120) and five (5.6%) had a high intelligence (a score higher than of 120). Average intelligence (a score between 90-110) was recorded for 44 (49.4%) participants, and 22 (24.7%) had a below average intelligence (a score between 80-90). Eleven participants (12.4%) were assessed at the level of borderline intellectual functioning (a score lower than 80) but still considered capable of undergoing psychological testing with the DAPP-SF and/or SIDP-IV by the forensic psychologist. For one participant (1.1%) the intelligence level was unknown. There were no significant differences in IQ scores between men and women.

Of the 89 suspects, 32 had been accused of (attempted) murder, followed by (attempted) sex offenses ($n = 20$) and (attempted) manslaughter ($n = 16$). Seven suspects had been accused of (attempted) armed robbery, four of arson, and three of extortion. The remaining ten suspects had been accused of (attempted) grievous bodily harm, bodily harm, kidnapping, threatening violence, and neonaticide.

Measures

Dimensional Assessment of Personality Pathology-Short Form

The DAPP-SF is a self-report questionnaire that assesses the presence and severity of personality pathology. It has 126 items measuring personal preferences and behavior and is the shortened version of the Dimensional Assessment of Personality Pathology – Basic Questionnaire (DAPP-BQ; Livesley & Jackson, 2006) which has 290 items. The DAPP-SF is comprised of 18 personality dimensions (Submissiveness, Cognitive Distortion, Identity Problems, Affective Lability, Stimulus Seeking, Compulsivity, Restricted Expression, Callousness, Oppositionality, Intimacy Problems, Rejection, Anxiousness Conduct Problems, Suspiciousness, Social Avoidance, Narcissism, Insecure Attachment, and Self-harm) and four second-order factors (Emotional Dysregulation, Dissocial Behavior, Inhibition, and Compulsivity). Each item is rated on a five-point Likert scale.

Psychometric analysis of the DAPP-SF has revealed sufficient reliability with alpha coefficients ranging from 0.78 to 0.89 with a mean value of 0.84, as well as construct validity and congruent factor structure (Tucker's congruence coefficients ranging from 0.89 to 1.00) in the general population and in patients seeking treatment for personality disorders (Van Kampen et al., 2008). The same was also found in patients seeking treatment for mood, anxiety, and somatoform disorders (De Beurs et al., 2009).

Van Kampen and colleagues (2008) compared DAPP-SF scores of three groups of respondents (patients seeking treatment for personality disorders, patients seeking treatment for depressive, anxiety, and somatoform disorders, and a population-based sample from general practitioners' patients) to scores on the SIDP-IV and the Five-Dimensional Personality Test (5DPT; Coolidge, Segal, Cahill, & Archuleta, 2008). Positive correlations were obtained between the DAPP-SF second-order factors Emotional Dysregulation, Dissocial Behavior, and Compulsivity and the 5DPT dimensions Neuroticism, Insensitivity and Orderliness. A negative correlation was obtained between Inhibition and Extraversion. Van Kampen and colleagues (2008) concluded that all indices of convergent and divergent validity were satisfactory. A high score on a personality dimension or second-order factor indicates a high probability of a personality disorder. For example, the DAPP-SF manual (Van Kampen & De Beurs, 2009) gives cut-off scores for the dimension Identity Problems, Anxiousness, and Social Avoidance that provide optimal specificity to distinguish personality-disordered respondents. Respondents who score above these cut-off values most likely meet the criteria for a personality disorder and, therefore, qualify for further clinical assessment using a standardized diagnostic interview. As mentioned earlier, De Beurs and colleagues (2010) also found support for the screening potential of the DAPP-SF in patients with personality disorders from the general population. For instance, a score of 180 on the Emotional Dysregulation scale had an AUC of 0.87 and resulted in a good sensitivity of 0.90 with a still acceptable specificity of 0.76.

Structured Interview for DSM-IV Personality

The SIDP-IV comprises ten sections, covering different life areas such as activities and interests, work, relationships, emotions, self-perception, stress, and anger. The interview follows a natural course on these and other topics so that questions about DSM-IV criteria are not as predictable as in other instruments. For each diagnosis of personality disorder (Paranoid, Schizoid, Schizotypal, Antisocial, Borderline, Histrionic, Narcissistic, Avoidant, Dependent, Obsessive-Compulsive, Self-Defeating, Depressive, and Negativistic) a dichotomous score indicates the diagnostic status and a dimensional score represents the severity of the disorder. Research by Damen, De Jong and Van der Kroft (2004) has shown that the Dutch version of the SIDP-IV has good inter-rater reliability.

Data analysis

Cronbach's alpha coefficients were calculated for the DAPP-SF dimension and second-order factor scores to determine the internal consistency for the study sample. Spearman's rank-order correlations were calculated between DAPP-SF dimension and second-order factor scores and the number of PD diagnoses according to the SIDP-IV. Pearson's correlations were calculated between DAPP-SF dimension and second-order factor scores and the number of criteria met on each SIDP-IV PD. Independent samples *t*-tests were conducted to compare mean DAPP-SF dimension and second-order factor scores in the study sample with each other, as well as with those of the general population and the presence or absence of a PD diagnosis according to the SIDP-IV. A Receiver Operating Characteristic (ROC) analysis was carried out for DAPP-SF dimension and second-order factor scores and the presence or absence of a PD diagnosis according to the SIDP-IV.

Results

DAPP-SF descriptives

Table 1 shows descriptive statistics for personality dimension scores and second-order factor scores on the DAPP-SF for the sample of participants who underwent both the DAPP-SF and the SIDP-IV interview ($n = 89$). Also shown are mean dimension and second-order factor scores and standard deviations from the Dutch general population studied by De Beurs and colleagues (2010) and effect sizes for the comparison of the two populations. Cronbach's alpha coefficients ranged from 0.75 for Conduct Problems to 0.91 for Social Avoidance and Self-harm. Cronbach's alpha coefficients for second-order factor scores ranged from 0.73 for Inhibition to 0.98 for Emotional Dysregulation. The internal consistency found in this forensic sample does not differ greatly from that in the general population. Comparison of the mean scores of the study population and the general population, using a *t*-test for independent samples, found that scores are significantly lower for the forensic participants compared to the general population on all dimensions except Identity Problems, Intimacy Problems, Conduct Problems, Insecure Attachment, and Self-Harm and all second-order factors except Inhibition ($d = 0.27 - 0.72$). Effect sizes varied from small for Insecure Attachment and Self-Harm to large for Intimacy Problems and Inhibition. Overall, the study population reported less personality pathology than the general population.

Comparing samples with and without a SIDP-IV

To investigate potential selection bias in the study population, DAPP-SF scores of the 54 participants who did not undergo a SIDP-IV interview were compared to the scores of the 89 participants who underwent both the DAPP-SF and the SIDP-IV interview. Means of all 22 personality dimension scores and second-order factor scores in both samples were compared using a *t*-test for independent samples, which yielded no significant differences between the DAPP-SF scores of participants with or without a SIDP-IV according to adjusted alpha levels of 0.005 (see Table 2).

Table 1. Descriptives of DAPP-SF personality dimension and second-order factor scores

	Study population (n = 89)			General population (n = 461)		t	Cohen's d
	α	M	SD	M	SD		
<i>Personality dimensions</i>							
Submissiveness	.88	16.14	6.75	19.68	6.32	4.78	-.54
Cognitive distortion	.81	8.89	3.96	12.12	5.40	5.37	-.68
Identity problems	.86	11.16	5.29	12.18	5.64	1.58	-.19
Affective lability	.86	17.21	6.58	21.04	7.28	4.61	-.55
Stimulus seeking	.87	16.29	6.81	18.00	5.76	2.49	-.27
Compulsivity	.86	19.97	7.04	24.24	6.48	5.61	-.63
Callousness	.77	16.92	5.29	18.80	5.40	3.02	-.35
Restricted expression	.85	19.27	6.69	21.28	6.48	2.67	-.31
Oppositionality	.86	19.01	7.15	23.10	7.20	4.91	-.57
Intimacy problems	.78	27.04	6.47	16.96	5.68	15.0	1.66
Rejection	.78	17.28	5.32	20.08	5.68	4.30	-.51
Anxiousness	.87	13.29	5.73	14.82	5.70	2.32	-.27
Conduct problems	.75	13.75	5.37	11.52	4.40	4.21	.45
Suspiciousness	.87	13.18	5.68	14.96	5.92	2.61	-.31
Social avoidance	.91	10.86	5.43	13.80	5.52	4.61	-.54
Narcissism	.82	14.99	5.65	18.72	6.16	5.30	-.63
Insecure attachment	.89	13.21	6.45	13.74	5.64	.79	-.09
Self-harm	.91	8.10	4.30	7.98	4.20	.25	.03
<i>Second-order factors</i>							
Emotional Dysregulation	.98	146.03	50.36	156.96	46.08	2.02	-.23
Inhibition	.73	43.96	8.18	32.32	7.52	13.18	1.48
Dissocial Behavior	.92	66.59	19.00	80.92	20.74	6.05	-.72
Compulsivity	.86	19.97	7.04	24.24	6.48	5.61	-.63

Table 2. Comparison of DAPP-SF personality dimension and second-order factor mean scores for participants with and without a SIDP-IV interview (n = 143)*

	DAPP-SF and SIDP-IV (n = 89)		DAPP-SF only (n = 54)		t	Cohen's d
	M	SD	M	SD		
<i>Personality dimensions</i>						
Submissiveness	16.14	6.75	15.35	6.00	-.71	-.12
Cognitive distortion	8.89	3.96	8.53	3.50	-.56	-.09
Identity problems	11.16	5.29	11.20	5.41	.05	.01
Affective lability	17.21	6.58	17.05	6.74	-.14	-.02
Stimulus seeking	16.29	6.81	15.24	5.59	-.95	-.16
Compulsivity	19.97	7.04	22.17	6.87	1.82	.31
Callousness	16.92	5.29	17.58	5.81	.71	.12
Restricted expression	19.27	6.69	20.22	7.06	.81	.14
Oppositionality	19.01	7.15	18.00	6.89	-.91	-.15
Intimacy problems	27.04	6.47	26.71	7.24	-.28	-.05
Rejection	17.28	5.32	18.47	5.81	1.50	.25
Anxiousness	13.29	5.73	13.35	6.27	.07	.01
Conduct problems	13.75	5.37	13.37	5.31	-.42	-.07
Suspiciousness	13.18	5.68	14.90	7.02	1.61	.27
Social avoidance	10.86	5.43	10.66	5.76	-.20	-.03
Narcissism	14.99	5.65	15.46	5.48	.49	.08
Insecure attachment	13.21	6.45	11.83	5.43	-1.31	-.22
Self-harm	8.10	4.30	8.09	4.18	-.01	.00
<i>Second-order factors</i>						
Emotional Dysregulation	146.03	50.36	144.34	49.92	-.20	-.03
Inhibition	43.96	8.18	44.30	9.38	.23	.04
Dissocial Behavior	66.59	19.00	67.30	18.07	.22	.04
Compulsivity	19.97	7.04	22.17	6.87	1.82	.31

SIDP-IV descriptives

In the sample of 89 participants who underwent both the DAPP-SF and the SIDP-IV interview, a total of 45 personality disorders were diagnosed in 32 individuals. In 22 cases (24.7%) one personality disorder was diagnosed. In seven cases (7.9%) two separate personality disorders were diagnosed and in three cases (3.4%) three personality disorders were diagnosed in the same person according to the SIDP-IV. Cluster B personality disorders were the most prevalent with a total of 30 diagnoses: 16 for Antisocial Personality Disorder, nine for Narcissistic PD, five for Borderline PD, and one for Histrionic PD. There were four diagnoses for Negativistic PD, four for Paranoid PD, one for Schizoid PD and one for Depressive PD. Cluster C was the least prevalent with only four diagnoses: two for Avoidant PD, one for Dependent PD, and one for Obsessive-Compulsive PD. There were no diagnoses for Schizotypal or Self-Defeating PD.

Comparison of SIDP-IV diagnoses and expert opinions

To assess the legitimacy of using the SIDP-IV classification as a criterion for personality disorder (PD) diagnosis in the present study, the SIDP-IV outcome was compared to the clinical opinions of the forensic expert teams in the PBC reports for all 89 participants who had completed both a DAPP-SF and a SIDP-IV interview. When reaching their final diagnosis, all expert teams integrated the SIDP-IV interview outcome with additional observation information from the suspect's seven-week admission and incorporate relevant information from the suspect's life history.

In 20 cases (22.5%) the experts' conclusion cited a PD Not Otherwise Specified, a classification that is officially not a possibility on the SIDP-IV and, therefore, not entirely comparable. Relevant traits of the PD indicated by the experts, however, could be found upon inspection on SIDP-IV item level for these 20 cases. This indicates that the experts' conclusions and the SIDP-IV outcome were to a large extent in accordance with each other.

Of the remaining 69 cases for which an exact comparison was possible, complete agreement was found for 50 participants (72.5%). In 13 of the remaining 19 cases the SIDP-IV found no PD while the forensic experts did (having incorporated information from the suspect's seven-week stay on the ward and important life history information to diagnose a PD). In six cases the SIDP-IV found a PD while the forensic expert team did not (acknowledging the many traits that were present of the PD, but finding no impairments in daily functioning to warrant a PD diagnosis or diagnosing a different disorder such as Autism Spectrum Disorder and Delusional Disorder). These cases show that when coming to a PD diagnosis, experts incorporate traits found on the SIDP-IV with their own observations, information from the PBC ward, and important life history information on impairments in daily functioning in the present and the past. Finding only 19 out of the comparable 69 six cases (27.5%) in which the SIDP-IV outcome did not converge with the forensic expert team's clinical findings gives an extra boost of confidence in the validity of the SIDP-IV classification and warranted its use as a criterion for PD diagnosis (as opposed to the teams' opinions) in this study.

The DAPP-SF as a screener for PD

To investigate the ability of the DAPP-SF to discriminate between participants with and without one or more personality disorders, the DAPP-SF scores were compared for individuals with and without a PD according to the SIDP-IV ($n = 89$). Independent samples t -tests (see Table 3) found no differences in personality dimension scores and second-order factor scores on the DAPP-SF for participants with and without a PD according to the SIDP-IV for adjusted alpha levels of .005. Most effect sizes were negligible or small, except for Stimulus Seeking, Restricted Expression, and Dissocial Behavior with

sizes between .47 and .49. Table 4 shows Spearman's rank-order correlations between the DAPP-SF personality dimension scores and second-order factor scores and the number of PD diagnoses (ranging from 0 to 3) for the entire study population. No significant associations were found according to the adjusted alpha levels of .005 and all associations were negligible as none were higher than .25. Correlational analyses for the three separate clusters of personality disorder were not possible due to the small number of participants in each cluster.

Table 3. Comparison of DAPP-SF personality dimension and second-order factor mean scores for participants with and without a PD according to the SIDP-IV interview (n = 89)*

	PD present (n = 32)		PD absent (n = 57)		t	Cohen's d
	M	SD	M	SD		
<i>Personality dimensions</i>						
Submissiveness	15.46	6.46	16.53	6.93	.72	.15
Cognitive distortion	9.10	3.55	8.78	4.20	-.37	-.08
Identity problems	11.91	5.15	10.74	5.36	-1.00	-.21
Affective lability	17.80	6.68	16.88	6.56	-.63	-.14
Stimulus seeking	18.38	7.28	15.12	6.30	-2.21	-.47
Compulsivity	20.60	7.22	19.62	6.98	-.62	-.13
Callousness	17.09	5.64	16.81	5.13	-.24	-.05
Restricted expression	21.31	6.54	18.12	6.56	-2.20	-.47
Oppositionality	20.22	7.56	18.33	6.89	-1.20	-.26
Intimacy problems	27.58	5.53	26.74	6.97	-.59	-.13
Rejection	17.74	5.00	17.03	5.51	-.60	-.13
Anxiousness	14.73	6.12	12.47	5.39	-1.81	-.39
Conduct problems	15.17	5.73	12.95	5.03	-1.91	-.41
Suspiciousness	13.13	5.67	13.21	5.74	.07	.02
Social avoidance	10.75	4.37	10.91	5.98	.14	.03
Narcissism	15.82	7.02	14.53	4.73	-1.03	-.22
Insecure attachment	13.81	6.37	12.87	6.52	-.66	-.14
Self-harm	8.50	4.87	7.88	3.97	-.65	-.14
<i>Second-order factors</i>						
Emotional Dysregulation	151.22	48.17	143.12	51.74	-.73	-.16
Inhibition	44.68	8.01	43.55	8.31	-.62	-.13
Dissocial Behavior	72.60	18.33	63.21	18.69	-2.29	-.49
Compulsivity	20.59	7.21	19.62	6.98	-.62	-.13

* No significant values were found according to adjusted alpha levels of 0.005

Table 4. Spearman's rank-order correlations between DAPP-SF scores and number of PD diagnoses according to the SIDP-IV (n = 89)*

Number of SIDP-IV PD diagnoses	
<i>Personality dimensions</i>	
Submissiveness	-.03
Cognitive distortion	.13
Identity problems	.19
Affective lability	.13
Stimulus seeking	.25
Compulsivity	.06
Callousness	.02
Restricted expression	.25
Oppositionality	.16
Intimacy problems	.04
Rejection	.09
Anxiousness	.22
Conduct problems	.17
Suspiciousness	.01
Social avoidance	.13
Narcissism	.02
Insecure attachment	.13
Self-harm	.11
<i>Second-order factors</i>	
Emotional Dysregulation	.15
Inhibition	.05
Dissocial Behavior	.27
Compulsivity	.06

* No significant values were found according to adjusted alpha levels of 0.005

SIDP-IV symptom profiles

The ability of the DAPP-SF to discriminate between participants with and without one or more personality disorders according to the SIDP-IV was investigated once more with Pearson's correlations for DAPP-SF subscale and second-order factor scores and the *number* of criteria met on each SIDP-IV PD. The latter can function as a profile of PD symptoms, which better suits the dimensional character of the DAPP-SF. Results are shown in Table 5. A number of significant correlations were found according to adjusted alpha levels of 0.005. Although the overall pattern of significant correlations showed some concurrence between DAPP-SF dimensions and the number of criteria met on each personality disorder according to the SIDP-IV – such as for Borderline, Histrionic, and Depressive Personality Disorder – and suggests that the dimensional approach to the SIDP-IV outcomes are in line with expectations, the correlation coefficients revealed primarily moderate associations (ranging from $r = -.22$ to $r = .48$).

Table 5. Pearson's correlations between DAPP-SF scores and number of criteria met per SIDP-IV PD (n = 89)

SIDP-IV personality disorders						
DAPP-SF	Schizoid	Borderline	Avoidant	Dependent	Obsessive-compulsive	Negativistic
<i>Personality Dimensions</i>						
Submissiveness	.29	.30*	.36*	.18	.08	-.07
Cognitive distortion	.05	.39*	.06	.09	-.05	-.11
Identity problems	.21	.48*	.32*	.15	.09	.01
Affective lability	.15	.45*	.24	.16	.11	.04
Stimulus seeking	.21	.44*	.11	-.06	-.01	.01
Compulsivity	-.12	-.14	.05	.04	.29	-.03
Callousness	.10	.09	-.02	-.02	.04	-.15
Restricted expression	.30*	.33*	.28	.07	.14	.02
Oppositionality	.20	.47*	.18	-.04	-.04	-.06
Intimacy problems	-.03	.05	-.01	-.05	-.01	-.12
Rejection	-.02	.09	-.13	.01	.10	-.10
Anxiousness	.17	.45*	.23	.16	.12	.09
Conduct problems	.08	.28	-.08	-.22	-.11	.11
Suspiciousness	.20	.11	.07	.15	.10	-.01
Social avoidance	.38*	.37*	.29	.16	.07	.04
Narcissism	-.07	.21	-.05	-.07	-.03	-.13
Insecure attachment	.06	.31*	.16	.20	.24	.08
Self-harm	.16	.38*	.36*	.13	-.02	.10
<i>Second-order factors</i>						
Emotional Dysregulation	.21	.45*	.26	.14	.08	-.00
Inhibition	.04	.10	-.02	-.05	.02	-.19
Dissocial Behavior	.20	.38*	.08	-.06	.04	.01
Compulsivity	-.12	-.14	.05	.04	.29	-.03

* Correlation is significant at the 0.005 level (2-tailed)

SIDP-IV personality disorders							
DAPP-SF	Self-defeating	Paranoid	Schizotypal	Histrionic	Narcissistic	Depressive	Antisocial
<i>Personality Dimensions</i>							
Submissiveness	.09	.26	.26	.01	-.09	.36*	-.01
Cognitive distortion	.07	.17	-.01	.01	-.16	.12	.01
Identity problems	.13	.26	.32*	.13	-.06	.35*	.02
Affective lability	.19	.28	.22	.11	-.04	.32*	-.08
Stimulus seeking	-.04	.31*	.21	.11	-.01	.12	.34*
Compulsivity	-.06	.03	-.11	-.05	.09	.05	-.00
Callousness	-.07	.24	.03	-.01	.15	-.01	.14
Restricted expression	.06	.27	.26	.05	-.03	.28	.18
Oppositionality	.03	.23	.24	.12	-.02	.18	.20
Intimacy problems	.03	-.12	-.11	.13	.08	.00	.05
Rejection	-.10	.34*	-.10	.00	.24	-.10	.02
Anxiousness	.23	.23	.20	.05	-.05	.38*	.09
Conduct problems	-.14	.14	-.03	-.09	.14	-.03	.41*
Suspiciousness	.01	.40*	.14	-.09	.01	.21	-.01
Social avoidance	.13	.21	.30*	-.01	-.13	.37*	.05
Narcissism	-.16	.10	-.06	.05	-.05	-.05	.08
Insecure attachment	.19	.24	.03	-.02	-.09	.32*	.02
Self-harm	.14	.08	.32*	-.05	-.11	.30*	-.08
<i>Second-order factors</i>							
Emotional Dysregulation	.12	.29	.23	.04	-.08	.33*	.04
Inhibition	-.02	.06	-.07	.10	.16	-.01	.14
Dissocial Behavior	-.06	.34*	.13	.03	.09	.11	.31*
Compulsivity	-.06	.03	-.11	-.05	.09	.05	-.00

* Correlation is significant at the 0.005 level (2-tailed)

Table 6. Cut-off scores for DAPP-SF dimensions and second-order factors with optimum sensitivity (n = 89)

	Cut-off score	Sensitivity	Specificity
<i>Personality dimensions</i>			
Submissiveness	11	.72	.28
Cognitive distortion	6	.69	.44
Identity problems	8	.72	.42
Affective lability	13	.75	.39
Stimulus seeking	12	.72	.38
Compulsivity	15	.72	.32
Callousness	13	.69	.30
Restricted expression	16	.75	.49
Oppositionality	15	.72	.42
Intimacy problems	23	.75	.25
Rejection	15	.63	.39
Anxiousness	10	.72	.46
Conduct problems	11	.69	.47
Suspiciousness	8	.81	.23
Social avoidance	7	.78	.44
Narcissism	12	.66	.46
Insecure attachment	9	.75	.35
Self-harm	6	.47	.67
<i>Second-order factors</i>			
Emotional Dysregulation	120	.72	.42
Inhibition	42	.59	.39
Dissocial Behavior	61	.72	.49
Compulsivity	18	.63	.54

ROC analysis

A Receiver Operating Characteristics (ROC) analysis was carried out for all DAPP-SF dimensions and second-order factors and the presence/absence of SIDP-IV personality disorders to determine the ability of the DAPP-SF to discriminate between the 32 individuals with and 57 without a personality disorder. The AUC for the 22 scores ranged from .45 (Submissiveness) to .66 (Dissocial behavior). Of the personality dimensions, Restricted Expression had the highest AUC (.65). No asymptotic significance was less than $p = .05$. Table 6 shows the cut-off scores per dimension and per second-order factor for the study population that correspond with optimum sensitivity and acceptable specificity. As can be seen, the proposed cut-off of 61 for Dissocial Behavior, for example, has a sensitivity of .72 (28% of the true cases are missed) and a specificity of .49 (51% of the participants without a PD are false positives on the screening instrument).

Discussion

Based on the results presented above it can be concluded that, for a two-staged assessment process in a forensic context, the DAPP-SF has limited usefulness as a screener for personality disorders in a sample of criminal suspects undergoing forensic pre-trial examination in a high-security observation clinic. Even though a few small to medium effect sizes were obtained that give some support for the use of the DAPP-SF as a screening instrument for personality disorders, inspection of the mean scores showed that the forensic population reported less personality pathology than the general population. This discourages the use of the DAPP-SF in forensic populations as the question arises whether the forensic population really does experience less personality pathology or whether the possibility that the participants dissimulate or display positive impression management when they fill in the self-report questionnaire in order to decrease their chances of enforced forensic treatment should be considered. A floor effect appears to have led to the inability of the DAPP-SF scores to discriminate the absence or presence of personality disorders according to the SIDP-IV within the study population, because scores of both groups were equally low. Spearman's rank-order and Pearson's correlations and independent samples *t*-tests between DAPP-SF scores and SIDP-IV PD diagnoses yielded only three moderate associations, insufficient to distinguish individuals with personality disorders. AUC results of the ROC analysis indicated that, in line with the other results, some of the DAPP-SF dimensions and second-order factors did not exceed chance level in their ability to screen for personality disorders in the study population.

Although convergence between self-report instruments and interview methods for establishing personality disorder was found to vary per disorder (Blackburn et al., 2004), Guy, Poythress, Douglas, Skeem and Edens (2008) found that self-report and interview measures of personality disorder were related most strongly at a dimensional level (i.e., the symptom count). This was also expected in the present study when the SIDP-IV results were approached in a dimensional way to match the dimensional nature of the DAPP-SF. However, the Spearman's rank-order and Pearson's correlation coefficients revealed, at best, moderate associations.

A short description of the Dutch forensic context may explain the possibility of dissimulation or positive impression management by the suspects. As mentioned earlier, Dutch courts can order those found guilty of crimes that carry a penalty of four or more years of incarceration to receive enforced forensic treatment if there is reduced criminal responsibility. Suspects undergoing pre-trial forensic assessment in the Netherlands have a keen interest in *avoiding* enforced forensic treatment. Courts will not end the enforced forensic treatment until the criminogenic aspects of the disorder have been treated and the risk of re-offending has been sufficiently reduced. Consequently, there is no way of predicting how long the individual will spend in the forensic clinic. A current trend is one of caution in ending treatments and releasing forensic patients, after incidents with former patients led to public upheaval. Consequently, the average length of stay in forensic psychiatric treatment has almost doubled over the past years, from 4.2 years in 1990 to 7.7 years in 2007 (Brand & Van Gemmert, 2009). This has caused more and more suspects to refuse to cooperate with pre-trial assessments to avoid enforced forensic treatment at all costs. Understandably, they prefer the chance of a longer prison sentence over additionally imposed mandatory treatment for an indefinite period of time. Many defendants refuse their cooperation during the pre-trial assessment and do not talk to the forensic experts or participate in any psychological interviews or questionnaires. Those who do cooperate are motivated to present themselves as psychologically healthy individuals.

Many suspects that do decide to undergo any psychological testing are thus likely inclined to dissimulate, to showing themselves in a better light to try and dispel forensic experts' suspicions of any kind of pathology. As the DAPP-SF is a self-report questionnaire, it leaves ample room for biased results due to the tendency to dissimulate described above.

Proof of dissimulation by positive impression management in a forensic context has been found by several authors (Ahlmeyer, Heil, McKee, & English, 2000; Gutheil 2003; McEwan, Davis, MacKenzie, & Mullen, 2009; Mills, Loza & Kroner, 2003). Gutheil (2003) asserts that inmates may be encouraged by their attorneys to present their symptoms in a certain, tactical way. Caruso, Benedek, Auble, and Bernet (2003) found proof of two types of dissimulators: intentional and unintentional. Intentional dissimulators were motivated by the preference of a defined prison term over an undefined term of hospitalization and the wish to avoid stigmatization, for example. Unintentional dissimulation was not a rational choice, but a genuine lack of knowledge or awareness of one's psychiatric disorder or symptoms. This would also lead to low self-reported personality pathology.

It is likely that the self-report nature of the DAPP-SF makes it unsuitable as a screener in a forensic pre-trial examination context. The present study and research by Spaans and colleagues (2009) suggest that although self-report instruments are of great value in individual use and case-finding of possible personality pathology, they may be less suited for the first step in the two-step approach in forensic populations. A number of authors advise against self-report instruments in forensic populations, unless they contain a measure for positive impression management or dissimulation (De Beurs & Barendregt, 2008; De Ruiter & Greeven, 2000; Edens & Ruiz, 2006; Mills et al., 2003). Even though research by McGrath, Mitchell, Kim and Hough (2010) has cast doubt upon the justification of the use of such response bias indicators, Eden and Ruiz (2006) found direct support for the validity scales of the Personality Assessment Inventory (PAI; Morey, 1991) in a correctional setting. Anderson, Sellbom, Wygant and Edens (2013) found support for validity scales, including one to identify dissimulation or positive impression management, of the Psychopathic Personality Inventory-Revised (PPI-R; Lilienfeld & Widows, 2005), a self-report instrument for personality traits associated with psychopathy that contains items intended not to evoke socially desirable responses.

Using self-report instruments that include response bias indicators such as the PAI and the PPI-R, or clinician-administered (semi-)structured interviews, or having close relatives or partners complete a measurement instrument as a proxy to the individual likely to fake good are alternatives to the DAPP-SF for diagnosing personality disorders in a forensic context.

Although positive impression management by the forensic population in the current study is considered the most likely explanation for the findings, it could not be formally assessed in the current study. An alternative explanation could be lack of statistical power given the small sample size of 89 participants with both DAPP-SF and SIDP-IV data. Another study limitation is related to the possible selection bias of including only cooperating, sufficiently Dutch-speaking, non-psychotic participants. A further limitation was the lack of data on inter-rater reliability for the PBC's forensic experts on the SIDP-IV, particularly in light of evidence that the inter-rater reliability of other well-known clinical instruments was lower in the (forensic) field than stated in the test manuals, such as the Psychopathy Checklist-Revised (PCL-R; Hare, 2003; Miller, Kimonis, Otto, Kline, & Wasserman, 2012; Murrie, Boccaccini, Johnson & Janke, 2008) - even when conducted by legally independent forensic experts (Sturup et al., 2013) - and STATIC-99 (Hanson & Thornton, 2000; Miller et al., 2012). The results suggesting the DAPP-SF's unsuitability as a screener might be influenced by the choice of outcome criterion. Nonetheless, while the incorporation of the SIDP-IV interview outcome in the clinician's

final diagnosis – and the clinician therefore not being blind to the SIDP-IV outcome – is a standard practice in the PBC that could not be altered for the present study, the 72.5% convergence between the SIDP-IV classification and the clinical diagnosis and the extensive way in which most dissimilarities between the two could be clarified by additional expert information strengthened our decision to use the SIDP-IV as the criterion for the presence of PD.

It is important to mention that even suspects who cooperate in their pre-trial assessment fear enforced forensic treatment just as much as non-cooperating suspects, and avoiding it is their main interest during the course of their legal proceedings. It would be interesting to investigate whether a similar floor effect is found when the DAPP-SF is administered to patients undergoing enforced forensic treatment in high security clinics. This would clarify whether it is indeed the pre-trial nature of the study context that causes the limited ability of the DAPP-SF to screen for personality disorders, or whether it is the forensic setting in general.

As personality disorder plays such a unique role in determining criminal responsibility in the Netherlands, it is important to diagnose it well. A concise screening instrument for personality disorders to successfully identify individuals that require a more thorough and time-consuming assessment could be very helpful in the diagnostic process. However, such an assessment instrument remains to be found, as the DAPP-SF did not succeed in achieving this objective.

