

# Dissimulation in forensic psychiatric evaluations, a case-control study of the Millon Clinical Multiaxial Inventory-III

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## Abstract

The possible tendency of subjects to decrease, hide, or omit symptomatic aspects of their mental functioning is one of the main problems in forensic psychological and psychiatric evaluations. We aimed at verifying the possible existence of significant differences in the Millon Clinical Multiaxial Inventory-III (MCMI-III) scales scores between a sample of dissimulators ( $n=40$ ) and their non-dissimulator counterpart matched by age, sex, and diagnosis. Cases and comparisons were retrieved from the archive of a single university forensic psychiatric centre between 2013 and 2022. Results showed statistically significant higher scores in the sample of dissimulators in the Desirability, Histrionic, Narcissistic, and Compulsive MCMI-III scales than in the comparison sample. Point biserial correlation test disclosed a strong positive correlation between the Desirability, Histrionic, Narcissistic, and Compulsive scales of the MCMI-III and being in the dissimulator group of subjects while a negative correlation emerged for all the other scales except drug dependence.

## Key points

- The forensic setting can affect a subject's behaviour.
- Dissimulation is a mechanism of minimization or concealment of a psycho-pathological condition.
- The MCMI-III can be a useful tool for a forensic psychiatrist or forensic psychologist in assessing dissimulation.

**Keywords:** dissimulation; Millon Clinical Multiaxial Inventory-III; forensic psychiatric evaluation; forensic psychological evaluation; mental disorders

## Introduction

The term dissimulation is used to describe a range of intentional distortions of psychological symptoms; it is a form of deception in which deliberate action is taken to hide an illness [1]. Subjects who undergo a forensic psychological or psychiatric evaluation might hide, partially disclose, or totally mask the symptoms on purpose; a dissimulator keeps emotional distance from his/her examiner, engages in omitting information, and with attitudes of escape and denial, is also able to invalidate the diagnosis [2]. A dissimulator can suffer from a mental disorder, but in particular situations is motivated to minimize its impact and disclosure which usually requires maintaining a high level of self-control; when a subject decides to dissimulate a pathology, he/she may experience the symptoms he is trying to mask [3, 4]. Several possible motivations that underly dissimulation have been described including subjective, objective, contextual, and relational ones [2].

The relationship between simulation and dissimulation is moreover controversial, and there have been cases in which

the marked minimization of symptoms has been misjudged as evidence of malingering, in the sense of suspected amplification of symptoms [5]. Dissimulation is a mechanism often revealed by coherent minimization and, therefore, in the presence of an established history of psychopathology the clinical indexes to be considered for the identification are: unspecific symptoms, reduction in the severity of symptoms, low number of self-reported symptoms, inconsistency in the description of the course of events, unexplained speed of recovery lack of potentially unfavourable statements [4].

Dissimulated disorders often include: many forms of psychosis, depressive disorders, and eating disorders [6]. Also, in the context of addictions, such as substance abuse and gambling, certain behaviours are commonly associated with denial and deception to conceal illicit activities. In this perspective, intentional and involuntary dissimulators have been differentiated, the first are aware of their disorder and actively engage in hiding it to achieve a utilitarian goal, the second consciously conceal their symptoms, but are egodystonic towards their illness with possible impairment of their awareness [6].

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The medical-legal context can have a distorting influence on conduct in the presence of a real psychopathological condition. It is plausible that people suffering from mental disorders mask it or conceal its effective impact, for reasons that may be related to the desire to acquire certain advantages [3, 7]. For this reason, the potential distorting role exerted by the evaluative setting must be kept in mind to improve the accuracy of evaluations [1]. No single mental test or clinical interview proved sufficient to identify dissimulation, but the concomitant use of a clinical approach and mental tests has proved useful in raising the suspicion of dissimulation [1, 6].

The Millon Clinical Multiaxial Inventory-III (MCMI-III, which is the latest version of the tool validated in Italy) [8, 9] is a self-report standardized questionnaire with dichotomous true/false response items that measure clinical syndromes and evaluate them in the context of personality disorders, reflecting the classification of Axis I and Axis II disorders of the Diagnostic and Statistical Manual of mental disorders 4th edition (DSM-4) [10]. The theoretical model on which the instrument is based attempts to explain personality structure and styles by exploring four domains: existence, adaptation, replication, and abstraction [8].

The MCMI-III has proved useful in the assessment of clinical syndromes and personality disorders in forensic populations [11]. There are many areas in which the tool can be used, from criminal to civil and family matters; the MCMI-III has also been used in the assessment of domestic violence, aggressive situations, social dangerousness, posttraumatic stress disorder, parental capacity, and child custody issues [11–13].

The MCMI-III showed good psychometric properties [14–16], nonetheless it is not exempt from the possibility of giving false positives or false negatives, which is why the test results should be interpreted in the light of other psychometric data, the information gathered through medical history and life history of the subject clinically examined [11]. One of the most significant limitations of the MCMI-III, which is more common with self-report questionnaires, is the possible reduced validity of the results in those subjects with specific personality styles that tend to alter their responses towards the desired direction, or to present symptoms and propensities as they wish them to be seen by the examiner [9].

Four modifying indices have been included in the MCMI-III to assess the validity and interpretability of the test [8]. The V Scale (Validity) checks for random responses. The X Scale (Disclosure) measures the amount of psychological/psychiatric information that the subject reveals in the test. The Y Scale (Desirability) detects defensive responses that minimize symptomatology. The Z scale (Debasement) measures the overreporting of psychological and somatic issues. For the latter two scales there are no cut-offs, but Millon and colleagues suggested that very high or very low scores are associated with the adoption of distorting behaviour, in a sense of both an amplification of problems and a deliberate underestimation of them [8, 17].

Although the MCMI-III is widely used, its application has been criticized in forensic settings [18–20]. Nevertheless, some studies on the assessment of fake-bad profiles have highlighted a discriminatory capacity of the MCMI-III between simulators and non-simulators, given by the combination of the X, Y, Z scales and the clinical scales; moreover, regarding usage of cut-off scores of individual scales, some authors have specifically identified a profile defined by high Scale X, low Scale Y, and high Scale Z [17, 21–23].

On the specific topic of dissimulation, the existence of patterns of defence-focused strategic responses using the MCMI-III in child custody and parental capacity assessments has also been verified [1, 24, 25]. Other studies also showed that the prototypical profile of individuals competing for child custody who fake-good is characterized by an elevation of Scale Y (Desirability) and contextually also by elevations in the Histrionic (4), Narcissistic (5), and Compulsive (7) personality scales, with very low scores in all other scales [1, 11, 26].

The reason for these test response styles probably relates to the subject's attempt to show himself in a positive light by interpreting the clinical items in such way as to attribute favourable characteristics to himself [11, 25–28].

As part of our forensic profile assessment activities, we have empirically noticed that in clinically established cases of dissimulation, in addition to the Desirability scale, there was contextual elevation of the Histrionic, Narcissistic, and Compulsive scales. The combined elevation of these scales is due to the controlled interpretation of the items by the assessed subject to manage the positive self-impression, trying to minimize or hide a psychopathology. Analysing the positive distinguishing features of the descriptive prototypes of the three personality organizations, the resulting profile is nothing more than a product of social desirability and therefore not necessarily representative of psychopathology [12, 17].

The objective of the present study is to verify the existence of significant differences in the MCMI-III scales' scores comparing a sample of dissimulators and their non-dissimulator counterpart matched by age, sex, and diagnosis.

## Materials and method

### Participants

We retrospectively retrieved from the archive of forensic psychiatric consultations carried out between 2013 and 2022 at the Forensic Criminology and Psychiatry Section of the University of Bari,  $n = 40$  subjects who had clearly manifested dissimulation during the evaluation. The evaluations were not administered with the purpose of looking for dissimulation, and the presence of dissimulation was defined later as explicitly stated in the expert report; based on the clinical evaluation carried out by blind consensus to verify agreement among experts and thus improve the reliability of clinical judgement [29, 30], of two forensic psychiatrists with  $>30$  years of experience. The subjects included had requested the evaluation spontaneously for the following reasons: (i) personal injury litigation, (ii) disability or worker's compensation claims, (iii) medical or psychiatric cases not involving litigation or compensation.

The inclusion criteria were age over 18 years, having undergone a forensic psychiatric evaluation, having been clinically evaluated as dissimulators, and having undergone an evaluation with MCMI-III. The base rate of the MCMI-III relating to the 27 test scales was extrapolated for each subject and inserted in an *ad hoc* excel sheet.

From the same archive we selected a comparison sample ( $n = 40$ ) among the subjects evaluated in the same period where there was no clinical evidence of dissimulation. Comparison subjects were matched by age, sex, and diagnosis to compare base rate scores of the MCMI-III scales. The psychiatric diagnoses were based on DSM-5 criteria [31].

The reports we analysed deriving from evaluations that took place at Policlinic of Bari, Section of Criminology and

Forensic Psychiatry, were carried out following the Declaration of Helsinki ethical principles of medical research involving human persons, and all the participants provided written informed consent for participating in the study.

### Statistical analysis

Data were analysed using the Statistical Package for Social Sciences version 20.0 (Armonk, NY, USA). McNemar-Bowker test was used to compare categorical variables. Wilcoxon signed-rank test was used to compare continuous parametric variables in clinical dissimulation sample and comparison sample. Point biserial correlation test was used to assess the relationship between MCMI-III scales and the group of dissimulators. All tests were two-tailed, the  $\alpha$  significance level was set to 0.05.

### Results

The subjects included in the clinical dissimulation sample (mean age 46.0 years, SD=10.8; age range: 22–64 years; 42.5% female) were diagnosed as follows: mood disorder ( $n=16$ ), personality disorder ( $n=2$ ), trauma- and stress-related disorders ( $n=10$ ), neurocognitive disorders ( $n=2$ ), 10 subjects did not satisfy any DSM-5 criteria for a mental disorder [31]. The main socio-demographic and clinical characteristics of the two study groups are reported in Table 1, no significant differences emerged between the two study groups. McNemar-Bowker test disclosed that the clinical dissimulation sample requested the psychiatric expert evaluation for disability or worker's compensation claims more frequently than the comparison group (Table 1).

Wilcoxon signed-rank test disclosed that the clinical dissimulation sample scored significantly higher on average than the comparison sample on the Desirability, Histrionic, Narcissistic, and Compulsive scales of the MCMI-III and had significantly lower scores on all other scales, except Drug dependence (Table 2).

Point biserial correlation test disclosed a strong positive correlation between the Desirability, Histrionic, Narcissistic, and Compulsive scale of the MCMI-III and being in the dissimulator group of subjects while a negative correlation

emerged for all the other scales. No association was found with the Drug dependence scale (Table 3).

### Discussion

The results we found from the comparison of mean scores of the MCMI-III scales between a sample of dissimulators and non-dissimulators showed significant differences between the two groups, suggesting a discriminatory capacity of the inventory. To the best of our knowledge, this is the first study to have compared MCMI-III results between clinical dissimulators and non-dissimulators, matched by age, sex, and diagnosis.

The significantly higher scores that the sample of dissimulators obtained at Desirability, Compulsive, Histrionic, and Narcissistic scales compared with their non-dissimulator counterpart allow us to hypothesize a specificity to this association in cases of dissimulation. Analogue results emerged from the correlation analysis, which allowed to ascertain the strength of association between each MCMI-III scale and dissimulation. A possible interpretation of such result might be linked to marked aptitude for cognitive rigidity and instrument control (Compulsive scale), a tendency to manipulate (Histrionic scale) and very centred, self-referent abilities (Narcissistic scale) [11, 17, 27].

In addition to higher scores in Desirability, Histrionic, Narcissistic, and Compulsive scales a contextual marked lowering of the scores in Schizoid, Avoidant, Dependent, Negativistic, Masochistic, Borderline, Dysthymia, Thought disorder, and Major depression clinical scales emerged in dissimulators. Because the MCMI-III is a self-report inventory, it is reasonable to interpret the presence of such low scores on the above-mentioned clinical scales as a further attempt to control the test, by providing negative answers to questions intuitively associated with the presence of psychopathological symptoms.

Previous studies showed that the MCMI-III scores of 4 (Histrionic), 5 (Narcissistic), and 7 (Compulsive) scales correlated positively with the fake-good validity scales of the MMPI-2 L (Lie), K (Correction), S (Superlative), suggesting an association between these scales and socially desirable qualities [32–35]. The MMPI-2 L (Lie), K (Correction), and S

**Table 1.** Socio-demographic and clinical characteristics of the two study groups.

Socio-demographic and clinical features	Clinical dissimulation sample (N = 40)	Comparison sample (N = 40)	P
Age, years, mean±SD	46.0±10.8	45.7±12.2	Ns <sup>a</sup>
Years of education, mean±SD	14.2±3.1	13.6±3.3	Ns <sup>a</sup>
Employed, n (%)	34 (85.0)	30 (75.0)	Ns <sup>b</sup>
Women, n (%)	17 (42.5)	17 (42.5)	Ns <sup>b</sup>
Married, n (%)	23 (57.5)	17 (42.5)	Ns <sup>b</sup>
Diagnosis, n (%)			
Mood disorder	16 (40.0)	16 (40.0)	Ns <sup>b</sup>
Personality disorder	2 (5.0)	2 (5.0)	
Trauma- and stress-related disorders	10 (25.0)	10 (25.0)	
Neurocognitive disorders	2 (5.0)	2 (5.0)	
No anamnestic objectivity to DSM-5	10 (25.0)	10 (25.0)	
Assessment purposes, n (%)			
Personal injury litigation	15 (37.5)	22 (55.0)	*
Disability or worker's compensation claims	20 (50.0)	8 (20.0)	
Medical or psychiatric cases not involving litigation or compensation	5 (12.5)	10 (25.0)	

Ns: not statistically significant. <sup>a</sup>Wilcoxon signed-rank test. <sup>b</sup>McNemar-Bowker test. \* <0.05.

**Table 2.** MCMI-III scales comparison between clinical dissimulation sample and age-, sex- and diagnosis-matched counterpart.

	Millon Clinical Multiaxial Inventory-III scales	Clinical dissimulation sample ( $n = 40$ ), base rates (mean $\pm$ SD)	Comparison sample ( $n = 40$ ), base rates (mean $\pm$ SD)	<i>T</i>	<i>P</i>
Modifying indices	Disclosure (X)	38.8 $\pm$ 11.7	67.1 $\pm$ 15.3	-8.8	<0.001
	Desirability (Y)	<b>85.6<math>\pm</math>9.2</b>	55.4 $\pm$ 17.3	9.8	<0.001
	Debasement (Z)	31.2 $\pm$ 25.3	72.4 $\pm$ 14.1	-8.4	<0.001
Clinical personality patterns	Schizoid (1)	31.8 $\pm$ 20.6	67.1 $\pm$ 13.9	-8.9	<0.001
	Avoidant (2A)	15.9 $\pm$ 14.1	64.8 $\pm$ 24.7	-10.8	<0.001
	Depressive (2B)	20.9 $\pm$ 23.3	52.7 $\pm$ 21.3	-6.5	<0.001
	Dependent (3)	17.3 $\pm$ 14.4	62.0 $\pm$ 26.5	-9.4	<0.001
	Histrionic (4)	<b>84.0<math>\pm</math>21.6</b>	43.6 $\pm$ 21.3	9.5	<0.001
	Narcissistic (5)	<b>67.0<math>\pm</math>13.8</b>	48.8 $\pm$ 22.0	4.2	<0.001
	Antisocial (6A)	27.9 $\pm$ 21.5	42.5 $\pm$ 20.6	-3.3	<0.010
	Sadistic (6B)	21.8 $\pm$ 18.0	47.8 $\pm$ 17.2	-6.7	<0.001
	Compulsive (7)	<b>90.5<math>\pm</math>21.4</b>	74.0 $\pm$ 22.1	3.3	<0.010
	Negativistic (8A)	21.6 $\pm$ 15.8	66.3 $\pm$ 19.9	-9.4	<0.001
Masochistic (8B)	6.4 $\pm$ 9.8	49.1 $\pm$ 18.4	-13.1	<0.001	
Severe personality pathology	Schizotypal (S)	15.6 $\pm$ 21.6	55.0 $\pm$ 22.9	-7.5	<0.001
	Borderline (C)	8.9 $\pm$ 10.4	50.9 $\pm$ 25.2	-8.9	<0.001
	Paranoid (P)	32.4 $\pm$ 27.1	63.0 $\pm$ 20.9	-5.1	<0.001
Clinical syndromes	Anxiety (A)	36.8 $\pm$ 37.3	87.6 $\pm$ 23.5	-7.8	<0.001
	Somatoform (H)	22.3 $\pm$ 27.6	71.7 $\pm$ 27.3	-7.9	<0.001
	Bipolar: manic (N)	25.0 $\pm$ 20.1	46.2 $\pm$ 26.8	-4	<0.001
	Dysthymia (D)	22.6 $\pm$ 29.7	77.4 $\pm$ 24.6	-9	<0.001
	Alcohol dependence (B)	19.0 $\pm$ 18.9	46.0 $\pm$ 22.2	-5.9	<0.001
	Drug dependence (T)	36.2 $\pm$ 21.9	43.8 $\pm$ 22.6	-1.7	Ns
	Post-traumatic stress (R)	33.6 $\pm$ 30.1	70.8 $\pm$ 22.1	-6.5	<0.001
Severe clinical syndromes	Thought disorder (SS)	15.9 $\pm$ 20.5	57.6 $\pm$ 19.7	-9.5	<0.001
	Major depression (CC)	22.5 $\pm$ 28.2	74.3 $\pm$ 28.1	-8.3	<0.001
	Delusional disorder (PP)	21.3 $\pm$ 20.7	39.5 $\pm$ 30.2	-3.3	<0.010

*P* values by Wilcoxon signed-rank test; Ns: not statistically significant. Bold values indicate those scales in which the clinical dissimulation sample obtained significantly higher scores than the comparison group.

**Table 3.** Point biserial correlation analysis between MCMI-III scales and belonging to the dissimulator group of subjects.

	<i>r</i>	<i>P</i>
Disclosure (X)	-0.725	<0.001
Desirability (Y)	0.741	<0.001
Debasement (Z)	-0.713	<0.001
Schizoid (1)	-0.713	<0.001
Avoidant (2A)	-0.776	<0.001
Depressive (2B)	-0.584	<0.001
Dependent (3)	-0.728	<0.001
Histrionic (4)	0.690	<0.001
Narcissistic (5)	0.449	<0.001
Antisocial (6A)	-0.330	<0.010
Sadistic (6B)	-0.600	<0.001
Compulsive (7)	0.358	<0.001
Negativistic (8A)	-0.784	<0.001
Masochistic (8B)	-0.827	<0.001
Schizotypal (S)	-0.668	<0.001
Borderline (C)	-0.741	<0.001
Paranoid (P)	-0.540	<0.001
Anxiety (A)	-0.636	<0.001
Somatoform (H)	-0.673	<0.001
Bipolar: manic (N)	-0.413	<0.001
Dysthymia (D)	-0.713	<0.001
Alcohol dependence (B)	-0.553	<0.001
Drug dependence (T)	-0.171	Ns
Post-traumatic stress (R)	-0.581	<0.001
Thought disorder (SS)	-0.724	<0.001
Major depression (CC)	-0.682	<0.001
Delusional disorder (PP)	-0.337	<0.010

Ns: not statistically significant. The correlation analysis was performed between each MCMI-III scale and belonging to the dissimulator group of subjects; a positive correlation indicates higher MCMI-III scores in dissimulators.

(Superlative) validity scales tended to be negatively correlated with some MCMI-III personality disorder scales, including several of the scales that we have observed as significantly low [30].

Previous studies have revealed elevation of the MCMI-III modification index Y in experimental dissimulation conditions with psychiatric subjects [21, 36]. Other studies, which analysed data from protocols administered during evaluations of parental capacity or child custody, also showed contextual elevation of scales 4, 5, 7 [12, 26, 27]. The results of the present study confirm the elevation of all these scales, but in contrast with the previous above-mentioned studies the sample recruited here was extrapolated from a larger forensic sample in which the dissimulative conduct was not the result of an experimental request, but spontaneously produced by the subjects. This study has limitation, in particular the limited sample size and monocentric nature. However, the recruitment in a real setting of clinically dissimulating subjects and pairing with a comparison group controlling for age, sex, and diagnosis imply provides information that, if replicated on larger samples, could ensure a generalization of the results.

The results obtained from the present study confirm, using a different methodology and in the absence of specific instructions for inventory endorsement, the relevance of specific MCMI-III scales in the detection of dissimulating subjects. Our results suggest that the MCMI-III scale Y construct confirms its appropriateness in detecting dissimulatory behaviour. Nevertheless, we suggest that the simultaneous elevation of Histrionic, Narcissistic, and Compulsive scales provides a more consistent pattern of identifying a clinically dissimulative attitude to a forensic evaluation.

## Conclusion

The results obtained in this study add information to the limited existing literature on the ability of MCMI-III to detect dissimulative behaviour in forensic contexts. A specific pattern characterized by the elevation of the scales Y, 4, 5, 7 and the lowering of the others, also with values BR < 35, characterized the sample of dissimulators. Due to the lack of tools that can be used to assess dissimulation in the forensic context, the significant results obtained from this study should be considered in a clinical assessment as indicators of dissimulative behaviour.

## Author' contributions

Ignazio Grattagliano, Gabriele Mandarelli and Roberto Catanesi were responsible for the elaboration of research design, supervision of scientific work and final processing. Gabriele Mandarelli and Roberta Risola contributed to the sample recruitment, statistical analysis and literature review. Cristiano Barbieri, Anna Cassano, Antonia Valerio, and Roberta Risola were responsible for the literature review and sample recruitment. Ignazio Grattagliano, Anna Cassano and Roberta Risola contributed to the administration and processing of psychodiagnostic surveys related to the recruited sample of patients.

## Compliance with ethical standards

The reports we analysed deriving from evaluations that took place at Policlinic of Bari, Section of Criminology and

Forensic Psychiatry, were carried out following the Declaration of Helsinki ethical principles of medical research involving human persons, and all the participants provided written informed consent for participating in the study.

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