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Evaluation of Self-Deception: Validation of the IAM-40 Inventory

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Abstract

This paper describes the constructs of pathological self-deception (the inability to detect the negative effect of one's own behaviour) and mystification (an extreme form of self-deception which affects daily life) by way of a brief historical review of the instruments used to evaluate self-deception and desirability. The Self-Deception and Mystification Inventory (IAM-40) is presented for the first time; it is made up of forty items and five factors (insincerity, manipulation, denial mechanisms, an interested perception of reality and mystification). The general objective of this investigation is to validate the Inventory of Self-Deception, including both its general scale and the factors and constructs of self-deception and mystification, in a study of 159 addict patients (clinical population sample) and 124 general population participants. Significant differences are found, as predicted, between both subpopulations, with a greater level of pathology of all studied indicators in the clinical sample. The clinical existence of self-deception and mystification is concluded. The IAM-40 is also proven to be an adequate and useful instrument for diagnostic purposes and for day-to-day clinical management. The critical discussion is based on a proposal for psychotherapeutic and sociotherapeutic *ad hoc* treatment.

Key words: self-deception, mystification, desirability, evaluation, psychopathology.

Novelty and Significance

What is already known about the topic?

- Evolutionary psychologists are those who have most invoked the term self-deception referring to its adaptive advantages to better deceive others. Few though outstanding are clinicians who have invoked the concept, for example, for the survival of the subject.
- There are few specific tests that measure self-deception and are more focused on work psychology than on the clinic one.

What this paper adds?

- IAM-40 inventory adds four extremely useful dimensions in clinical assessment and psychotherapeutic orientation, especially in addictive, food, anxiety and character disorders.
- In forensic psychology it also has predictive behavioural value as shown by pilot studies in prisons.

Lies and normal or physiological self-deception are inherent to the human condition. They play a regulatory, or homeostatic, role in psychological protection (Taylor & Brown, 1994; Taylor & Hick, 2007). In this context, the word "lie" alludes to the process of congruency or internal incongruence depending on the response of a subject to a state of urgent need; in other words, the subject usually lies through necessity. However, lying is a communicative and relational fault, which is not socially tolerated: the individual who lies is condemned and isolated (Smith, 2005; Monts, Zurcher, & Nydegger, 1977;

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Sullivan, 2002). While lying involves deceiving another, self-deception is lying to oneself; it is used to maintain false beliefs or illusions which are very important to the person. Gianetti (2000) describes self-deception as the process of denial or not rationalizing the relevance, meaning or importance of countering the evidence with the argument. In short, self-deception represents an obstacle to authenticity.

Self-deception is not innately pathological. Who can claim that they never deceive themselves? We all have a level, some higher some lower, of self-deception in the form of illusion, fantasy or natural confabulation, which we use in our daily lives to interact with others. Various authors (Joplin, 1996; Mele, 2001; Taylor, 1994, 2007) attest to the homeostatic function of self-deception, that is, its importance for achieving equilibrium in the subject. Positive illusions about oneself play an important role in maintaining mental health, as well as in the ability to maintain good interpersonal relations and a sense of well-being. Such illusions include excessively positive evaluations of oneself, exaggerated perceptions of self-control and unrealistic optimism about one's own future. For Ekman (1996) self-knowledge is not as important for well-being as knowing the intention behind the deception. However, Mele (1997) maintains that the objective of deceiving is not a characteristic feature in the majority of cases of self-deception; for Mele, the motivating force of self-deception is desire. In contrast, Trivers (2006) argues that the self-deceived subject does not necessarily deceive themselves because of a desire for the belief to be true. Rather, the belief is influenced by what he/she hopes to understand from it, since the cognitive processes which allow people to find truth have not necessarily been designed with the aim of finding "real or objective" truth, and his/her judgements are limited and conditioned by the context of the situation (see, Neil van Leeuwen, 2003; Patten, 2003).

The self-deceived person "knows what is happening (to themselves) but ignores what this means" (Rosset, 2000, 2002). One of the elements that confirm the clinical nature of self-deception is a sense of need, which is perceived as vital, overwhelming, imperative and inescapable. The extreme need clouds the mind and overrides one's will. This need does not have to exist objectively; the subject only has to feel that it exists. An urgent need generates deception and sustained need causes self-deception (Sirvent, 2006). The deceived person needs to believe what he/she believes. The subject may initially be conscious of their (own) deception, but, after repeating it to themselves and, above all, by being driven by the need, they believe it. They require it to face their daily life, and they therefore internalize the need and make it part of their being until it is automatized. From this point, their reality is different. They will function on a different communication level, which is governed by self-deception.

Most of mental disorders have some form of fundamental self-deception (Nyberg, 1994; Sims, 2003; Sommer, 1992; Teasdale, 1983). For example, an anorexic person ignores their fear of public rejection, and many addicts wrongly and irrationally believe that others do not notice their addiction. By pathological self-deception, we refer to deception which is accompanied by the inability to perceive the negative effects of one's own behaviour; or the case of a subject who despite being aware of the problem, does not adopt or does not want to adopt solutions or waits for these solutions to come from elsewhere (Sirvent, 2011). In short, we apply the criterion of "someone who

does not realize that something is harmful to themselves or to others or, and which is even worse, they do (appear to) realize, but do not try to solve the problem". Many subjects live immersed in self-deception without this seeming to be an inconvenience for them. However, a patient -a person who suffers because of self-deception- cannot allow themselves the luxury of continuing to self-deceive, because they will either never recover, or fall back into self-deceiving without realizing they have done so. The patient needs to complete treatment with clear ideas about self-deception and, if they relapse, they will know the reason for the relapse without being confused. In all cases, it is preferable for the subject to eliminate all elements of self-deception (Moral, 2011; Kirby, 2005; Witkiewitz, 2003).

Pathological self-deception is present in many processes, especially those which are susceptible to recidivism, in particular those which have an episodic evolution, such as certain adaptive disorders or neurotic disorders in general, somatopsychic processes, dissociative disorders, eating disorders, factitious disorders, personality disorders, addiction, malingering, mood disorders, incompliance with therapy, grieving, identity problems, etc. Ultimately, as has been mentioned earlier, it is part of the world of neurosis, although it also occurs in certain types of psychosis, especially those which involve paranoia (including schizophrenia) and it damages the remaining connection with the real world. In addictions, self-deception is one of the most important factors in relapses. From data in different investigations by Marlatt (2005) and Donovan (1996) about factors and causes of relapse, they estimate that 68% of addicts who received treatment experienced a relapse, which was influenced directly or indirectly by self-deception. More seriously, it was the principal cause of relapse (51%) for drug addicts, who had undergone long term programmes. This finding allows us to state that this phenomenon must be dealt with in order to prevent relapse.

Certain factors of self-deception are associated with specific types of mental disorder, for example, mystification is associated with addiction, manipulation with personality disorders, denial mechanisms with neurotic disorders, distorting reality with eating disorders, etc. Evaluation of self-deception has traditionally been associated with the concepts of "desirability" and "impression management", and they have been awarded the greatest importance within the field of work and organizational psychology (Hogan & Holland, 2003; Salgado, 2003). Social desirability or response distortion are described as "the tendency to respond to items in a way which conforms to social or normative pressures instead of providing a truthful self-report", especially when the answers to personality questionnaires have important implications (for example, being offered a job or not) (Ones, Viswesvaran, & Reiss, 1996; Van Rooy & Visweswaran, 1996; Ellington, Sackett, & Hough, 1999).

Salgado (2005) carried out a retrospective compilation of instruments. Hathaway and MacKinley's Minessota Multiphasic Personality Inventory (MMPI) is the pioneering benchmark. It consists of two scales to detect possible distortion in questionnaire responses: the so-called K scale detects negative distortions or a tendency to present a worse self-image. The Lie scale detects positive distortions or the tendency to exhibit a positive personal image. In the California Personality Inventory (CPI; 1987), there is a scale for measuring the level of social desirability called the Good Impression Scale

or the tendency to distort positively. Other social desirability scales include Edwards's scale (1957), Crown-Marlowe's (1964) social desirability scale, Eysenck's sincerity scale (Eysenck & Eysenck, 1964), the 16PF motivation distortion scale (Cattell, Ebe, & Tatsuoka, 1970) and McCrae and Costa's (1983) Social desirability scales.

All the aforementioned scales consider social desirability to be a one-dimensional concept. However, as a result of Paulhus's investigations, social desirability is now accepted as being two-dimensional and the Balanced Inventory of Desirable Responding (BIDR, Paulhus, 1984, 2002) is the most popular modern inventory. The BIDR's two dimensions are impression management and self-deception. Impression management involves intentionally adapting one's public image in order to be viewed in a favourable light by others. Self-deception, in contrast, refers to the unintentional tendency to describe oneself favourably, which is shown in positively distorted self-descriptions; the subject, however, firmly believes in these descriptions. Impression management is, therefore, a voluntary manipulation of one's image so that others perception of them is positive, while self-deception is not a deliberate manipulation, although it can lead to distortions in other's self-perceptions.

Finally, Sirvent's Self-deception scale (Blanco, 2006), which provides the main background to this study, explored the following fields: manipulation (influence the feelings and attitudes of others for personal benefit), reiteration (repeat mistakes related with self-deception, denial mechanisms and avoidance (disregard an unpleasant or un wanted part of information or life experience as if it did not exists. Important differences between that scale and the IAM-40 inventory which we will now present is its much more in-depth exploration of pathological self-deception, including new fields of great importance, such as insincerity, an interested perception of reality, and, above all, mystification. In 1994, Sirvent described mystification (or intrinsic mystification as "an extreme form of self-deception which affects everything the subject does; the subject becomes entirely untrusting, self-absorbed and isolated from interpersonal communication. It involves an attitude, cognitive and behavioural pattern of a sociopathic nature (Sirvent, 2008; Thomson, 1996). Common symptoms in mystification are insincerity, emotional manipulation, scepticism, inability to grasp reality, evident lack of self-knowledge and, quite frequently, being bad-tempered and irritable.

Some fundamental aspects of mystification are: (a) Self-deception which is not limited to the addictive sphere but extends to all daily activity. Deception as a way of life with insincerity. In extreme cases the subject avoids social contact; (b) Suspicion and distrust of any outside message that clashes with the subject's own interest. Suspicion may sometimes lead to paranoid thinking; (c) Mystification defence mechanism: cognitive rejection of messages from others; melancholic personality and elusive or selfish, accommodating responses as a defence mechanism. (d) Thoughts are irreducible and irrefutable and the subject does not reflect on things very often and withdraws into themselves and reacts defensively.

In terms of outward appearance, the subject may be bad-tempered, unsociable and misanthropic, and use defensive or irascible language, or even project a false appearance, showing desirability, and adaptive responses. A selfish or egocentric personality is also common (Sirvent, 2010).

Having considered the above, and defined the construct, the general objective of the investigation is to establish the constructs self-deception and mystification statistically through an analysis of their descriptive characteristics and of the differing profiles found in the clinical subpopulations and the general population sample. As has been shown in the theoretical background, self-deception is a construct which is characterized by: (a) Deceiving oneself unconsciously or trying to do so consciously; (b) Behaviour is controlled by said self-deception, and (c) Ignoring or denying the consequences of such behaviour. A differential diagnosis must be carried out when presented with false beliefs, delirious thoughts and any processes which occur with distorted thoughts (neurosis in general, psychosomatic or anxiety disorder, obsessive compulsive disorder -OCD-, etc.). The broad objective is to design a valid and reliable instrument to measure the construct self-deception and its associated factors in accordance with the literature on the subject. In order to achieve a better validation of the IAM-40, the following specific objectives are proposed: (a) Explore the descriptive symptomatic profiles of the construct Self-deception in each of the explored symptomatic dimensions and factors; (b) Carry out a comparative analysis between clinical subpopulations and the general population sample of the signs of self-deception; (c) Expand on the proposal for an explanatory model of the etiology of self-deception; and after achieving these objectives; and (d) Explore the valuation further and proceed to a critical discussion of a proposal for psychotherapeutic intervention.

Finally, the hypothesis of the study is that significant differences will be found in the syndromic profiles of self-deception in the clinical subpopulation (drug-addicts and patients with psychopathological disorders and/or psychiatric disorders in general) and the general population. A syndromic profile showing a greater pathology is expected to be found in the clinical sub-population.

Method

Participants

Through purposive or biased sampling, patients who were treated by the multidisciplinary team of psychotherapists from the *Fundación Instituto Spiral* (Oviedo and Madrid, Spain) were selected. The selection of subjects and the size of the clinical sample were decided by following technical criteria and according to investigative interest. Specifically, 159 patients, who were receiving treatment at the Fundación Instituto Spiral, participated in the study; 66.7% (total number= 196) were men. With regard to the criterion of age stratification, the mean age of the subjects is 37.75 years old (Standard deviation [*SD*]=9.864); the mode is 38 years old; the minimum age is 17 and the maximum, 63. The general population sample was selected at random and it is made up of 124 subjects, ranging in ages from 18 to 61 years old (mean age= 39.911, *SD*= 13.251). Sociodemographic variables of interest include: 42.8% (total number= 59) of the clinical population have received Secondary Education (initial stage) and 36.2% (total number= 50) have completed Secondary studies. Similarly, in the sub-sample of the general population, 54.7% have undertaken mid-level university studies, 42.7% had

the professional qualification of administrative manager and in both sub-samples, more than half of the subjects stated that they were of a middle socioeconomic class (51.4% and 56.4% respectively).

Instruments

The *Self-Deception and Mystification Inventory* (IAM-40) was used; it comprises 40 items whose average score is compiled in the general scale. It also consists of five factors (Insincerity and communicative opacity, Manipulation, Denial and relapse mechanisms, Mystification and distrust and Interested or distorted perception of reality) plus three subfactors related to respective factors, which describe clinical aspects of self-deception and further qualify and imply the factor in question. The factors and subfactors which define the construct self-deception and their corresponding clinical description are as follows:

- *Insincerity and communicative opacity factor*. Insincerity is a lack of truthfulness, both in interactions and when talking of oneself, especially when the lack of recognition of the truth may cause unpleasant consequences. The tendency to lie is an almost automatic mechanism in the person who is interested not so much by deception, but by personal benefit and in avoiding a feared consequence if they were to respond truthfully (the person does not lie for lying's sake, but to avoid harmful consequences if they tell the truth). Communicative opacity is the difficulty in accessing the subject's thoughts, on a cognitive level; the subject also usually has problems in expressing emotions or ideas, and expresses them incompletely or distortedly. A clear lack of willingness to externalise feelings or thoughts is observed frequently.
- *Manipulation Factor*. Manipulation is the attempt to modify the emotions or understanding of the speaker for personal benefit (this aspect differentiates this concept of clinical manipulation from the conventional meaning). The subject tries to obtain a benefit, rather than deceive, when he/she manipulates. Someone who jokes, for example, is an emotional manipulator who does not fit into this concept, while, in contrast, a fraudster would fit into this category since he/she focuses more on using the other for personal benefit than on deceiving. In the Self-deception and Mystification Inventory (IAM-40) manipulation is viewed from a utilitarian perspective.
- *Denial and relapse mechanisms factor*. Denial is to argue that something does not exist, is not true, or is not as someone believes or claims it to be, despite there being evidence. It is to not recognize something and not admit its existence. Denial of reality can be a defence mechanism against reality: the person denies evidential facts or real situations, and does not perceive things which he/she does not accept. The continuing refusal to be influenced by external facts also indicates that a denial mechanism is at work. Dismissal is the principal mechanism which the subject resorts to when faced with arguments which he/she does not like or when faced with an inconvenient reality. It involves refuting another without even considering their explanations. The arguments for rejecting or contradicting are guided by self-interest rather than by a desire for objectivity and emotional or inconsistent arguments are very often used. This dismissal is a way of making understanding impossible by creating an automatic negative response mechanism which becomes more and more pronounced. In addition, when the subject is not pleased by the interlocutor, he/she will distort everything they say and will put the rejection mechanism into place against any statement made

by the other. Repetition of mistakes, or being faced with the same problems several times, is a sign and consequence of selective amnesia. The subject does not learn from mistakes, takes time to become aware of important issues, does not perceive the counterproductive effects of something, maintains the state of situations which never improve and most importantly, avoids making a connection between issues which are present, but which the subject appears not to understand.

- *Mystification and distrust factor*. Mystified behaviour suggests a life based on deception ("deception as a way of life"), which covers all areas of daily activity and isolates the subject, although he/she does interact with other people. The subject's life is removed from the real world and self-deception takes over daily behaviour. In drug-addicts or alcoholics, for example, the subject maintains a "mystified being" and limits themselves to doing enough to locate substances and scorns the multiple facets of life, which contributes to a worsening in their ability to relate with people and a drop in their quality of life. In extreme cases the subject avoids social contact and becomes a misanthrope. Another characteristic of mystification is a lack of pragmatism or practicality, unreal logic and behaviour which defies common sense. In addition, the subject is defensive or uses a sceptical or mystification defence mechanism, which acts as a psychological barrier to any external message, thus making it difficult to change their perceptions or become aware of things. A reason for this, among others, is that the subject systematically distrusts others and their recommendations; suspicion is an obstruction to all outside messages and interpersonal communication is severed. Mental rigidity is both a cause and a consequence of this defensiveness and it is one of the main impediments to therapeutic progress. Self-centredness and the associated isolation unavoidably predispose the subject to misanthropy, which reduces understanding of external advice and communication with others even more. It completes a spurious, vicious circle, especially when this clashes with self-interest, in which case the subject's thoughts are irreducible.

Interested or distorted perception of reality factor. This view consists of considering or taking into consideration only the things which are pleasing to the subject and ignoring anything displeasing. In other words, seeing only the positive and ignoring the negative. It involves only accepting a message if it is pleasing to the subject (selective critique) and transforming thoughts for the purpose of one's own benefit. What one likes (including if it is harmful for the subject) is confused with what is suitable. The subject believes more in his/her own illusory reality than in the reality which others, such as therapists and close family or friends, try to convince them of, sometimes with difficulty and tirelessly; this causes them not to discern a serious problem. Subjective deformation of self-perception and outside reality are both equally crucial symptoms of self-deception. The subject has an illusory self-image, which may be, nevertheless, firmly rooted in his/her conscience. Perceptive distortion means that others will be aware that he/she has problems before the subject is. He/she will often disagree greatly with the opinions of others. The subject will frequently believe that almost nobody understands them.

Process and data analysis

Given our focus for the investigation, the first step involved carrying out an exhaustive review of the theme of self-deception in the literature dealing with this field. This included both essential theories and analytical instruments. With reference to the

empirical research, the information on patients receiving treatment was carried out by professionals from la *Fundación Instituto Spiral* within the therapeutic programme and with sufficient methodological guarantees (assignment of an identification code, confidentiality, etc.). As part of the validation process for IAM-40, an initial phase involved using Paulhus' Desirability Inventory (The Balanced Inventory of Desirable Responding, BIDR; Paulhus, 1998) as an anchor questionnaire; it was adapted and translated into Spanish by an expert team in this field with the author's consent and approval on the version of the Inventory used. Our research interest focused on exploring the subscales, Impression Management (IM) and Self-deception (SD). In time, the Self-deception Scale (Sirvent, 2006) was validated in a clinical population of addicts; the Scale comprises the subscales Manipulation, Reiteration, Denial and avoidance mechanisms and Self-deception itself (see Blanco, López, & Sirvent, 2007). A new double-blind validation analysis by expert judges of the Self-deception Scale (IAM-50) resulted in the current Self-deception and Mystification Inventory (IAM-40), which we are subjecting to validation.

A validity test of the content was carried out to evaluate the pertinence of the items and the syndromic factors. Four professional judges and experts in Psychology from interdisciplinary work teams received the instrument with 50 items in total; an agreement was reached by three or more judges regarding the level to which each item was an indicative measurement. Ten items were discarded and their categorization with corresponding clinical factors was readjusted. The analysis of the convergent validity was based on Sirvent's previous work (2006, 2007, 2008).

In this descriptive study, the statistical processing and treatment of the data was carried out using the SPSS programme and the following types of analysis were carried out: descriptive analyses (frequency distribution, averages and typical deviations, etc.); analysis of frequencies and comparison of averages (ANOVAs); factor analyses; as well as multivariate statistical analysis techniques for exploring the relations between the variables.

Results

Table 1 presents a summary of the basic descriptive statistics (the minimum, maximum, mean and standard deviation -*SD*) and the subsequent two tables show the results found from the analysis of the main descriptive statistics, both in the clinical sub-sample and in the general population (see Tables 1, 2, and 3, respectively).

Table1. Comparative Summary Table of descriptive statistics.

Syndromic Factors	Minimum		Maximum		Mean		*SD*	
	Clinical	General	Clinical	General	Clinical	General	Clinical	General
Insincerity and communicative opacity	1.00	1.38	4.00	4.00	2.73	2.54	.063	.506
Manipulation	1.00	1.41	4.86	4.29	2.84	2.34	.767	.557
Denial and relapse mechanisms	1.50	1.63	4.75	4.38	3.27	2.70	.712	.488
Mystification and distrust	1.56	1.78	4.78	3.78	3.06	2.51	.637	.432
Distorted view of reality	1.25	1.75	4.75	4.00	3.08	2.61	.599	.481
General Scale	1.80	1.65	4.43	3.73	3.00	2.54	.553	.351

Table 2. Descriptive statistics from the clinical population.

		Insincerity and communicative opacity	Manipulation	Denial and relapse mechanisms	Mystification and distrust	Distorted view of reality	General
Mean		2.73	2.84	3.27	3.06	3.08	3.00
SD		.063	.767	.712	.637	.599	.553
Variation		.415	.589	.508	.406	.359	.307
Asymmetry		-.006	.393	-.276	.007	.034	.030
Standard error in asymmetry		.192	.192	.192	.192	.193	.193
Minimum		1.00	1.00	1.50	1.56	1.25	1.80
Maximum		4.00	4.86	4.75	4.78	4.75	4.43
Percentils	5	1.750	1.571	2.125	2.000	2.125	2.072
	10	2.000	1.857	2.250	2.222	2.250	2.275
	25	2.250	2.286	2.750	2.556	2.625	2.575
	50	2.625	2.857	3.375	3.111	3.125	2.987
	75	3.250	3.286	3.875	3.556	3.375	3,431
	80	3.375	3.428	3.875	3.667	3.500	3.500
	90	3.750	3.857	4.125	3.889	3.750	3.700
	95	3.875	4.286	4.375	4.000	4.006	3.852
	97	3.875	4.571	4.500	4.222	4.375	4.125
	99	3.925	4.857	4.675	4.644	4.676	4.292

Table 3. Descriptive statistics from the general population.

		Insincerity and communicative opacity	Manipulation	Denial and relapse mechanisms	Mystification and distrust	Distorted view of reality	General
Mean		2.54	2.34	2.70	2.51	2.61	2.54
SD		.506	.557	.488	.432	.481	.351
Variation		.256	.311	.239	.187	.232	.123
Asymmetry		.281	.388	.364	.537	.503	.411
Standard error in asymmetry		.217	.217	.217	.217	.217	.217
Minimum		1.38	1.41	1.63	1.78	1.75	1.65
Maximum		4.00	4.29	4.38	3.78	4.00	3.73
Percentils	5	1.750	1.464	1.875	1.806	1.906	2.025
	10	1.875	1.571	2.062	2.000	2.000	2.112
	25	2.125	2.000	2.375	2.222	2.250	2.325
	50	2.500	2.286	2.625	2.444	2.500	2.525
	75	2.875	2.714	3.000	2.778	2.969	2.750
	80	2.875	2.857	3.125	2.778	3.125	2.800
	90	3.187	3.000	3.375	3.111	3.250	3.025
	95	3.375	3.250	3.594	3.306	3.500	3.194
	97	3.625	3.429	3.656	3.472	3.656	3.244
	99	4.000	4.214	4.250	3.778	3.937	3.669

Significant differences ($p < .005$) in the symptomatic profiles of both subpopulations were confirmed, as predicted; the differentiation was indicative of a greater pathology in the clinical simple in all of the studied indicators (see Table 4).

In terms of the correlation between self-deception as perceived by the professional teams and self-deception as determined by the findings, it is inferred that the self-deception

Table 4. ANOVA of factors.

	Sum of squares	Mean squares	*F*	*p*
Insincerity and communicative opacity	2.472	2.472	7.156	<.010
Manipulation	16.953	16.953	36.263	<.000
Denial and relapse mechanisms	22.829	22.829	58.563	<.000
Mystification and distrust	21.385	21.385	68.885	<.000
Distorted view of reality	25.044	25.044	49.622	<.000
General Scale	14.445	14.445	63.925	<.000

inventory and the judges are in agreement regarding the levels of self-deception and its factors or components; i.e. there is inter-judge agreement. It should also be added that the morbidity rate for self-deception in the general population is almost 10% (scale >3.0: 12.90%; >3.05: 7.26%; >3.2: 6.45%).

For the analysis of the internal consistency of the IAM-40 a Cronbach alpha coefficient of .922 was obtained, which is indicative of a very good internal consistency. The values oscillated between the level for the syndromic factor of Manipulation (.802) and that obtained for Insincerity and communicative opacity (.709). The correlations between the scores for each one of the syndromic factors and the total corrected score in the IAM-40 are shown in table 5. The correlation coefficients for the item-total are all statistically significant and range between .867 and .467, while the mean of the inter-item correlations 3.25 (range= 1.402).

Exploratory factor analyses were carried out to study the dimensionality of the sample. The first analysis used the principal factor method and the oblique rotation method, while a second factor analysis used the extraction of principal components method and the Varimax rotation method, with the aim of clarifying the structure of the factors which were extracted from the questionnaire. From the factor analysis seven factors were extracted by using the principal axis extraction method and direct oblimin rotation. In Table 6 the matrixes of the five factors are shown (Insincerity and communicative opacity, Manipulation, Denial and relapse mechanisms, Mystification and distrust and Clinical self-deception); these five factors were extracted from this factor analysis and as a whole they represent 67.4% of the explained variation and they have been clinically described in the section relating to the evaluation instrument.

Table 5. Inter-element correlation matrix (Pearson bilateral significance, *N*= 283).

	Insincerity and communicative opacity	Manipulation	Denial and relapse mechanisms	Mystification and distrust	Distorted view of reality
Manipulation	.529*	--			
Denial and relapse mechanisms	.588*	.515*	--		
Mystification and distrust	.556*	.540*	.736*	--	
Distorted view of reality	.579*	.557*	.674*	.671*	--
General Scale	.789*	.743*	.867*	.867*	.822*

Note: *= significant at the .01 level (bilateral).

DISCUSSION

Self-deception, as well as all the other factors investigated by the self-deception and mystification inventory (IAM-40) have a clinical existence, and it is possible for them all to be evaluated and studied. The IAM-40 inventory has been shown to be a suitable instrument for measuring the general level of self-deception through the global score and the factors (insincerity, manipulation, denial mechanisms, mystification and distorted view of reality). The scale and factors are all useful diagnostic elements for daily clinical management and for clinical investigation. In conclusion, the validity of

Table 6. Factors analysis and reliability of the clinical factors.

	Items	R^2	Alpha
Insincerity and communicative opacity	19	.724	.709
	37	.689	
	2	.476	
	9	.442	
	15	.439	
Manipulation	32	.719	.802
	36	.683	
	6	.629	
	13	.604	
	29	.556	
	23	.461	
Denial and relapse mechanisms	14	.775	.782
	17	.766	
	1	.699	
	30	.699	
	5	.628	
	18	.528	
	21	.406	
	26	.401	
Mystification and distrust	39	.702	.759
	4	.646	
	3	.594	
	40	.560	
	34	.504	
	27	.458	
Distorted view of reality	11	.570	.726
	28	.526	
	7	.487	
	35	.465	
	22	.451	
	8	.407	
	24	.403	

the constructs self-description and pathological self-deception and the importance of both in numerous mental disorders are confirmed.

The Self-deception and Mystification Inventory (IAM-40) seems to be especially appropriate for studying addict populations since it evaluates fundamental components of self-deception: denial mechanisms, manipulation, tendency for recidivism and mystification; it may be used for preventing subsequent relapses (Donovan, 1996; Marlatt, 2005), and even as orientation for the therapist (Porcel, 2005). We are sure that its application in other psychopathological process would be equally interesting, especially in mood disorders, sociopaths and neurotics in general (anxiety disorders, phobias, etc.).

The study invites further study of the evaluation of self-deception by applying the IAM-40 inventory to specific population samples. In this respect, experiments with addicts and prison population samples have been performed in Latin America and Spain with interesting results. We believe that it is the right time to extend this application to different mental disorders. It seems relevant to discuss the proposal for an explanatory clinical model of self-deception which deals in greater depth with the nosologic and psychopathological nature which justifies ad hoc intervention (Porcel, 2005; Sirvent, 2008, 2010). Secondly, the critical discussion proceeds from a proposal for psychotherapeutic

and sociotherapeutic intervention. It is important to remember that pathological self-deception perpetuates the disorder and acts as a catalyst for recidivism, which is why it is important to revert self-deception, if the illness is to be neutralized with some assurance. The question is, should self-deception be treated specifically? If the answer is yes, how do we do so?

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