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## **ASSESSING AND DETECTING THE ABILITY TO FAKING PSYCHOLOGICAL INJURY AS A CONSEQUENCE OF A MOTOR VEHICLE ACCIDENT ON THE MMPI-2 USING MOCK VICTIMS.<sup>1</sup>**

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### ABSTRACT

The Spanish Law 30/1995 concerning civil liability in motor vehicle accidents (MVA) has included, under the precept of moral damage, the compensation of victims of psychological injury. The literature has identified PTSD and the indirect measurements or secondary disorders i.e., depression and dystimia, as psychological injury of an MVA. Nevertheless, under civil law, the diagnosis of PTSD alone does not constitute sufficient evidence given that in legal terms faking or false testimony must be detected and eliminated before an expert testimony can be admissible. In this context, and in order to assess the ability of malingerers to fake psychological injury in MVA, a total of 105 naïve participants i.e., untrained in psychopathology, and who had never been involved in a traffic accident in which they had sustained physical or psychological injury, were asked to feign they had suffered psychological injury as a consequence of a MVA. One week after self-training, they were evaluated on the MMPI-2. The results show that participants were able to fake both the direct and indirect symptoms of psychological injury of an MVA. The assessment of the predictive capacity of the validity and configurations scales of the MMPI-2 for effective simulators of moral damages revealed a wide

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margin of error: 26 subjects (24.76%) were perfect simulators. Finally, the results for the assessment of psychological injury of MVA are discussed and guidelines are recommended for detecting faking.

*Key words:* Faking, motor traffic accidents (MVA), psychological assessment, post traumatic stress disorder (PTSD), MMPI-2.

### RESUMEN

La ley española 30/1995 referente a responsabilidad civil en los accidentes de vehículo de motor (MVA) ha incluido, bajo precepto del daño moral, la remuneración de víctimas de lesión psicológica. La literatura ha identificado PTSD y las medidas indirectas o desórdenes secundarios, ejemplo depresión y distimia, como las lesiones psicológicas de un MVA. Sin embargo, bajo la ley civil, el diagnóstico de PTSD por sí solo no constituye evidencia suficiente, dado que en términos legales antes que sea admisible el testimonio de un experto, se deben detectar y eliminar la falsificación o falso testimonio. En este contexto y para determinar la capacidad de las personas de falsificar una lesión psicológica en MVA, a un total de 105 participantes quienes no tenían entrenamiento en psicopatología y nunca habían estado implicados en un accidente de tráfico en el cual hubiesen sufrido lesión física o psicológica, se les pidió fingir que habían sufrido una lesión psicológica como consecuencia de un n MVA. Una semana después del auto-entrenamiento, fueron evaluados con el MMPI-2. Los resultados muestran que los participantes pudieron falsificar tanto los síntomas directos como los indirectos de lesión psicológica de un MVA. La evaluación de la capacidad predictiva de las escalas de validez y de las configuraciones del MMPI-2 para los simuladores efectivos de daños morales, reveló un amplio margen de error: 26 sujetos (24.76%) fueron simuladores perfectos. Finalmente, se discuten las implicaciones de los resultados para la evaluación de lesiones psicológicas en MVA y se recomiendan pautas para detectar la falsificación.

*Palabras clave:* Falso testimonio, evaluación psicológica, accidentes de tráfico con vehículo de motor (MVA), desorden de estrés post-traumático (PTSD), MMPI-2.

### INTRODUCTION

The Spanish *Law 30/1995*, 8 November 1995 regulating *Civil Responsibility and Motor Insurance* has introduced for the first time in Spain psychological injury as an item to be estimated under the category of moral injury. Whilst physical injury is estimated on compensation tables, the estimation for compensation of psychological injury sustained in a motor vehicle accident have not been clearly established due to the difficulties in estimating

claims in monetary gains (Douglas, Huss, Murdoch, Washington, & Korch, 1999; Koch, Douglas, Nicholls, & O'Neill, 2006; Santos, 1989). According to Spanish Law 30/1995, psychological injury is defined as injury sustained as a result of having undergone a traumatic experience which, to a greater or lesser degree, may adversely affect a person's everyday life in terms of family relationships, social relationships, work, and/or leisure (Iglesias, 1996). Though legislators had been well aware of the psychological injuries sustained in Motor Vehicle

Accidents (MVAs), they had often been reticent to consider them as an element to be evaluated in claims for victims compensation on the basis of the difficulties in assessing psychological injuries and hence the creation of objective compensation tables (American Medical Association, 1995; Criado del Río, 1999; Muller, 1995; Pérez & García, 1991) primarily due to the subjective, individual and personal nature of psychological injuries (Kane, 2006; Koch, *et al.*, 2006). As these deficiencies have now been overcome, the Spanish law has recently introduced psychological injury as an item for victim compensation. Thus, Post-Traumatic Stress Disorder (PTSD) and its indirect measurements *i.e.*, comorbidity with disorders such as hypochondriasis, hysteria, depression, anxiety, dystimia (Blanchard & Hickling, 2004; Bryant & Harvey, 1995; Fuglsang, Moergeli, & Schnyder, 2004; Kessler, Sonnega, Hughes, & Nelson, 1995; Maes, Mylle, Delmiere, & Altamura, 2000; O'Donnell, Creamer, & Pattison, 2004; Stallard, Salter, & Velleman, 2004; Taylor & Koch, 1995; Vallejo-Pareja, 1998) have been admitted as evidence of psychological injury given that it has been systematically observed that this disorder is linked to having experienced, directly or indirectly, traumatic events such as sexual aggression (*p. ej.*, Echeburúa, Corral, Zubizarreta, & Sarasúa, 1995; Naugle, Bell, & Polusny, 2003), natural disasters (*p. ej.*, Hodgkinson, Joseph, Yule, & Williams, 1995), war (*p. ej.* Fairbank, Ebert, & Zarkin, 1999), kidnapping, torture or accidents (*p.ej.*, Blanchard, Hickling, Taylor, & Loos, 1996). Furthermore, reliable and valid measurement instruments, *i.e.*, the Structured Interview of Reported Symptoms or the MMPI, have been designed to measure and provide an objective quantification (*p. ej.*, V axis of the DSM-IV-TR) of psychological injury (Rogers, 1997a). However, PTSD has been identified as a primary diagnostic in those who have suffered a traumatic event, the secondary diagnostics vary from one traumatic event to other. Thus, in cases of sexual assault the secondary disorders are normally depression, social inadaptability and sexual dysfunctions whereas in traffic accidents the

literature has identified depression, dystimia, anxiety, phobias and substance or alcohol abuse/dependence (Blanchard & Hickling, 2004; Bryant & Harvey, 1995; O'Donnell, Creamer, & Pattison, 2004; Fuglsang, Moergeli, & Schnyder, 2004; Maes, Mylle, Delmiere, & Altamura, 2000; Stallard, Salter, & Velleman, 2004; Taylor & Koch, 1995).

Within the context of motor vehicle accidents, the focus of medical-legal assessment can no longer be restricted to the traditional role of diagnosing disorders and must encompass the detection of feigning (American Psychiatric Association, 2002). To achieve both objectives, the design of effective clinical procedures for the diagnosis and control of feigning is indispensable particularly in view of the fact that standard clinical evaluation has never been able to detect feigning (*e.g.* Rogers, 1997b).

Thus the aim of this experimental study was twofold: a) to evaluate on the MMPI-2, the standard instrument for evaluating psychological injury in a forensic context (Butcher & Miller, 1999), the person's ability to feign psychological injury sustained in a MVA; and b) to assess the efficacy of the validity scales and the configurations of the validity scales to predict the faking of psychological injury.

## METHOD

### *Subjects*

A total of 105 naïve participants in psychopathology, and who had never been involved in a traffic accident in which they had sustained physical or psychological injury, 45 men (42.86%) and 66 women (57.14%), over the age of 18 years, with an 19 to 75 year age range distribution, with the mean age biased to young people in line with the proportion of real victims of traffic accidents ( $M= 24.12$ ;  $SD= 7.07$ ), took part in the study. The participants were 74 employed, 22 self-employed, 4 unemployed, 1

retired person, and 4 participants of no fixed profession. As for the academic level, all participants had at least the certificate of secondary education, that is, all had a minimum of cognitive skills to malingering (prior to participating in the study, all participants were interviewed in order to detect brain damage or deficiencies in cognitive skills).

### *Measurement Instruments*

Measurements were carried out using the MMPI-2 measurement instrument adapted for the Spanish context by the TEA (Hathaway & McKinley, 1999), which is the most frequently used instrument for the forensic evaluation of psychological injury (Butcher & Miller, 1999). In order to clinically measure direct and indirect psychological injury sustained in motor vehicle accidents, the basic clinical scales of the MMPI-2 were used as well as the two additional measurement scales of the PTSD, the Pk and Ps Scales. For feigning, the original validity scales ("no answers", L, F, and K scales), and the complementary validity indicators (Back F, TRIN and VRIN) were used, (other validity scales such as the Fp and the Ds scales were not used as they are not currently part of the MMPI-2 scoring). Moreover, the results obtained from the original MMPI-2 validity scales were used to calculate the configurations that have proven to be effective for the detection of feigning of disorders (Duckworth & Anderson, 1995). The F-K index, also known as the "Gough index" and the "inverted V" profile have proven to be robust indicators of attempts to portray a bad image whereas the "inverted V" profile detects the exaggeration of symptoms (Nicholson *et al.*, 1997).

### *Procedure*

Participants were asked to complete the adapted Spanish version of the MMPI-2 (Hathaway & McKinley, 1999) following the *standard instructions* outlined in the MMPI-2 for

contrasting the participant's mental condition. All participants freely consented to participate in the experiment, and were informed that they would undergo clinical evaluation and would be provided a report on their clinical condition on request. The questionnaires were administered individually. Having completed the MMPI-2, participants were instructed they would be re-evaluated one-week later. The second evaluation involved supplying participants a series of *feigning instructions* whereby they had to imagine they had been injured in a traffic accident and were feigning to have suffered psychological injuries so as to obtain a sizeable compensation for damages. Prior to being re-evaluated on the MMPI-2, participants were given some time to rehearse for the feigning task. To maximize participant commitment to the task at hand, a financial incentive of 150 Euros was offered to the four best feigners of psychological injury.

## RESULTS

### *Evaluation of feigning on the MMPI clinical scales*

In order to assess the first objective of the present study i.e., to determine the ability to feign psychological injury, the responses of the feigning condition were contrasted with the cut-off point (70 being the most common score) beyond which the "diagnostic impression" that the subject is deemed pathological (Hathaway & McKinley, 1999). The results (see Table 1) reveal that the participants matched or significantly surpassed the cut-off point of the basic clinical scales for hypochondria, depression, hysteria, deviation psychopathic, paranoia, psychasthenia, schizophrenia, and social introversion. The data show that the subjects who feigned psychological injury exhibited symptoms of psychological injury both in terms of primary disorders, the PS and PK Scales for Posttraumatic Stress Disorders as well as secondary disorders i.e., depression (verbigratia, Kessler, Sonnega, Hughes, & Nelson, 1995; Maes *et al.*, 2000; O'Donnell,

Creamer, & Pattison, 2004). Nevertheless, the same results detected psychological injury in terms of hypochondria, hysteria, psychopathic deviations, the psychotic triad (paranoia, schizophrenia and psychasthenia), and social introversion which are not a psychological

disorder associated to traffic accidents (i.e., Blanchard & Hickling, 2004; Fulsang, Moergeli, & Schnyder, 2004; Stallard, Salter, & Velleman, 2004). Finally, participants in the feigning condition exhibited neither gender disorders (masculinity-femininity), nor hypomania.

TABLE 1

*One sample T-test. Feigning answers.*

Variable	t	p	M	SD
Hypochondriasis	6.80	.000	80.23	15.42
Depression	7.68	.000	79.09	12.12
Hysteria	5.47	.000	76.75	12.66
Psychopathic deviation	-1.70	.093	68.01	12.03
Masculinity-femininity	-18.84	.000	52.81	9.35
Paranoia	2.81	.006	74.61	16.84
Psychasthenia	4.95	.000	75.65	11.70
Schizophrenia	7.42	.000	83.10	18.09
Hypomania	-8.73	.000	59.71	12.07
Social introversion	-1.08	.281	68.63	12.98
PTSD, PK Scale	4.33	.000	75.01	11.87
PTSD PS Scale	4.40	.000	74.85	11.28

Note: *df* (104). test value= 70.

*Analysis of the responses mediated by the feigning instructions factor*

Though the findings support that participants were able to feign effectively psychological injury in terms of primary and secondary disorders associated to traffic accidents should not obscure the fact that these were associated with unrelated symptoms. It is worth noting that these results cannot reject the possibility that the effects were already present prior to the measurement of feigning. Thus a repeated measurement design to evaluate the effects of the instructions on the clinical measurements was undertaken. The results reveal a multivariate effect modulated by the

“instructions” factor (standard instructions vs. feigning instructions),  $F_{\text{multivariate}}(10,95)= 42.69$ ;  $p<.001$ ;  $\eta^2= .818$ . Moreover, explained variance is such that the “instructions” factor accounts for 82% of the variance.

The univariate effects (see Table 2), show that participants scored higher towards pathology in all of the clinical measurements under the “feigning instructions” condition in comparison to the “standard instructions” condition. Indeed, in the later condition, participants reported clinical normality (i.e., *Ms* were approximately 50). Likewise, the analysis of cases rejects the pathology of subjects in the “standard instructions” condition.

TABLE 2

*Univariate effects on the clinical scales of the MMPI-2 by the “instructions” factor.  
Within-subjects effects*

Clinical Scales	MS	F	p	Eta <sup>2</sup>	M <sub>si</sub>	M <sub>mi</sub>	1-B
Hypochondriasis	48184.58	303.58	.000	.74	49.93	80.23	1
Depression	46622.10	308.43	.000	.75	49.28	79.09	1
Hysteria	36221.73	330.26	.000	.76	50.49	76.75	1
Psychopathic deviation	12404.74	119.75	.000	.53	52.64	68.01	1
Masculinity-femininity	376.00	8.04	.005	.07	50.13	52.81	.802
Paranoia	34560.17	291.79	.000	.74	49.99	75.65	1
Psychasthenia	32091.50	196.17	.000	.65	49.88	74.61	1
Schizophrenia	59068.97	287.43	.000	.73	49.56	83.10	1
Hypomania	3108.88	39.74	.000	.28	52.02	59.71	1
Social introversion	20562.30	158.61	.000	.60	48.84	68.63	1

Note:  $df(1,104)$ .  $M_{si}$  = Mean of standard instructions.  $M_{mi}$  = Mean of malingering instructions.

As for the direct measurements of PTSD, a significant increase in the Pk and Ps Scales (see Table 3) mediated by the instructions factor was observed. Thus, there was no evidence of PTSD in the standard instructions condition ( $M= 49.98$  y  $49.61$  for PK and PS, respectively), whereas in the feigning instructions condition not only significant higher scores were obtained but also the “diagnostic impression” entered the region of pathology ( $M_s$  T scores  $=70$ ) were obtained for the measurements of this disorder which were in the pathology region (T score  $=70$ , see Table 1). Similarly, case analysis showed no evidence of PTSD under the “standard instructions” condition while as evidence of

effective feigning (PTSD and depression) was observed in 60.9% of the cases in the “feigning instructions” condition,  $\chi^2(1,n=105)=5.03$ ;  $p<.05$ . Thus, it appears that the feigning of psychological injury in a recognition task such as the MMPI is quite feasible for potential feigners.

In short, participants employed a general feigning strategy consisting of reporting they suffered from most of the symptoms, that is, “indiscriminate symptom endorsement”, which included the direct (PTSD) and indirect (depression) measurements of psychological injury associated to a MVA.

TABLE 3

*Within-subjects effects on the PTSD scales by the “instructions” factor.*

PTSD Scales	MS	F	p	Eta <sup>2</sup>	M <sub>si</sub>	M <sub>mi</sub>	1-B
PTSD, PK Scale	32887.54	307.76	.000	.747	49.98	75.01	1.000
PTSD, PS Scale	33440.48	318.41	.000	.754	49.61	74.85	1.000

Note:  $df(1,104)$ .  $M_{si}$  = Mean of standard instructions.  $M_{mi}$  = Mean of malingering instructions.

*Analysis of feigning on the MMPI-2 validity scales.*

*Analysis of the sensitivity of the original MMPI-2 validity scales mediated by the instructions factor.*

The multivariate contrastive analysis revealed that the response validity control scales were sensitive to the instructions factor (standard instructions vs. feigning instructions),  $F_{\text{multivariate}}(4,101) = 35.63$ ;  $p < 0.001$ ;  $\eta^2 = .577$ . In addition

to the significance of this effect, this factor explained nearly 60% of the variance.

The univariate analyses (see Table 4) show, in comparison to the standard instructions condition, a significant increase in the F Scale values (Frequency), a decrease in the K Scale (K Factor), and a fall in the no-answers Scale in the feigning instructions condition, whereas the L Scale (Lie) remained unchanged. These findings are in line with the predictions of the model in the F and K scales but run counter to the predictions for feigning on the no-answers Scale.

TABLE 4

*Univariate effects in the MMPI-2 original control scales mediated by the “instructions” factor. Within-subjects effects.*

Original control Scales	MS	F	p	eta <sup>2</sup>	M <sub>si</sub>	M <sub>mi</sub>	1-B
No answer scale (?)	43.886	10.51	.002	.092	1.91	.99	.895
Lie scale (L)	1029.64	1.28	.260	.012	48.81	53.24	.202
Frequency scale (F)	53536.23	132.88	.000	.561	49.19	81.12	1
K Factor	2558.97	49.60	.000	.323	50.24	43.26	1

Note:  $df(1,104)$ .  $M_{si}$  = Mean of standard instructions.  $M_{mi}$  = Mean of malingering instructions.

*Analysis of the statistical power and the classification of the original validity scales under the feigning instructions.*

On the basis of the previous findings which open a door to the possibility of using these scales for feigning detection in MVA, the statistical power and the directionality of the sensitivity to feigning as well as the robustness of the classification of the cases was assessed using the design of  $n=1$  in line with standard forensic procedure.

The criminological model for the explanation of feigning is based on the basic assumption that a key strategy of feigners is non-response and non-cooperation during the evaluation process (Lewis & Saarni, 1993; American Psychiatric Association, 2002). On the MMPI, both are

measured by the “no-answer” Scale whose cut-off point for invalidating a protocol is more than 10 omitted items (Graham, 2006). Our results revealed that this indicator failed to detect any of the feigners. Moreover, the contrast between the means for the standard and the feigning instructions (see Table 4) highlights that, contrary to expectation, a low no-answers score was found in the feigning condition. Thus, the “no-answer” Scale is not valid for predicting feigning.

The L validity Scale, which is driven to measure social desirability (by hiding symptoms) but not feigning, informs of dissimulation if a subject scores high (T score =70) (Graham, 2006). Clearly, this strategy is contrary to the interests of feigners so they should, but do not, score, ( $M = 53.23$ ;  $SD = 38.58$ ), in this direction as illustrated by our results on feigning instructions,  $t(104) = -22.137$ ;



$p < .001$ . Nevertheless, the study of cases shows that the response of 4 participants was in line with social desirability, that is, dissimulators.

The comparison of the mean of the F Scale for the feigning instructions ( $M = 81.12$ ;  $SD = 26.97$ ) with the cut-off which is indicative of feigning (T score  $\geq 70$ , 7 in raw scores) (Hathaway & McKinley, 1999), confirms that this is a reliable indicator of feigning,  $t(104) = 4.226$ ;  $p < .001$ . Nonetheless, the analysis of cases highlights that only 59.05 % of malingerers (62 participants) were correctly classified by this scale as a feigner; thus, it is not a better indicator of feigning than random prediction, that is, 50%,  $\chi^2(1) = 3.44$ ; ns. In short, the F validity Scale is a statistically reliable indicator of feigning but lacks robustness in the classification of cases.

The K Scale ( $M = 43.26$ ;  $SD = 8.86$ ), which is efficient for detecting feigners (T score  $< 50$ ) and dissimulators (T score  $\geq 65$ ) (Graham, 2006), was found to be a robust indicator of feigning,  $t(104) = 7.8$ ;  $p < .001$ . In addition, the analysis of cases showed the correct classification of 78.1% feigners, which confirms that it is a reliable feigning indicator,  $\chi^2(1) = 33.15$ ;  $p < .001$ . It is worth noting, however, that 22.2% of feigners were not correctly classified as such by this instrument, which is greater than the statistically acceptable margin of error, that is, the criteria of statistical significance ( $< .05$ ),  $Z(105) = 8.09$ ;  $p < .001$ . Thus, this index allows for a margin of error greater than is statistically admissible. Thus, the K Scale is powerful for detecting feigners but with a considerable margin of error. In addition, the analysis of cases revealed that none of the feigners scored T  $\geq 65$ , that is, they did not employ the unexpected “giving a good image of oneself” strategy.

#### *Configurations of the validity scales.*

The configurations of the validity scales enhance the robustness for validating or invalidate the results obtained in the protocol. As for the

detection of feigning, the F-K index, also referred to as the Gough index, and the “inverted V” profile are considered to be effective indicators (Duckworth & Anderson, 1995). The comparison of the F-K index ( $M = 37.87$ ;  $SD = 32.01$ ) with the average cut-off informed in the literature for feigning (Rogers, Sewell, Martin, & Vitacco, 2003) (12 in raw scores and T scores  $\geq 30$ ), not showed that this index was robust for the detection of feigning,  $t(104) = 2.52$ ;  $p < .05$ . Notwithstanding, the analysis of cases showed that this configuration only correctly classified 55.2% of feigners; hence, it is not a reliable indicator in case classification,  $\chi^2(1) = 1.152$ ; ns, given that it did not classify better than random prediction (50%). As for the “inverted V” profile (T scores on the L and K  $< 50$  and F  $> 80$  are indicative of feigning) (Jiménez & Sánchez, 2003) was only able to accurately classify 25 malingerers, that is, 23.81% which implies that is considerably less effective than random prediction,  $\chi^2(1) = 28.81$ ;  $p < .001$ . In short, the combinations of indexes were not efficient for forensic procedures designed to detect the feigning of psychological injury in cases of MVA.

#### *Analysis of the additional validity scales of the MMPI-2.*

The additional validity scales TRIN and VRIN (T  $> 70$ ;  $\geq 13$  in raw scores) (Hathaway & McKinley, 1999) were insensitive to the instructions factor (see Table 5) and absolutely unproductive for the classification of feigners. Consequently, both scales lack any value for the detection of feigning responses concerning the clinical injuries sustained in a MVA. As for the Fb Scale a significant increase mediated by the instructions factor was observed (see Table 5). Moreover, the comparison between the data for the “feigning instructions” condition, ( $M = 79.98$ ;  $SD = 26.14$ ) and the value of the theoretical cut-off point for feigning (T score  $\geq 70$ ) (Hathaway & McKinley, 1999) revealed that this feigning estimator was statistically reliable,  $t(104) = 8.05$ ;  $p < .001$ . Nevertheless, the analysis of cases confirms that this feigning

indicator (55.2% of correct classifications) is as reliable as random prediction (50%),  $\chi^2(1)=1.15$ ; ns. Moreover, the analysis of cases showed that

the participants who were detected as feigners by this indicator had also been detected by the original F Scale.

TABLE 5

*Univariate effects in the MMPI-2 additional control scales mediated by the instructions factor. Within-subjects effects.*

Additional control Scales	MS	F	p	eta <sup>2</sup>	Mes	Msi	1-B
TRIN	224.23	3.21	.076	.030	50.56	48.49	.426
VRIN	3.73	.045	.832	.000	48.98	49.25	.055
Fb Posterior/Back F	50918.57	131.77	.000	.559	48.84	79.98	1

Note: *df*(1,104).  $M_{si}$  = Mean of standard instructions.  $M_{mi}$  = Mean of malingering instructions.

*Overall analysis of feigning detection with the validity indicators.*

The consistency in the evaluation is an essential cornerstone for judicial judgment making (Judgement of the Spanish Supreme Court of 8 February 1995, RJ 808; Judgement of the Spanish Supreme Court of 18 November, RJ 7987) as well as for the validity of psychological evidence in court (Hastie, Penrod, & Pennington., 1983). Similarly, for invalidating a protocol as feigning, at least two of the relevant original validity scales for feigning (no-answers, F and K Scales) or their corresponding combinations (F-K and “inverted V” profile) should classify a protocol as such (Lachar, 1974; Roig-Fusté, 1993). Consequently, the accumulative effect of these indexes and their configurations was analysed. The results, whose contingencies can be seen in Table 6, underline the accumulative effectiveness of 57.14%, which is not better than a random prediction,  $\chi^2(1)=2.14$ ; ns. Thus, 42.85 % (n=45) of feigners were able to effectively manipulate these controls. The analysis of these 45 feigners showed that 19 did not fake the expected psychological injury whereas 26 (24.76%) simulated the expected psychological injury which denotes a margin of error greater than statistically admissible, the criteria of statistical significance (contrast value of .05),  $Z(105)=9.29$ ;  $p<.001$ .

TABLE 6

*Validity indexes and the number of malingers detected.*

Number of indexes	malingers detected
0	18(17.14%)
1	27(25.71%)
≥ 2	60(57.14%)

DISCUSSION

Prior to the interpretation of the results and arriving at any conclusions, it would be wise to briefly mention three basic limitations of this study. First, it would be convenient to underline that the participants were not undertaking a real-life task, quite simply, they neither suffered from injuries sustained in a MVA nor were claiming compensation for injury. Hence, the implications and psychological circumstances surrounding the case were quite different thus the interpretation of the results cannot be directly extrapolated to real-life cases without certain reservations (Konecni & Ebbesen, 1979). Secondly, as our participants were mock feigners and victims, it was impossible to determine the incidence of

*false positives* with the present experimental design. Thirdly, given that different processes of victimization does not result in identical psychological injury (i.e., Bryant & Harvey, 1995; Blanchard & Hickling, 2004; Kessler *et al.*, 1995), and that the ability to feign varies from one to another (i.e., Arce, Pampillón, & Fariña, 2002; Bury & Bagby, 2002), the results cannot be generalised directly to other forensic settings that are unrelated to MVAs.

Bearing in mind these limitations concerning the results, the following conclusions may be drawn. Firstly, people, regardless of their knowledge of psychopathology, are capable of feigning psychological injury on the MMPI both in terms of primary (PTSD) and secondary (depression) disorders resulting from a MVA. This ability to feign may be generalized to other forensic settings with implications for courts such as criminal insanity, work place accident victims, or sexual assault (i.e., Arce *et al.*, 2002; Bury & Bagby, 2002; Elhai, Gold, Sellers, & Dorfman, 2001). Secondly, on the whole, the original MMPI validity scales are sensitive to feigning. Thirdly, on the basis of the MMPI validity indicators two strategies for the detection of feigning have been identified: positive and negative criteria. Fourthly, positive criteria are those that predict the possibility of dissimulation. Two positive criteria available in our study i.e., L scores  $\geq 70$  and K scores  $\geq 65$ . According to our findings, the values of the L Scale indicators of dissimulation were not entirely effective feigners of psychological injury. Thus, according to this scale, some feigners are dissimulators though they can effectively fake psychological injury of a MVA. As for the scoring criteria K  $\geq 65$ , it was completely insensitive to feigning given that none of the feigners were detected as a dissimulator by this index. Consequently, in real-life evaluations a score K  $\geq 65$  is a very robust indicator that we are not facing a feigner. Fifthly, the negative criteria, which are indicative of possible feigning, were six in total (“no

answers,” L, F, and K Scales, and the configurations F-K and the “inverted V” profile). Of these, only one was robust for the classification of cases: low scores (T score  $< 50$ ) on the K Scale (78.1% correct classifications). Furthermore, the probability of non-correct rejections (that is, failing to identify feigners as feigners) is significant. Sixth, the accumulative effect of the different indexes was tested using the consistency between two or more indicators as a standard for reliability (Lachar, 1974; Roig-Fusté, 1993), finding that the consistency in feigning prediction of psychological injury was only 57.14%. Seventh, the additional indexes VRIN and TRIN were entirely ineffective and non-productive for the classification of cases. As for the Fb Scale (Back F), it was statistically effective, but not for the classification of feigners. Moreover, this index, which was derived from the original F scale, classified the same cases as this one, which implies measurement duplicity.

Though the validity indicators of the MMPI may be effective for the detection of feigning, these entailed a significant margin of error, and the lack of consistency in feigning detection underscores the need for a multimethod approach in order to improve the performance in predicting feigning (Arbisi, 2005; Arce *et al.*, 2002; Polusny & Arbisi, 2006; Rogers, 1997c).

Finally, as for the strategies employed by potential feigners, the results reveal that the participants resorted to two strategies (Rogers & Mitchell, 1991) i.e., “symptoms severity” and “indiscriminate symptom endorsement”. The strategy of symptom severity highlights a common error made by feigners i.e., describing their clinical state as very serious as can be seen from the high severity they ascribed to their mental disorders. Moreover, given the extensive number of malingering disorders endorsed by feigners, it appears they adopted the strategy “the more the symptoms the better”, that is, indiscriminate symptoms endorsement.

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