

Temperament and Character Inventory-Revised (TCI-R). Standardization and normative data in a general population sample

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Inventario del Temperamento y el Carácter-Revisado (TCI-R). Baremación y datos normativos en una muestra de población general

Summary

Introduction. The revised version of the Temperament and Character Inventory (TCI-R), a tool designed by C. R. Cloninger for the evaluation of the seven dimensions defined in his psychobiological model of personality, was translated and adapted to Spanish. The aim of the study was to obtain normative data and scales with T-scores in a incidental sample of the general Spanish population.

Methods. After adaptation to Spanish, the tool was administered to 400 subjects from several areas of Spain. The sample is stratified according to age and gender according to the year 2001 Spanish population census. We have studied the differences between men and women and the association between age and dimensions. We have checked the normal distribution of the traits, and proceeded with the standardization and normalization of the scores.

Results. We present the mean and standard deviation according to sex for each of the main dimensions and subscales. The scores of the main dimensions obtained for general population according to gender show a normal distribution that has allowed us to standardize them into T-scores. The reliability of the dimensions is high. There are differences in the means depending on gender: women scored higher in Harm Avoidance, Reward Dependence and Cooperativeness. Men scored higher in Persistence. There were no high correlations between age and the dimensions.

Conclusions. The Spanish version of the new TCI-R is an adequate tool for the study of personality dimensions of normal population.

Key words: Personality. Temperament. Character. T-score.

Resumen

Introducción. Se ha traducido y adaptado al castellano la versión revisada del Inventario del Temperamento y el Carácter (TCI-R), instrumento diseñado por C. R. Cloninger para evaluar las siete dimensiones de personalidad definidas en su modelo psicobiológico de personalidad. El objetivo es la obtención de datos normativos y baremos tipificados en una muestra incidental de población general española.

Métodos. Tras la adaptación al castellano del instrumento se administra a 400 sujetos de varias áreas geográficas del estado español. La muestra se estratifica por edades y sexo según el censo español del año 2001. Se estudian las diferencias para hombre y mujer y la asociación entre edad y las dimensiones. Se verifica la distribución normal de los rasgos, y se procede a la estandarización y normalización de las puntuaciones.

Resultados. Se presenta la media y desviación estándar por género para cada una de las dimensiones principales y las subescalas. Las puntuaciones de las dimensiones principales, obtenidas en la población general por sexo, muestran una distribución normal que ha permitido estandarizarlas en puntuaciones tipificadas. La fiabilidad de las dimensiones es elevada. Existen diferencias en las medias según el género puntuando las mujeres más alto en evitación del daño, dependencia de la recompensa y cooperación. Los hombres puntuaron más alto en persistencia. No existen correlaciones elevadas entre la edad y las dimensiones.

Conclusiones. La versión española de la nueva versión del TCI-R constituye un instrumento adecuado para el estudio de las dimensiones de la personalidad en población normal.

Palabras clave: Personalidad. Temperamento. Carácter. Puntuación T.

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INTRODUCTION

The Cloninger personality biopsychosocial model is a model that integrates concepts that come from neurobiology and genetics of behavior together with traits from sociocultural learning. This model makes up one of

the personality dimensional models with a greater theoretical basis both in conceptualization of the normal personality as well as in the proposals for a new nosological classification, including personality disorders^{1,2}.

In the beginning, Cloninger focused on the most biological dimensions of the personality included in the temperament components³. The Tridimensional Personality Questionnaire (TPQ) was designed to assess the dimensions of Novelty seeking, Fear of uncertainty, Reward Dependence and Persistence. The dimensions of temperament are considered traits with moderate inheritability and stability over life^{4,5} and are related with the individual differences in basic emotional responses such as fear, aggressiveness and attachment.

After, and due to the limitations found with the TPQ in both the general as well as clinical populations, Cloninger extended his personality model to assess three more di-

mensions that are called Self-directedness, Cooperativeness and Transcendence and that are included in the component of the character. To define these dimensions, he used information on the cognitive and social development, descriptions of the development of the personality within humanist and existential psychology and the most recent studies on neuroscience on learning and conceptual memory¹.

The TPQ was revised and a new instrument was designed that made reference to the new dimensions added. The new questionnaire was called Temperament and Character Inventory (TCI), which is a self-administered instrument using a true/false response format. It quantifies the 7 dimensions of personality and 25 second order traits. This questionnaire has been used in students, general population and clinical population. Its psychometric properties, as well the empiric work performed with the instrument, are gathered in the manual

TABLE 1. Descriptive statistics, minimum-maximum range, kurtosis and asymmetry coefficients and associated probability in the TCI-R dimensions

	Men						Women						p
	Mean	S. D.	m	M	Kurt	Asym	Mean	S. D.	m	M	Kurt.	Asym	
NS	98,53	14,99	63	142	0,13	0,11	96,92	14,72	56	139	0,24	0,11	ns
HA	91,73	15,60	53	139	0,11	0,07	97,92	16,94	55	151	0,36	0,19	0,000
RD	103,92	14,83	48	141	1,09	0,45	110,71	14,95	78	142	0,78	0,12	0,000
PS	114,99	18,75	53	164	0,70	0,00	111,11	17,93	59	153	0,04	0,12	0,035
SD	149,93	18,68	102	191	0,42	0,13	149,85	18,35	79	189	0,44	0,37	ns
C	139,89	15,87	72	173	1,22	0,71	143,98	14,61	94	176	0,23	0,42	0,008
ST	63,52	13,99	32	119	0,47	0,33	66,15	15,75	30	114	0,05	0,44	ns
NS1	31,27	5,61	16	46	0,24	0,36	30,77	5,88	10	42	0,23	0,52	ns
NS2	22,73	5,56	9	41	0,46	0,48	22,18	5,32	9	37	0,43	0,21	ns
NS3	26,36	5,49	10	43	0,21	0,11	26,79	6,71	10	44	0,00	0,25	ns
NS4	18,16	4,65	8	31	0,11	0,18	17,17	4,01	7	27	0,17	0,09	0,023
HA1	27,50	6,05	13	48	0,35	0,26	29,36	6,66	13	48	0,38	0,29	0,004
HA2	23,20	4,66	11	35	0,22	0,22	25,63	4,75	13	35	0,16	0,11	0,000
HA3	19,72	5,39	7	33	0,48	0,12	20,61	5,46	9	35	0,33	0,31	ns
HA4	21,30	5,03	11	38	0,26	0,23	22,31	5,58	10	38	0,01	0,28	ns
RD1	27,74	4,40	13	39	0,09	0,10	30,26	4,58	16	40	0,20	0,16	0,000
RD2	34,92	7,34	10	50	0,05	0,30	37,06	7,07	19	50	0,81	0,18	0,003
RD3	20,90	4,93	6	30	0,20	0,43	22,39	5,47	8	30	0,60	0,46	0,004
RD4	20,34	3,90	6	30	0,74	0,20	20,98	3,86	10	30	0,22	0,20	ns
PS1	30,32	5,82	15	45	0,29	0,02	30,77	5,41	17	45	0,38	0,18	ns
PS2	28,35	4,95	9	40	0,84	0,29	27,58	5,25	12	39	0,31	0,40	ns
PS3	30,42	7,28	12	49	0,32	0,11	27,28	6,73	12	48	0,21	0,26	0,000
PS4	25,89	5,24	12	40	0,00	0,21	25,46	5,34	11	40	0,04	0,17	ns
SD1	32,52	5,00	20	40	0,52	0,37	32,07	5,34	17	40	0,47	0,46	ns
SD2	23,79	3,74	13	30	0,16	0,35	23,57	4,17	10	30	0,74	0,76	ns
SD3	19,33	3,72	5	25	1,65	0,96	18,99	3,23	8	25	0,22	0,49	ns
SD4	33,95	8,42	10	50	0,27	0,29	35,31	7,45	10	50	0,15	0,24	ns
SD5	40,32	5,68	24	55	0,12	0,00	39,89	5,95	17	53	0,67	0,45	ns
C1	31,79	4,78	12	40	0,77	0,61	32,27	4,92	17	40	0,17	0,53	ns
C2	18,33	3,36	6	25	0,60	0,34	19,12	3,11	5	25	1,41	0,50	0,015
C3	31,41	4,34	12	40	1,35	0,50	32,08	3,62	23	40	0,32	0,04	ns
C4	28,00	5,10	10	35	0,44	0,86	29,16	4,90	12	35	1,27	0,121	0,022
C5	30,34	4,74	18	40	0,31	0,00	31,33	4,33	17	40	0,00	0,38	0,030
ST1	27,59	6,26	10	47	0,04	0,05	27,64	6,81	12	44	0,18	0,20	ns
ST2	19,45	5,83	8	37	0,21	0,30	20,15	6,09	8	38	0,30	0,31	ns
ST3	16,47	5,47	8	35	0,08	0,63	18,36	6,43	8	37	0,28	0,67	0,002

ns: no significant.

written by Cloninger et al⁶. In our setting, there is an excellent review in Mateos Agut and De la Gándara⁷. In the year 1999, the questionnaire was revised in order to improve certain methodological problems referring, especially, to Persistence and Reward Dependence dimensions^{8,9}. The Temperament and Character Inventory-Revised (TCI-R) is a 240 item self-administered instrument that is responded on a 5 point Likert scale. A subscale has been added in the dimension of Reward Dependence, openness to warm communication, and the Persistence dimension is made up on 4 second order traits in this version. Furthermore, the number of items on the subscales of Reward dependence has been extended since the internal consistency of these subscales has always been described as low¹⁰⁻¹². Thus, the revised questionnaire evaluates the same main dimensions as the previous one but it has 29 subscales and the answering method has been changed. This is the translation to Spanish of the TCI-R on which the psychometric properties and factorial reply have been studied^{13,14}.

The purpose of this study is to present the changes in the new revised version of the Temperament and Character Inventory (TCI-R) and provide normative data and scales with T score authorized in a Spanish general population sample.

METHODS

Development of the Spanish version of TCI-R

The translation to Spanish of the American version had the informed consent of its author and was performed in several steps that included two translations from English to Spanish and a later translation from Spanish to English by different bilingual persons. The final language was reviewed by psychiatrists and psychologists and the expression of some items was modified to improve the Spanish colloquial style.

Subjects

The sample was made up of 400 subjects whose ages ranged from 18 to 65 years from the several areas of Madrid, Tarragona and Barcelona. The sample was stratified by age and gender according to the Spanish census for the year 2001. A part of the subjects who completed the study were not used on the basis of the TCI-R validity scale (5 items). Of the 400 subjects, 200 were male (mean: 39.49; SD: 12.94) and 200 were female (mean: 39.72; SD: 12.30). All the subjects had knowledge of the study that was being carried out and accepted an informed consent.

TABLE 2. Percentiles in TCI-R dimensions by gender

Pc	NS		HA		RD		PS		SD		C		ST	
	M	W	M	W	M	W	M	W	M	W	M	W	M	W
1	64	59	57	60	50	78	65	63	102	95	90	107	34	34
2	67	64	59	64	68	81	70	69	111	114	101	108	36	37
3	68	66	62	65	78	82	79	74	113	116	106	112	39	40
4	69	69	63	66	80	83	81	78	117	118	110	117	42	43
5	71	71	66	68	83	85	83	80	120	118	112	119	42	43
10	79	77	70	76	85	90	92	89	126	125	119	124	44	47
15	83	80	76	81	89	93	97	94	129	131	123	129	50	50
20	86	87	79	85	92	96	101	98	133	135	128	131	52	52
25	89	88	82	87	95	99	105	100	136	138	131	134	54	55
30	91	90	83	89	96	100	108	101	139	142	133	137	55	57
35	93	92	86	91	99	104	109	104	142	144	135	140	57	58
40	96	94	88	93	100	107	111	107	146	145	136	142	59	61
45	97	95	89	96	102	110	112	108	149	147	138	144	61	62
50	98	97	91	99	104	112	113	110	151	150	140	145	63	65
55	100	99	93	101	106	114	115	113	153	151	142	146	65	67
60	102	100	95	102	108	116	117	116	155	155	144	149	67	68
65	103	102	96	104	110	118	120	118	157	157	146	150	68	71
70	105	104	100	105	111	119	123	121	159	160	149	151	71	73
75	107	106	103	107	115	122	126	122	162	162	151	153	74	76
80	110	108	105	109	117	124	129	126	165	166	154	157	75	78
85	114	111	108	113	119	127	133	130	171	171	157	159	78	83
90	117	115	113	120	121	129	136	135	175	173	160	162	81	88
95	122	121	118	125	127	133	149	142	181	178	162	166	85	95
96	126	122	119	126	128	135	151	143	182	179	163	168	88	97
97	130	124	119	129	130	136	153	144	183	183	164	169	90	100
98	134	125	125	142	131	138	158	146	184	184	165	171	91	102
99	135	136	127	144	135	140	162	152	187	185	168	174	101	108
100	142	139	139	151	141	142	164	153	191	189	173	176	119	114

M: men; W: woman.

APPENDIX A. Dimensions and number of items of the Temperament and Character Inventory-Revised (TCI-R)

	Scale	Items
NS	Novelty seeking	35
HA	Harm avoidance	33
RD	Reward dependence	30
PS	Persistence	35
SD	Self-directedness	40
C	Cooperativeness	36
ST	Self-transcendence	26
NS1	Exploratory excitability	10
NS2	Impulsiveness	9
NS3	Extravagance	9
NS4	Disorderliness	7
HA1	Anticipatory worry and pessimism	11
HA2	Fear of uncertainty	7
HA3	Shyness	7
HA4	Fatigability	8
RD1	Sentimentality	8
RD2	Openness to warm communication	10
RD3	Attachment/Openness	6
RD4	Dependence	6
PS1	Eagerness of effort	9
PS2	Work hardened	8
PS3	Ambitious	10
PS4	Perfectionist	8
SD1	Responsibility	8
SD2	Purposefulness	6
SD3	Resourcefulness	5
SD4	Self-acceptance	10
SD5	Enlightened second nature	11
C1	Social acceptance 1	8
C2	Empathy	5
C3	Helpfulness	8
C4	Compassion	7
C5	Pure hearted consciousness	8
ST1	Self-forgetful	10
ST2	Transpersonal identification	8
ST3	Spiritual acceptance	8

Instruments

The adapted version of the Temperament and Character Inventory-Revised (TCI-R), whose dimensions, subscales and number of items appear in appendix A, was applied. In addition to the personality questionnaire, the Goldberg General Health Questionnaire (GHQ-28 items)¹⁵ was administered in the context of a more extensive study.

Statistical analysis of the data

The mean and standard deviation per gender were calculated for all the main dimensions and subscales of the inventory. The mean differences were calculated with the *Student t test* for independent samples for men and women. The association between the age variable and

main dimensions of temperament and character was performed by the Pearson correlation. To perform the descriptive study of normality and to simplify the interpretation of the results, the direct values of the dimensions were transformed into z scores. After, that the asymmetry and kurtosis coefficients were applied. Then, standardization and normalization to the direct scores were done, transforming them into percentiles and T scores following the criteria of the previous version of the TCI⁶ (a mean of 50 and deviation of 10 is assumed). The scales are presented in T scores, assuming the intermediate values and the high and low values as cutoffs, because of the reason explained in the results. Cronbach's alpha is used for the study of internal consistency of the dimensions.

RESULTS

The descriptive statistics (mean and standard deviation), minimum and maximum values, asymmetry and kurtosis coefficients and associated probability after the comparison of means between men and women in all the dimensions of the TCI-R are shown in [table 1](#). For the kurtosis and asymmetry coefficients, values close to zero are expected, given that this would imply a normal distribution. In the Cooperativeness (C) dimension, in men, the kurtosis coefficient value is greater than 1, which would mean that the distribution tends to concentrate around the mean more than in a Normal distribution. A similar tendency is reproduced, with a 1.09 value, in the sample of men for Reward Dependence (RD). On its part, the asymmetry coefficient with values less than zero in C and RD verifies that the deviations to the mean are greater for the values lower than the mean than for the superior values. There are differences in the scores according to gender, the women scoring higher in Harm avoidance (anticipatory worry and pessimism and fear of uncertainty), Reward dependence (sentimentality, openness to warm communication and attachment/openness) and Cooperativeness (empathy, compassion and pure hearted consciousness). Men score higher in Persistence (ambitious) and Disorderliness. The other subscale in which the women scored higher was spiritual acceptance. Correlations between age and gender are inferior to 0.27 (negative between novelty seeking [NS] and age in men). There were no significant differences in age by gender ($p = 0.855$).

Given the significant differences by gender in many of the TCI-R dimensions that are not attributable to age, differentiated scales were performed for men and women. These scales appear in appendix B with T scores from 14 to 90, taking the values of 50 for the mean and 10 for the deviation used in the North American TCI version as a criterion⁶. In the design of scales, we have presented the results on five levels: very low (T = 34 or less), low (T de 35 to 44), middle (T = 56 to 65) and very high (T = 66 or more). As occurs with other personality assessment instruments such as the NEO-PI-R¹⁶, there are no typified scores

APPENDIX B. T and direct scores by gender for the main dimensions of the TCI-R

T	NS		HA		RD		PS		SD		C		ST	
	M	W	M	W	M	W	M	W	M	W	M	W	M	W
Very high														
90													119	
89													118	
88													117	
87													115-116	
86													114	
85													112-113	
84													111	
83													110	
82													108-109	
81				150-151									107	
80			138-139	148-149									105-106	113-114
79	142	139	137	147									104	112
78	140-141	138	135-136	145-146									103	110-111
77	139	136-137	134	143-144									101-102	108-109
76	137-138	135	132-133	142			163-164						100	107
75	136	134	130-131	140-141	141		161-162						98-99	105-106
74	134-135	132-133	129	138-139	139-140		160						97	104
73	133	131	127-128	137	138		158-159	152-153					96	102-103
72	131-132	129-130	126	135-136	136-137		156-157	150-151	191			176	94-95	101
71	130	128	124-125	133-134	135	142	154-155	148-149	189-190	188-189	173	174-175	93	99-100
70	128-129	126-127	123	131-132	133-134	140-141	152-153	147	187-188	186-187	171-172	173	91-92	97-98
69	127	125	121-122	130	132	139	150-151	145-146	185-186	184-185	170	172	90	96
68	125-126	123-124	120	128-129	130-131	137-138	148-149	143-144	183-184	182-183	168-169	170-171	89	94-95
67	124	122	118-119	126-127	129	136	146-147	141-142	181-182	181	167	169	87-88	93
66	122-123	120-121	116-117	125	127-128	134-135	145	139-140	179-180	179-180	165-166	167-168	86	91-92
High														
65	121	119	115	123-124	126	133	143-144	138	177-178	177-178	163-164	166	84-85	90
64	119-120	117-118	113-114	121-122	124-125	131-132	141-142	136-137	176	175-176	162	164-165	83	88-89
63	118	116	112	120	123	130	139-140	134-135	174-175	173-174	160-161	163	82	86-87
62	116-117	114-115	110-111	118-119	121-122	128-129	137-138	132-133	172-173	171-172	159	161-162	80-81	85
61	115	113	109	116-117	120	127	135-136	130-131	170-171	170	157-158	160	79	83-84
60	113-114	111-112	107-108	115	119	125-126	133-134	129	168-169	168-169	155-156	158-159	77-78	82
59	112	110	106	113-114	117-118	124	131-132	127-128	166-167	166-167	154	157	76	80-81
58	110-111	108-109	104-105	111-112	116	122-123	130	125-126	164-165	164-165	152-153	155-156	75	78-79
57	109	107	102-103	109-110	114-115	121	128-129	123-124	163	162-163	151	154	73-74	77
56	107-108	106	101	108	113	119-120	126-127	121-122	161-162	160-161	149-150	153	72	75-76
Middle														
55	106	104-105	99-100	106-107	111-112	118	124-125	120	159-160	159	148	151-152	70-71	74
54	104-105	103	98	104-105	110	116-117	122-123	118-119	157-158	157-158	146-147	150	69	72-73
53	103	101-102	96-97	103	108-109	115	120-121	116-117	155-156	155-156	144-145	148-149	68	71
52	101-102	100	95	101-102	107	113-114	118-119	114-115	153-154	153-154	143	147	66-67	69-70
51	100	98-99	93-94	99-100	105-106	112	116-117	113	151-152	151-152	141-142	145-146	65	67-68
50	98-99	97	91-92	98	104	110-111	115	111-112	150	149-150	140	144	63-64	66
49	97	95-96	90	96-97	102-103	109	113-114	109-110	148-149	148	138-139	142-143	62	64-65
48	95-96	94	88-89	94-95	101	107-108	111-112	107-108	146-147	146-147	136-137	141	61	63
47	94	92-93	87	93	99-100	106	109-110	105-106	144-145	144-145	135	139-140	59-60	61-62
46	92-93	91	85-86	91-92	98	105	107-108	104	142-143	142-143	133-134	138	58	60
45	91	89-90	84	89-90	96-97	103-104	105-106	102-103	140-141	140-141	132	136-137	56-57	58-59

APPENDIX B. T and direct scores by gender for the main dimensions of the TCI-R (continuation)

T	NS		HA		RD		PS		SD		C		ST	
	M	W	M	W	M	W	M	W	M	W	M	W	M	W
Low														
44	89-90	88	82-83	87-88	95	102	103-104	100-101	138-139	138-139	130-131	135	55	56-57
43	88	86-87	81	86	93-94	100-101	101-102	98-99	136-137	137	128-129	134	54	55
42	86-87	85	79-80	84-85	92	99	100	96-97	135	135-136	127	132-133	52-53	53-54
41	85	83-84	77-78	82-83	90-91	97-98	98-99	95	133-134	133-134	125-126	131	51	52
40	83-84	82	76	81	89	96	96-97	93-94	131-132	131-132	124	129-130	49-50	50-51
39	82	80-81	74-75	79-80	87-88	94-95	94-95	91-92	129-130	129-130	122-123	128	48	49
38	80-81	79	73	77-78	86	93	92-93	89-90	127-128	127-128	121	126-127	47	47-48
37	79	78	71-72	76	84-85	91-92	90-91	87-88	125-126	126	119-120	125	45-46	45-46
36	77-78	76-77	70	74-75	83	90	88-89	86	123-124	124-125	117-118	123-124	44	44
35	76	75	68-69	72-73	81-82	88-89	86-87	84-85	121-122	122-123	116	122	42-43	42-43
Very low														
34	74-75	73-74	66-67	70-71	80	87	85	82-83	120	120-121	114-115	120-121	41	41
33	73	72	65	69	78-79	85-86	83-84	80-81	118-119	118-119	113	119	40	39-40
32	71-72	70-71	63-64	67-68	77	84	81-82	78-79	116-117	116-117	111-112	117-118	38-39	38
31	70	69	62	65-66	76	82-83	79-80	77	114-115	115	109-110	116	37	36-37
30	68-69	67-68	60-61	64	74-75	81	77-78	75-76	112-113	113-114	108	115	35-36	34-35
29	67	66	59	62-63	73	79-80	75-76	73-74	110-111	111-112	106-107	113-114	34	
28	65-66	64-65	57-58	60-61	71-72	78	73-74	71-72	108-109	109-110	105	112		
27	64	63			70		71-72	69-70	106-107	107-108	103-104	110-111		
26		61-62			68-69		70	68	105	105-106	102	109		
25		60			67		68-69	66-67	103-104	104	100-101	107-108		
24		58-59			65-66		66-67	64-65	101-102	102-103	98-99			
23					64		64-65	62-63		100-101	97			
22					62-63					98-99	95-96			
21					61					96-97	94			
20					59-60					94-95	92-93			
19					58						90-91			
18					56-57									
17					55									
16					53-54									
15					52									
14					50-51									

M: man; W: woman.

that serve as a cutoff to score a certain dimension pathologically. The transition point between normality and abnormality has been established as a normative or statistical criterion and later investigations, in clinical samples, will make it possible to determine the scores or cutoffs that are associated with a risk probability of presenting certain symptoms. It was decided to not make different scores by ages given the weak correlations between this variable and the main dimensions. There are typified scales for each one of the subscales that have not been presented in this article but which can be requested to the authors. Table 2 shows the percentiles for the main dimensions by gender. The reliability of the main dimensions was high with values of 0.77 to 0.87.

CONCLUSIONS

The revised version of the Temperament and Character Inventory-revised (TCI-R) has advantages regarding the previous version, not only in regards to the psychometric properties^{13,14} but also in regards to the standardization of the scores. Some items have been added to this new version in some of the Reward dependence subscales and second order traits have been included in this dimension and in the Persistence dimension that improve the internal consistency of the scales and their construct validity.

Another one of the contributions of the new instrument is the response on the 5 options Likert scale that increases the number of probable scores from the mini-

mum to maximum and that makes it possible to perform a more extensive typification with this new version. The typified scales that we present were obtained from a sample that was representative incidental of the population with the verification of the tendency to normality (with the exception of Cooperativeness and Reward dependence) in the scores. This implies that the group of questions of each scales means situations that place the subjects over the continuum. The creation of extensive scales in T form makes it possible to transform an individual result based on that obtained by a normative reference group while it means the comparison of all the dimensions in a mean range of 50, which facilitates its visualization and the communication of results. These scales make it possible to establish an intermediate range in which most of the individuals are included. Those subjects with extreme scores in any or several of the dimensions and who present behaviors dominated by any of the neurobiological systems underlying the traits with a greater tendency to deviation are included outside of this range.

The relevance of scales by gender is based on the significant differences obtained for the Harm avoidance, Reward dependence, Persistence and Cooperativeness dimensions. Women score higher in these dimensions as has occurred in other studies performed in other countries^{17,18}. Age is not very significantly linked to the dimensions in this study, except a low and negative correlation with NS¹⁹. However, in the future, investigations should be performed with this instrument focused on the evolution of the personality during the evolutive cycles.

Validation studies are necessary in clinical samples such as that of Gutiérrez et al.²⁰, with the TCI that orient us in the detection of cutoffs that are associated with certain signs and symptoms when the scores are above or below the mean.

In summary, the version that is presented in this study is the translation and adaptation to Spanish of the American version of the Temperament and Character Inventory-Revised (TCI-R) for the evaluation of the normal and abnormal personality. This version has been standardized and scaled in the general population, facilitating the use of this standardized instrument for use in the clinical practice or in studies with samples and groups with psychopathology.

ACKNOWLEDGEMENTS

This study has been financed partially by the FIS 01/1605, Marató TV3 /010510 and Framework-V Multi-centre Research Grant, QLK1-1999-916.

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