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Temperament and character profile of persons with suicide attempt

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Introduction. The aim of this study was to establish the association between temperament and character personality traits with attempted suicide patients.

Method. Consecutive male and female adults subjects, between 18-65 years old, presenting a suicide attempt and hospitalized in the Psychiatric Service of Civil Hospital of Guadalajara, Jalisco (Mexico), were evaluated based on Cloninger's Temperament and Character Inventory (TCI) and compared with the Mexican normative data.

Results. A total 63 subjects, with a mean age of 28.25 ± 9.28 years old, 54% of whom were women, were enrolled. Personality traits associated with suicide attempt in comparison with general population included: temperament: elevation in «novelty seeking» (22.9 ± 6.0 vs 20.2 ± 5.1 ; $t = 3.30$, $df = 83$, $p = 0.01$), «harm avoidance» (19.0 ± 4.8 vs 12.6 ± 7.1 ; $t = 8.54$, $df = 132$, $p < 0.001$), and «self-transcendence» (19.1 ± 5.6 vs 16.4 ± 6.2 ; $t = 3.41$, $df = 100$, $p = 0.0009$); and character: decrease in «self-directedness» (26.8 ± 6.2 vs 29.9 ± 10.8 ; $t = -3.02$, $df = 161$, $p = 0.002$), and «cooperativeness» (26.0 ± 4.5 vs 28.2 ± 9.9 ; $t = -2.59$, $df = 214$, $p = 0.01$). Finally, males with suicide attempt showed higher «harm avoidance» than females (20.37 ± 5.3 vs 17.82 ± 4.1 ; $t = -2.14$, $df = 61$, $p = 0.036$).

Conclusions. Temperament traits associated with suicide attempt in the present study are related with serotonergic and noradrenergic deregulation previously involved in the phenomena, and the sum of the character personality dimensions explains the complex relationship between biological and learned factors of suicide behavior.

Key words:
Suicide. Temperament. Character. Personality.

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Perfil de temperamento y carácter de personas con intento suicida

Introducción. El objetivo del presente trabajo fue determinar el perfil de temperamento y carácter relacionado con el intento suicida.

Método. Los pacientes consecutivos (hombres y mujeres), entre 18 y 65 años de edad, con intento suicida, hospitalizados en el Servicio de Psiquiatría del Antiguo Hospital Civil de Guadalajara, Jalisco (México), fueron evaluados con base en el Inventario de Temperamento y Carácter (ITC) de Cloninger y comparados con los datos normativos mexicanos.

Resultados. Del total de 63 pacientes con edad promedio de $28,25 \pm 9,28$ años, el 54% son mujeres. El perfil de personalidad de las personas con intento suicida, a diferencia de la población normal, se caracterizó por: a) elevación de «búsqueda de la novedad» ($22,9 \pm 6,0$ frente a $20,2 \pm 5,1$; $t = 3,30$, $gl = 83$, $p = 0,01$), «evitación del daño» ($19,0 \pm 4,8$ frente a $12,6 \pm 7,1$; $t = 8,54$, $gl = 132$, $p (0,0001)$ y «autotranscendencia» ($19,1 \pm 5,6$ frente a $16,4 \pm 6,2$; $t = 3,41$, $gl = 100$, $p = 0,0009$), y b) disminución de «autodirección» ($26,8 \pm 6,2$ frente a $29,9 \pm 10,8$; $t = -3,02$, $gl = 161$, $p = 0,002$) y «cooperatividad» ($26,0 \pm 4,5$ frente a $28,2 \pm 9,9$; $t = -2,59$, $gl = 214$, $p = 0,01$). Finalmente, los hombres con intento suicida mostraron un mayor índice de evitación del daño en comparación con las mujeres ($20,37 \pm 5,3$ frente a $17,82 \pm 4,1$; $t = -2,14$, $gl = 61$, $p = 0,036$).

Conclusiones. Los factores temperamentales relacionados con el intento suicida están vinculados con la desregulación serotoninérgica y noradrenérgica relacionada previamente con este fenómeno, y la suma de rasgos de carácter dan cuenta de la compleja interacción entre pautas heredadas y aprendidas del comportamiento suicida.

Palabras clave:
Suicidio. Temperamento. Carácter. Personalidad.

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INTRODUCTION

Suicide has become one of the main causes of death. Since some years ago, the World Health Organization has

estimated that approximately one thousand persons a day commit suicide worldwide. Suicide attempt, an obvious predictive factor of consumed suicide, can be defined as a behavior that means the deliberate intention of causing death to oneself¹. In western societies, suicidal ideation and attempts are more common in women in a proportion of 3 to 1²⁻⁵. For completed suicide, the values reverse by almost 4 to 1⁶.

There is evidence in favor of a close relationship between personality and suicide phenomenon. The following has been documented: *a)* characteristics of the personality related with suicide attempt, such as: introversion, difficulty to express emotions, perfectionism, pessimism, dependence, rigidity, impulsivity, self-punishment, interpersonal conflicts, attention seeking and impulsive, aggressive and/or antisocial behavior, among others⁷⁻¹¹; *b)* relationship between suicidal ideation and suicide with personality traits, such as «neuroticism»¹² and harm avoidance¹³; *c)* presence of personality disorders in at least one third of the persons who have consumed a suicide (31 %-62 %) and up to 77 % of those who have carried out a suicide attempt¹⁴⁻²⁴, and *d)* increase of suicide risk in the face of comorbidity of a personality disorder and another psychiatric disorder^{17,18}. In fact, different authors have proposed that the use of personality evaluations could support the detection of individual suicide traits and then the prevention and/or adequate and effective attention of suicide^{25,28}.

At present, that proposed by Cloninger (1987) stands out among the existing personality models in regards to its psychobiological idea. This, based on the biogenetic suppositions on the structures that modify the adaptive response of the individual towards harm, avoidance and reward, proposes three temperament dimensions, which are complemented by three other characterological dimensions, focused more on conscious and social learning of the individual²⁹.

Recently, and based on this model, Grucza et al.³⁰ demonstrated that an increase in the temperamental trait called «harm avoidance» is related with depressive symptoms and that «novelty seeking», another temperamental trait, is positively associated with a history of past suicide attempts. This study was performed in a community sample and the same authors recognize that the severe cases may not be represented. Furthermore, previous suicide attempt was evaluated with a self-report form. On their part, Bulick et al.³¹, in a study with patients having eating disorders, found that those with a history of suicide attempts showed an increase in two of the character traits of this personality model: persistence and self-transcendence, and a decrease in one more, called «self-directedness». With it, traits that are more characterological related with suicide behavior are seen.

In this direction, the objective of the present study is to determine the temperament and character profile of per-

sons with suicide attempt based on Cloninger's personality psychobiological model in a sample of Mexican patients compared with the general population.

METHOD

Participants

The study sample was made up of persons of both genders, between 18 and 65 years of age, hospitalized due to suicide attempt in the Psychiatry Service of the Old Civil Hospital of Guadalajara, Jalisco, Mexico, who had clear consciousness, were medically stable and who signed an informed consent letter to participate voluntarily in the study.

Instrument

The Temperament and Character Inventory (TCI) is a self-report questionnaire made up of 240 items that evaluate four temperament dimensions: *a)* harm avoidance; *b)* novelty seeking; *c)* reward dependence, and *d)* persistence and three character dimensions: *1)* self-directness; *2)* cooperativeness, and *3)* self-transcendence, each one with three to five sub-scales, except for that of persistence³². The TCI has been widely studied and has shown adequate psychometric properties in the general population and clinical samples from different cultures³²⁻³³, including the Mexican one³⁴.

Procedure and statistical analysis

A psychiatrist evaluated the medical-psychiatric condition of the patients who were hospitalized in the psychiatry service due to a suicide attempt, applying the instrument to all those who fulfilled the inclusion criteria. The data were captured and analyzed in the SPSS-X, version 10 statistical program. As hypothesis tests, the Student's *t* test for independent groups was carried out in order to compare the mean scores of each scale and subscale of the Temperament and Character Inventory of the persons with suicide attempt and the data of the instrument's standardization sample in the Mexican population previously published. Finally, comparisons were made of the mean scores of the different scales and subscales of the instrument by gender (man, woman) and civil status (with partner, without partner).

RESULTS

The final study sample was made up of 63 patients who made a suicide attempt, 54 % (*n* = 34) of whom were women and 46 % (*n* = 29) men, with a mean age of 28.25 ± 9.28 years. A total of 52.4 % (*n* = 33) had no partner (single, separated, divorced or widow[er]) and 28.6 % (*n* = 18) lived with their partner. Of these, 54 % (*n* = 34) were employed at the time of the suicide attempt, 27 % (*n* = 17) were dedicated to «house-

Table 1 Comparisons of superior and inferior traits of temperamentos and character of Cloninger between patients with suicidal ideation and normal mexican population

Superior and inferior traits of temperament and character	Suicide attempt (n = 63)	Mexican standardization* (n = 269)	t	gl	p
Dimensiones de temperamento					
Búsqueda de la novedad	22.9 ± 6.0	20.2 ± 5.1	3.30	83	0.014
Excitabilidad exploradora frente a rigidez	6.2 ± 2.0	6.9 ± 2.2	-2.42	97	0.017
Impulsividad frente a reflexión	6.7 ± 1.7	3.9 ± 2.5	10.33	127	<0.0001
Extravagancia frente a discreción	4.5 ± 2.0	4.7 ± 2.0	-0.52	91	0.6
Desorden frente a restricción	5.5 ± 2.2	4.5 ± 2.0	3.26	87	0.0015
Evitación del daño	19.0 ± 4.8	12.6 ± 7.1	8.54	132	<0.0001
Preocupación frente a optimismo	6.2 ± 2.0	3.5 ± 2.7	8.97	121	<0.0001
Miedo a lo incierto frente a confianza	3.6 ± 1.3	3.1 ± 1.7	3.05	127	0.002
Timidez frente a gregarismo	4.4 ± 1.7	2.9 ± 2.2	6.17	116	<0.0001
Fatigabilidad y astenia frente a vigor	4.6 ± 2.5	2.9 ± 2.4	5.23	93	<0.0001
Dependencia de la recompensa	14.7 ± 3.1	13.9 ± 4.1	1.78	118	0.77
Sensibilidad frente a insensibilidad	4.8 ± 1.2	5.5 ± 2.2	5.95	132	<0.0001
Apego frente a separación	2.9 ± 1.5	4.9 ± 2.2	-0.09	173	0.92
Dependencia frente a independencia	4.1 ± 1.3	3.4 ± 1.3	-2.11	83	0.37
Persistencia frente a irresolución	4.5 ± 2.0	4.7 ± 1.8	-0.728	87	0.468
Dimensiones de carácter					
Autodirección	26.8 ± 6.2	29.9 ± 10.8	-3.02	161	0.002
Responsabilidad frente a culpabilidad	4.5 ± 2.0	5.9 ± 2.5	4.60	110	<0.0001
Determinación frente a sin dirección	4.8 ± 1.5	5.6 ± 2.3	-3.01	132	0.0003
Con recursos frente a apatía	2.9 ± 1.3	3.6 ± 1.6	-3.41	106	<0.0001
Autoaceptación frente a lucha interna	5.9 ± 2.2	6.4 ± 2.9	-1.50	116	0.13
Congruencia con ideales	8.5 ± 1.8	8.2 ± 3.2	1.15	162	0.24
Cooperatividad	26.0 ± 4.5	28.2 ± 9.9	-2.59	214	0.01
Aceptación social frente a intolerancia	4.7 ± 1.5	5.5 ± 2.5	-2.99	149	0.0003
Empatía frente a desinterés social	4.3 ± 1.5	4.4 ± 1.9	-0.43	111	0.66
Capacidad de ayuda frente a incapacidad	6.0 ± 1.6	5.4 ± 2.0	2.53	193	0.12
Compasión frente a venganza	5.1 ± 1.5	6.9 ± 3.1	6.55	150	<0.0001
Integridad frente a falta de escrúpulos	5.8 ± 1.3	5.8 ± 2.1	0.34	88	0.73
Autotranscendencia	19.1 ± 5.6	16.4 ± 6.2	3.41	100	0.0009
Concentración creativa frente a conciencia	7.3 ± 2.8	5.9 ± 2.6	3.64	89	0.0003
Identificación transpersonal	4.8 ± 2.2	4.3 ± 2.1	1.84	120	0.067
Aceptación espiritual frente a materialismo	6.9 ± 2.3	6.1 ± 3.1	2.30	83	0.023

*Taken from Sánchez de Carmona et al., 1996³⁴.

work», 6.3% (n = 4) were students and 6.3% (n = 4) were unemployed. The mean schooling level was 7.27 ± 4.08 (0 – 17 years).

In table 1, the results of the comparisons between the mean scores for each one of the scales and subscales of the instrument in the group of patients with suicide attempt and the Mexican sample used for the normalization study and psychometric properties of the instrument's Spanish version

are shown³⁴. It can be added that the men with a suicide attempt who participated in the study showed a greater harm avoidance index in comparison with the women (mean men: 20.37 ± 5.3 ; mean women: 17.82 ± 4.1 ; $t = -2.14$, $gl = 61$, $p = 0.036$) and that no clinical or statistically significant difference was reported in the mean scores of the different temperament and character variables subjected to study between persons with suicide attempt who had or did not have a partner.

CONCLUSIONS

The present study shows additional evidence regarding the personality differences between persons with a suicide attempt and the general population. In general terms, the personality profile of persons with suicide attempt, on the contrary to the normal population, was characterized by: elevation of «novelty seeking», «harm avoidance» and «self-transcendence», as well as decrease of «self-directedness» and «cooperativeness». Grucza et al.³⁰ had already suggested a relationship between the temperament traits «novelty seeking and harm avoidance» and the history of suicide attempts in the general population and Bulik et al.³¹ between those of the «self-transcendence» and «self-directedness» character and suicide attempt in patients with eating disorders.

These findings may be due, at least, to the fact that: *a)* according to Cloninger³⁵ the temperament traits of novelty seeking are regulated by the dopaminergic system; *b)* temperament traits of harm avoidance are regulated by the serotonergic system, highly involved in mood state regulation³⁸, and *c)* temperament traits of reward dependence are regulated by the noradrenergic system. It is well known that depression is one of the most clearly established risk factors of suicidal behavior³⁶⁻³⁹; *d)* self-directedness implies maturity, responsibility, constructiveness and establishment of goals while cooperativeness is a characteristic of individuals who are empathic, tolerant, compassionate, fair and capable of providing safety, supportive help and services to others²⁹. Thus, it does not seem rare to find it decreased in persons with suicide attempt. Plutchick et al.⁹, among others, had already demonstrated evidence of the relationship between violent, impulsive and antisocial behavior and suicide intentionality.

Nonetheless, it must be stated that different authors have demonstrated that a diversity of psychiatric disorders had an elevation in «harm avoidance» and decrease in «self-directedness» in comparison with control groups, which suggests it is a trait associated to psychopathology in general. Fassino et al.⁴⁰ found them increased in anorexia and bulimia patients; Kusonoki et al.⁴¹ in persons with obsessive-compulsive or major depression disorders; Pelisoló et al.⁴² in social phobia; Hansenne et al.⁴³ in relationship to depression severity, Basiaux et al.⁴⁴ in alcohol dependence patients, and even Szoke et al.⁴⁵ in schizophrenia patients.

It is possible to suggest that this decrease in «self-directedness» may well be due to the comorbid presence of some personality disorder. De la Rie et al.⁴⁶ found that this trait really predicts the presence or absence of these clinical entities. Marteinsdottir et al.⁴⁷, however, found a decrease of «self-directedness» in persons with social phobia with and without avoidance disorder of the comorbid personality. Thus, it is felt that this type of studies is necessary in patient samples with major depression and suicide

attempt, and considering the spectrum of existing personality disorders.

It can be added that the finding in regards to the statistically significant increase of «self-transcendence» character trait in patients with suicide attempt vs general population should be considered with the caution that its so questioned validity merits (even by Cloninger, 1994, himself)³², as it involves values that may not be shared by all the cultures. In regards to the differences of gender and temperament and character traits of patients with suicide attempt, it must be observed that there could be a relationship between the high harm avoidance index in men and its so reported use of means of greater lethality and greater consumed suicide in comparison with women⁶.

Among the most important limitations of this study, at least the following should be mentioned: *a)* the sample was not obtained randomly, and the hospital where the study was performed is a third level one, so that the seriousness of the attempts and the psychopathology itself associated to them may be greater than that of other clinical frameworks; *b)* the absence of other psychopathological groups does not make it possible to attribute the personality traits found specifically to suicide attempt, because they may be also found in other psychiatric disorders and even be associated to these patients because of certain psychopathological aspects of them (as depression and anxiety) and not specifically to the suicide attempt, and *c)* the reduced sample size makes it impossible to generalize these results, which should be thus considered as findings with a certain heuristic value while subsequent studies are performed that make it possible to determine the relationship between personality traits and specific psychopathological aspects.

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