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Original contribution

Validating the spanish version of the aberrant behavior checklist in mexican patients with autism

Validación de la versión en español de la Aberrant Behavior Checklist-Community en pacientes autistas mexicanos

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Keywords

Autism Spectrum Disorder; Validation; Aberrant Behavior Checklist-Community

Abstract

Objective. The objective of this work was to validate the Spanish version of the Aberrant Behavior Checklist-Community in a sample of Mexican children with autism spectrum disorder.

Methods. The translation of the original instrument was made in English into Spanish. The clarity of the questions was validated using the Likert scale from an initial sample of 12 people. Subsequently, the test was applied to the mother, therapist and teacher of a total sample of 7 patients aged between 5 and 9 years with a diagnosis of Autism Spectrum Disorder, obtaining 3 tests per patient with a total of 21 surveys. As a statistical tool to validate the instrument, Cronbach's alpha was used.

Results. When evaluating the clarity, none of the items and instructions were below 80, so it was concluded that the clarity of the writing of the whole scale was good to excellent. The statistical analysis for the validation of the scale showed a global Cronbach alpha of 0.98, considering it an excellent validity.

Conclusions. The results indicate that the translation of the Aberrant Behavior Checklist-Community has the validity and reliability to be used as a tool to assess the efficacy of interventions in patients with autism spectrum disorder. The tool is easy to apply and no special training is required to answer.

Resumen

Objetivo. Validar la versión en español del Aberrant Behavior Checklist-Community en una muestra de niños mexicanos con trastorno del espectro autista.

Métodos. Se hizo la traducción del instrumento original en inglés al español. A partir de una muestra inicial de 12 personas se validó la claridad de las preguntas utilizando la escala de Likert. Posteriormente se aplicó la prueba a la madre, terapeuta y maestra de una muestra total de 7 pacientes con edades comprendidas entre 5 y 9 años con diagnóstico de Trastorno del espectro autista, obteniendo 3 pruebas por paciente con un total de 21 encuestas. Como herramienta estadística para validar el instrumento se utilizó el alfa de Cronbach.

Resultados. Al evaluar la claridad ninguno de los ítems y de las instrucciones quedaron por debajo de 80, por lo que se concluyó que la claridad de la redacción de toda la escala era de buena a excelente. El análisis estadístico para la validación de la escala mostro un alfa de Cronbach global de 0.98, considerándola de una validez excelente.

Conclusiones. La traducción que realizamos de la Aberrant Behavior Checklist-Community tiene la validez y confiabilidad para poder ser utilizada como una herramienta para valorar la eficacia de las intervenciones en los pacientes con trastorno del espectro autista. La herramienta es de fácil aplicación y no se requiere un entrenamiento especial para su llenado.

Palabras clave

Trastorno del espectro autista; Validación; Aberrant Behavior Checklist-Community

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Introduction

Autism Spectrum Disorder (ASD) is one of the most frequent neurodevelopmental disorders of childhood. It is characterized by abnormalities in socialization, communication, restricted interests, and repetitive behaviors.[1,2] The prevalence reported in Mexico is 0.87, similar to the global prevalence estimated at 0.7 to 1%.[3-5] It is considered that one in every 68 children have the disorder in the United States.[6]

The diagnosis of ASD is clinical but, in many cases, it is necessary to use scales to confirm the diagnosis. Among the most used are the DSM-5[7] criteria and the ADOS, ADI-R, CARS, and CHAT scales.[8-11] Instruments applied before and during interventions are required to measure the impact of therapies, work in school, strategies used at home, and pharmacological treatments. Some of the most frequently used include the Behavior Problems Inventory (BPI-01), the Aberrant Behavior Checklist (ABC), and the Repetitive Behavior Scale-Revised (RBS-R).[12]

The ABC was originally designed to measure problematic behaviors in patients over five years of age with intellectual disabilities who lived in specialized centers[13-14] and it has been proven effective as a tool to examine behaviors in patients with ASD and neurogenetic disorders including fragile X, Prader-Willi, Cri du chat, Smith–Magenis, Angelman, and Down syndromes.[15-18] Since its introduction, the ABC has been used in more than 300 studies and has been translated into more than 30 languages. The results indicate that the psychometric characteristics of the ABC, such as internal consistency, test-retest reliability, inter-rater reliability, and concurrent validity with other standardized instruments and direct observation are statistically acceptable.[19] The ABC was replicated in Great Britain, reporting a very good internal consistency.[20.21]

Years later, a revised version known as the ABC-Community (ABC-C) was written, with the objective of making this tool applicable at home or at school.[22] Although the ABC and the ABC-C have been translated into many languages, they have only been validated in non-Spanish speaking countries such as Japan, Germany, Turkey, and India.[23-26]

The ABC-C is a 58-item rating scale derived by factor analysis, and its five subscales are labeled as follows: I- Irritability (15 items), II- Lethargy/withdrawal (16 items), III- Stereotypy (7 items), IV- Hyperactivity/noncompliance (16 items), and V- Inappropriate speech (4 items). The ABC-C is easy to use. It is completed by an informant such as a teacher, therapist, monitor, parent, or another adult who has regular contact with the patient. Each behavioral element is rated on a four-point scale from 0 (not a problem) to 3 (the problem is serious). The evaluators are instructed to evaluate the behavior of patients during the last month.[22]

It is a widely-used tool for the evaluation of children and adolescents with ASD.[27] The irritability subscale has been used to assess the efficacy of neuroleptics, escitalopram, and to measure the response to psychosocial interventions.[28-30]

The aim of this work is to translate and validate the ABC-C scale to be used as a reference to measure the changes in patients with ASD over five years old by the different interventions that are used during their treatment.

Methods

The first step was the translation of the original tool from English into Spanish, which was performed by three translators: a neuropsychologist, a psychologist, and a pediatric neurologist. After the translation, a meeting was held with two pediatric neurologists, a neuropsychologist, and an epidemiologist where the instructions and the items were analyzed and the final text was drawn up (Figure 1). Subsequently, the questionnaire was applied to 12 people with the aim of assessing clarity. The Likert scale was used (Table 1) and the average score was obtained from the maximum score (48 for the instructions and 36 for the items). It was agreed with the group that an average score higher than 80% was acceptable and above 90% was excellent.

To validate the scale in patients with ASD, it was applied individually to the mothers, therapists, and teachers of a total of seven patients (six male and one female) aged between five and nine years, obtaining three tests per subject, with a total of 21 scales. All patients met criteria for ASD according to the DSM-5 and the ADOS scale. Cronbach's alpha was used as a statistical tool to validate the instrument, considering a coefficient of >.9 as excellent, >.8 good, >.7 acceptable, >.6 questionable, >.5 poor, and <.5 unacceptable.[31] To obtain the statistical significance, the standardized normal distribution known as Student's t was used in its application for the correlation indexes.[32] The Excel 2010 package was used with the Megastat application for the analysis of the data.

Results

When evaluating clarity, none of the items or instructions was below 80. Only four of the items and the clarity of the instructions scored below 90, so it was concluded that the clarity of the entire scale was between good and excellent (Table 2).

Out of the 1218 expected responses, 1214 (99.7%) were answered. The statistical analysis for the validation of the scale showed a global Cronbach's alpha of 0.98, considering it an excellent validity. Valuing the subscales separately, Irritability was 0.71, Lethargy was 0.88, Stereotypy was 0.82, Hyperactivity was 0.90, and Inappropriate Speech 0.64. To determine the statistical significance of the Cronbach's alpha values, the Student's t was used and all coefficients were statistically significant (Table 3).

Table 1. Likert scale to assess clarity of translation.

a. Likert scale for clarity of the instructions

0 = They are incomprehensible.
1 = They are confusing.
2 = They are redundant.
3 = I understand, but the wording could be improved.
4 = The instructions are clear and precise and for the items.

b. Likert scale for clarity of the items

0 = I do not understand what they are asking.
1 = It's confusing and I barely understand the question.
2 = I understand the question, but the wording could be improved.
3 = The question is very clear and understandable.

Table 2. Cronbach's alpha coefficient for validation of the global scale and by subscales.

Statistic	Global	Irritability	Lethargy / withdrawal	Stereotypy	Hyperactivity / noncompliance	Inappropriate speech
Sum variances	53.112	10.028	16.246	6.544	15.213	5.238
Total variance	772.490	30.810	100.362	30.148	104.562	13.448
K	21	21	21	21	21	21
Cronbach's alpha	0.98	0.71	0.88	0.82	0.90	0.64
P	1.17E-14	0.0002	7.27E-08	2.42E-06	1.79E-08	.001

K = number of surveys; P = Student's t.

Table 3. VCronbach's alpha values in other studies.

	Ono[23] *(Japón)*	*Zeilinger*[24] *(Alemania)*	*Leothkay*[25] *(India)*	*Karabekiroglu*[26] *(Turquía)*	*Ours (México)*
Irritability	*0.92*	*0.92*	*0.89*	*0.94*	*0.71*
Lethargy	*0.95*	*0.89*	*0.89*	*0.92*	*0.88*
Stereotypy	*0.92*	*0.78*	*0.89*	*0.87*	*0.82*
Hyperactivity	*0.94*	*0.88*	*0.92*	*0.65*	*0.90*
Inappropriate speech	*0.85*	*0.81*	*0.85*	*0.87*	*0.64*
Full scale		*0.95*			*0.98*

Figure 1. Translated version of the ABC-C

ABERRANT BEHAVIOR CHECKLIST – COMMUNITY

Nombre paciente:

Nombre evaluador:

Sexo: Masculino/Femenino

Fecha Nacimiento __/__/__
M D A

Relación con el paciente (táchelo).

Padre	( )
Maestro	( )
Terapista/Supervisor	( )
Otro (especifíquelo)	( )

_____

Fecha evaluación __/__/__
M D A

¿Donde fue observado el paciente?

Casa	( )
Escuela	( )
Centro de Terapia	( )
Trabajo	( )
Otro (especifíquelo)	( )

_____

Si está en la escuela, que tipo:

Escuela Regular	( )
Escuela Especial	( )
No escolarizado	( )
Otros	( )

Grupo Étnico: Caucásico ( ) Mestizo ( )
Afroamericano ( ) Otro ( ) _____.

ESTADO MEDICO DEL PACIENTE

a. Sordera?	No	Si	No se sabe
b. Ceguera?	No	Si	No se sabe
c. Epilepsia?	No	Si	No se sabe
d. Parálisis cerebral	No	Sí	No se sabe

e. Otra: _____

MEDICAMENTOS QUE TOMA (Enliste cualquier medicamento y la dosis)

1. _____
2. _____
3. _____
4. _____
5. _____

INSTRUCCIONES

La escala de calificación ABC-Community está diseñada para ser usada con pacientes que se encuentran en la comunidad. Tenga en cuenta que el término paciente se utiliza para referirse a la persona que está siendo calificada. Este podría ser niño en edad escolar, adolescente o adulto.

Por favor califique el comportamiento de este paciente durante las últimas cuatro semanas. Para cada ítem, decida si el comportamiento es un problema y marque el número apropiado: 0= es que no causa problema la conducta; 1 = es cuando se percibe el problema, pero no altera la dinámica familiar o escolar; 2 = es cuando ya los comportamien tos dificultan la dinámica familiar; 3 = es cuando el problema trastorna persistentemente la vida familiar o escolar.

0= no es un problema
1= el comportamiento es un problema, pero leve
2= el problema es moderadamente grave
3= el problema es en grado severo

Al juzgar el comportamiento de este paciente, tenga en cuenta los siguientes puntos:

(a) La frecuencia relativa para cada comportamiento especificado. Por ejemplo, si el paciente promedia más estalli dos de temblor que la mayoría de los demás pacientes que conoce o la mayoría de los demás en su clase, es proba blemente moderadamente grave (2) o grave (3) incluso si éstos ocurren sólo una vez o dos veces por semana. Otros comportamientos, como el incumplimiento, probablemente tendrían que ocurrir con más frecuencia para merecer una calificación extrema.

(b) Si tiene acceso a esta información, considere las experiencias de otros proveedores de cuidados con este paciente. Si el paciente tiene problemas con otros, pero no con usted, trate de tener toda la imagen en cuenta.

(c) Trate de considerar si un comportamiento dado interfiere con sus apegos, funcionamiento o relaciones. Por ejemplo, el balanceo corporal o el retiro social no pueden interrumpir a otros niños o adultos, pero casi ciertamente impide el desarrollo o el funcionamiento individual.

No utilice mucho tiempo en cada punto - su primera reacción es usualmente la correcta.

1. Excesiva actividad en casa, escuela, trabajo o en otra parte.	0	1	2	3
2. Se daña a sí mismo a propósito.	0	1	2	3
3. Apático, lento, inactivo.	0	1	2	3
4. Agresivo con otros niños o adultos (verbal o físicamente).	0	1	2	3
5. Busca aislarse de los demás.	0	1	2	3
6. Movimientos corporales recurrentes y sin sentido.	0	1	2	3
7. Hace mucho ruido.	0	1	2	3
8. Grita exageradamente.	0	1	2	3
9. Habla excesivamente.	0	1	2	3
10. Berrinches/rabietas.	0	1	2	3
11. Conductas estereotipadas: movimientos anormales y repetitivos.	0	1	2	3
12. Se queda con la mirada perdida.	0	1	2	3
13. Impulsivo (actúa sin pensar).	0	1	2	3
14. Irritable y llorón.	0	1	2	3
15. Inquieto, incapaz de estar sentado.	0	1	2	3
16. Aislado, prefiere hacer actividades solo.	0	1	2	3
17. Tiene conductas extrañas o fuera de lo común.	0	1	2	3
18. Desobediente; difícil de controlar.	0	1	2	3

19. Grita sin razón o motivo.	0	1	2	3
20. Pocas expresiones faciales; carece de respuesta emocional.	0	1	2	3
21. Molesta a otros.	0	1	2	3
22. Lenguaje repetitivo (como si tuviera eco).	0	1	2	3
23. No hace nada más que sentarse y ver a los demás.	0	1	2	3
24. No coopera o no hace caso.	0	1	2	3
25. Estado de ánimo triste.	0	1	2	3
26. Se resiste a cualquier tipo de contacto físico.	0	1	2	3
27. Se mueve o rueda hacia adelante y hacia atrás.	0	1	2	3
28. No pone atención a las instrucciones.	0	1	2	3
29. Se enoja con facilidad si sus peticiones no son atendidas inmediatamente.	0	1	2	3
30. Se aísla de otros niños y adultos.	0	1	2	3
31. Interrumpe las actividades grupales.	0	1	2	3
32. Se sienta o se para en una sola posición por tiempo muy largo.	0	1	2	3
33. Habla consigo mismo en voz alta.	0	1	2	3
34. Llora por molestias o dolores menores.	0	1	2	3
35. Movimientos repetitivos de manos, cuerpo o cabeza.	0	1	2	3
36. Tiene cambios de conducta repentinos.	0	1	2	3
37. No reacciona en actividades estructuradas (tareas, vestirse, seguir instrucciones).	0	1	2	3
38. No puede estar sentado (ej. en clase, entrenamientos, comidas, etc).	0	1	2	3
39. No puede estar quieto en ningún momento.	0	1	2	3
40. Es difícil de acercársele, tocarlo o hacer empatía.	0	1	2	3
41. Grita y llora de forma inapropiada.	0	1	2	3
42. Prefiere estar solo/a.	0	1	2	3
43. No intenta comunicarse con palabras o gestos.	0	1	2	3
44. Se distrae fácilmente.	0	1	2	3
45. Agita o aletea las extremidades repetitivamente.	0	1	2	3
46. Repite palabras o frases una y otra vez.	0	1	2	3
47. Golpea el piso con los pies, golpea y/o avienta objetos o cierra puertas.	0	1	2	3
48. Constantemente corre o salta alrededor de la habitación.	0	1	2	3
49. Mueve el cuerpo hacia atrás y hacia delante repetitivamente.	0	1	2	3
50. Se lastima deliberadamente o sin motivo.	0	1	2	3
51. No pone atención cuando le hablan.	0	1	2	3
52. Se auto lastima físicamente.	0	1	2	3
53. No realiza actividades por su cuenta (Comer, vestirse, asearse, etc.).	0	1	2	3
54. Tiende a estar excesivamente activo.	0	1	2	3
55. Es indiferente al afecto.	0	1	2	3
56. No hace caso a las órdenes.	0	1	2	3
57. Tiene explosiones de temperamento y berrinches cuando no consigue lo que quiere.	0	1	2	3
58. Muestra pocas reacciones sociales a otros.	0	1	2	3

ABC-C: Aberrant Behavior Checklist-Community.

Discussion

ASD represents a real challenge both in the diagnosis and the interventions that must be applied to modify the different cognitive-behavioral conditions that accompany this group of patients throughout their lives. In this disorder, it is frequent for patients to present sleep disorders, epilepsy, gastrointestinal problems, alterations in attention, obsessive-compulsive disorder, anxiety, and aggressive behaviors.

There has been a greater interest in early diagnosis and early intervention in the last decade, demonstrating that, when treated in preschool age, there is a considerable improvement in socialization, behavior regulation, and language.[33-35]

The urgent need for rigorous studies to evaluate the impact of therapies, training for parents, special education models, and pharmacological treatments requires us to have instruments specifically developed and validated for all ages. The Baby and Infant Screen for Children with Autism Traits, part 3 (BISCUIT), has been validated in patients under three years of age.[36] The ABC, the BPI-01, and the RBS-R have been used successfully among younger populations of adult patients.[12,26] In Mexico, validations of these tools have not been performed to be used in Spanish in patients with ASD or intellectual disability, generating a problem when trying to objectively measure the efficacy of the different therapies used in these patients.

The ABC-C has been validated in other languages, which, according to the criteria of George and Mallery, qualify the scale between good and excellent. In our translation into Spanish, we find a Cronbach's alpha of 0.98 which qualifies it as excellent. When we analyzed the subscales, we found the lowest value in Speech, with a Cronbach's alpha of 0.64 falling in the questionable rating; however, when using the Student's t to establish the significance of Cronbach's coefficient, we obtained a t19 = 3,640 and P = 0.001, which means that there is a tendency towards coincidence between the observers.

The validity of the scale translated by our group is comparable with the other translations made in different countries and with the original tool developed by Aman. The Japanese and Turkish versions were validated for the pediatric age, as is the case of our translation. The other versions were applied to adult populations. No differences were found in the validations for the different age groups. Table 3 describes the Cronbach's alpha values of the translated scales.

Conclusions

The results of our work indicate that the tool has the appropriate validity and reliability to be used in Mexican patients with ASD over five years of age. It is a tool that does not require much training for its application and can be completed by any observer.

It is necessary to generate jobs that evaluate specific medium and long-term treatments for patients with ASD through this instrument and its correlation with other variables such as school, social, and communication performance.

Conflict of Interest
The authors declare they have no conflicts of interest.

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