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Psychometric Properties of the Teachers' Knowledge and Practice Scale for Students with ADHD

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Abstract

The psychometric properties of the scale of knowledge and pedagogical practice of teachers against inattention, hyperactivity, and impulsive behavior in school contexts in Cúcuta, Norte de Santander are validated. It was carried out under a quantitative, non-experimental approach, of exploratory, cross-sectional type, in terms of the population to be taken into account, who were the teachers assigned to the Municipal Education Secretary; the sample was obtained by proportional fixing; the data were processed in SPSS applying exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) based on reliability and reproducibility Cronbach's alpha, test-retest with Lin's intraclass correlation coefficient and the kappa index Cohen's. It is concluded that the test has the appropriate psychometric properties for use in Colombian school contexts.

Keywords: Pedagogical relationship; psychometric properties; inattention; hyperactivity; impulsivity.

Research Results

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Propiedades psicométricas de la escala sobre el conocimiento y la práctica pedagógica de los docentes hacia estudiantes con TDAH

Resumen

Fueron validadas las propiedades psicométricas de la escala de conocimiento y práctica pedagógica de docentes sobre conductas de inatención, hiperactividad e impulsividad en contextos escolares de Cúcuta, Norte de Santander, bajo una metodología cuantitativa, no experimental, exploratoria, de corte transversal. La población a tomar en cuenta fueron los docentes adscritos a la Secretaría de Educación Municipal; la muestra se obtuvo por fijación proporcional; los datos fueron procesados en SPSS aplicando el análisis factorial exploratorio (AFE) y un análisis factorial confirmatorio (AFC), en cuanto a confiabilidad y reproducibilidad alfa de Cronbach, test-retest con coeficiente de correlación intraclase de Lin e índice kappa de Cohen. Se concluye que la prueba tiene las propiedades psicométricas relevantes para su uso en contextos escolares colombianos.

Palabras clave: relación pedagógica; propiedades psicométricas; desatención; hiperactividad; impulsividad.

Propriedades psicométricas da escala sobre o conhecimento e a prática pedagógica de professores para alunos com TDAH

Resumo

Foram validadas as propriedades psicométricas da escala de conhecimento e prática pedagógica dos professores relativas a comportamentos de desatenção, hiperactividade e impulsividade em contextos escolares em Cúcuta, Norte de Santander. Foi realizada sob uma metodologia quantitativa, não experimental, exploratória e transversal; no que diz respeito à população a ter em conta foram os professores afectos à Secretaria Municipal de Educação; em relação à amostra, que foi obtida por fixação proporcional; os dados foram processados no SPSS, aplicando a análise de factor exploratório (AFE) e uma análise de factor de confirmação (AFC) em termos de fiabilidade e reprodutibilidade Alfa de Cronbach, teste-reteste com o coeficiente de correlação intra-classe de Lin e o índice kappa de Cohen. Conclui-se que o teste tem as propriedades psicométricas relevantes para uso em contextos escolares colombianos.

Palavras-chave: relação pedagógica; propriedades psicométricas; desatenção; hiperactividade; impulsividade.

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1. Introduction

Education is a process of constant formation, regardless of the place where it is carried out; in this way, Colombia tends to develop educational models that derive an integral conceptualization of the person, strengthening the personal, cultural, social, and political spheres of all the agents involved in the educational system. Contributing to the development of students is only a small part of the type of service that teachers offer to the community in general, through the moral, intellectual and physical orientation of students. In the same way, mental health is influenced in academic environments, and education should give importance and awareness to these issues (Angarita-Ortiz et al., 2020; Carrillo-Sierra and Quintero, 2020). In this sense, it is important to guarantee an adequate provision of services, ensuring the necessary environment for the access and stability of children and adolescents in the school system, as one of the various meritorious actions during their work exercise (Beltrán et al., 2012; Padrós-Blázquez et al., 2018).

Among the various problems that can arise in the educational sector, a characteristic of the students stands out that must be perceived by the educators to implement useful intervention strategies when including the students in the classroom, without affecting their behavior. In this way, it is relevant to highlight that reference is made to the prevalence of cases with attention deficit hyperactivity disorder (ADHD) in the classroom (Domínguez-Lara and Merino-Soto, 2015; Rivera, 2016; Carrillo-Sierra et al., 2018).

Teachers must be trained to be able to deal with situations in which a disorder such as ADHD is present, to achieve inclusive education in the classroom (González-Gómez and Carrillo-Sierra, 2018). Among the studies with the highest academic trajectory is that developed by Barkley (2014), who has published documents from 1998 to the last edition in 2014. The information that the author refers to regarding ADHD is the following: it is considered a disorder of chronic nature; the report states that between 50 and 80% of children with ADHD continue to present symptoms related to the disorder in adolescence. Therefore, it is important to identify the problem as early as possible to implement effective interventions to improve the quality of life of these children. However, for the successful development of any type of intervention, it is essential that the actors involved in the process of interaction with the children, such as parents, classmates, and teachers, have sufficient knowledge of the subject (Mellado et al., 2015; Fenollar-Cortés et al., 2016; Miranda et al., 2018).

For this reason, it is appropriate to select teachers as the central actors of this instrument, specifying the importance of the level of knowledge they can present about ADHD, which is of great relevance in identifying the behaviors typical of the disorder in young children, since they are the ones who can observe, over a long period, a large number of behaviors that children perform in structured situations, such as academic activities, and unstructured situations, such as play (Ochoa, 2018). Another point for which teachers are considered a key population is that they are the ones who are in daily contact with different groups of students, which would facilitate the establishment of comparative analyses between students of the same age. Finally, the fact that teachers are aware of ADHD would allow them to alert the work teams involved in the educational system to which they are attached, to promote specific workshops for the needs of their students (Expósito, 2016).

Therefore, the construction of a scale that allows measuring the level of knowledge of teachers on this topic becomes an imperative task (Hernández and Hernández, 2015; Moreno et al., 2018). For this purpose, it is necessary to consider that ADHD is a neurodevelopmental disorder that begins in childhood and whose main symptoms are inattention, hyperactivity, and impulsivity. Etiologically, this disorder originates from neurobiological to environmental factors, with children and adolescents with ADHD being the ones with the highest risk of facing academic difficulties and suffering from affective, anxiety, and behavioral disorders (American Psychiatric Association [APA], 2014).

Considering the above, an instrument must be validated using multivariate statistical methods, based on having the psychometric quality instrument that allows the evaluation of the knowledge and pedagogical practice of teachers against inattention, hyperactivity, and impulsivity behaviors applied in contexts schoolchildren from Cúcuta, Norte de Santander. Therefore, said instrument must condense the inattention, hyperactivity, impulsivity, pedagogical, and didactic relationship subscales, as will be discussed later (Carrillo-Sierra et al., 2018).

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1.1. Inattention

It refers to an individual's inability to maintain attention in various activities for long periods, including school and leisure activities. Among the key points for its detection are usually errors in the execution or completion of such actions, such as organizing tasks, execution time, not following instructions, and avoiding any type of exercise that requires mental effort (APA, 2014; Barkley, 2014; Morales-Hidalgo et al., 2017; DuPaul et al., 2018).

1.2. Hyperactivity

This section refers to when the individual usually gets a lot of energy and therefore cannot regulate himself; this aspect is reflected in people who play with their hands and feet, squirm in their seats, constantly get up from their seats, or move indoors from a place where they are expected to remain seated, in addition to being excessively eloquent (APA, 2014; Barkley, 2014; Richarte et al., 2017).

1.3. Impulsive

It includes those impulsive behaviors that are usually evident in individuals, such as answering questions before they are finished, making it difficult for them to take turns during daily activities in class; they usually interrupt and disrupt other people's conversations, in addition to using their classmates' things or the classroom teacher's teaching tools without waiting for the owner's approval or permission (APA, 2014; Barkley, 2014; Morales-Hidalgo et al., 2017; DuPaul et al., 2018; Moreno et al., 2018).

1.4. Pedagogical Relationship

It refers to the bond that teachers develop with their students; this component consists of the acquisition of knowledge of various kinds, such as the identification of behavioral patterns of their students. The construction of this relationship stems from the relational aspects of the teaching-learning dynamic, allowing closeness, respect, and authority during the teacher's work practice (Hernández and Hernández, 2015; Salamanca et al., 2016; Morales-Hidalgo, 2017).

1.5. Didactics

This section focuses on the identification of the behavioral patterns of greater predilection in teachers during the construction of activities that allow students a greater appropriation of the teaching-learning process, from a paradigm of inclusion and participation of different potentialities of the students (Ruedas, 2016; Eugenio-Gozalbo and Aragón, 2016; Estévez and León, 2015).

After developing a brief conceptualization of the dimensions, we proceed to annex the construction of the instrument that will be used in educational contexts in the city of Cúcuta, considering its reliability for the identification of knowledge and pedagogical practices of teachers against ADHD.

2. Methodology

The present investigation is of a quantitative, non-experimental approach, of an exploratory design, with a cross-section. Population of teachers attached to the Municipal Secretary of Education, sample by proportional allocation. The data will be processed in SPSS 22 by applying exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) based on reliability and Cronbach's alpha reproducibility, test-retest with Lin's intraclass correlation coefficient, and the kappa index Cohen.

2.1. Population and sample

The concept of population refers to the set of units that make up the group to be studied in the research (Hernández et al., 2010). In this case, the instrument is to be validated with teachers from the public sector in the city of Cúcuta, Norte de Santander. The total population was made up of 579 teachers (N=579 teachers) since the number of these varies by school, the sampling was applied stratified by proportional allocation, so that each of the samples obtained is proportional to the size of the stratum, accordingly, all units have the same probability of being selected. Table 1 presents a sample calculated with the equation belonging to probabilistic sampling by proportional allocation, which assigns a representative sample $\frac{Z^2 \Sigma_{h=1}^{L} W_h P_h (1-P_h)}{e^2}$ according to the proportion of each stratum (College) (Hernández et al., 2010).

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Table 1

Sample

School	Total teachers	Total sample
1	100	40
2	38	15
3	125	50
4	33	13
5	132	53
6	151	60
Total	579	231

2.2. Information collection techniques and instruments

The data collection was carried out with the scale of knowledge and pedagogical practice of teachers against the scale of knowledge and pedagogical practice of teachers with students with inattention, hyperactivity, and impulsiveness - CPIHI (Rivera-Porras et al., 2019), formed according to the following operationalization of the variable:

Table 2

Operationalization of the variable

Variable	Dimension	Definition – Description	Reagent
Knowledge	Inattention	It refers to the inability of external agents to transfer attention or sustain mental effort.	1, 2, 3, 4, 5, 6, 7, 8, and 9
	Hyperactivity	It is an intense motor activity, in which there is a continuous movement and the activity is excessive.	10, 11, 12, 13, 14, and 15
	Impulsiveness	It is the tendency to react impulsively, rapidly, and disproportionately to internal or external stimuli that are perceived as threatening, without measuring one's past actions or considering the consequences of one's actions.	16, 17, and 18
Practice	Pedagogical relationship -Attitudes	The relationship between the student and the teacher, resulting from the dynamics of teaching-learning, which allows closeness, respect, and authority during the teacher's work practice. It is directly related to the teaching attitude, defined as the way of reacting to the situation.	19, 20, 21, 22, 23, 24
	Didactics	It is the area responsible for implementing strategies related to how certain information is provided.	25, 26, 27, 28, 29, 30, 31, 32.

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Data were processed in SPSS using exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) based on reliability and Cronbach's alpha reproducibility, test-retest with Lin's intraclass correlation coefficient and Cohen's kappa index.

3. Results

To carry out the process of typing and standardizing the scale, the procedure was divided into two phases: The first was related to the reliability of the instrument and the elimination of items that were not considered necessary; the second was to validate the factorial structure of the scale.

Table 3

Reliability

Dimension	Cronbach's alpha	Number of reagents
Inattention	0,85	8
Hyperactivity	0,78	4
Impulsiveness	0,76	3
Pedagogical relationship	0,73	8
Didactics	0,83	9
Total, scale	0,93	32

To calculate the reliability, the Cronbach's alpha coefficient was used for each dimension and globally. It was found that the dimensions of inattention (α 0.85) and didactics (α 0.83), and in general the global scale (α 0.93) have a very high level, while the dimensions of hyperactivity (α 0.78), impulsivity (α 0.76), and pedagogical relationship (α 0.73) have a high level. This indicates that the scale does not show a significant variation between the interrelationships of the items.

In reviewing Table 4, it was determined that it is not necessary to eliminate any of the items, as doing so would not significantly improve the structure of the model, but rather would be detrimental to the structure of the same.

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Table 4

Reliability through dimensions and reagents

Dimension	Reagent	Scale average if the item has been deleted	Scale variance if the element has been suppressed	Corrected total item correlation	Cronbach's alpha if the element has been deleted
Inattention	1. I recognize that I neglect the details of a task because I have difficulty shifting my attention.	29,21	14,01	0,52	0,84
	2. I am able to recognize when a student is having difficulty in sustaining the mental effort in his or her activities.	29,19	13,55	0,63	0,83
	3. I know when a student is not paying attention or listening because of distraction.	29,39	13,08	0,58	0,84
	4. I recognize when a student is not completing tasks due to difficulty following directions.	29,07	13,48	0,60	0,83
	5. I can recognize when a student has difficulty planning assignments and activities.	29,34	13,11	0,63	0,83
	6. I notice when a student avoids structured, extended activities that require sustained attention.	29,37	12,86	0,68	0,83
	7. I recognize when a student repeatedly misplaces items needed to develop activities or tasks.	29,71	12,34	0,60	0,84
	8. I recognize when a student is being distracted by agents inside or outside of the classroom.	29,28	13,48	0,53	0,84

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Hyperactivity	9. I notice when a student has constant movement at his/her desk.	13,27	3,47	0,52	0,76
	10. I notice when a student leaves his/her desk in activities and academic situations where he/she is expected to remain seated.	12,79	3,53	0,67	0,68
	11. I recognize when a student is engaging in excessive physical activity in situations where it is unnecessary.	12,95	3,18	0,66	0,68
	12. I notice when a student talks excessively during the development of activities or tasks.	12,67	4,20	0,51	0,76
Impulsiveness	13. I recognize when a student is anticipating instruction or a question to answer.	8,48	1,71	0,58	0,69
	14. I recognize when a student becomes impatient or interrupts participation shifts.	8,51	1,52	0,67	0,59
	15. I recognize when a student is interfering in the activities of others without clarity of role.	8,57	1,70	0,53	0,74
Pedagogical relationship	16. I provide my students with support materials to carry out activities and facilitate the understanding of the topic.	30,41	10,51	0,44	0,70
	17. I provide my students with visual aids from weekly classroom activities.	31,12	9,14	0,40	0,71
	18. I provide my students with the materials needed to complete the activities or tasks.	30,20	10,46	0,51	0,69
	19. I tell my students the time remaining to deliver an activity or assignment.	30,11	10,80	0,48	0,69
	20. I avoid making judgments and accusations about the behavior of a student during the course of a lesson.	30,73	9,60	0,35	0,72
	21. I encourage student participation and bonding during the development of collaborative activities or tasks.	30,20	10,52	0,38	0,71
	22. I create spaces for classroom feedback and error-based learning.	30,40	10,35	0,47	0,69
	23. I give my students the time they need to develop activities or assignments.	30,10	10,67	0,52	0,69

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Didactics	24. I have classroom inclusion techniques and strategies for my students.	33,21	17,20	0,60	0,81
	25. I establish evaluation criteria in accordance with the needs of my students.	33,04	17,60	0,64	0,80
	26. I choose a test type according to the characteristics of my students.	33,13	17,15	0,59	0,81
	27. My practice allows me to give my students individual attention in the classroom.	33,58	16,74	0,56	0,81
	28. I use a variety of classroom activities to facilitate my students' adaptation.	33,14	17,92	0,63	0,81
	29. I use audiovisual media to focus the attention of my students.	33,36	18,36	0,34	0,84
	30. I give short and clear instructions to my students to facilitate their understanding of the activities and tasks.	32,69	19,35	0,49	0,82
	31. I set learning expectations for my students that are achievable and measurable.	33,08	17,95	0,58	0,81
	32. I set behavioral expectations for my students and provide clear guidelines for developing activities and assignments.	32,70	19,15	0,56	0,82

Once the reliability process was completed, we proceeded to determine which of the items were related to each other to determine its internal consistency. It was found that all the items are significantly related ($p<0.05$) (see Table 5), which indicates that the test has a high internal consistency, leaving evidence of adequate relationship between the items.

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Table 5

Correlations matrix

Correlations matrix		Inattention	Hyperactivity	Impulsiveness	Pedagogical relationship	Didactics
Correlation	Inattention	*	0,72	0,65	0,52	0,51
	Hyperactivity	0,72	*	0,71	0,48	0,43
	Impulsiveness	0,65	0,71	*	0,56	0,49
	Pedagogical relationship	0,52	0,48	0,56	*	0,67
	Didactics	0,51	0,43	0,49	0,67	*
Sig. (unilateral)	Inattention	*	0,00	0,00	0,00	0,00
	Hyperactivity	0,00	*	0,00	0,00	0,00
	Impulsiveness	0,00	0,00	*	0,00	0,00
	Pedagogical relationship	0,00	0,00	0,00	*	0,00
	Didactics	0,00	0,00	0,00	0,00	*

After verifying reliability and internal consistency, we proceeded to confirm the factorial structure. However, before proceeding, the population assumptions were verified through the KMO test and Bartlett's sphericity. Table 6 shows that, according to both tests, the factorial analysis can be applied (KMO 0.81; Bartlett's sphericity, p 0.00).

Table 6

KMO and Bartlett Test

Kaiser-Meyer-Olkin sampling adequacy measure		0,81
Bartlett's sphericity test	Approx. Chi-square	714
	Gl	10
	Gis.	0,00

When examining the communalit and extraction indices (Table 7), it was found that the component Inattention contributes 78%; the component Hyperactivity contributes 85%; the component Impulsivity contributes 77%; the component Pedagogical Relationship contributes 82%, and the component Didactics contributes 85% to the proposed model.

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Table 7

Community and extraction indices

Communities	Initial	Extraction
Inattention	1,00	0,78
Hyperactivity	1,00	0,85
Impulsiveness	1,00	0,77
Pedagogical relationship	1,00	0,82
Didactics	1,00	0,85

Source: Authors.

After identifying the commonalities and the extraction, we proceeded to identify the total variance explained to clarify the model through the proposed structure. It was found that through the two components initially proposed, it is possible to explain 81.45 of the total variances (see Table 8 and Figure 1). This makes it clear that the initial proposed factorial structure adapts to the applied population criteria.

Table 8

Total explained variance

Component	Initial eigenvalues			Sums of loads squared of extraction			Sums of loads squared of rotation		
	Total	% variance	% Cumulative	Total	% variance	% Cumulative	Total	% variance	% Cumulative
1,00	3,29	65,97	65,97	3,29	65,97	65,97	2,29	45,97	45,97
2,00	0,77	15,47	81,45	0,77	15,47	81,45	1,77	35,48	81,45
3,00	0,36	7,35	88,81						
4,00	0,30	6,11	94,92						
<5.00	0,25	5,07	100						

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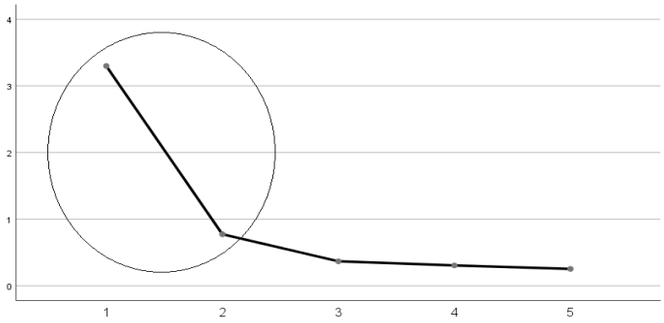
Figure 1

Sedimentation chart



Source: SPSS.

After verifying the components, the factorial structure of the model was verified; in the initial solution, only one component was identified to explain the variance, composed of the five dimensions. However, when the varimax components were rotated using Kaiser normalization, it was found that component 1 was formed by the dimensions: Inattention, Hyperactivity, and Impulsivity, thus forming the factor Knowledge; in terms of component 2, it was formed by the dimensions: Pedagogical and Didactic Relationship, forming the factor Pedagogical Practices (see Tables 9 and 10).

Table 9

Core Component Matrix, Initial Solution

Component Matrix	Component	
	Knowledge	Internship
Inattention	0,84	-0,27
Hyperactivity	0,83	-0,41
Impulsiveness	0,85	-0,23
Pedagogical relationship	0,79	0,45
Didactics	0,75	0,53

Table 10

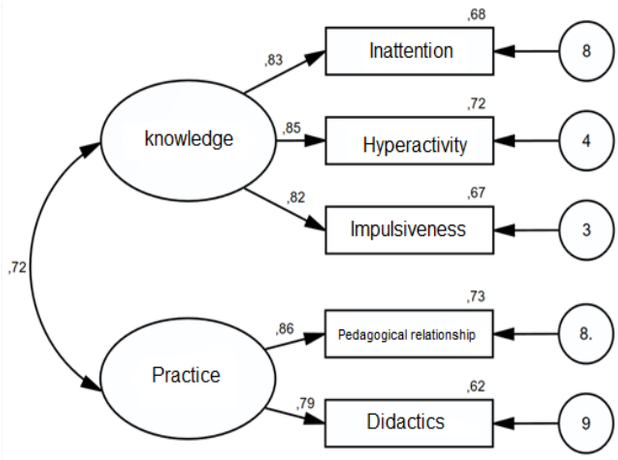
Matrix of rotated components (Varimax with Kaiser normalization).

Rotated component array	Component	
	Knowledge	Internship
Inattention	0,82	0,32
Hyperactivity	0,90	0,20
Impulsiveness	0,80	0,36
Pedagogical relationship	0,33	0,85
Didactics	0,25	0,89

Finally, the factor structure was verified by confirmatory factor analysis (Figure 2). It was found that the final scale consisted of 32 items divided into two factors; the first was called Knowledge and consisted of the dimensions: Inattention (factor load: 0.83; 8 items), Hyperactivity (factor load: 0.85; 4 items), and Impulsivity: 0.82; 3 items); the second factor was called: Pedagogical Practice and was composed of the dimensions: Pedagogical Relationship (factor load: 0.86; 8 items) and Didactics (factor load: 0.79; 9 items).

Figure 2

CPIHI structural equation model



Source: AMOS.

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This structure was also verified by the goodness and fit indices of the model, and it was found that, at the level of comparative fit, it satisfies the Comparative Goodness of Fit Index (CFI 0.99), the Tucker-Lewis Index (TLI 0.96), the Normalized Fit Index (NFI 0.98), and, at the level of parsimonious fit it satisfies the Parsimony-corrected Normalized Fit Index (PNFI 0.39). At the level of parsimony adjustment, it corresponds to the Parsimony-corrected Normalized Adjustment Index (PNFI 0.39); and at the level of other indices, it corresponds to the Goodness of Fit Index (GFI 0.98) and the Root of the Mean Square Residual (RMR 0.29) (see Table 11). This indicates that the initially proposed factorial structure meets the criteria of the structural model.

Table 11

Structural model goodness and fit Indices

Statistical		Model	Default model	Saturated model	Independence model	Decision limit	Criterion
Absolute adjustment	Chi-square	15,00				N/A	N/A
	Degrees of freedom	4,00				Less than 3	Does not comply
	Probability level	0,00				Significance > 0.05	Does not comply
Comparative fit	Comparative goodness of fit index - CFI		0,99	1,00	0,00	≥ 0.95	Meets
	Tucker-Lewis Index - TLI	rho2	0,96		0,00	≥ 0.95	Meets
	Normalized Fit Rate - NFI	Delta1	0,98	1,00	0,00	≥ 0.95	Meets
Parsimonious adjustment	Parsimony-corrected normalised adjustment index - NFP		0,39	0,00	0,00	Next to 1	Does not comply
Other	Goodness of fit index - GFI		0,98	1,00	0,43	≥ 0.95	Meets
	Corrected goodness of fit index - AGFI		0,93		0,14	≥ 0.95	Does not comply
	Average quadratic residue root - RMR		0,29	0,00	5,42	Close to zero	Meets
	Approximation Mean Square Residue Root - RMSEA		0,10		0,51	< 0.08	Does not comply

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4. Discussion and Conclusions

In the Latin American context, the importance of teachers in identifying the learning difficulties of their students and how this may be related to disorders such as ADHD is explored in works such as Balbi et al. (2017), who are responsible for carrying out the most exhaustive work on the subject. Thus, the design and construction of a self-report test to identify the presence of ADHD in students from the Chilean context implies work focused on the consolidation of scales that allow obtaining the most information on the subject (San Nicolás and Iraurgi, 2016).

On the other hand, Salas-Bravo et al. (2017) attempted to design an optimal performance test, focusing on teachers as the population to be evaluated, based on their knowledge of students and the years they had developed this work, to correlate whether their competence in the subject was related to the cases of students who presented ADHD as well as those who did not. Subsequently, Ramos and Pérez-Salas (2016) tried to design a self-report test to identify the presence of ADHD in Ecuadorian students.

In the national context, Salamanca et al. (2016) were responsible for developing a correlational study between the coordination disorder with ADHD of the problem demonstrated in a particular region, where again teachers become key actors for the description of information relevant to the case. Rincón and Rey (2017) made an adaptation of an instrument responsible for the assessment of ADHD; however, its applicability focuses only on the child population, leaving out the actor who is the object of interest in this work (Morales-Hidalgo et al., 2017; DuPaul et al., 2018).

In relation to the current study, the process of classification and standardization of the scale has shown that it presents an overall high level of reliability; therefore, there is no significant variation in the interrelationship of the items; the removal of any reagent would disfavor the test structure. In the same way, the test presents a high internal consistency, which verifies the adequate relationship between the items. 81.45% of the total variance is explained by the two components initially proposed, so the proposed factorial structure adapts to the population criteria applied. Thus, Component 1 was composed of the dimensions: Inattention, Hyperactivity, and Impulsivity, which make up the Knowledge factor; and Component 2 was made up of the dimensions: Pedagogical and Didactic Relationship, which constitute the Pedagogical Practices factor. Likewise, the verification of the factorial structure shows that the initially proposed factorial structure meets the criteria of the structural model.

Therefore, it is valid to affirm that the scale of knowledge and pedagogical practice of teachers compared to schoolchildren with inattention, hyperactivity, and impulsiveness - CPIHI, has the pertinent psychometric properties for use in Colombian school contexts.

Interest conflict

The authors of this article declare that they have no conflict of interest regarding the work presented.

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Contribution

All authors participated in the preparation, reading, and approval of the manuscript.