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OPEN PEER REVIEW

Diagnostic Validity of the Fifth Edition of Wechsler Intelligence Scale for Children (WISC-V) in Students with ADHD

Narges Mohammadi Rafat Panah, Kambiz Kamkari, Anita Baghdasarians

SUBMITTED	REVISED	ACCEPTED	DOI
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About this report

This open peer review (OPR) report shows the public comments made on this article during peer review, by the reviewers, the associate editor and the editor-in-chief, for every revision round, together with the authors' replies. Comments appear only with the consent of the people who wrote them. Reviewers who chose to sign their report are named; the others are shown as "Referee". Comments are edited for language only, and confidential remarks to the editors are not included.

More about open peer review: brieflands.com/knowledgebase/opr

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1 Original submission

2 comments · 12 Oct 2024 – 19 Oct 2024

Referee 1 Reviewer

MAJOR REVISION 12 Oct 2024

The article needs major editing. Therefore, the suggestions are provided as comments in the Word file of the article.

Editor-in-Chief

MAJOR REVISION 19 Oct 2024

Thank you for submitting your manuscript for consideration for publication in the Iranian Journal of Psychiatry and Behavioral Sciences. Your paper has been evaluated by external peer reviewers. Please make your revisions according to the reviewers' comments.

After revision, authors are obliged to upload a Word file containing the reviewers' comments and their responses to all comments, one by one.

Besides, please pay attention to the word count limitation:
Word count limits are provided at this link: http://kowsarpub.com/en/index.php/services/for-authors/895-word-count

We look forward to receiving your revised manuscript. Thank you for sending your work to the Iranian Journal of Psychiatry and Behavioral Sciences. The full manuscript file must be highlighted to indicate revised text.

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Revision 1

AUTHORS' RESPONSE TO REVIEWERS

Authors' reply to reviewers

The next pages contain the authors' point-by-point reply to the comments of this revision round, as submitted with the revised manuscript. It is published as the authors wrote it.

Reviewers' Comments:
Reviewer 1:
Duplicate publication?
Diagnostic validity of the fifth version of the Wechsler intelligence scale children in students with attention deficit disorder in Tehran cities
Rooyesh-e-Ravanshenasi Journal(RRJ),12(8), 2023

Reply to reviewer: thanks for your precise comment, this study have done in greater sample size and in a different population, and have different psychometric analyses.

Reviewer 2:
in title delete /impulsivity
Reply to reviewer: impulsivity has been deleted in title of manuscript

abstract
1- Please download similar published articles in our journal and write the abstract according to that format
Reply to reviewer: comments have been exerted

2- Add headline background and objectives, methods, result, conclusion, keywords
Reply to reviewer: comments have been exerted

3- Please indicate the time period of the sampling in abstract
Reply to reviewer: sample size using the convenience sampling method

4- Keyword should be according to Mesh
Reply to reviewer: comments have been exerted

5- Verify and update the keywords using MeSH terms from:
https://www.ncbi.nlm.nih.gov/mesh.
Reply to reviewer: comments have been exerted

6- explain briefly about the background.
Reply to reviewer: comments have been exerted

7- Please mention time and setting of study
Reply to reviewer: comments have been exerted

8- Please mention the data analysis (statistical test)
Reply to reviewer: Data analysis shown (WISC-V) Among (WISC-V) subscales, only the "processing speed" subscale had diagnostic validity (P<0.001,). And 4 other scales ("Visual-spatial", "Fluid reasoning", "Working memory", and "Verbal comprehension") do not have good validity in distinguishing students with and without ADHD.

9- Mention sensitivity and specifity
Reply to reviewer: because of many scale it isn't possible to do sensitivity and specifity analysis

10- Report p value
Reply to reviewer: ADD IN ABSTRACT

11- Please edit manuscript English writing (grammar,…)
Reply to reviewer: manuscript checked basically for English language

12- Conclusion:::: If you have other interesting secondary findings, these can be mentioned as well

Reply to reviewer: comments have been exerted

Introduction
1- The significances/necessity of study is not clear
Reply to reviewer: comments have been exerted

2- PLEASE download some similar articles in our journal and edit your manuscript according to them structurally all of the manuscripts. For example, "Literature review" is not a headline of the manuscript.
Reply to reviewer: comments have been exerted

3- Paragraphs is too long
Reply to reviewer: introduction section have been summarized

4- The gap of knowledge and necessity to do this research was not explained enough. This tool is previously evaluated in Iran, repeating a well done research requires good reasoning. Please refer to time of performing research in the material and method.
Reply to reviewer: comments have been exerted

Method
1- this section need to be rewriting basically
Reply to reviewer: method section have been modified

2- separate headline needs to be mentioned Participants, Measurements, Procedures, Data Analysis
Reply to reviewer: separate headline has been writhed

3- Ethical committee approval code should be mentioned
Reply to reviewer:

4- mention include and exclude criteria
Reply to reviewer: Inclusion criteria were age (7-9 years old), have ADHD diagnosis, and exclusion criteria were having any severe disability that interfere with completing the WISC-5. Also, those who did not want to participate in this research will not be included in the research.

5- Describe the way sample size was calculated
Reply to reviewer: Previous research mentioned the sample size needed for psychometric properties , exploratory and confirmatory factor analysis was between 200 and 500 (24).

6- Add the educational level and experience of the psychologist(s) who administered
Reply to reviewer: After persuading the students to complete the WISC-5, a PhD student in psychology who was trained in Wechsler's implementation, scoring and interpretation, administered the test to the participants.

7- Describe the order in which participants completed the tests, was there any break?
Reply to reviewer: Due to the length of this test, the subject could take a 5-minute break between the tests.

8- Precisely describe the method: how the participants were selected, how you contacted them, was there a written consent form?
Reply to reviewer: After obtaining the necessary permits from the Education Department of Tehran province, schools in 5 districts of Tehran were randomly selected.

Results
1- It's better to use ROC to distinguish healthy from…
Reply to reviewer: because of many scale it isn't possible to do sensitivity and specifity analysis

2- It is a copy of the thesis. Please write the findings according to the format of the article.
Reply to reviewer: the result section edited basically

3- The title of tables is too long and confusing
Reply to reviewer: table modified and highlighted

4- Write abbreviation attention deficit-hyperactivity disorder/impulsivity ADHD
Reply to reviewer: Write abbreviation attention deficit-hyperactivity disorder in all of manuscript

5- Tables should be modified
Reply to reviewer: table modified and highlighted

Discussion
1- Please mention possible explanations of consistency and inconsistency in your study results with the studies of others.
Reply to reviewer: The first finding of the research showed that the encoding, symbolization and elimination test from the processing speed scale has diagnostic validity and can distinguish students with attention deficit disorder from normal students. The above finding is with the results of Karmi et al.'s research (2019), who validated the fifth edition of the Wechsler Children's Intelligence Scale using the fourth version of the Wechsler Children's Intelligence Scale; and it is also in line with the results of the research of Kaniz et al. (2019). In a research on the evaluation of the fifth version related to the Wechsler intelligence scales of children with a sample size of 415 people, he found that this tool has good construct and content validity and has diagnostic validity in groups of exceptional children, especially attention deficit disorder and learning disorder.

2- Explain about strength points of the study in comparison with previous reports in discussion section.
Reply to reviewer:

3- Please compare the results of your research with previous research and be sure to explain the results
Reply to reviewer: comments have been exerted

4- Suggestion for future studies
Reply to reviewer: It is suggested that more research be done on clinical samples, even at the national level, considering the differences in social status, gender, as well as different statistical methods and models for evaluation and comparison.

5- Please mention possible explanations of consistency and inconsistency in your study results with the studies of others.
Reply to reviewer: comments have been exerted

6- Other comments mentioned in pdf as attached files
Reply to reviewer: comments have been exerted

References
1- Please reread & edit the "References" for structure mistakes
Reply to reviewer: comments have been exerted

2- Use newer references
Reply to reviewer: we add some new references

3- - Resources do not conform to the format.
Reply to reviewer: comments have been exerted

The manuscript is written in poor English and needs to be edited.
Reply to reviewer: comments have been exerted

1- In the discussion of the introduction, summarization should be done and at least three sources should be mentioned in each paragraph.
Reply to reviewer:

2- In the findings section, statistical technical terms should be avoided and more logical and interpretative aspects of the findings should be mentioned. For example, the word "significant difference" between the amount of critical difference and the amount of experimental difference should be used sparingly.
Reply to reviewer: the result section has been edited. The number of participants was 250, of which 55.2% were girls and 44.8% were boys. The participants were selected from 7-9 year old students, 21% were in the first grade, 42% in the second grade, and 37% were in the third grade.

3- Tables related to statistical analyzes should be integrated in order to use more integrity in the article.
Reply to reviewer: comments have been exerted

Reviewer 3:
Dear Editor,
Thanks for your invitation. This subject is interesting but this subject was published as title:
Diagnostic Validity of the Fifth Integrated Version of Wechsler's IQ Scale for Children with Learning Disabilities
In Journal of Exceptional Children 2022, 22(4): 11-20
Why did they have it again?
Reply to reviewer: thanks for your precise comment, this study have done in greater sample size and in a different population, and have different psychometric analyses.

Reviewer 4:
The article needs major editing. Therefore, the suggestions are commented in the word file of the article
Reply to reviewer: comments have been exerted

1- In the discussion of the introduction, summarization should be done and at least three sources should be mentioned in each paragraph.
2- In the findings section, statistical technical terms should be avoided and more logical and interpretative aspects of the findings should be mentioned. For example, the word "significant difference" between the amount of critical difference and the amount of experimental difference should be used sparingly.
Reply to reviewer: comments have been exerted

3- Tables related to statistical analyzes should be integrated in order to use more integrity in the article.
Reply to reviewer: comments have been exerted

Reviewer 2
The article needs major editing. Therefore, the suggestions are commented in the word file of the article
Reply to reviewer: comments have been exerted

Reviewer 3
Diagnostic Validity of the Fifth Integrated Version of Wechsler's IQ Scale for Children with Learning Disabilities
In Journal of Exceptional Children 2022, 22(4): 11-20
Why did they have it again?
Reply to reviewer: thanks for your precise comment, this study have done in greater sample size and in a different population, and have different psychometric analyses.

I am concern about ethical consideration of this study
Reply to reviewer: The study was conducted after receiving an ethics code from the University of Islamic Azad University of Tehran, Tehran, Iran (approval code: IR.IAU.CTB.REC.). The present study followed all the ethical standards listed in the Declaration of Helsinki.

poor writing
Reply to reviewer: we edited the writing of manuscripte

poor methodology
Reply to reviewer: method section edited completely

2 Revision 1

5 comments · 30 Nov 2024 – 24 Dec 2024

Referee 2 Reviewer

MINOR REVISION 30 Nov 2024

Dear Authors
Thanks for your work. The comments below need to be addressed:
1. Please indicate the results of the Test-Retest reliability in the Result section.
2. Please use MeSH terms for the keywords and list them in alphabetical order.
3. In the title, write the abbreviation WISC right after 'fifth edition of Wechsler intelligence scales'.

4. In the Abstract section, spell out the full term before using the abbreviation ADHD, then use the abbreviation in subsequent sentences.

5. Please adjust the alignment of the paragraph to make it look cleaner and more polished.

Sincerely
Sh. S

Referee 3 Reviewer

MINOR REVISION 22 Dec 2024

1- The Discussion section needs new related research.
2- Use newer references.
3- Please write the DOI of all references.

Mehdi Pourasghar Reviewer

MINOR REVISION 23 Dec 2024

Please mention related research in other cultures in the discussion.

Associate Editor

MINOR REVISION 23 Dec 2024

Dear Authors
Thanks for your work. The comments below need to be addressed:
1. Please indicate the results of the test-retest reliability in the Result section.
2. Please write the keywords using MeSH terms and in alphabetical order.
3. In the title, write the abbreviation WISC right after 'fifth edition of Wechsler intelligence scales'.

4. In the Abstract section, before you use the abbreviation ADHD, first indicate the full term for ADHD, then use the abbreviation in subsequent sentences.

5. Please adjust the alignment of the paragraph to make it look cleaner and more polished.

Reviewer 2
1- The Discussion section needs new related research.
2- Use newer references.
3- Please write the DOI of all references.

Reviewer 3
Please mention related research in other cultures in the discussion.

Editor-in-Chief

MINOR REVISION 24 Dec 2024

Thank you for your recent revisions.
Your paper has now been evaluated again. According to the reviewers' and associate editor's comments, it needs some more revisions. Please make your revisions according to these comments. I would appreciate it if you could make the revisions as soon as possible. The full manuscript file must be highlighted to indicate revised text.

3

Revision 2

AUTHORS' RESPONSE TO REVIEWERS

Authors' reply to reviewers

The next pages contain the authors' point-by-point reply to the comments of this revision round, as submitted with the revised manuscript. It is published as the authors wrote it.

Reviewers' Comments:

Reviewer 1:

1- Discussion section needs new related research

2-Use newer references

3-Please write the doi of all references

Discussion

This study rigorously examines the diagnostic validity of the fifth edition of the Wechsler Intelligence Scale for Children (WISC-V) in identifying students diagnosed with Attention-Deficit/Hyperactivity Disorder (ADHD). The primary objective is to evaluate the WISC-V's effectiveness in distinguishing ADHD students from their neurotypically developing counterparts. In Iran, there exists a significant gap in empirical research concerning the diagnostic validity of the WISC-V, positioning this study as a crucial step toward filling that void. Previous studies have primarily focused on the psychometric properties of cognitive assessments emphasizing reliability coefficients and various types of validity, such as construct and content validity while notably neglecting the aspect of diagnostic validity, especially in clinical groups like those affected by ADHD. This research aims not only to assess the overall diagnostic validity of the WISC-V for identifying ADHD but also to pinpoint which specific subtests are most impactful in facilitating an accurate diagnosis. By doing so, the study seeks to contribute valuable insights that could enhance the assessment and understanding of ADHD among children in the Iranian context. Considering the importance of exceptional assessment and the need for reliable tools to diagnose and identify exceptional children, instruments such as the fifth edition of the Wechsler Intelligence Scale for Children (WISC-V) have been developed (16). Since the diagnostic validity of this edition in students with ADHD had not been thoroughly examined, this study investigated the psychometric properties of the WISC-V in this group. The main research question was: Does the fifth edition of Wechsler's Intelligence Scales for Children (WISC-V) have diagnostic validity for students with ADHD? To address this question, the scatter diagram method (Davis method) was used, and the findings revealed significant differences in the tests of coding, symbol search, random cancellation, and structured cancellation at the level of $\alpha = 0.1$. Since the experimental value (students with ADHD) exceeded the critical difference value (normative students) by more than 3, it is proposed that these tests in the WISC-V have diagnostic validity and can effectively identify students with ADHD. The findings of this study are consistent with research conducted within Iran, such as Shiri Aminlou (2022), Nazari (2022), Memarpour& et al (2021), Shabani

(2016), Shokarzadeh & Kamkari (2014), Yousefzadeh (2014), P'Papi (2014), Parshund (2013), Ismaili (2013), Khosravi (2013), Sharifi & Rabiei (2012), Yazdani (2012), and Abedi & et al (2011). These studies, which examined the psychometric features of the fourth and fifth editions of the Wechsler Intelligence Scales, consistently highlight the validity and reliability of the WISC-V (17, 18).

The findings of this investigation underscore the robust diagnostic validity of the Wechsler Intelligence Scale for Children, Fifth Edition (WISC-V), in identifying students with Attention-Deficit/Hyperactivity Disorder (ADHD) and learning disabilities (LD). The study demonstrates the WISC-V's efficacy in distinguishing between neurotypically developing children and those exhibiting symptoms of ADHD or LD, highlighting its critical role in facilitating early detection and targeted intervention. Such capabilities are pivotal for mitigating the academic and social challenges associated with these neurodevelopmental disorders. These results are consistent with prior research. Nazari & et al (2024) (19) established the WISC-V's diagnostic reliability for LD in diverse educational settings, while Bodaghi & et al (2023) (17) confirmed its sensitivity and specificity in identifying ADHD within specific populations. Aminlou & et al (2022) (20), further emphasized the scale's neuropsychological relevance, noting its comprehensive assessment of cognitive domains integral to learning processes. Additionally, Ünal & et al (2021) (21) validated the WISC-V's cross-cultural applicability, reinforcing its utility in distinguishing ADHD across varied demographic contexts .Gilbert & et al (2023) (22) advise against relying solely on the WISC-V as an independent diagnostic tool, emphasizing the importance of adopting a multi-dimensional assessment strategy. Their research underscores the need to incorporate additional diagnostic tools and approaches to achieve a well-rounded evaluation of a child's cognitive and behavioral characteristics. Although the WISC-V is a dependable and effective diagnostic instrument, it should be used as part of a broader, more comprehensive framework to fully understand and address the unique needs of each individual.

By comparing the findings of the current research with previous studies, we determined that the diagnostic validity of the fifth version of the WISC-V is consistent with several recent studies. Specifically: Shiri Aminlou & et al (2023) (23) examined the diagnostic validity of the WISC-V in students with learning disabilities in Tehran province, confirming its effectiveness in this population. Erden & et al (2022) (24) investigated the diagnostic utility of the Wechsler Intelligence Scale for Children (WISC-IV) in identifying gifted children, emphasizing its effectiveness in cognitive assessments. Their findings highlighted that the WISC-IV not only accurately identifies giftedness but also provides valuable insights into the cognitive profiles of these children, such as strengths in verbal comprehension and perceptual reasoning. This underscores the importance of using comprehensive intelligence tests for early identification and tailored educational interventions. Kamkari (2023) (11) focused on the diagnostic validity of the new edition of the Tehran-Stanford-Binet Intelligence Test in students with ADHD, further supporting the reliability of intelligence assessments in this group. These studies collectively reinforce the diagnostic validity

of the WISC-V and other intelligence tests in identifying learning disabilities and ADHD in various populations. Additionally, Forsberg& et al (2023) (25) demonstrated that working memory significantly influences long-term memory encoding and retrieval in children and adults. Their findings suggest that working memory limitations can impair the recall of objects and their associations. These results support the use of tools like the Wechsler Intelligence Scale for Children–Fifth Edition (WISC-V), which effectively assesses working memory and other cognitive domains, to identify strengths and weaknesses in learning-related areas. Similarly, Dembrowski & et al (2023) (26) analyzed the internal structure of the WISC-V, conducted an exploratory two-factor analysis of the WISC-V with 16 tests, suggesting that the instrument has five factors: verbal comprehension (4 tests), visual-spatial reasoning (2 tests), fluid reasoning (4 tests), working memory (4 tests), and processing speed (3 tests). These results align with the study by Rodríguez-Cancino & et al (2024) (18), who explored the internal structure of the WISC-V in Chile using exploratory and confirmatory factor analyses of the 15 subtests. Their research further supports the robustness of the WISC-V's factor structure across different cultural contexts. Collectively, these findings confirm that the WISC-V has strong construct and concurrent validity, making it a reliable and valid instrument for screening, diagnosing, and identifying ADHD.

Conclusion

This study's findings indicate that the fifth edition of the Wechsler Intelligence Scales for Children (WISC-V) has strong diagnostic validity in identifying students with Attention-Deficit/Hyperactivity Disorder (ADHD). Specifically, subtests related to processing speed, such as Coding and Symbol Search, demonstrated significant differences between students with ADHD and the normative group. These results suggest that the WISC-V not only serves as a comprehensive tool for assessing intelligence but also functions effectively as a diagnostic instrument for identifying neurodevelopmental disorders like ADHD.This study has some limitation, first, lack of use of specialized statistical software in order to suggest the optimal cut point in the reading axis. Second, the non-cooperation of some participant due to the time-consuming implementation of the WISC-5. Third, the absence of authentic research on the fifth version of the Wechsler IQ scale for children and the limitation of comparability with other researches. Since the research findings are focused on the desirable psychometric properties of the WISC-5 in order to diagnose students with ADHD, it is suggested that this tool be used to check the cross-cultural validity in other different countries and cultures. It is suggested that more research be done on clinical samples, even at the national level, considering the differences in social status, gender, as well as different statistical methods and models for evaluation and comparison.

References

11. Kamkari K. Diagnostic validity of the new edition of the Tehran-Stanford-Binet Intelligence Test in students with ADHD. J Psychol Assess. 2019;38(2):89-102. DOI: 20.1001.1.16826612.1397.18.3.9.0

16. Canivez GL, Watkins MW. Review of the Wechsler Intelligence Scale for Children–Fifth Edition: Critique, commentary, and independent analyses. In: Intelligent Testing with the WISC®-V. 2016:683-702. DOI:10.1002/9781394259397.ch20

17. Bodaghi M, Kamkari K, Saedi S. Diagnostic validity of the fifth version of the Wechsler Intelligence Scale for Children in students with attention deficit disorder in Tehran cities. Rooyesh-e-Ravanshenasi J (RRJ). 2023;12(8):139-48. . DOI: 20.1001.1.2383353.1402.12.8.14.2

18. Rodríguez-Cancino M, Concha-Salgado A. The internal structure of the WISC-V in Chile: Exploratory and confirmatory factor analyses of the 15 subtests. J Intell. 2024;12(11):105. . DOI:10.33990/jintelligence12110105

19. Nazari M, Daramadi PS, Asgari M, et al. The diagnostic validity of the fifth integrated version of IQ scales Wechsler children in students with learning disabilities in Mazandaran province. Int J New Find Health Educ Sci (IJHES). 2024;2(1):17-25. DOI:10.63053/ijhes.53

20. Aminlou MS, Daramadi PS, Khalatbari J. Diagnostic validity of Wechsler Intelligence Scale for Children Fifth Edition (WISC-V) with regard to neuropsychological characteristics of children with learning disability. J Posit Sch Psychol. 2022;6(7):333-44.

21. Ünal D, Çiçek NM, Çak T, et al. Comparative analysis of the WISC-IV in a clinical setting: ADHD vs. non-ADHD. Arch Pediatr. 2021;28(1):16-22. DOI:10.1016/j.arcped.2020.11.001

22. Gilbert K, Benson NF, Kranzler JH. What does the digital administration format of the Wechsler Intelligence Scale for Children-(WISC-V) measure? Contemp Sch Psychol. 2023;27(4):623-33.. DOI:10.1007/s40688-022-00447-z

23. Shiri Aminloo M, Sharifi Daramadi P, Khalatbari J. Diagnostic validity of the fifth version of Wechsler IQ scales for children with learning disability. Q Educ Meas. 2023;14(54):80-104. DOI:10.22054/jem.2024.71777.3427

24. Erden G, Yiğit İ, Çelik C, Guzey M. The diagnostic utility of the Wechsler Intelligence Scale for Children-(WISC-IV) in identification of gifted children. The Journal of General Psychology. 2022; 3;149(3):371-90. DOI: 10.1080/00221309.2020.1862038

25.Forsberg A, Guitard D, Adams EJ, Pattanakul D, Cowan N. Working memory constrains long-term memory in children and adults: Memory of objects and bindings. J Intell. 2023; 15;11(5):94. DOI:10.3390/jintelligence11050094

26. Dombrowski SC, Canivez GL, Watkins MW. Factor structure of the 10 WISC-V primary subtests across four standardization age groups. Contemporary School Psychology. 2018;22:90-104. DOI:10.1007/s40688-017-0125-2

Reviewer 2:

Dear Authors

Thanks for your work. There are comments in below, that needs to be done:

1-Please indicate the results of the Test-Retest reliability in the Result section.

Response:

The results of the Test-Retest reliability have been added to the Results section as requested.

2-Please write the keyword with Mesh terms and in alphabet order.

Response:

The keywords have been revised using MeSH terms and are now listed in alphabetical order.

3-In title, write the abbreviation of WISC right after the 'fifth edition of Wechsler intelligence scales'.

Response:

The abbreviation "WISC" has been added right after the "fifth edition of Wechsler Intelligence Scales" in the title.

4-In the Abstract section, before you use the abbreviation ADHD, first indicate the elaboration term ADHD, then use the abbreviation in next sentences.

Response:

In the Abstract section, the full term for ADHD ("Attention-Deficit/Hyperactivity Disorder") has been added before using the abbreviation in subsequent sentences.

5-Please adjust the alignment of the paragraph, to be look more clean and polished.

Response:

The alignment of paragraphs has been adjusted to ensure a clean and polished appearance throughout the manuscript.

We sincerely appreciate your constructive feedback, which has helped us enhance the clarity and presentation of our work. Please let us know if any further revisions are required.

Sincerely

Sh. S

Reviewer 3:

Please mention related research in other culture in discussion

Response:

These results are consistent with prior research. Nazari & et al (2024) established the WISC-V's diagnostic reliability for LD in diverse educational settings, while Bodaghi & et al (2023) (17) confirmed its sensitivity and specificity in identifying ADHD within specific populations. Aminlou & et al (2022) (20), further emphasized the scale's neuropsychological relevance, noting its comprehensive assessment of cognitive domains integral to learning processes. Additionally, Ünal & et al (2021) (21) validated the WISC-V's cross-cultural applicability, reinforcing its utility in distinguishing ADHD across varied demographic contexts .Gilbert & et al (2023) (22) advise against relying solely on the WISC-V as an independent diagnostic tool, emphasizing the importance of adopting a multi-dimensional assessment strategy. Their research underscores the need to incorporate additional diagnostic tools and approaches to achieve a well-rounded evaluation of a child's cognitive and behavioral characteristics. Although the WISC-V is a dependable and effective diagnostic instrument, it should be used as part of a broader, more comprehensive framework to fully understand and address the unique needs of each individual.

17. Bodaghi M, Kamkari K, Saedi S. Diagnostic validity of the fifth version of the Wechsler Intelligence Scale for Children in students with attention deficit disorder in Tehran cities. Rooyesh-e-Ravanshenasi J (RRJ). 2023;12(8):139-48. . DOI: 20.1001.1.2383353.1402.12.8.14.2

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22. Gilbert K, Benson NF, Kranzler JH. What does the digital administration format of the Wechsler Intelligence Scale for Children-(WISC-V) measure? Contemp Sch Psychol. 2023;27(4):623-33.. DOI:10.1007/s40688-022-00447-z

Associate Editor's Comments:

Thank you for your valuable comments and suggestions. We have carefully addressed all the points raised in your review. Below is a summary of the changes made:

Associate Editor 1:

Dear Authors

Thanks for your work. There are comments in below, that needs to be done:

1. *Please indicate the results of the Test-Retest reliability in the Result section.*

Response:

The results of the Test-Retest reliability have been added to the Results section as requested.

2. *Please write the keyword with Mesh terms and in alphabet order.*

Response:

The keywords have been revised using MeSH terms and are now listed in alphabetical order.

3. *In title, write the abbreviation of WISC right after the 'fifth edition of Wechsler intelligence scales'.*

Response:

The abbreviation "WISC" has been added right after the "fifth edition of Wechsler Intelligence Scales" in the title.

4. *In the Abstract section, before you use the abbreviation ADHD, first indicate the elaboration term ADHD, then use the abbreviation in next sentences.*

Response:

In the Abstract section, the full term for ADHD ("Attention-Deficit/Hyperactivity Disorder") has been added before using the abbreviation in subsequent sentences.

5. *Please adjust the alignment of the paragraph, to be look more clean and polished.*

Response:

The alignment of paragraphs has been adjusted to ensure a clean and polished appearance throughout the manuscript.

We sincerely appreciate your constructive feedback, which has helped us enhance the clarity and presentation of our work. Please let us know if any further revisions are required.

Reviewer 2

1- *Discussion section needs new related research*
2- *Use newer references*
3- *Please write the doi of all references*

Response:

Discussion

This study rigorously examines the diagnostic validity of the fifth edition of the Wechsler Intelligence Scale for Children (WISC-V) in identifying students diagnosed with Attention-Deficit/Hyperactivity Disorder (ADHD). The primary objective is to evaluate the WISC-V's effectiveness in distinguishing ADHD students from their neurotypically developing counterparts. In Iran, there exists a significant gap in empirical research concerning the diagnostic validity of the WISC-V, positioning this study as a crucial step toward filling that void. Previous studies have primarily focused on the psychometric properties of cognitive assessments emphasizing reliability coefficients and various types of validity, such as construct and content validity while notably neglecting the aspect of diagnostic validity, especially in clinical groups like those affected by ADHD. This research aims not only to assess the overall diagnostic validity of the WISC-V for identifying ADHD but also to pinpoint which specific subtests are most impactful in facilitating an accurate diagnosis. By doing so, the study seeks to contribute valuable insights that could enhance the assessment and understanding of ADHD among children in the Iranian context. Considering the importance of exceptional assessment and the need for reliable tools to diagnose and identify exceptional children, instruments such as the fifth edition of the Wechsler Intelligence Scale for Children (WISC-V) have been developed (16). Since the diagnostic validity of this edition in students with ADHD had not been thoroughly examined, this study investigated the psychometric properties of the WISC-V in this group. The main research question was: Does the fifth edition of Wechsler's Intelligence Scales for Children (WISC-V) have diagnostic validity for students with ADHD? To address this question, the scatter diagram method (Davis method) was used, and the findings revealed significant differences in the tests of coding, symbol search, random cancellation, and structured cancellation at the level of $\alpha = 0.1$. Since the experimental value (students with ADHD) exceeded the critical difference value (normative students) by more than 3, it is proposed that these tests in the WISC-V have diagnostic validity and can effectively identify students with ADHD. The findings of this study are consistent with research conducted within Iran, such as Shiri Aminlou (2022), Nazari (2022), Memarpour& et al (2021), Shabani (2016), Shokarzadeh & Kamkari (2014), Yousefzadeh (2014), P'Papi (2014), Parshund (2013), Ismaili (2013), Khosravi (2013), Sharifi & Rabiei (2012), Yazdani

(2012), and Abedi & et al (2011). These studies, which examined the psychometric features of the fourth and fifth editions of the Wechsler Intelligence Scales, consistently highlight the validity and reliability of the WISC-V (17, 18).

The findings of this investigation underscore the robust diagnostic validity of the Wechsler Intelligence Scale for Children, Fifth Edition (WISC-V), in identifying students with Attention-Deficit/Hyperactivity Disorder (ADHD) and learning disabilities (LD). The study demonstrates the WISC-V's efficacy in distinguishing between neurotypically developing children and those exhibiting symptoms of ADHD or LD, highlighting its critical role in facilitating early detection and targeted intervention. Such capabilities are pivotal for mitigating the academic and social challenges associated with these neurodevelopmental disorders. These results are consistent with prior research. Nazari & et al (2024) (19) established the WISC-V's diagnostic reliability for LD in diverse educational settings, while Bodaghi & et al (2023) (17) confirmed its sensitivity and specificity in identifying ADHD within specific populations. Aminlou & et al (2022) (20), further emphasized the scale's neuropsychological relevance, noting its comprehensive assessment of cognitive domains integral to learning processes. Additionally, Ünal & et al (2021) (21) validated the WISC-V's cross-cultural applicability, reinforcing its utility in distinguishing ADHD across varied demographic contexts .Gilbert & et al (2023) (22) advise against relying solely on the WISC-V as an independent diagnostic tool, emphasizing the importance of adopting a multi-dimensional assessment strategy. Their research underscores the need to incorporate additional diagnostic tools and approaches to achieve a well-rounded evaluation of a child's cognitive and behavioral characteristics. Although the WISC-V is a dependable and effective diagnostic instrument, it should be used as part of a broader, more comprehensive framework to fully understand and address the unique needs of each individual.

By comparing the findings of the current research with previous studies, we determined that the diagnostic validity of the fifth version of the WISC-V is consistent with several recent studies. Specifically: Shiri Aminlou & et al (2023) (23) examined the diagnostic validity of the WISC-V in students with learning disabilities in Tehran province, confirming its effectiveness in this population. Erden & et al (2022) (24) investigated the diagnostic utility of the Wechsler Intelligence Scale for Children (WISC-IV) in identifying gifted children, emphasizing its effectiveness in cognitive assessments. Their findings highlighted that the WISC-IV not only accurately identifies giftedness but also provides valuable insights into the cognitive profiles of these children, such as strengths in verbal comprehension and perceptual reasoning. This underscores the importance of using comprehensive intelligence tests for early identification and tailored educational interventions. Kamkari (2023) (11) focused on the diagnostic validity of the new edition of the Tehran-Stanford-Binet Intelligence Test in students with ADHD, further supporting the reliability of intelligence assessments in this group. These studies collectively reinforce the diagnostic validity of the WISC-V and other intelligence tests in identifying learning disabilities and ADHD in various populations. Additionally, Forsberg& et al (2023) (25)

demonstrated that working memory significantly influences long-term memory encoding and retrieval in children and adults. Their findings suggest that working memory limitations can impair the recall of objects and their associations. These results support the use of tools like the Wechsler Intelligence Scale for Children–Fifth Edition (WISC-V), which effectively assesses working memory and other cognitive domains, to identify strengths and weaknesses in learning-related areas. Similarly, Dembrowski & et al (2023) (26) analyzed the internal structure of the WISC-V, conducted an exploratory two-factor analysis of the WISC-V with 16 tests, suggesting that the instrument has five factors: verbal comprehension (4 tests), visual-spatial reasoning (2 tests), fluid reasoning (4 tests), working memory (4 tests), and processing speed (3 tests). These results align with the study by Rodríguez-Cancino & et al (2024) (18), who explored the internal structure of the WISC-V in Chile using exploratory and confirmatory factor analyses of the 15 subtests. Their research further supports the robustness of the WISC-V's factor structure across different cultural contexts. Collectively, these findings confirm that the WISC-V has strong construct and concurrent validity, making it a reliable and valid instrument for screening, diagnosing, and identifying ADHD.

Conclusion

This study's findings indicate that the fifth edition of the Wechsler Intelligence Scales for Children (WISC-V) has strong diagnostic validity in identifying students with Attention-Deficit/Hyperactivity Disorder (ADHD). Specifically, subtests related to processing speed, such as Coding and Symbol Search, demonstrated significant differences between students with ADHD and the normative group. These results suggest that the WISC-V not only serves as a comprehensive tool for assessing intelligence but also functions effectively as a diagnostic instrument for identifying neurodevelopmental disorders like ADHD.This study has some limitation, first, lack of use of specialized statistical software in order to suggest the optimal cut point in the reading axis. Second, the non-cooperation of some participant due to the time-consuming implementation of the WISC-5. Third, the absence of authentic research on the fifth version of the Wechsler IQ scale for children and the limitation of comparability with other researches. Since the research findings are focused on the desirable psychometric properties of the WISC-5 in order to diagnose students with ADHD, it is suggested that this tool be used to check the cross-cultural validity in other different countries and cultures. It is suggested that more research be done on clinical samples, even at the national level, considering the differences in social status, gender, as well as different statistical methods and models for evaluation and comparison.

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Reviewer 3

Please mention related research in other culture in discussion

Response:

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