motricidade

ORIGINAL ARTICLE

https://doi.org/10.6063/motricidade.39612

The Adult Developmental Coordination/ Dyspraxia Checklist in Greek young adults: a preliminary reliability study

Ioannis Pappas[1]*, Ermioni Katartzi[1], Maria Kontou[1], Eirini Argiriadou[1], Carla Lourenço[2]

ABSTRACT

Developmental Coordination Disorder is a neurodevelopmental disorder that affects motor coordination with a negative impact on daily activities. Developmental Coordination Disorder persists from childhood to adulthood in 50–70% of individuals. The present study was a preliminary evaluation of the reliability of the Greek Adult Developmental Coordination Disorders/Dyspraxia Checklist version, a self-reported questionnaire to screen adults for probable Developmental Coordination Disorder. One hundred and three (N = 103) young adults (aged 19–26), without a previous diagnosis of neurological disorders or disabilities, who completed the Greek version of the Adult Developmental Coordination Disorders/Dyspraxia Checklist twice, with a three-week interval between test-retest measurements. The results showed that Cronbach's alpha values ranged from 0.77 to 0.92 for each of the three subscales and 0.93 for the total Adult Developmental Coordination Disorders/Dyspraxia Checklist scores, indicating a strong internal consistency. Similarly, test-retest reliability results showed intraclass correlation coefficients ranging from 0.63 to 0.87 across each subscale and the total Adult Developmental Coordination Disorders/Dyspraxia Checklist score. Thus, the results revealed acceptable values and moderate to good reliability for the Greek Adult Developmental Coordination Disorders/Dyspraxia Checklist version. In conclusion, given that motor difficulties associated with Developmental Coordination Disorder persist into adulthood and negatively affect motor coordination and daily activities, the Greek Adult Developmental Coordination Disorders/Dyspraxia Checklist version could be a reliable screening tool for identifying probable Developmental Coordination Disorder in young adults. However, further research regarding validity issues in Greek young adults with and without developmental disorders, including Developmental Coordination Disorder, is encouraged.

KEYWORDS: developmental coordination disorder; motor difficulties; reliability assessment; adult developmental coordination disorders/dyspraxia checklist; young adults.

INTRODUCTION

Developmental Coordination Disorder (DCD), also known as dyspraxia in the UK, is a neurodevelopmental disorder, which characterised by impairment of motor coordination and significantly affects academic and day-to-day living activities (American Psychiatric Association [APA], 2013). DCD's primary and secondary symptoms frequently are reported to continue into adulthood (Purcell et al., 2015; Saban & Kirby, 2018), posing challenges in educational and professional settings (Saban & Kirby, 2018), with negative effects in motor-based tasks such as handwriting, typing, driving or carrying out self-care skills that can affect everyday skills in their vocational life (APA, 2013; Blank et al., 2019).

Individuals with DCD often face difficulties in learning and performing activities of daily living and struggle when playing sports (Blank et al., 2019), while subsequently, they often exhibit psychological, social, educational, and health problems (Zwicker et al., 2012). Additionally, secondary symptoms indicate that, adults with DCD are more likely compared to their peers experience executive functioning challenges (Hill & Brown, 2013), more socialising issues, which may raise their risk of developing clinical

[1]Aristotle University of Thessaloniki, Faculty of Physical Education and Sports Sciences Department of Physical Education and Sports Science – Serres, Greece.
[2]Instituto Politécnico de Viseu – Viseu, Portugal.
*Corresponding author: Spyrou Mpouki 14 Street, Corinth 201 00 – Greece. E-mail: ioanpapp@phed-sr.auth.gr

Conflict of interests: nothing to declare. Funding: nothing to declare.
Received: 18th December 2024. Accepted: 18th June 2025.

depression and anxiety (Wilson et al., 2017), leading to state and trait anxiety, depression, exercising fatigue and low self-esteem during everyday activities, with negative effects on quality of life (Kirby et al., 2013; Scott-Roberts & Purcell, 2018; Thomas & Christopher, 2017; Zaguri-Vittenberg et al., 2023).

The prevalence of DCD is estimated to be 5–6% in the general child population (APA, 2013; Li et al., 2024); however, motor difficulties persist into adulthood among 50–70% of children with DCD (APA, 2013; Blank et al., 2019). Emerging adulthood is the period between adolescence and young adulthood, extending from the age of 18 to approximately 29 in high-income countries and the Western world (Arnett, 2014).

While there are standardised motor assessment tools and self-report questionnaires to diagnose DCD in childhood, there are limited options for the adult population (Blank et al., 2019). Given that difficulties related to DCD persist into adulthood, and due to the notable lack of standardise motor assessment tools for adults, the Movement Assessment Battery for Children second edition (MABC-2) developed by Henderson et al. (2007) and the Bruininks Oseretsky Test of Motor Proficiency second edition (BOT-2) by Bruininks and Bruininks, (2005), have been used in the literature for motor assessment of DCD in adults even thought have been developed for children (Blank et al., 2019).

The Adult Developmental Coordination Disorders/Dyspraxia Checklist (ADC), originally developed in English and Hebrew (Kirby et al., 2010), is one of the few existing screening tools and self-report measures for DCD in adults. ADC is currently available in German (Meachon et al., 2022), Italian (Zappullo et al., 2023), and Uzbek (Saidmamatov et al., 2023). Designed to consider the range of motor, organisational, attention, and social difficulties commonly associated with DCD in adulthood, showing good discriminant validity, although further study is needed (Blank et al., 2019). The ADC is one of the possible tools that can assist the diagnostic process, treatment, and research questions in adults with DCD. Additionally, because it includes a wide range of categories beyond motor impairments, it is a useful tool for supporting the expanding research on secondary symptoms in DCD (Meachon et al., 2022).

In order to make it accessible to more cultural groups and in more languages, it is critical to evaluate the checklist further (Kirby et al., 2010). The ADC was designed to identify individuals at risk for DCD and those with probable DCD; additionally, it can provide crucial information during the diagnostic process, although it is recommended to be combined with motor assessments for better diagnosis of DCD (Barnett et al., 2019; Kirby et al., 2010). In order to satisfy the DSM-5 criterion that symptoms appear in childhood, it first offers a retrospective look at symptoms experienced in childhood with subscale A. In addition, it can determine whether an individual is having trouble meeting DSM-5 Criterion B: motor difficulties must interfere with daily life. Moreover, ADC treats DSM-5 criteria B (Movement disorders affect daily activities such as leisure, self-care, work, school, and play) and C (Difficulty begins in childhood) (APA, 2013). The ADC checklist has been used in various cases in the research context, such as classification of individuals with latent DCD into groups (Hyde et al., 2018), for confirmation of absence of movement difficulties in control groups (Du et al., 2015), and executive functioning in adults with DCD assignment assessment (e.g. Rosenblum, 2013). It consists of 40 items divided into three subscales. Each subscale in the original English and Hebrew studies showed strong internal validity ($\alpha > 0.85$) across the three subscales and the questionnaire (Kirby et al., 2010). Furthermore, subscale scores and total scores were significantly higher in all sections in the group of students with DCD and significant motor difficulties, compared to those without motor difficulties or DCD in the control group (Kirby et al., 2010).

Although there is evidence that DCD often persists into adulthood (APA, 2013), as far as we are aware, there are no adult self-report methods accessible and no standardised tool for its assessment in Greek-speaking adults; the absence of appropriate standardised tools may result in underdiagnosis, leaving the Greek adult population with DCD without appropriate support. The translation and reliability evaluation of a Greek version of ADC is the objective of this manuscript, in order to make it available to Greek-speaking adults at risk for DCD and those with probable DCD, for diagnostic and treatment reasons (Kirby et al., 2010), because these adults experience challenges in educational and professional settings (Saban & Kirby, 2018) and also, secondary symptoms which impact negatively their well-being (Hill & Brown, 2013; Kirby et al., 2013). Therefore, it was expected that the ADC checklist would be a reliable screening tool in its Greek version among young adults, given its strong psychometric properties in other languages, and thus lay the foundation for future screening and intervention studies with visual applications.

Hence, the present study was a preliminary investigation designed to assess the reliability of the "Adult Developmental Coordination Disorders/Dyspraxia Checklist" questionnaire in its Greek version, to be used as a probable DCD identification tool among Greek young adults. A reliable assessment tool suitable for detecting motor difficulties in young

adults helps recommend appropriate intervention programs aimed at improving the daily lives of adults with DCD and encouraging them to adopt an active lifestyle, such as engaging in physical activity.

METHOD

Experimental design

The aim of the present study was to test the reliability of the Greek version of the "Adult Developmental Coordination Disorders/Dyspraxia Checklist" using the standard test-retest reliability method, so that it can be used as an assessment tool for the identification of motor difficulties in young adults.

In the present study, the sample consisted of N = 103 young adults (30 males and 73 females), aged 18 to 26 years (22.60 ± 1.8 yr). Participants were recruited through invitations shared on social media and via email sent to students and citizens in a rural city in Northern Greece. Participation was voluntary, and participants were informed of the procedure and signed informed consent. Their names and any identifying information were not collected. All participants in the study were healthy, without any neurological disorder or motor or mental disability. The socio-demographic characteristics of the participants included working status and possible diagnosed developmental disorders.

Regarding working status, 53.4% were university students, 22.3% were employees, 5.8% were unemployed, 9.7% were part-time students, while 8.9% made a living in other ways. Concerning the existence of Developmental disorders, 3 participants reported that they had a diagnosis of Dyslexia, 1 attention deficit hyperactivity disorder (ADHD) and 2 Learning Difficulties. However, only 1 of them received an allowance for their disorder. The study was conducted in accordance with the Helsinki Declaration and was approved by the local Ethics Committee of the Department of Physical Education and Sport Science at Serres [NO: (ERC-017/2023)].

Sample size

Based on accepted guidelines for dependability research, the sample size was predetermined with an anticipated intraclass correlation coefficient (ICC) in the moderate to excellent reliability (0.60–0.90). For reliable tests, Koo and Li (2016) suggested 20–30 people. To provide adequate statistical power (≥ .80) at a significance level of α = 0.05, a minimum of 100 participants was sought. Given that the final sample comprised 103 participants, the study was adequately powered to assess the reliability of the Greek version of the ADC checklist."

Instrument

The Adult Developmental Coordination Disorders/Dyspraxia Checklist (ADC) was used, an easy-to-use self-reported questionnaire that provides information about the individual's ability to function in different settings (such as home, academic and social) (Kirby et al., 2010). The ADC contains 40 items organised into three subscales. Subscale A includes 10 items about the history of childhood difficulties, items in subscales B and C are about currently experienced difficulties (in adulthood) that the individual considers as affecting their performance. In addition, subscale B contains 10 items focusing on the influence of DCD on the individual's perception of their performance and subscale C includes 20 items related to current social consequences of their difficulties; as the authors describe it, symptoms "manifested by others" (Kirby et al., 2010). The ADC questionnaire is based on Criterion B of the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV). The person was asked to rate how often this difficulty occurs on a Likert scale: 'Never' [1], 'Sometimes' [2], 'Frequently' [3], 'Always' [4]. The items used clear, understandable terminology, and the scale was organised so that lower scores indicated better performance.

For each subscale, a total score is computed by adding each item (e.g. Subscale A = item 1 + item 2 + … + item 10, etc.) The total score of ADC is computed by adding the total scores of each subscale (Total ADC score Subscale A + Subscale B + Subscale C). Reliability of the ADC was determined by means of each subscale (A, B, and C) and total ADC scores. Regarding the detection and classification of motor difficulties in adults, these were expressed through the total score obtained from the sum of subscales A + B + C, with scores defined as follows: > 65 possible DCD; > 56 risk for DCD (Kirby et al., 2010).

The full Greek version of the Adult Developmental Coordination Disorders/Dyspraxia Checklist, including all translated items of Subscales A, B, and C, is provided in Appendix 1.

Research procedure

Initially, the original English-language ADC Checklist items were translated into Greek using the back-translation technique (Vallerand, 1989), as has been used in previous research (Vlachopoulos et al., 2010). Translators A and B were two independent bilingual university faculty members with degrees in sport science and research experience in DCD, who translated the ADC from English into Greek. After thorough consideration, translators reached a preliminary English version. This version was then independently translated from

English back into Greek by translators C and D, two bilingual faculty staff with expertise in English and degrees in sports science, respectively. Comparison of the version retranslated into Greek by translators C and D with the original ADC Checklist revealed that the meaning of the items was identical. Consequently, the preliminary Greek version agreed upon by translators A and B was retained. Subsequently, the two versions (English and Greek) were carefully compared, and an expert committee reviewed the Greek version, making minor wording and syntax adjustments to enhance item clarity and comprehension. Participants were informed about the purpose of the research and gave their informed consent. Afterwards, participants received the final version of the ADC Greek questionnaire along with socio-demographic questions. The questionnaire was completed individually via a Google Form. Participants were informed that there were no right or wrong answers. After 3 weeks, they completed the same questionnaire again, according to recommendations for test–retest reliability (Kurpius & Stafford, 2006).

Statistical analysis

The SPSS 29.0 package was used for the statistical analysis, and the level of significance was set at $p < .05$. Descriptive statistics were performed, and the means and standard deviations of the variables were recorded. To test that the translated ADC scores would exhibit strong internal consistency, Cronbach's alphas greater than 0.70 were used for each of the three ADC subscales (Cortina, 1993; George & Mallery, 2003; Nunnally, 1978). Values of 0.70 or higher were deemed sufficient. Intraclass correlation coefficient (ICC) estimates and their 95% confident intervals were calculated using SPSS statistical package version 29 based on a mean-rating ($k = 2$), absolute-agreement, 2-way mixed-effects model; with values less than 0.50, between 0.50 and 0.75, between 0.75 and 0.90, and greater than 0.90 are indicative of poor, moderate, good, and excellent reliability (Koo & Li, 2016).

RESULTS

The results regarding internal consistency showed that Cronbach's coefficient alpha for each of the three ADC subscales, as well as the total ADC score in the Greek version, ranged from 0.77 to 0.93, being at an excellent and acceptable level (Cortina, 1993; George & Mallery, 2003; Nunnally, 1978). For ICC, values less than 0.50, between 0.50 and 0.75, between 0.75 and 0.90, and greater than 0.90 indicate poor, moderate, good, and excellent reliability, respectivelly (Koo & Li, 2016). The ICC showed that subscales A and C had good reliability, and subscale B had moderate reliability. For the total ADC score, the ICC values were good. Based on both measures, the ICC for the ADC Greek version ranged from good to moderate for the A, B, and C subscalessubscales and the total ADC score (Table 1), supporting high reliability for the ADC Greek version.

Furthermore, paired-samples t-test analysis with equal variances assumed (Levene's > .05) between test-retest measurement mean scores showed no statistically significant differences ($p > .05$) in the three subscales and total ADC scores in the Greek version (Table 2).

Table 2. Means, standard deviations and paired sample t-tests between test-retest measurements, in subscale and total Adult Developmental Coordination Disorders/Dyspraxia Checklist scores.

	Test *M* (SD)	retest *M* (SD)	$t_{(1,102)}$	*p*-value
Subscale A	4.00 (3.93)	3.99 ± 3.71	.045	.964
Subscale B	3.83 ± 4.05	3.28 ± 3.04	1.82	.072
Subscale C	10.32 ± 6.55	10.76 ± 7.01	–1.25	.213
Total ADC	18.15 ± 12.85	18.03 ± 12.79	.183	.855

ADC: Adult Developmental Coordination Disorders/Dyspraxia Checklist; *M*: mean; SD: standard deviation, *t*: paired samples t-test statistic; *p*: significance level. Non-significant t-test results ($p > .05$)

Table 1. Intraclass Correlation Coefficient single measures, 95% confidence interval and Cronbach's alpha for the Adult Developmental Coordination Disorders/Dyspraxia Checklist three subscale and total scores between test-retest measures.

	Cronbach's alpha	ICC	95% confidence interval		*F* test with true value 0			
			Lower bound	Upper bound	value	*df*1	*df*2	Significance
Subscale A	.912	.839	.770	.888	11.395	102	102	.000
Subscale B	.774	.631	.499	.734	4.418	102	102	.000
Subscale C	.924	.859	.798	.902	13.136	102	102	.000
Total ADC	.932	.873	.818	.912	14.785	102	102	.000

ADC: Adult Developmental Coordination Disorders/Dyspraxia Checklist; ICC: intraclass correlation coefficient; *df*: degrees of freedo; F: F-test for reliability; α = Cronbach's alpha. ICC values of 0.60–0.74 indicate moderate reliability; 0.75–0.90 indicates good reliability. Cronbach's alpha values above 0.70 indicate acceptable internal consistency.

DISCUSSION

The aim of the present study was to investigate the reliability of the "Adult Developmental Coordination Disorders/Dyspraxia Checklist (ADC)", in its Greek version, so that it could be used as an assessment tool to identify movement difficulties in young adults, in Greece. The ADC was originally developed in English and Hebrew by Kirby et al. (2010) and is currently available in German (Meachon et al., 2022), Italian (Zappullo et al., 2023), and Uzbek (Saidmamatov et al., 2023) languages.

Regarding internal consistency, analyses carried out using Cronbach's alpha for statistical analysis, the results showed that each subscale (in a range from 0.77 to 0.92) and total ADC score (0.93), the ADC checklist showed high reliability in its Greek version, demonstrating acceptable reliability (Cortina, 1993; George & Mallery, 2003; Nunnally, 1978); it was seen that subscales A & C showed excellent reliability and the values for subscale B were, also, at acceptable levels. The results of the present study are in agreement with studies by Kirby et al. (2010) regarding the English and Hebrew original versions of the ADC checklist, in which Cronbach's alpha values ranged from 0.87 to 0.91 (Kirby et al., 2010). Data of the present study are also in line with results of the study regarding the German ADC version which indicated strong internal consistency in each of the original subscales (Cronbach's alpha values 0.89–0.96), (Meachon et al., 2022), the Italian ADC version (Zappullo et al., 2023) in which internal consistency of the ADC subscales was found to be adequate and the results of the study regarding the Uzbek ADC version which demonstrated high internal consistency (Cronbach's alpha values 0.87–0.91), (Saidmamatov et al., 2023). Thus, internal consistency of the ADC Greek version was found to be at acceptable levels.

Furthermore, test-retest reliability results, applying Intraclass Correlation Coefficient (ICC), showed that the ADC Greek version subscale A (0.83) and C (0.85) were characterised as good reliability and subscale B (0.63) as moderate reliability, aligning with the reliability assessment frameworks proposed by Koo and Li (2016). Also, ICC values for the total ADC score demonstrated good reliability, too (0.87) (Koo & Li, 2016). Thus, ICC results for the ADC Greek version range from good to moderate, supporting its high reliability. Both the present research study and the Uzbek study (Saidmamatov et al., 2023) applied test-retest reliability analyses examining intraclass correlation coefficient, however, the present study showed higher degree of consistency across test –retest administrations (moderate to good; 0.63–0.85), whereas the Uzbek study showed poor to moderate (ranging 0.46 to 0.54) reliability, for the Uzbek ADC version (Saidmamatov et al., 2023). The different results in the Uzbek study may be due to the fact that the Uzbek ADC version included revisions due to cultural differences (Saidmamatov et al., 2023).

Regarding the different methodologies used in previous studies of Italian, German, English, and Hebrew ADC versions, it is worth noting that the Greek study used a test-retest reliability methodology, with the aim of providing a preliminary insight into the tool's consistency over time. In contrast, the Italian study primarily examined concurrent validity by comparing the Italian version of the ADC with a handwriting speed test. In addition, the sample population that participated in the Greek study is another key distinction. In order to ensure that results are representative of the general population rather than a clinical sample, the Greek study focused on young individuals from the general population without taking into consideration developmental disorders. However, the German study examined the ADC's capacity to distinguish between conditions by including participants with ADHD in addition to those with and without DCD. This difference in methodology is critical as the Greek study mainly assessed the Greek version of ADC's reliability in a non-clinical sample, while the German study (Meachon et al., 2022) provided validity evidence in samples diagnosed with developmental disorders. It is notable to mention that, in the present study, the Greek ADC version retained the original three-factor structure version of ADC (Kirby et al., 2010), ensuring conceptual consistency with the initial instrument and was translated from English into the Greek language, similarly to the Italian study (Zappullo et al., 2023). However, the Italian version added a new dimension in the validation process by further examining DCD symptoms and autistic traits. Finally, in the German (Meachon et al., 2022) and Uzbek (Saidmamatov et al., 2023) studies, the original ADC version was translated with revisions and cultural adaptations.

In conclusion, test-retest and internal consistency results of the present study indicated that the ADC Greek version can be used as a reliable tool for preliminarily identifying motor difficulties in the Greek adult population. Therefore, early detection of motor difficulties in young adults will contribute to the establishment of appropriate intervention programs aimed at improving the daily lives of Greek young adults with DCD, both in social and professional life, and also encouraging them to adopt an active lifestyle, such as engaging in physical activity.

Limitations

The present study was a preliminary test-retest reliability examination of the Greek version of the ADC in young adults.

Despite encouraging results on the checklist's moderate to high reliability in the Greek population, some limitations must be noted. First and foremost, the sample consisted of individuals involved in sport activities, and six participants reported developmental disorders other than DCD, which were not examined separately. In addition, the electronic completion of the questionnaire did not allow for any direct explanations to the participants' questions. Nevertheless, this study laid important groundwork by developing a diagnostic tool for future research on the ADC and for topics requiring further research, such as adults with DCD and related executive functioning difficulties. Furthermore, the aim of the present study was not to examine the validity of the Greek ADC versions.

CONCLUSIONS

Based on strong internal consistency and moderate to good test-retest reliability (ICC) results, the Adult Developmental Coordination/Dyspraxia Checklist Greek version can be used to detect motor difficulties related to Developmental Coordination Disorder in Greek young adults as a reliable tool. Researchers and clinicians who require a screening or self-report tool for Greek-speaking individuals who may have a diagnosis of DCD as children will find the present translation of the ADC a useful and reliable resource. In conclusion, the ADC's Greek version can be a practical and useful tool that effectively captures key elements of motor coordination impairments and other symptoms most common in DCD, making it helpful for Greek speakers. Future research should focus on validity issues in Greek young adults, with and without developmental disorders, including DCD. Moreover, further research is encouraged and should focus on using the Greek ADC version in epidemiological studies to identify motor difficulties in specific educational, sports, professional, and everyday activity settings among young adults. Moreover, variables regarding physical activity participation, cognitive and motor competence, psychological, educational and social behaviour that may be derived as secondary symptoms by motor difficulties should be examined in future research studies.

REFERENCES

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). APA.

Arnett, J. J. (2014). *Emerging adulthood: The winding road from the late teens through the twenties* (2nd ed.). Oxford University Press. https://doi.org/10.1093/acprof:oso/9780199929382.001.0001

Barnett, A. L., Law, C., & Stuart, N. (2019). Developmental progression in DCD. In A. L. Barnett & E. L. Hill (Eds.), *Understanding motor behavior in developmental coordination disorder* (pp. 49–78). Routledge. https://doi.org/10.4324/9781315268231

Blank, R., Barnett, A. N., Cairney, J., Green, D., Kirby, A., Polatajko, H., Rosenblum, S., Smits-Engelsman, B., Sugden, D., Wilson, P., & Vinçon, S. (2019). International clinical practice recommendations on the definition, diagnosis, assessment, intervention, and psychosocial aspects of developmental coordination disorder. *Developmental Medicine & Child Neurology, 61*(3), 242–285. https://doi.org/10.1111/dmcn.14132

Bruininks, R. H., & Bruininks, B. D. (2005). *Bruininks-Oseretsky Test of Motor Proficiency* (2nd ed.). Pearson Assessments.

Cortina, J. M. (1993). What is coefficient alpha? An examination of theory and applications. *Journal of Applied Psychology, 78*(1), 98–104.

Du, W., Wilmut, K., & Barnett, A. L. (2015). Level walking in adults with and without developmental coordination disorder: An analysis of movement variability. *Human Movement Science, 43*, 9–14. https://doi.org/10.1016/j.humov.2015.06.010

George, D., & Mallery, P. (2003). *SPSS for Windows step by step: A simple guide and reference* (4th ed.). Allyn & Bacon.

Henderson, S. E., Sugden, D. A., & Barnett, A. L. (2007). *Movement Assessment Battery for Children-2* (2nd ed.). Pearson Assessments.

Hill, E. L., & Brown, D. (2013). Mood impairments in adults previously diagnosed with developmental coordination disorder. *Journal of Mental Health, 22*(4), 334–340. https://doi.org/10.3109/09638237.2012.745187

Hyde, C., Fuelscher, I., Williams J., Lum, J. A. G., He, J., Barhoun, P., & Enticott, P. G. (2018). Corticospinal excitability during motor imagery is reduced in young adults with developmental coordination disorder. *Research in Developmental Disabilities, 72*, 214–224. https://doi.org/10.1016/j.ridd.2017.11.009

Kirby, A., Edwards, L., Sugden, D., & Rosenblum, S. (2010). The development and standardization of the Adult Developmental Co-ordination Disorders/Dyspraxia Checklist (ADC). *Research in Developmental Disabilities, 31*(1), 131–139. https://doi.org/10.1016/j.ridd.2009.08.010

Kirby, A., Williams, N., Thomas, M., & Hill, E. L. (2013). Self-reported mood, general health, wellbeing and employment status in adults with suspected DCD. *Research in Developmental Disabilities, 34*(4), 1357–1364. https://doi.org/10.1016/j.ridd.2013.01.003

Koo, T. K., & Li, M. Y. (2016). A guideline of selecting and reporting intraclass correlation coefficients for reliability research. *Journal of Chiropractic Medicine, 15*(2), 155–163. https://doi.org/10.1016/j.jcm.2016.02.012

Kurpius, S. E. R., & Stafford, M. E. (2006). *Testing and measurement: A user-friendly guide*. Sage Publications.

Li, H., Ke, X., Huang, D., Xu, X., Tian, H., Gao, J., Jiang, C., & Song, W. (2024). The prevalence of developmental coordination disorder in children: A systematic review and meta-analysis. *Frontiers in Pediatrics, 12*, Article 1387406. https://doi.org/10.3389/fped.2024.1387406

Meachon, E. J., Beitz, C., Zemp, M., Wilmut, K., & Alpers, G. W. (2022). The adult developmental coordination disorders/dyspraxia checklist – German: Adapted factor structure for the differentiation of DCD and ADHD. *Research in Developmental Disabilities, 126*, Article 104254. https://doi.org/10.1016/j.ridd.2022.104254

Nunnally, J. C. (1978). *Psychometric theory* (2nd ed.). McGraw-Hill.

Purcell, C., Scott-Roberts, S., & Kirby, A. (2015). Implications of DSM-5 for recognising adults with developmental coordination disorder (DCD). *British Journal of Occupational Therapy, 78*(5), 295–302. https://doi.org/10.1177/0308022614565113

Rosenblum, S. (2013). Handwriting measures as reflectors of executive functions among adults with developmental coordination disorders (DCD). *Frontiers in Psychology, 4*, Article 357. https://doi.org/10.3389/fpsyg.2013.00357

Saban, M. T., & Kirby, A. (2018). Adulthood in developmental coordination disorder (DCD): A review of current literature based on ICF perspective. *Motor Disorders, 5*(1), 9–17. https://doi.org/10.1007/s40474-018-0126-5

Saidmamatov, O., Jammatov, J., Sousa, C., Barros, R., Vasconcelos, O., & Rodrigues, P. (2023). Translation and adaptation of the Adult Developmental Coordination Disorder/Dyspraxia Checklist (ADC) into Asian Uzbekistan. *Sports, 11*(7), Article 135. https://doi.org/10.3390/sports11070135

Scott-Roberts, S., & Purcell, C. (2018). Understanding the functional mobility of adults with developmental coordination disorder (DCD) through the International Classification of Functioning (ICF). *Current Developmental Disorders Reports, 5*(1), 26–33. https://doi.org/10.1007/s40474-018-0128-3

Thomas, M., & Christopher, G. (2017). Fatigue in developmental coordination disorder: An exploratory study in adults. *Fatigue: Biomedicine, Health & Behavior, 6*(1), 41–51. https://doi.org/10.1080/21641846.2018.1419564

Vallerand, R. J. (1989). Vers une méthodologie de validation trans-culturelle de questionnaires psychologiques: Implications pour la recherche en langue française. *Canadian Psychology / Psychologie Canadienne, 30*(4), 662–680. https://doi.org/10.1037/h0079856

Vlachopoulos, S. P., Ntoumanis, N., & Smith, A. L. (2010). The basic psychological needs in exercise scale: Translation and evidence for cross-cultural validity. *International Journal of Sport and Exercise Psychology, 8*(4), 394–412. https://doi.org/10.1080/1612197x.2010.9671960

Wilson, P. H., Smits-Engelsman, B., Caeyenberghs, K., Steenbergen, B., Sugden, D., Clark, J., Wilmut, K., & Blank, R. (2017). Cognitive and neuroimaging findings in developmental coordination disorder: New insights from a systematic review of recent research. *Developmental Medicine & Child Neurology, 59*(11), 1117–1129. https://doi.org/10.1111/dmcn.13530

Zaguri-Vittenberg, S., Weintraub, N., & Tal-Sabanit, M. (2023). "It feels as though I need to exert more effort than others": the experience of daily participation of young adults with developmental coordination disorder (DCD) - a qualitative study. *Disability and Rehabilitation, 46*(15), 3332–3341. https://doi.org/10.1080/09638288.2023.2246376

Zappullo, I., Conson, M., Baiano, C., Cecere, R., Raimo, G., & Kirby, A. (2023). The relationships between self-reported motor functioning and autistic traits: The Italian version of the Adult Developmental Coordination Disorders/Dyspraxia Checklist (ADC). *International Journal of Environmental Research and Public Health, 20*(2), Article 1101. https://doi.org/10.3390/ijerph20021101

Zwicker, G., Harris, S. R., & Klassen, A. F. (2012). Quality of life domains affected in children with developmental coordination disorder: A systematic review. *Child: Care, Health and Development, 39*(4), 562–580. https://doi.org/10.1111/j.1365-2214.2012.01379.x

All content of Journal Motricidade is licensed under Creative Commons, except when otherwise specified and in content retrieved from other bibliographic sources

Appendix 1. Greek version of the Adult Developmental Coordination/Dyspraxia Checklist.

	Υποκλίμακα Α: Σαν παιδί,	Subscale A: As a child, did you:
A1	Είχες δυσκολίες με δραστηριότητες αυτο-φροντίδας, όπως το δέσιμο των κορδονιών, το κούμπωμα των κουμπιών και τη χρήση των φερμουάρ;	Have difficulties with self-care tasks, such as tying shoelaces, fastening buttons and zips?
A2	Είχες δυσκολία να τρως χωρίς να λερώνεσαι;	Have difficulty eating without getting dirty?
A3	Είχες δυσκολία να μάθεις να κάνεις ποδήλατο σε σύγκριση με τους συνομηλίκους σου;	Have difficulty learning to ride a bike Compared to your peers?
A4	Είχες δυσκολία να μάθεις να παίζεις ομαδικά παιχνίδια, όπως ποδόσφαιρο, βόλεϊ, ρίψη, ή υποδοχή μιας μπάλας με ακρίβεια;	Have difficulties with playing team games, such as football, volleyball, catching or throwing balls accurately?
A5	Είχες δυσκολία να γράφεις ευανάγνωστα (ώστε οι άλλοι να μπορούν να τα διαβάσουν);	Have difficulty writing neatly (so others could read it)?
A6	Είχες δυσκολία να γράφεις γρήγορα, όπως οι συνομήλικοί σου;	Have difficulty writing as fast as your Peers?
A7	Έπεφτες πάνω σε αντικείμενα, ή ανθρώπους, σκόνταφτες πάνω σε πράγματα περισσότερο από άλλους;	Bump into objects or people, trip over things more than others?
A8	Είχες δυσκολία να παίζεις κάποιο μουσικό όργανο (π.χ. βιολί, φλογέρα);	Have difficulty playing a musical instrument (e.g., violin, recorder)?
A9	Είχες δυσκολίες να οργανώνεις/τακτοποιείς, ή να βρίσκεις τα πράγματά σου στο δωμάτιό σου;	Have difficulties with organising/finding things in your room?
A10	Σας σχολίαζαν οι άλλοι για την έλλειψη του κινητικού συντονισμού σας, ή σας αποκαλούσαν αδέξιο;	Have others comment about your lack of coordination or call you clumsy?
	Υποκλίμακα Β: έχεις δυσκολίες αυτήν την περίοδο με τις ακόλουθες 10 δραστηριότητες:	Subscale B: Currently: Do you have difficulties currently with the following 10 items:
B1	Δραστηριότητες αυτο-φροντίδας, όπως το ξύρισμα, ή το μακιγιάζ;	Self-care tasks such as shaving or make up?
B2	Να τρως με μαχαίρι και πιρούνι/κουτάλι;	Eating with a knife and fork/spoon?
B3	Χόμπι που απαιτούν καλό κινητικό συντονισμό;	Hobbies that require good coordination?
B4	Να γράφεις ευανάγνωστα όταν πρέπει να γράψεις γρήγορα;	Writing neatly when having to write fast?
B5	Να γράφεις τόσο γρήγορα όσο και οι συνομήλικοί σου;	Writing as fast as your peers?
B6	Να μπορείς να διαβάσεις τα δικά σου γραπτά;-	Reading your own writing?
B7	Να αντιγράφεις κάτι χωρίς να κάνεις λάθη;	Copying things down without making mistakes?
B8	Να οργανώνεις-τακτοποιείς/να βρίσκεις τα πράγματά σου στο δωμάτιό σου;	Organizing/finding things in your room?
B9	Να βρίσκεις τον δρόμο σου γύρω από νέα κτίρια ή χώρους;	Finding your way around new buildings or places?
B10	Σε αποκαλούν οι άλλοι ανοργάνωτο-η;	Have others called you disorganized?
	Υποκλίμακα Γ: Παρακαλώ επιλέξτε την κατάλληλη απάντηση και περιγράψτε στο επισυναπτόμενο έντυπο (χαρτί). Αυτήν την περίοδο:	Subscale C: Please mark the suitable option and describe on the attached paper. Currently.
Γ1	Αντιμετωπίζεις δυσκολίες να κάθεσαι ακίνητος-η, ή φαίνεσαι νευρικός-ή/υπερκινητικός-ή;	Do you have difficulties sitting still or appearing fidgety?
Γ2	Χάνεις, ή ξεχνάς να πάρεις μαζί σου τα πράγματά σου;	Do you lose or leave behind ossessions?
Γ3	Θα έλεγες πως πέφτεις πάνω σε πράγματα, ρίχνεις υγρά, ή σπας πράγματα;	Would you say that you bump into things, spill or break things?
Γ4	Αργείς περισσότερο από άλλους, να σηκωθείς το πρωί και να πας στη δουλειά, ή στο πανεπιστήμιο;	Are you slower than others getting up on the morning and getting to work or college?
Γ5	Σου πήρε περισσότερο χρόνο από άλλους να μάθεις να οδηγείς; (Αν δεν οδηγείς, παρακαλώ, υπόδειξέ μας στο συνημμένο χαρτί και περίγραψέ μας, γιατί επέλεξες να μην οδηγείς)	Did it take you longer than others to learn to drive? (if you do not drive, please indicate on the paper and describe why you chose not to drive)
Γ6	Το βρίσκουν οι άλλοι δύσκολο να διαβάσουν τα γραπτά σου;	Do others find it difficult to Ready our writing?
Γ7	Αποφεύγεις χόμπι και δραστηριότητες που απαιτούν καλό κινητικό συντονισμό;	Do you avoid hobbies that require good coordination?
Γ8	Επιλέγεις να περνάς τον ελεύθερο χρόνο σου μόνος-η σου, παρά με άλλους;	Do you choose to spend your leisure time more on your own than with others?
Γ9	Αποφεύγεις τα ομαδικά παιχνίδια/αθλήματα;	Do you avoid team games/sports?
Γ10	Εάν κάνεις ένα άθλημα, είναι πιο πιθανό να το κάνεις μόνος-η σου π.χ. να πας στο γυμναστήριο, παρά με άλλους;	If you do a sport, is it more likely to be on your own, e.g. going to the gym, than with others?

Continue...

Appendix 1. Continuation.

Γ11	Είχες την τάση στην εφηβεία ή στα είκοσι, ή αυτήν την περίοδο, να αποφεύγεις να πηγαίνεις σε κλαμπ /ή να χορεύεις;	Do you/did you in your teens/twenties avoid going to clubs/dancing?
Γ12	Εάν είσαι οδηγός, έχεις δυσκολία να παρκάρεις το αυτοκίνητο;	If you are a driver, do you have difficulty parking a car?
Γ13	Έχεις δυσκολία να ετοιμάσεις ένα γεύμα από το μηδέν?	. Do you have difficulty preparing a meal from scratch?
Γ14	Έχεις δυσκολία να ετοιμάσεις μια βαλίτσα/η για να πας ταξίδι;	Do you have difficulty packing a suitcase to go away?
Γ15	Έχεις δυσκολία να διπλώσεις ρούχα και να τα τοποθετήσεις τακτοποιημένα;	Do you have difficulty folding clothes to put them away neatly?
Γ16	Έχεις δυσκολία να διαχειριστείς χρήματα;	Do you have difficulty managing money?
Γ17	Έχεις δυσκολία να εκτελείς δύο πράγματα ταυτόχρονα (π.χ. να οδηγείς και να ακούς);	Do you have difficulties with performing two things at the same time (e.g., driving and listening or taking a telephone message)?
Γ18	Έχεις δυσκολίες με την εκτίμηση της απόστασης (π.χ. όσον αφορά στο παρκάρισμα, τη διέλευση ανάμεσα από αντικείμενα);	Do you have difficulties with distance estimation (e.g., with regard to parking, passing through objects)?
Γ19	Έχεις δυσκολία να οργανώνεσαι/προετοιμάζεσαι από πριν;	Do you have difficulty planning ahead?
Γ20	Νιώθεις ότι χάνεις την προσοχή σου σε συγκεκριμένες καταστάσεις;	Do you feel you are losing attention in certain situations?