

Πρόγραμμα Μεταπτυχιακών Σπουδών Εξειδίκευσης

Του Τμήματος Φιλολογίας του Δημοκριτείου Πανεπιστημίου Θράκης

σε συνεργασία με το

ΕΚΕΦΕ Δημόκριτος – Ινστιτούτο Πληροφορικής και Επικοινωνιών

με τίτλο «Εξειδίκευση στις Τ.Π.Ε. και Ειδική Αγωγή – Ψυχοπαιδαγωγική της ένταξης»

**ΔΙΑΤΑΡΑΧΕΣ ΤΗΣ ΚΙΝΗΤΙΚΗΣ ΣΥΝΑΡΜΟΓΗΣ ΣΕ ΠΑΙΔΙΑ ΠΡΩΤΟΣΧΟΛΙΚΗΣ
ΗΛΙΚΙΑΣ: Η ΕΠΙΔΡΑΣΗ ΤΟΥ ΦΥΛΟΥ – ΑΝΙΧΝΕΥΣΗ ΜΕ ΤΗ ΧΡΗΣΗ ΤΗΣ
ΔΕΣΜΗΣ ΔΕΚΑ-ΠΡΟ**

**DEVELOPMENTAL COORDINATION DISORDER IN EARLY SCHOOL AGED
CHILDREN: GENDER EFFECT – SCREENING VIA THE DEMOST-PRE BATTERY**

Της Κωνσταντινίδου Μαρίας – Αθανασίας

Μεταπτυχιακή διατριβή που υποβάλλεται

στην τριμελή επιτροπή για την απόκτηση του μεταπτυχιακού τίτλου του

Προγράμματος Μεταπτυχιακών Σπουδών Εξειδίκευσης

Του Τ.Ε.Φ – Δ.Π.Θ. σε συνεργασία με το Ε.Κ.Ε.Φ.Ε. Δημόκριτος – Ινστιτούτο

Πληροφορικής και Επικοινωνιών

Με τίτλο «Εξειδίκευση στις Τ.Π.Ε. και Ειδική Αγωγή – Ψυχοπαιδαγωγική της Ένταξης»

Η τριμελής επιτροπή:

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| 1. ΚΑΜΠΑΣ ΑΝΤΩΝΗΣ | ΚΑΘΗΓΗΤΗΣ ΤΕΦΑΑ ΔΠΘ |
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«ΔΗΜΟΚΡΙΤΟΣ» |

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ΠΕΡΙΛΗΨΗ

Η παρούσα έρευνα μελετά την συχνότητα εμφάνισης σοβαρών ή ήπιων κινητικών δυσκολιών σε παιδιά τυπικού πληθυσμού πρώτης σχολικής ηλικίας σε συνδυασμό με την επίδραση του φύλου στις επιδόσεις τους, στα 9 τεστ της δέσμης ΔΕΚΑ – ΠΡΟ. Το δείγμα αποτέλεσαν 91 παιδιά (n=91), 45 αγόρια και 46 κορίτσια Α΄ τάξης, Μ.Ο. ηλικίας 86 μηνών, που φοιτούν σε δημόσια Δημοτικά σχολεία του νομού Αττικής. Το εργαλείο που χρησιμοποιήθηκε είναι η δέσμη ανίχνευσης ΔΕΚΑ – ΠΡΟ, ενώ οι μετρήσεις έλαβαν χώρα σε κλειστό χώρο (αίθουσα του σχολείου) σε διάστημα 2 εβδομάδων. Από τη στατιστική επεξεργασία των αποτελεσμάτων της έρευνας παρατηρήθηκε πως η επίδραση του φύλου δεν είναι στατιστικά σημαντική στις επιδόσεις των παιδιών του δείγματος, παρεκτός στο 6^ο τεστ «Στόχευση με το χέρι». Συμπερασματικά, αναφορικά με τη συχνότητα εμφάνισης κινητικών δυσκολιών, φάνηκε ότι ένα σημαντικό ποσοστό των παιδιών του δείγματος παρουσίασε, στην πλειονότητα των τεστ της δέσμης σοβαρές ή λιγότερο σοβαρές κινητικές δυσλειτουργίες, ενώ σχετικά με την επίδραση του φύλου, βρήκαμε ότι η συγκεκριμένη δέσμη ανιχνεύει τις κινητικές δυσκολίες ανεξάρτητα από το φύλο.

ΛΕΞΕΙΣ ΚΛΕΙΔΙΑ: Κινητική ανάπτυξη, κινητική συναρμογή, εργαλεία κινητικής ανίχνευσης, κινητική αδεξιότητα, επίδραση του φύλου.

ABSTRACT

The purpose of this study was to ascertain the prevalence of DCD in Greek primary school children aged 6-7 years and, furthermore, to examine the effect of gender in the performance of early school aged children in the 9 tasks of the assessment tool "DEMOST – PRE". The sample consisted of 91 children (n=91), 45 boys and 46 girls in Grade A, with a mean age of 86 months, who were students in public schools in the Prefecture of Attica. The assessment tool that was used during the measurements was the DEMOST – PRE assessment battery and the measurements took place within their school's classroom for 2 consecutive weeks. From the statistical analysis of the results, it was observed that the gender effect is not statistically significant in the performance of the sample's children except for the 6th test "Targeting with one hand". In conclusion, regarding the identification of motor impairment on the sample's children, it appeared that a fair amount of children face motor clumsiness and, moreover, the DEMOST – PRE assessment battery estimates children's motor proficiency regardless of gender.

KEY WORDS: Motor development, motor coordination, movement assessment instrument, movement clumsiness, gender effect.

BIBΛΙΟΓΡΑΦΙΑ

- Adams, I. L., Lust, J. M., Wilson, P. H., & Steenbergen, B. (2014). *Compromised motor control in children with DCD: a deficit in the internal model?—A systematic review*. *Neuroscience & Biobehavioral Reviews*, 47, 225-244.
- American Psychiatric Association (APA). (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.), 37-55. Washington, DC: Author.
- APA (2013, pp. 74-77). *Diagnostic and Statistical Manual of Mental Disorders*, Fifth Edition. Copyright 2013 American Psychiatric Association.
- Balakrishnan, T., & Rao, C. S. (2007). *Interrater reliability of bilateral coordination of Bruininks Oseretsky Test of Motor Proficiency (BOTMP) & Performance of Indian Children compared with USA norms*. *The Indian Journal of Occupational Therapy*, 38(3), 55-60.
- Barral, J., & Debû, B. (2002). *Hand and gender differences in the organization of aiming in 5-year-old children*. *Neuropsychologia*, 40(2), 152-161.
- Barral, J., & Debû, B. (2004). *Aiming in adults: Sex and laterality effects*. *Laterality: Asymmetries of Body, Brain and Cognition*, 9(3), 299-312.
- Brown, T., & Lalor, A. (2009). *The movement assessment battery for children—second edition (MABC-2): a review and critique*. *Physical & occupational therapy in pediatrics*, 29(1), 86-103.
- Cairney, J., Hay, J., Faught, B., Mandigo, J., & Flouris, A. (2005). *Developmental coordination disorder, self-efficacy toward physical activity, and play: Does gender matter?*. *Adapted Physical Activity Quarterly*, 22(1), 67-82.
- Cairney, J., Hay, J., Veldhuizen, S., Missiuna, C., & Faught, B. E. (2009). *Comparing probable case identification of developmental coordination disorder using the short form of the Bruininks-Oseretsky Test of Motor Proficiency and the Movement ABC*. *Child: care, health and development*, 35(3), 402-408.
- Cantell, M., Kooistra, D., & Larkin, D. (2001). *Aproaches to intervention for children with developmental coordination disorder*. *New Zealand Journal of Disability Studies*, 9, 106-119.
- Cantell, M.H., Smyth, M.M. & Ahonen, T.P. (2003). *Two distinct pathways for developmental coordination disorder: Persistence and resolution*. *Human Movement Science*, 22, 413-431.
- Clements, S. D., & Peters, J. E. (1962). *Minimal brain dysfunctions in the school-age child: diagnosis and treatment*. *Archives of General Psychiatry*, 6(3), 185-197.
- Cousins, M. & Smyth, M.M. (2003). *Developmental coordination impairments in adulthood*. *Human Movement Science*, 22, 433-459.
- Cummins, A., Piek, J. P., & Dyck, M. J. (2005). *Motor coordination, empathy, and social behaviour in school-aged children*. *Developmental Medicine & Child Neurology*, 47(7), 437-442.

- Deconinck, F. J., De Clercq, D., Savelsbergh, G. J., Van Coster, R., Oostra, A., Dewitte, G., & Lenoir, M. (2006). *Differences in gait between children with and without developmental coordination disorder*. *Motor control*, 10(2), 125-142.
- Deitz, J. C., Kartin, D., & Kopp, K. (2007). *Review of the Bruininks-Oseretsky test of motor proficiency, (BOT-2)*. *Physical & occupational therapy in pediatrics*, 27(4), 87-102.
- Dewey, D., Kaplan, B.J., Crawford, S.G., & Wilson, B.N. (2002). *Developmental coordination disorder: Associated problems in attention, learning and psychosocial adjustment*. *Human Movement Science*, 21, 905-918.
- DSM-IV (1994). *Diagnostic and Statistical Manual of Mental Disorder* (Fourth edition). Washington DC: American Psychiatric Association.
- Duda, J. L. (1987). *Toward a developmental theory of childrens motivation in sport*. *Journal of Sport Psychology*, 9, 130-145.
- Dunn, J. C., & Watkinson, E. J. (1996). *Problems with identification of children who are physically awkward using the TOMI*. *Adapted Physical Activity Quarterly*, 13(4), 347-356.
- Ellinoudis, T., Evaggelinou, C., Kourtessis, T., Konstantinidou, Z., Venetsanou, F., & Kambas, A. (2011). *Reliability and validity of age band 1 of the Movement Assessment Battery for Children–Second Edition*. *Research in Developmental Disabilities*, 32(3), 1046-1051.
- Ellinoudis, T., Kourtessis, T., & Kiparissis, M. (2008). *Suitability of the Movement Assessment Battery for Children in Greece: Comparison between a Greek sample and the North-American normative sample of 9 and 11 year old children*. *International Journal of Health Science*, 1(4).
- Engel-Yeger, B., Rosenblum, S., & Josman, N. (2010). *Movement Assessment Battery for Children (M-ABC): establishing construct validity for Israeli children*. *Research in Developmental Disabilities*, 31(1), 87-96.
- Fayt, C., Schepens, N., & Minet, M. (1992). *Children's development of reaching: temporal and spatial aspects of aimed whole-arm movements*. *Perceptual and motor skills*, 75(2), 375-384.
- Fitzpatrick, D. & Watkinson, E.J. (2003). *The Lived Experience of Physical Awkwardness: Adults' Retrospective Views*, *Adapted Physical Activity Quarterly*, 20(3), 235-244.
- Flatters, I., Hill, L. J., Williams, J. H., Barber, S. E., & Mon-Williams, M. (2014). *Manual control age and sex differences in 4 to 11 year old children*. *PloS one*, 9(2), e88692.
- Gaines R, Missiuna C, Egan M, McLean J. (2008). *Educational out reach and collaborative care enhances physician's perceived knowledge about developmental coordination disorder*. *BMC Health Serv Res* 8: 21.
- Gallahue, D. L., & Ozmun, J. G. (2002). *Understanding Motor Development, Infants, Children, Adolescents, Adults* (5th ed.). Boston MA: McGraw Hill.
- Gallahue, D.L. & Ozmun, J.L. (1998). *Understanding Motor Development*. Boston: Mc Graw Hill.

- Geuze, R. H., Jogmans, M., Shoemaker, M., & Smits-Engelsman (2001b). *Clinical and research diagnostic criteria for developmental coordination disorder: a review and discussion*. *Human Movement Science*, 20, 7-47.
- Gheysen, F., Van Opstal, F., Roggeman, C., Van Waelvelde, H., & Fias, W. (2011). *The neural basis of implicit perceptual sequence learning*. *Frontiers in Human Neuroscience*, 5, 137.
- Giagazoglou, P., Kabitsis, N., Kokaridas, D., Zaragas, C., Katartzi, E., & Kabitsis, C. (2011). *The movement assessment battery in Greek preschoolers: The impact of age, gender, birth order, and physical activity on motor outcome*. *Research in Developmental Disabilities*, 32(6), 2577-2582.
- Gidley Larson, J. C., Mostofsky, S. H., Goldberg, M. C., Cutting, L. E., Denckla, M. B., & Mahone, E. M. (2007). *Effects of gender and age on motor exam in typically developing children*. *Developmental neuropsychology*, 32(1), 543-562.
- Hadders-Algra, M. (2002). *Two distinct forms of minor neurological dysfunction: perspectives emerging from a review of data of the Groningen Perinatal Project*. *Developmental medicine and child neurology*, 44(8), 561-571.
- Hadders-Algra, M. (2003). *Developmental coordination disorder: is clumsy motor behavior caused by a lesion of the brain at early age?. Neural plasticity*, 10(1-2), 39-50.
- Henderson, S. E. (1986). *Problems of motor development : Some theoretical issues*. *Advances in Special Education*, 5, 147 - 186.
- Henderson, S.E., May, D.S. & Umney, M. (1989). *An exploratory study of goal-setting behaviour, self-concept and locus of control in children with movement difficulties*. *European Journal of Special Needs Education*, 4(1), 1-15.
- Holsti, L., Grunau, R.V. & Whitfield, M.F. (2002). *Developmental coordination disorder in extremely low birth weight children at nine years*. *Journal of Developmental Behaviour Pediatric*, 23(1), 9-15.
- Horvat, V., Prskalo, I., & Hraski, M. (2014). *The relationship between motor abilities, physical activity and gender in preschool children*. *Merit Research Journal of Education and Review*, 2(15), 312-315.
- Ikeda, T., & Aoyagi, O. (2009). *Relationship between gender difference in motor performance and age, movement skills and physical fitness among 3-to 6-year-old Japanese children based on effect size calculated by meta-analysis*. *School Health*, 5, 9-23.
- Iversen, S., Knivsberg, A. M., Ellertsen, B., Nødland, M., & Larsen, T. B. (2006). *Motor coordination difficulties in 5–6-year-old children with severe behavioural and emotional problems*. *Emotional and behavioural difficulties*, 11(3), 169-185.
- Junaid, K. A., & Fellowes, S. (2006). *Gender differences in the attainment of motor skills on the movement assessment battery for children*. *Physical & Occupational Therapy in Pediatrics*, 26(1-2), 5-11.
- Kadesjo, B., & Gillberg, C. (1999). *Developmental coordination disorder in Swedish 7-year-old children*. *Journal of the American Academy of child & adolescent psychiatry*, 38(7), 820-828.

- Kambas, A., & Aggeloussis, N. (2006). *Construct validity of the Bruininks-Oseretsky Test of Motor Proficiency–Short Form for a sample of Greek preschool and primary school children*. *Perceptual and motor skills*, 102(1), 65-72.
- Kambas, A., & Venetsanou, F. (2014). *The Democritos Movement Screening Tool for preschool children (DEMOST-PRE®): Development and factorial validity*. *Research in developmental disabilities*, 35(7), 1528-1533.
- Kambas, A., & Venetsanou, F. (2016). *Construct and Concurrent Validity of the Democritos Movement Screening Tool for Preschoolers*. *Pediatric Physical Therapy*, 28(1), 94-99.
- Kambas, A., Venetsanou, F., Giannakidou, D., Fatouros, I. G., Avloniti, A., Chatzinikolaou, A., ... & Zimmer, R. (2012). *The Motor-Proficiency-Test for children between 4 and 6 years of age (MOT 4–6): An investigation of its suitability in Greece*. *Research in Developmental Disabilities*, 33(5), 1626-1632.
- Kourtessis, T., Tsigilis, N., Tzetzis, G., Kapsalas, T., Tserkezoglou, S., & Kioumourtzoglou 1, E. (2003). *Reliability of the Movement Assessment Battery for Children Checklist in Greek school environment*. *European Journal of Physical Education*, 8(2), 202-210.
- Logan, S. W., Robinson, L. E., Rudisill, M. E., Wadsworth, D. D., & Morera, M. (2013). *The comparison of school-age children's performance on two motor assessments: the Test of Gross Motor Development and the Movement Assessment Battery for Children*. *Physical Education and Sport Pedagogy*, 19(1), 48-59.
- Lord, R., & Hulme, C. (1987). *Perceptual judgements of normal and clumsy children*. *Developmental Medicine & Child Neurology*, 29(2), 250-257.
- Mackenzie, S. J., Getchell, N., Deutsch, K., Wilms-Floet, A., Clark, J. E., & Whitall, J. (2008). *Multi-limb coordination and rhythmic variability under varying sensory availability conditions in children with DCD*. *Human Movement Science*, 27(2), 256-269.
- Macnab, J.J., Miller, L.T., Polatajko, H.J. (2002). *The search for subtypes of DCD: Is cluster analysis the answer?* *Human Movement Science*, 20, 4972.
- Miller, L.T., Missiuna, C.A., Macnab, J.J., Malloy-Miller, T., & Polatajko, H.J. (2001). *Clinical description of children with developmental coordination disorder*. *Canadian Journal of Occupational Therapy*, 68, 5-15.
- Maldonado, M. (2005). *Motor Skill Disorders*, www. E-medicine. Com, Inc.
- Missiuna, C., Rivard, L., & Pollock, N. (2004). *They're Bright but Can't Write: Developmental Coordination Disorder in School Aged Children*. *Teaching Exceptional Children Plus*, 1(1), n1.
- Mon-Williams M, Tresilian JR, Bell VE, Coppard VL, Nixdorf M, Carson RG. *The preparation of reach-to-grasp movements in adults, children, and children with movement problems*. *Q J Exp Psychol A* 2005; 58: 1249–63.
- O'brien, J., Spencer, J., Atkinson, J., Braddick, O., & Wattam-Bell, J. (2002). *Form and motion coherence processing in dyspraxia: evidence of a global spatial processing deficit*. *Neuroreport*, 13(11), 1399-1402.

- Orton, S. (1937). *Reading, writing and speech problems in children*. New York: Norton.
- Peerlings W. (2007). *Bruininks-Oseretsky Test of Motor Proficiency. 2nd edition. (BOT-2)*. In Actuele Themata uit de psychomotorische therapie, Johan Simons (ed.). Acco, Leuven/Leusden.
- Przysucha EP, Taylor MJ. *Control of stance and developmental coordination disorder: the role of visual information*. *Adapt Phys Activ Q* 2004; 21: 19–33.
- Psotta, R., Hendl, J., Fromel, K., & Lehnert, M. (2012). *The second version of the Movement Assessment Battery for Children: A comparative study in 7-10 year old children from the Czech Republic and the United Kingdom*. *Acta Gymnica*, 42(4), 19-27.
- Rasmussen, P., & Gillberg, C. (2000). *Natural outcome of ADHD with developmental coordination disorder at age 22 years: a controlled, longitudinal, community-based study*. *Journal of the American Academy of Child & Adolescent Psychiatry*, 39(11), 1424-1431.
- Raynor, A. J. (2001). *Strength, power, and coactivation in children with developmental coordination disorder*. *Developmental Medicine & Child Neurology*, 43(10), 676-684.
- Ruiz, L. M., Graupera, J. L., Gutiérrez, M., & Miyahara, M. (2003). *The Assessment of Motor Coordination in Children with the Movement ABC test: A Comparative Study among Japan, USA and Spain*. *International Journal of Applied Sports Sciences*, 15(1).
- Sanders, G., & Walsh, T. (2007). *Testing predictions from the hunter-gatherer hypothesis—1: Sex differences in the motor control of hand and arm*. *Evolutionary Psychology*, 5(3), 147470490700500313.
- Schmidt, R. C., Shaw, B. K., & Turvey, M. T. (1993). *Coupling dynamics in interlimb coordination*. *Journal of Experimental Psychology: Human Perception and Performance*, 19(2), 397.
- Schmidt, R., & Weisberg, C. (2009). *Κινητική μάθηση και Απόδοση. Μια εφαρμοσμένη προσέγγιση*. Επιμ.: Μ. Μιχαλοπούλου, Αθλότυπο, Αθήνα.
- Schoemaker, M.M., Smits-Engelsman, B.C.M. & Jongmans, M.J. (2003). *Psychometric properties of the Movement Assessment Battery for Children-Checklist as a screening instrument for children with a developmental co-ordination disorder*. *British Journal of Educational Psychology*, 73, 3, 425-441.
- Slater, L. M., Hillier, S. L., & Civetta, L. R. (2010). *The clinimetric properties of performance-based gross motor tests used for children with developmental coordination disorder: a systematic review*. *Pediatric Physical Therapy*, 22(2), 170-179.
- Spironello, C., Hay, J., Missiuna, C., Faight, B. E., & Cairney, J. (2010). *Concurrent and construct validation of the short form of the Bruininks-Oseretsky Test of Motor Proficiency and the Movement-ABC when administered under field conditions: implications for screening*. *Child: care, health and development*, 36(4), 499-507.
- Tan, S. K., Parker, H. E., & Larkin, D. (2001). *Concurrent validity of motor tests used to identify children with motor impairment*. *Adapted physical activity quarterly*, 18(2), 168-182.

- Teeken, J. C., Adam, J. J., Paas, F. G., Van Boxtel, M. P., Houx, P. J., & Jolles, J. (1996). *Effects of age and gender on discrete and reciprocal aiming movements*. *Psychology and aging*, 11(2), 195.
- Tottenham, L. S., & Saucier, D. M. (2004). *Throwing accuracy during prism adaptation: male advantage for throwing accuracy is independent of prism adaptation rate*. *Perceptual and motor skills*, 98(3_suppl), 1449-1455.
- Tottenham, L. S., Saucier, D. M., Elias, L. J., & Gutwin, C. (2005). *Men are more accurate than women in aiming at targets in both near space and extrapersonal space*. *Perceptual and motor skills*, 101(1), 3-12.
- Valtr, L., Psotta, R., & Abdollahipour, R. (2016). *Gender differences in performance of the Movement Assessment Battery for Children-test in adolescents*. *Acta Gymnica*, 46(4), 155-161.
- Venetsanou, F., & Kambas, A. (2016). *Motor proficiency in young children: a closer look at potential gender differences*. *Sage Open*, 6(1), 2158244015626226.
- Venetsanou, F., Kambas, A., Aggeloussis, N., Serbezis, V., & Taxildaris, K. (2007). *Use of the Bruininks–Oseretsky Test of Motor Proficiency for identifying children with motor impairment*. *Developmental Medicine & Child Neurology*, 49(11), 846-848.
- Venetsanou, F., Kambas, A., Ellinoudis, T., Fatouros, I., Giannakidou, D., & Kourtessis, T. (2011). *Can the Movement Assessment Battery for Children-Test be the “gold standard” for the motor assessment of children with Developmental Coordination Disorder?. Research in developmental disabilities*, 32(1), 1-10.
- Visser, J. (2003). *Developmental coordination disorder: a review of research on subtypes and Comorbidities*. *Human Movement Science*, 22, 461-478.
- Wall, A.E., Reid, G. & Paton, J. (1990). *Problems in movement control*. North- Holland: Elsevier Science Publishers B.V.
- Wall, A.E., Reid, G., & Paton, J. (1990). *The syndrome of physical awkwardness*. In G. Reid (Ed) *Problems in movement control* (pp. 283-316). North- Holland: Elsevier Science Publishers B.V.
- Wall, A.E. (1982). *Physical awkward children: a motor development perspective*. In J.P.Das, R. F. Mulcahy & A.E. Wall (eds.). *Theory and research in learning disabilities*, (pp. 253 - 268). New York, N.Y.: Plenum Press.
- Wann, J.P., Mon-Williams, M., & Rushton, K. (1998). *Postural control and co-ordination disorders: The swinging room revisited*. *Human Movement Science*, 17, 491-513.
- Willoughby, C., & Polatajko, H. J. (1995). *Motor problems in children with developmental coordination disorder: Review of the literature*. *American Journal of Occupational Therapy*, 49(8), 787-794.
- Wilson, P. H., Maruff, P., Ives, S., & Currie, J. (2001). *Abnormalities of motor and praxis imagery in children with DCD*. *Human Movement Science*, 20(1-2), 135-159.
- Wilson, P. H., Thomas, P. R., & Maruff, P. (2002). *Motor imagery training ameliorates motor clumsiness in children*. *Journal of Child Neurology*, 17(7), 491-498.

- Wilson, P.H., & McKenzie, B.E. (1998). *Information processing deficits associated with developmental coordination disorder: A meta-analysis of research findings*. *Journal of Child Psychology and Psychiatry*, 39, (6), 829-840.
- Wright, H. C., & Sugden, D. A. (1996). *A two-step procedure for the identification of children with developmental co-ordination disorder in Singapore*. *Developmental Medicine & Child Neurology*, 38(12), 1099-1105.
- Wright, H.C. (1997). *Children with Developmental Coordination Disorder- A review*. *European Journal of Physical Education*, 2, 5-22.
- Zimmer, R. (2007). *Εγχειρίδιο κινητικής αγωγής. Από τη θεωρία στην πράξη*. Επιστ. επιμ: Α., Καμπάς. Αθήνα: Αθλότυπο
- Zwicker, J. G., Suto, M., Harris, S. R., Vlasakova, N., & Missiuna, C. (2018). *Developmental coordination disorder is more than a motor problem: Children describe the impact of daily struggles on their quality of life*. *British journal of occupational therapy*, 81(2), 65-73.
- Ελληνούδης, Θ. (2001). *Η επίδραση του παράγοντα ηλικία στην ανίχνευση και αξιολόγηση των κινητικών δυσκολιών σε παιδιά δημοτικού σχολείου*. Αδημοσίευτη μεταπτυχιακή διατριβή. Δημοκρίτειο Πανεπιστήμιο Θράκης, Κομοτηνή.
- Ελληνούδης, Θ., Κουρτέσης, Θ., Κυπαρίσσης, Μ. & Παπαλεξοπούλου, Ν., (2008). *Η κινητική αδεξιότητα σε παιδιά ηλικίας 9-12 ετών στην Ελλάδα- Μία επιδημιολογική μελέτη*. Αναζητήσεις στη Φυσική Αγωγή & τον Αθλητισμό, 6(3)280-289.
- Καμπάς Α., Φατούρος Ι, Αγγελούσης Ν., Γούργουλης Β., Ταξιλδάρης Κ. (2003). *Η Επίδραση της Ηλικίας και του Φύλου στις Συναρμοστικές Ικανότητες στην Παιδική Ηλικία*. Ηλεκτρονικό Περιοδικό – Αναζητήσεις στη Φυσική Αγωγή & τον Αθλητισμό, 1(2), 152 - 158. (inGreek).
- Καμπάς, Α. (2004). *Εισαγωγή στην Κινητική Ανάπτυξη*. Αθήνα: Εκδόσεις Αθλότυπο.
- Καραμπατζάκη, Ζ. (2002). *Πρώιμη ανίχνευση και αναγνώριση της αναπτυξιακής διαταραχής του ψυχοκινητικού συντονισμού σε παιδιά ηλικίας 4-8 ετών* (Doctoral dissertation, Πανεπιστήμιο Ιωαννίνων. Σχολή Επιστημών Αγωγής. Τμήμα Παιδαγωγικό Νηπιαγωγών).
- Καραμπατζάκη, Ζ. & Σαρρής, Δ. (2012). "Πρόγραμμα παρέμβασης σε παιδιά με αναπτυξιακή διαταραχή συντονισμού των κινήσεων". *Παιδαγωγικός λόγος*. Τόμος ΙΗ', 1, 115-130.
- Κουρτέσης, Θ. (1997). *Αποτελέσματα εξάσκησης μέσα στο νερό σε παιδιά με προβλήματα στην κίνηση*. Αδημοσίευτη Μεταπτυχιακή Διατριβή. Δημοκρίτειο Πανεπιστήμιο Θράκης, Κομοτηνή.
- Κουτσούκη, Δ. (2007). *Ειδική Φυσική Αγωγή: Θεωρία και Πρακτική*. Αθήνα: Συμμετρία.
- Παπαλεξοπούλου, Ν. (2002). *Διερεύνηση της καταλληλότητας του ερωτηματολογίου Movement Assessment battery for children Checklist (MABC), για χρήση στο Ελληνικό σχολικό περιβάλλον*. Αδημοσίευτη μεταπτυχιακή διατριβή. Δημοκρίτειο Πανεπιστήμιο Θράκης, Κομοτηνή.
- Σταύρου Λ. (1985). *Ψυχοπαιδαγωγική Αποκλινόντων νηπίων , παιδιών , εφήβων*, Αθήνα : Ανθρωπος.
- Τσαπακίδου Α. (1997) . *Κινητικές δεξιότητες. Προγράμματα ανάπτυξης κινητικών δεξιοτήτων σε παιδιά προσχολικής ηλικίας*. Θεσνίκη : University Studio Press.

Τσερκέζογλου, Σ., Κουρτέσης, Θ., Καψάλας, Θ. (2003). Αποτελέσματα ενός προσανατολισμένου στη δεξιότητα παρεμβατικού προγράμματος για παιδιά με Διαταραχές του Συντονισμού στο Ελληνικό σχολικό περιβάλλον. Αναζητήσεις στη Φυσική Αγωγή και τον Αθλητισμό, 1(2), 103-115.