

**PENGARUH *MULTIMODEL COGNITIVE TRAINING* TERHADAP  
PENINGKATAN *DECISION-MAKING* ATLET PADA CABANG  
OLAHRAGA KATEGORI *OPEN-SKILL***

**SKRIPSI**

Diajukan untuk Memenuhi Sebagian dari Syarat untuk  
Memperoleh Gelar Sarjana Pendidikan



oleh

Noor Fatimah Indah Sari

NIM 1804338

**PROGRAM STUDI PENDIDIKAN KEPELATIHAN OLAHRAGA  
DEPARTEMEN PENDIDIKAN KEPELATIHAN  
FAKULTAS PENDIDIKAN OLAHRAGA DAN KESEHATAN  
UNIVERSITAS PENDIDIKAN INDONESIA**

**2022**

**PENGARUH *MULTIMODEL COGNITIVE TRAINING* TERHADAP  
PENINGKATAN *DECISION-MAKING* ATLET PADA CABANG  
OLAHRAGA KATEGORI OPEN-SKILL**

Oleh

**Noor Fatimah Indah Sari  
(1804338)**

Sebuah Skripsi yang diajukan untuk memenuhi salah satu syarat memperoleh gelar Sarjana Pendidikan (S.Pd.) Program Studi Pendidikan Kepelatihan Olahraga

**© Noor Fatimah Indah Sari 2022  
Universitas Pendidikan Indonesia  
April 2022**

Hak Cipta dilindungi undang-undang.

Skripsi ini tidak boleh diperbanyak seluruhnya atau sebagian, dengan dicetak ulang, difoto kopi, atau cara lainnya tanpa izin dari penulis.

**HALAMAN PENGESAHAN**

**NOOR FATIMAH INDAH SARI**

**PENGARUH *MULTIMODEL COGNITIVE TRAINING* TERHADAP  
PENINGKATAN *DECISION-MAKING* ATLET PADA CABANG  
OLAHRAGA KATEGORI OPEN-SKILL**

Disetujui dan disahkan oleh pembimbing:

**Pembimbing I**



**Dr. Komarudin, M.Pd.**  
NIP. 197204031999031003


**Pembimbing II**



**Dr. H Dikdik Zafar Sidik, M.Pd.**  
NIP. 196812181994021001

**Mengetahui**

**Ketua Departemen**



**Dr. H. Mulyana, M.Pd**  
NIP. 197108041998021001

**PENGARUH MULTIMODEL COGNITIVE TRAINING TERHADAP  
PENINGKATAN *DECISION-MAKING* ATLET PADA CABANG  
OLAHRAGA KATEGORI *OPEN-SKILL***

**ABSTRAK**

*Decision-making* merupakan salah satu kemampuan dasar yang diperlukan atlet untuk menentukan tindakan dalam suatu keadaan. Terutama pada cabang olahraga kategori *open-skill*, dimana seorang pemain harus dapat menentukan tindakan yang akan dilakukan dengan cepat dan tepat, disertai dengan keadaan lingkungan yang tidak dapat diduga. Penelitian ini bertujuan untuk mengetahui pengaruh latihan *Multimodel Cognitive Training* terhadap *Decision-Making* atlet pada cabang olahraga kategori *open-skill*. Metode yang digunakan dalam penelitian ini adalah metode eksperimen dengan desain *pretest-posttest control group design*. Sampel yang digunakan pada penelitian ini adalah atlet UKM bolabasket dan bola voli UPI, sebanyak 28 orang. Pengambilan sampel dilakukan secara *random selection*, kemudian dibagi menjadi 2 kelompok yaitu kelompok eksperimen dengan *Multimodel Cognitive Training* dan kelompok kontrol dengan *Physical Activity Games*. Dalam mengukur tingkat pengambilan keputusan atlet menggunakan instrument penelitian *The Decision Style Questionnaire* pada saat *pre-test* dan *post-test*. *Multimodel Cognitive Training* dan *Physical Activity Games* memiliki pengaruh yang signifikan terhadap peningkatan *Decision-making* atlet cabang olahraga kategori *open-skill*. Namun, *Multimodel Cognitive Training* menunjukkan hasil yang lebih baik dalam meningkatkan *decision-making* atlet cabang olahraga *open-skill*. Kesimpulan dari penelitian ini, *Multimodel Cognitive Training* dan *Physical Activity Games* dapat meningkatkan *decision-making* atlet cabang olahraga kategori *open-skill*, tetapi *Multimodel Cognitive Training* memiliki pengaruh yang lebih signifikan.

**Kata Kunci:** *Open-Skill, Multimodel Cognitive Training, Physical Activity Games*

# **THE EFFECT OF MULTIMODEL COGNITIVE TRAINING ON IMPROVING THE DECISION-MAKING OF ATHLETES IN THE OPEN- SKILL CATEGORY OF SPORTS**

## **ABSTRACT**

Decision making is one of the basic abilities needed by athletes to determine actions in a situation. Especially in the open-skill category, where a player must be able to determine the action to be taken quickly and precisely, accompanied by unpredictable environmental conditions. This study aims to determine the effect of Multimodel Cognitive Training on athlete decision making in the open-skill category of sports. The method used in this study is an experimental method with a pretest-posttest control group design. The sample used in this study were athletes from UKM basketball and volleyball UPI, as many as 28 people. Sampling was done randomly, then divided into 2 groups, namely the experimental group with Multimodel Cognitive Training and the control group with Physical Activity Games. In measuring the decision making of athletes using the research instrument The Decision Style Questionnaire at the time of pre-test and post-test. Multimodel Cognitive Training and Physical Activity Game have a significant influence on improving the decision making of athletes in the open-skill category. However, Multimodel Cognitive Training shows better results in improving the decision making of athletes in open-skill sports. The conclusion of this study, Multimodel Cognitive Training in the and Physical Activity Games can improve the decision making of athletes in the open-skill category, but Multimodel Cognitive Training has a more significant effect.

Keywords: Open-Skill, Multimodel Cognitive Training, Physical Activity Games

## DAFTAR ISI

HALAMAN PERNYATAAN KEASLIAN SKRIPSI .....	iv
KATA PENGANTAR .....	v
UCAPAN TERIMA KASIH.....	vi
ABSTRAK .....	ix
ABSTRACT .....	x
DAFTAR ISI.....	xi
DAFTAR GAMBAR .....	xii
DAFTAR TABEL.....	xiii
BAB I PENDAHULUAN.....	1
1.1 Latar Belakang .....	1
1.2 Rumusan Masalah .....	4
1.3 Tujuan Penelitian.....	4
1.4 Manfaat Penelitian.....	4
1.4.1 Secara Teoritis .....	4
1.4.2 Secara Praktis.....	5
1.5 Struktur Organisasi Penelitian .....	5
BAB II TINJAUAN PUSTAKA.....	6
2.1 <i>Multimodel Cognitive Training</i> .....	6
2.1.1 Pengertian .....	6
2.1.2 Life Kinetik.....	7
2.2 <i>Physical Activity Games</i> .....	17
2.3 <i>Decision-Making</i> .....	25
2.3.1 Pengertian .....	25
2.3.2 Kerangka Kerja Otak .....	27
2.3.3 Manfaat .....	28
2.3.4 Faktor-Faktor Decision-Making pada Atlet.....	28
2.4 Olahraga Kategori <i>open-skill</i> .....	32
2.5 Asumsi Dasar .....	33
2.6 Hipotesis .....	34
BAB III METODE PENELITIAN.....	35
3.1 Metode Penelitian.....	35
3.2 Desain Penelitian .....	35
3.3 Prosedur Penelitian.....	36

3.4 Lokasi dan Waktu.....	37
3.5 Populasi dan Sampel .....	38
3.5.1 Populasi.....	38
3.5.2 Sampel .....	38
3.6 Instrumen Penelitian.....	39
3.7 <i>Treatment</i> Penelitian.....	39
3.8 Analisis Data .....	43
BAB IV TEMUAN DAN PEMBAHASAN .....	44
4.1 Analisis Deskriptif.....	44
4.2 Uji Normalitas Data.....	45
4.3 Uji Homogenitas.....	46
4.4 Uji Hipotesis.....	47
4.5 Pembahasan .....	49
BAB V SIMPULAN, IMPLIKASI, DAN REKOMENDASI .....	54
5.1 Simpulan.....	54
5.2 Implikasi .....	54
5.3 Rekomendasi .....	55
DAFTAR PUSTAKA .....	56
LAMPIRAN .....	62
Lampiran 1. Persetujuan Pembimbing .....	62
Lampiran 2. Penunjukan Pembimbing Skripsi.....	63
Lampiran 3. Kartu Bimbingan Skripsi .....	65
Lampiran 4. Surat Izin Penelitian.....	66
Lampiran 5. Surat Balasan Izin Penelitian .....	68
Lampiran 6. Instrumen <i>The Decision Style Questionnaire</i> .....	70
Lampiran 7. Hasil Data Penelitian dan Data Hasil SPSS.....	73
Lampiran 8. Program Latihan.....	80
Lampiran 9. Dokumentasi Kegiatan Penelitian.....	83

## DAFTAR GAMBAR

Gambar 2. 1 Latihan <i>Ladder (Single-Doubles)</i> .....	10
Gambar 2. 2 Latihan <i>Ladder (Doubles-Doubles Out)</i> .....	11
Gambar 2. 3 Latihan <i>Ladder B3</i> .....	11
Gambar 2. 4 Latihan <i>Ladder B4</i> .....	12
Gambar 2. 5 Latihan <i>Ladder C2</i> .....	12
Gambar 2. 6 Latihan <i>Jumping Line A (J1A)</i> .....	13
Gambar 2. 7 Latihan <i>Jumping Line A (J2A)</i> .....	14
Gambar 2. 8 Latihan <i>Jumping Line A (J3A)</i> .....	14
Gambar 2. 9 <i>Juggling 1</i> .....	15
Gambar 2. 10 Latihan <i>Jumping Cross JC1</i> .....	15
Gambar 2. 11 Latihan <i>Rainbow Run RR1</i> .....	16
Gambar 2. 12 Struktur Otak yang dipengaruhi <i>Physical Activity Games</i> .....	20
Gambar 2. 13 Contoh Permainan Jaga Benteng .....	22
Gambar 2. 14 Lapangan dan Cara Bermain Galasin.....	23
Gambar 2. 15 Contoh Permainan <i>Hop Pop and Tag</i> .....	24
Gambar 2. 16 Contoh Permainan <i>Team Bowling</i> .....	24
Gambar 2. 17 Kerangka Kerja <i>Affordance Competition Hypothesis</i> .....	27
Gambar 3. 1 Desain Penelitian Eksperimen.....	35
Gambar 3. 2 Langkah-Langkah Penelitian.....	36
Gambar 4. 1 Hasil Data Perubahan .....	45



## DAFTAR TABEL

Tabel 3. 1 Program <i>Multimodel Cognitive Training</i> melalui <i>Life Kinetik</i> .....	40
Tabel 3. 2 Program Perlakuan <i>Physical Activity Games</i> .....	42
Tabel 4. 1 Analisis Deskriptif Secara Umum.....	44
Tabel 4. 2 Uji Normalitas Data .....	46
Tabel 4. 3 Hasil Uji Homogenitas Dua Varian Kelompok Eksperimen .....	46
Tabel 4. 4 Hasil Uji <i>Paired t-Test Decision-Making</i> Kelompok Eksperimen .....	48
Tabel 4. 5 Hasil <i>Uji Paired t-Test Decision-Making</i> Kelompok Kontrol .....	48
Tabel 4. 6 Hasil Uji Independent Sampel Test .....	48

## DAFTAR PUSTAKA

- Álvarez-Bueno, C., Pesce, C., Caverro-Redondo, I., Sánchez-López, M., Martínez-Hortelano, J. A., & Martínez-Vizcaíno, V. (2017). The Effect of Physical Activity Interventions on Children's Cognition and Metacognition: A Systematic Review and Meta-Analysis. *Journal of the American Academy of Child and Adolescent Psychiatry*, 56(9), 729–738. <https://doi.org/10.1016/j.jaac.2017.06.012>
- Araújo, D., Hristovski, R., Seifert, L., Carvalho, J., & Davids, K. (2019). Ecological cognition: expert decision-making behaviour in sport. *International Review of Sport and Exercise Psychology*, 12(1), 1–25. <https://doi.org/10.1080/1750984X.2017.1349826>
- Bamidis, P. D., Vivas, A. B., Styliadis, C., Frantzidis, C., Klados, M., Schlee, W., Siountas, A., & Papageorgiou, S. G. (2014). A review of physical and cognitive interventions in aging. *Neuroscience and Biobehavioral Reviews*, 44, 206–220. <https://doi.org/10.1016/j.neubiorev.2014.03.019>
- Bar-Eli, M., Plessner, H., & Raab, M. (2011). Judgement, Decision Making and Success in Sport. In *Judgement, Decision Making and Success in Sport*. <https://doi.org/10.1002/9781119977032>
- Baumgartner, L., Weberruß, H., Oberhoffer-Fritz, R., & Schulz, T. (2020). Vascular Structure and Function in Children and Adolescents: What Impact Do Physical Activity, Health-Related Physical Fitness, and Exercise Have? *Frontiers in Pediatrics*, 8(March). <https://doi.org/10.3389/fped.2020.00103>
- Best, J. R. (2010). Effects of physical activity on children's executive function: Contributions of experimental research on aerobic exercise. *Developmental Review*, 30(4), 331–351. <https://doi.org/10.1016/j.dr.2010.08.001>
- Bompa, T. O., & Buzzichelli, C. A. (2019). *Periodization: Theory and Methodology of Training* (Sixth Edit). Human Kinetics.
- Bonk, D., & Tamminen, K. A. (2021). Athletes' perspectives of preparation strategies in open-skill sports. *Journal of Applied Sport Psychology*, 0(0), 1–21. <https://doi.org/10.1080/10413200.2021.1875517>
- Causer, J., & Ford, P. R. (2014). “Decisions, decisions, decisions”: Transfer and specificity of decision-making skill between sports. *Cognitive Processing*, 15(3), 385–389. <https://doi.org/10.1007/s10339-014-0598-0>
- Christopher E. Zwillling. (2019). Enhanced Decision-Making Through Multimodal Training. *Njp Science of Learning*.

- Cisek, P., & Kalaska, J. F. (2010). Neural mechanisms for interacting with a world full of action choices. *Annual Review of Neuroscience*, *33*, 269–298. <https://doi.org/10.1146/annurev.neuro.051508.135409>
- Correia, V., Araújo, D., Duarte, R., Travassos, B., Passos, P., & Davids, K. (2012). Changes in practice task constraints shape decision-making behaviours of team games players. *Journal of Science and Medicine in Sport*, *15*(3), 244–249. <https://doi.org/10.1016/j.jsams.2011.10.004>
- Davids, K., Araújo, D., Correia, V., & Vilar, L. (2013). How small-sided and conditioned games enhance acquisition of movement and decision-making skills. *Exercise and Sport Sciences Reviews*, *41*(3), 154–161. <https://doi.org/10.1097/JES.0b013e318292f3ec>
- Demirakca, T., Cardinale, V., Dehn, S., Ruf, M., & Ende, G. (2016). The exercising brain: Changes in functional connectivity induced by an integrated multimodal cognitive and whole-body coordination training. *Neural Plasticity*, 2016. <https://doi.org/10.1155/2016/8240894>
- Duda, H. (2015). Application of Life Kinetik in The Process of Teaching Technical Activities To Young Football Players. *Journal of Kinesiology and Exercise Sciences*, 51–61.
- Effendi, H. (2016). Peranan psikologi olahraga dalam meningkatkan prestasi atlet. *Nusantara (Jurnal Ilmu Pengetahuan Sosial)*, *1*, 27.
- Fraenkel, J. R., Wallen, N. E., & Hyun, H. H. (2012). *How To Design and Evaluate Research in Education*. Connect Learn Succeed.
- Furley, P., Bertrams, A., Englert, C., & Delphia, A. (2013). Ego depletion, attentional control, and decision making in sport. *Psychology of Sport and Exercise*, *14*(6), 900–904. <https://doi.org/10.1016/j.psychsport.2013.08.006>
- Guo, W., Wang, B., Lu, Y., Zhu, Q., Shi, Z., & Ren, J. (2016). The relationship between different exercise modes and visuospatial working memory in older adults: a cross-sectional study. *Peer J*.
- Guo, W., Wang, B., Smoter, M., & Yan, J. (2021). Effects of open-skill exercises on cognition on community dwelling older adults: Protocol of a randomized controlled trial. *Brain Sciences*, *11*(5). <https://doi.org/10.3390/brainsci11050609>
- Hasnunidah, N. (2017). *Metodologi Penelitian Pendidikam*. Media Akademi.
- Iqbal, D. N., & Tafaqur, M. (2020). Peningkatan Keterampilan Atlet Bola Voli melalui Latihan Life Kinetik. *Jurnal Kepeleatihan Olahraga*, *12*(1), 1–5. <https://doi.org/10.17509/jko-upi.v12i1.24006>

- Kaya, A. (2014). Decision Making by Coaches and Athletes in Sport. *Procedia - Social and Behavioral Sciences*, 152, 333–338. <https://doi.org/10.1016/j.sbspro.2014.09.205>
- Kinrade, N. P., Jackson, R. C., & Ashford, K. J. (2015). Reinvestment, task complexity and decision making under pressure in basketball. *Psychology of Sport and Exercise*, 20, 11–19. <https://doi.org/10.1016/j.psychsport.2015.03.007>
- Komarudin. (2018). *Life Kinetik dan Performa Psikologis*. PT Remaja Rosdakarya.
- Komarudin, & Awwaludin, P. N. (2019). *Life Kinetik Training in Improving the Physical Condition of Football Athletes*. 11(Icsshpe 2018), 182–185. <https://doi.org/10.2991/icsshpe-18.2019.52>
- Komarudin, M. (2019). *Life Kinetic Training In Improving The Cognitive Functions*. 7(Icssh 2018), 107–110. <https://doi.org/10.2991/icssh-18.2019.25>
- Kraft, E. (2012). Cognitive function, physical activity, and aging: Possible biological links and implications for multimodal interventions. *Aging, Neuropsychology, and Cognition*, 19(1–2), 248–263. <https://doi.org/10.1080/13825585.2011.645010>
- Lepora, N. F., & Pezzulo, G. (2015). Embodied Choice: How Action Influences Perceptual Decision Making. *PLoS Computational Biology*, 11(4), 1–23. <https://doi.org/10.1371/journal.pcbi.1004110>
- Leykin, Y., & Derubeis, R. J. (2010). Decision-making styles and depressive symptomatology: Development of the decision styles questionnaire. *Judgment and Decision Making*, 5(7), 506–515.
- Lorains, M., Ball, K., & MacMahon, C. (2013). An above real time training intervention for sport decision making. *Psychology of Sport and Exercise*, 14(5), 670–674. <https://doi.org/10.1016/j.psychsport.2013.05.005>
- Mulyadi, A., Komarudin, K., Sartono, H., & Novian, G. (2021). Meningkatkan Konsentrasi Atlet Sepak Bola melalui Metode Latihan Life Kinetik. *Jurnal Patriot*, 3(4), 387–396. <https://doi.org/10.24036/patriot.v3i4.801>
- Mustafa, P. S., Gusdiyanto, H., Victoria, A., Masgumelar, N. K., Lestariningsih, N. D., Maslacha, H., Ardiyanto, D., Hutama, H. A., Boru, M. J., Fachrozi, I., Isaci, E., Rodriguez, S., Prasetyo, T. B., & Romadhana, S. (2020). *Metodologi Penelitian Kuantitatif, Kualitatif, dan Penelitian Tindakan Dalam Pendidikan Olahraga*. Universitas Negeri Malang.

- Niedermeier, M., Weiss, E. M., Steidl-Müller, L., Burtscher, M., & Kopp, M. (2020). Acute effects of a short bout of physical activity on cognitive function in sport students. *International Journal of Environmental Research and Public Health*, 17(10), 65–70. <https://doi.org/10.3390/ijerph17103678>
- Novan, N. A., Hidayah, N., Erawan, B., Komarudin, K., Awwaludin, P. N., & Mustaqim, R. (2020). *Implementation of Life Kinetic Mental Training Method in Order to Improve the Competency of Coaches in Psychological Training for Athletes*. 21(Icsshe 2019), 256–259. <https://doi.org/10.2991/ahsr.k.200214.067>
- Nurmansyah, P., & Sutresna, N. (2015). Analisis Pelaksanaan Teknik Dominan Dalam Cabang Olahraga Bolabasket. *Jurnal Kepelatihan Olahraga, Vol 7, No.* <https://doi.org/https://doi.org/10.17509/jko-upi.v7i2.16152>
- Pačesová, P., Šmela, P., & Nemček, D. (2020). Cognitive functions of female open skill sport athletes, closed skill sport athletes and nonathletes. *Physical Activity Review*, 8(2), 23–29. <https://doi.org/10.16926/par.2020.08.18>
- Panchuk, D. (2018). Exploring the Effectiveness of Immersive Video for Training Decision-Making Capability in Elite, Youth Basketball Players. *Frontiers in Psychology*.
- Pesce, C., Crova, C., Cereatti, L., Casella, R., & Bellucci, M. (2009). Physical activity and mental performance in preadolescents : Effects of acute exercise on free-recall memory. *Mental Health and Physical Activity*, 2(1), 16–22. <https://doi.org/10.1016/j.mhpa.2009.02.001>
- Purnamasari, D., Ma'mun, A., & Juliantine, T. (2020). Pengaruh Physical Activity terhadap Emotion dan Social Skills. *Jurnal Penelitian Pendidikan*, 20(1), 20–31. <https://doi.org/10.17509/jpp.v20i1.24550>
- Roca, A., & Williams, A. M. (2017). Does decision making transfer across similar and dissimilar sports? *Psychology of Sport and Exercise*, 31, 40–43. <https://doi.org/10.1016/j.psychsport.2017.04.004>
- Ruiz, J. R., Ortega, F. B., Castillo, R., Martín-Matillas, M., Kwak, L., Vicente-Rodríguez, G., Noriega, J., Tercedor, P., Sjöström, M., & Moreno, L. A. (2010). Physical activity, fitness, weight status, and cognitive performance in adolescents. *Journal of Pediatrics*, 157(6). <https://doi.org/10.1016/j.jpeds.2010.06.026>
- Sakselin, M.-M. (2020). *Decision-Making and Gaze Behaviour of Basketball Players in 3-on-3 Pick’N Roll Play*. 1–72.
- Saleh, M. (2019). Latihan dan Aktivitas Fisik untuk Meningkatkan Kesejahteraan Psikologis. *Journal Power Of Sports*, 1, 12–22.

- Sentani, M. R., Muhtar, T., & Mahendra, A. (2019). Pengaruh Motor Cognitive Coordination Training Terhadap Motor Coordination dan Working Memory Pada Atlet Junior. *Jurnal Terapan Ilmu Keolahragaan*, 4(2), 84–90. <https://doi.org/10.17509/jtikor.v4i2.18711>
- Siyoto, S., & Sodik, A. (2015). *Dasar Metodologi Penelitian*. Literasi Media Publishing.
- Stuss, D. T., & Knight, R. T. (2013). *Principles of Frontal Lobe Functions* (Second Edi). Oxford University Press.
- Taddei, F., Bultrini, A., Spinelli, D., & Di Russo, F. (2012). Neural correlates of attentional and executive processing in middle-age fencers. *Medicine and Science in Sports and Exercise*, 44(6), 1057–1066. <https://doi.org/10.1249/MSS.0b013e31824529c2>
- Tenenbaum, G., & Eklund, R. C. (2007). *Handbook of Sport Psychology* (Third). John Wiley & Sons, Inc.
- Tomporowski, P. D., Lambourne, K., & Okumura, M. S. (2011). Physical activity interventions and children's mental function: An introduction and overview. *Preventive Medicine*, 52(SUPPL.), S3–S9. <https://doi.org/10.1016/j.ypmed.2011.01.028>
- Tomporowski, P. D., McCullick, B. A., & Horvat, M. (2010). Role of Contextual interference and mental engagement on learning. In *Role of Contextual Interference and Mental Engagement on Learning* (Issue January 2010).
- Tomporowski, P. D., McCullick, B. A., & Pesce, C. (2015). *Enhancing Children's Cognition With Physical Activity Games*. Human Kinetics.
- Tomporowski, P. D., McCullick, B., Pendleton, D. M., & Pesce, C. (2015). Exercise and children's cognition: The role of exercise characteristics and a place for metacognition. *Journal of Sport and Health Science*, 4(1), 47–55. <https://doi.org/10.1016/j.jshs.2014.09.003>
- Travassos, B., Araújo, D., Davids, K., O'Hara, K., Leitão, J., & Cortinhas, A. (2013). Expertise effects on decision-making in sport are constrained by requisite response behaviours-A meta-analysis. *Psychology of Sport and Exercise*, 14(2), 211–219. <https://doi.org/10.1016/j.psychsport.2012.11.002>
- van Maarseveen, M. J. J., Savelsbergh, G. J. P., & Oudejans, R. R. D. (2018). In situ examination of decision-making skills and gaze behaviour of basketball players. *Human Movement Science*, 57(December 2017), 205–216. <https://doi.org/10.1016/j.humov.2017.12.006>

- Wahyuni, A., & Berawi, K. (2016). Pengaruh Aktivitas dan Latihan Fisik Terhadap Fungsi Kognitif Pada Penderita Demensia. *Majority*, 5 No. 4, 13–16.
- Wang, C. H., Chang, C. C., Liang, Y. M., Shih, C. M., Chiu, W. S., Tseng, P., Hung, D. L., Tzeng, O. J. L., Muggleton, N. G., & Juan, C. H. (2013). Open vs. Closed Skill Sports and the Modulation of Inhibitory Control. *PLoS ONE*, 8(2), 4–13. <https://doi.org/10.1371/journal.pone.0055773>
- Ward, N., Paul, E., Watson, P., Cooke, G. E., Hillman, C. H., Cohen, N. J., Kramer, A. F., & Barbey, A. K. (2017). Enhanced Learning through Multimodal Training: Evidence from a Comprehensive Cognitive, Physical Fitness, and Neuroscience Intervention. *Scientific Reports*, 7(1), 1–8. <https://doi.org/10.1038/s41598-017-06237-5>
- Yu, H., & Li, L. (2020). Research on Eye Movement Characteristics of Different Level Basketball Defenders in Sports Decision-making Scenarios. *Journal of Physics: Conference Series*, 1578(1). <https://doi.org/10.1088/1742-6596/1578/1/012159>