

**PENGARUH PROGRAM AKTIVITAS FISIK DAN LINGKUNGAN  
SEKOLAH TERHADAP KEMAMPUAN GERAK, KEBUGARAN  
JASMANI DAN KESEHATAN MENTAL**

DISERTASI

diajukan untuk memenuhi sebagian syarat memperoleh gelar  
Doktor Pendidikan Olahraga



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**PROGRAM STUDI  
PENDIDIKAN OLAHRAGA  
SEKOLAH PASCASARJANA  
UNIVERSITAS PENDIDIKAN INDONESIA  
2021**

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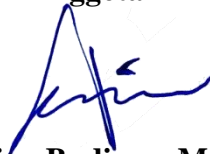
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## **PERNYATAAN KEASLIAN DAN BEBAS PLAGIARISM**

Dengan ini saya menyatakan bahwa disertasi dengan judul “**Pengaruh Program Aktivitas Fisik dan Lingkungan Sekolah terhadap Kemampuan Gerak, Kebugaran Jasmani dan Kesehatan Mental**” ini beserta seluruh isinya adalah benar-benar karya saya sendiri. Saya tidak melakukan penjiplakan atau pengutipan dengan cara-cara yang tidak sesuai dengan etika ilmu yang berlaku dalam masyarakat keilmuan. Atas pernyataan ini, saya siap menanggung resiko/sanksi apabila dikemudian hari ditemukan adanya pelanggaran etika keilmuan atau ada klaim dari pihak lain terhadap keaslian karya saya ini.

Bandung, Agustus 2021

Penulis

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## ABSTRAK

### **Ahmad Chaeroni. 1707696. Pengaruh Program Aktivitas Fisik dan Lingkungan Sekolah terhadap Kemampuan Gerak, Kebugaran Jasmani dan Kesehatan Mental**

Penelitian ini bertujuan untuk mengetahui dan menguji pengaruh program aktivitas fisik dan lingkungan sekolah terhadap kemampuan gerak, kebugaran jasmani dan kesehatan mental. Metode yang digunakan adalah kuasi eksperimen dengan desain *vactorial*. Populasi dalam penelitian ini adalah remaja di Sumatera Barat berjumlah 481.156 orang. Teknik pengambilan sampel menggunakan teknik *cluster sampling*, sehingga diperoleh siswa remaja umur 15-19 tahun (113 pria dan wanita) dijadikan sampel sesuai kebutuhan penelitian. Instrumen yang digunakan untuk mengetahui kemampuan gerak adalah *Barrow Motor Ability Test* (BMA), kebugaran jasmani menggunakan Tes Kebugaran Jasmani Indonesia (TKJI) dan kesehatan mental menggunakan angket. Eksperimen dilaksanakan selama 12 minggu dengan jumlah pertemuan sebanyak satu kali setiap minggu untuk program Pendidikan jasmani dari masing-masing kelompok perlakuan dan untuk program *Out of School Hours Activity* (OSHA) sebanyak tiga kali perminggu. Penelitian ini menerapkan empat kelompok perlakuan yaitu program aktivitas fisik berbasis pendidikan jasmani yang berada di lingkungan sekolah luas (X1) dan lingkungan sekolah sempit (X3), program aktivitas fisik berbasis pendidikan jasmani+OSHA yang berada di lingkungan sekolah luas (X2) dan lingkungan sekolah sempit (X4). Data di analisis menggunakan teknik uji *Kruskal Wallis* pada taraf signifikansi  $\alpha= 0,05$ .

Hasil penelitian menunjukkan bahwa: 1) Terdapat perbedaan pengaruh antara program aktivitas fisik Penjas dan Penjas+OSHA terhadap kemampuan gerak, kebugaran jasmani dan kesehatan mental siswa; 2) Tidak terdapat interaksi antara program aktivitas fisik dengan lingkungan sekolah terhadap kemampuan gerak, demikian pula pada variabel kesehatan mental siswa, akan tetapi pada variable kebugaran jasmani terdapat interaksi; 3) Terdapat perbedaan pengaruh antara program aktivitas fisik Penjas dan Penjas+OSHA terhadap kemampuan gerak, kebugaran jasmani dan kesehatan mental siswa pada lingkungan sekolah terbuka (luas); 4) Terdapat perbedaan pengaruh program aktivitas fisik Penjas dan Penjas+OSHA terhadap kemampuan gerak, kebugaran jasmani dan kesehatan mental siswa pada lingkungan sekolah terbatas (sempit).

**Kata Kunci:** Program Aktivitas Fisik, Lingkungan Sekolah, Kemampuan Gerak, Kebugaran Jasmani dan Kesehatan Mental.

## ABSTRACT

### **Ahmad Chaeroni. 1707696. The Effect of Physical Activity Program and School Environment on Motor Ability, Physical Fitness and Mental Health**

This study aims to determine and examine the effect of physical activity programs and school environment on motor ability, physical fitness and mental health. The method used is a quasi-experimental with a vactorial design. The population in this study were teenagers in West Sumatra found 481.156 people. The sampling technique used cluster sampling technique, so that teenagers aged 15-19 years (113 men and women) were sampled according to research needs. The instrument used to determine movement ability is the Barrow Motor Ability Test (BMA), physical fitness using the Indonesian Physical Fitness Test (TKJI) and mental health using a questionnaire. The experiment was carried out for 12 weeks with the number of meetings once a week for the physical education program of each treatment group and for the Out of School Hours (OSHA) program three times per week. This study applies four treatment groups, namely physical education physical activity programs located in large school environments (X1) and narrow school environments (X3), physical education-based physical activity programs + OSHA located in large school environments (X2) and narrow school environments (X4). Data analysis used the Kruskal Wallis test technique at a significance level of 0.05.

The results showed that: 1) There were differences in the effect of physical activity programs on Physical Education and Physical Education+OSHA on students' motor abilities, physical fitness and mental health; 2) There is no interaction between the physical activity program and the school environment on the ability to move, as well as on the students' mental health variables, but on the physical fitness variable there is an interaction; 3) There is a difference in the effect of physical activity programs on Physical Education and Physical Education + OSHA on the ability to move, physical fitness and mental health of students in an open school environment (wide); 4) There are differences in the effect of physical activity programs on Physical Education and Physical Education + OSHA on the ability to move, physical fitness and mental health of students in a limited (narrow) school environment.

**Keywords:** *Physical Activity Program, School Environment, Motor Ability, Physical fitness and Mental Health.*

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## DAFTAR RUJUKAN

- Ali, M. (2014). *Memahami Riset Perilaku dan Sosial*. Jakarta: Bumi Aksara.
- Alipandie, I. (1984). *Metodik Pendidikan Umum*, Usaha nasional. Surabaya.
- Allen, L. R., Stevens, B., & Harwell, R. (1996). Benefits-based management activity planning model for youth in at-risk environments. *Journal of Park and Recreation Administration*, 14(3), 10-19.
- Almatsier, S. (2009). *Prinsip Dasar Ilmu Gizi*. PT Gramedia Pustaka Utama. Jakarta.
- Andermo, S., Hallgren, M., Nguyen, TTD. et al. (2020). School-related physical activity interventions and mental health among children: a systematic review and meta-analysis. *Sports Med - Open* 6, 25 <https://doi.org/10.1186/s40798-020-00254-x>.
- Annajah, U & Falah N. (2016). Pengaruh Lingkungan Sosial terhadap Motivasi Berprestasi Snak Panti Asuhan Nurul Haq Yogyakarta. *Jurnal Hisbah*,13(1).
- Ansar & Masaong. (2007). *Manajemen Berbasis Sekolah; Teori, Model, dan Implementasi di Sekolah Dasar*. Nurul Jannah.
- Assagioli, R. (2007). *Transpersonal Development The Dimensions Beyond Psychosynthesis*. Scotland: Smiling Wisdom.
- Atkinson, R.L., dkk. (2000). *Hilgards Introduction to Psychology*. (15 th ed). Editor : Smith, Carolyn D. Harcourt College Publishers.
- Ayuningtyas, D., Misnaniarti., Rayhani, M. (2018). Analisis Situasi Kesehatan Mental Pada Masyarakat Di Indonesia Dan Strategi Penanggulangannya. *Jurnal Ilmu Kesehatan Masyarakat*, 9(1):1-10. doi: <https://doi.org/10.26553/jikm.2018.9.1.1-10>.
- Badan Pusat Statistik. (2019). *Jumlah Penduduk Sumatera Barat, 2015 – 2019*. Sumbar.
- Badura, P., Sigmund, E., Madarasova Geckova, A., Sigmundova, D., Sirucek, J., van Dijk, J. P., & Reijneveld, S. A. (2016). Is Participation in Organized Leisure-Time Activities Associated with School Performance in Adolescence?, *PLOS ONE*, 11(4), e0153276. doi:10.1371/journal.pone.0153276.

- Bandura, A. (2012). Social Cognitif Theory. Dalam Lange. P. A. M. V.; Kruglanski, A.W; & Higgins, E.T. (editor). *Handbook of theories of social psychology*. Volume 1. London : Sage Publications Ltd.
- Barbosa, S. C., Coledam, D. H. C., Stabelini Neto, A., Elias, R. G. M., & de Oliveira, A. R. (2016). School environment, sedentary behavior and physical activity in preschool children. *Revista Paulista de Pediatria (English Edition)*, 34(3), 301–308. doi:10.1016/j.rppede.2016.02.003.
- Baron, Robert, A., & Byrne. D. (2012). *Psikologi Sosial jilid 2*. Jakarta: Erlangga.
- Barnett, L. M., Lai S. K., Veldman S.L.C., Hardy L.L., Cliff D.P., Morgan P.J., Zask A., Lubans D.R., Shultz S.P., Ridgers N.D., Rush E, Brown H.L & Okely A.D. (2016). Correlates of gross motor competence in children and adolescents: a systematic review and meta-analysis. *Sports Medicine*. 46(11), 1663-1688, doi: 10.1007/s40279-016-0495-z.
- Baskin, M. L., Dulin-Keita, A., Thind, H., & Godsey, E. (2015). Social and Cultural Environment Factors Influencing Physical Activity Among African-American Adolescents. *Journal of Adolescent Health*, 56(5), 536–542. doi:10.1016/j.jadohealth.2015.01.012.
- Bastaman, H. D. 2001. *Integrasi Psikologi Dengan Islam*. Yogyakarta : Pustaka Pelajar.
- Beighle, A., Morgan, C. F., Le Masurier, G., & Pangrazi, R. P. (2006). Children’s Physical Activity During Recess and Outside of School. *Journal of School Health*, 76(10), 516–520. doi:10.1111/j.1746-1561.2006.00151.x.
- Bennett, B. L., Howel, M. L., and Simri, U. (1983). *Comparative physical education and sport*. Philadelphia: Lea&Febiger.
- Berliana. (2008). *Belajar Pembelajaran dalam Pelatihan Olahraga*. Bandung: FPOK UPI.
- Berlin, J. A. & Colditz, G. A. (1990). A meta-analysis of physical activity in the prevention of coronary heart disease. *American Journal of Epidemiology*, 132, 612-628.
- Berntzen, B., Jukarainen S., Kataja M., Hakkarainen A., Lundbom J., Lundbom N., Tammelin T., Simonen R., Piirilä P., Rissanen A., Kaprio J., Paavonen EJ & Pietiläinen KH. (2018). Physical activity, cardiorespiratory fitness and metabolic outcomes in monozygotic twin

pairs discordant for body mass index . *Scandinavian Journal of Medicine & Science in Sports*, 28 (3), 1048-1055. doi: 10.1111/sms.12975.

- Biddle, S. J. H., & Asare, M. (2011). Physical activity and mental health in children and adolescents: A review of reviews. *British Journal of Sports Medicine*, 45, 886-895, doi:10.1136/bjsports-2011-090185.
- Blair, S. N & Brodney, S. (1999). Effects of physical inactivity and obesity on morbidity and mortality: current evidence and research issues. *Medicine and Science in Sports and Exercise*, 31, S646-S662.
- Bohn-Gettler, C., & Pellegrini, A. (2014). *Recess in primary school: The disjuncture between educational policy and scientific research*. In B. H. Bornstein & R. L. Wiener (Eds.), *Justice, Conflict and Wellbeing* (pp. 313–336). New York, NY: Springer.
- Brittin J, Frerichs L, Sirard JR, Wells NM, Myers BM, Garcia J, et al. (2017) Impacts of active school design on school-time sedentary behavior and physical activity: A pilot natural experiment. *PLoS ONE* 12(12): e0189236. <https://doi.org/10.1371/journal.pone.0189236>.
- Brown, H. E., Atkin, A. J., Panter, J., Wong, G., Chinapaw, M. J. M., & van Sluijs, E. M. F. (2016). Family-based interventions to increase physical activity in children: a systematic review, meta-analysis and realist synthesis. *Obesity Reviews*, 17(4), 345–360. doi:10.1111/obr.12362.
- Brown, W., J., Bauman, A., E., Bull, F., C., & Burton, N., W. (2012). *Development of Evidence-based Physical Activity Recommendations for Adults (18-64 years)*. Report Prepared for The Australian Government Department of Health. Australia.
- Brunes, A., Flanders, W. D., & Augestad, L. B. (2015). The effect of physical activity on mental health among adolescents with and without self-reported visual impairment: The Young-HUNT Study, Norway. *British Journal of Visual Impairment*, 33(3), 183–199. doi:10.1177/0264619615602298.
- Budiana, D., Arif, DN., Mudjihartono. (2017). The Effect of Endurance and Strength Physical Activity Program and Nutrition Education to Obesity Children Life Satisfaction. *OP Conf. Series: Materials Science and Engineering* 180.012194. doi:10.1088/1757-899X/180/1/012194.
- Buckley, J. P., Hedge, A., Yates, T., Copeland, R. J., Loosemore, M., Hamer, M., ... & Dunstan, D. W. (2015). The sedentary office: an expert statement

on the growing case for change towards better health and productivity. *British journal of sports medicine*, 49(21), 1357-1362.

Bukhori, Baidi. (2012). "Hubungan Kebermaknaan Hidup dan Dukungan Sosial Keluarga dengan Kesehatan Mental Narapidana". *Jurnal Addin. Volume 4 no. 1 Januari-Juni 2012*.

Button, B., Trites, S., & Janssen, I. (2013). Relations between the school physical environment and school social capital with student physical activity levels. *BMC Public Health*, 13(1). doi:10.1186/1471-2458-13-1191.

Burns, R. D., Fu, Y., Fang, Y., Hannon, J. C., & Brusseau, T. A. (2017). Effect of a 12-Week Physical Activity Program on Gross Motor Skills in Children. *Perceptual and Motor Skills*, 124(6), 1121–1133. doi:10.1177/0031512517720566.

Cardinal, B. J. (2016). Toward a greater understanding of the syndemic nature of hypokinetic diseases. *Journal of Exercise Science & Fitness*, 14(2), 54–59. doi:10.1016/j.jesf.2016.07.001.

Cedering. (2016). Konsekvenser Av Skolnedläggningar: En Studie Av Barns Och Barnfamiljers Vardagsliv I Samband Med Skolnedläggningar I Ydre Kommun. [Impact of School Closures: a Study of the Daily Life of Children and Families in Connection to School Closures in Ydre]. Uppsala University, Department of Human Geography, Uppsala.

Centers for Disease Control and Prevention. (2013). *Comprehensive school physical activity programs: A guide for schools*. Atlanta, GA: U.S. Department of Health and Human Services.

Cheng, L. A., Mendonça, G., & Farias Júnior, J. C. de. (2014). Physical activity in adolescents: analysis of the social influence of parents and friends. *Jornal de Pediatria*, 90(1), 35–41. doi:10.1016/j.jpmed.2013.05.006.

Chow, B. C., McKenzie, T. L., & Louie, L. (2009). Physical Activity and Environmental Influences during Secondary School Physical Education. *Journal of Teaching in Physical Education*, 28(1), 21–37. doi:10.1123/jtpe.28.1.21.

Coles, M. E., Ravid, A., Gibb, B., George-Denn, D., Bronstein, L. R., & McLeod, S. (2016). Adolescent Mental Health Literacy: Young People's Knowledge of Depression and Social Anxiety Disorder. *Journal of Adolescent Health*, 58(1), 57–62. doi:10.1016/j.jadohealth.2015.09.017.



- Crouter, S. E., Salas, C., & Wiecha, J. (2016). Effects of an afterschool community center physical activity program on fitness and body composition in obese youth. *Journal of Sports Sciences*, *35*(11), 1034–1040. doi:10.1080/02640414.2016.1209305.
- Dalyono, M. (2010). *Psikologi Pendidikan*. Jakarta: Rieneka Cipta.
- Davison, K. K., & Lawson, C. T. (2006). Do attributes in the physical environment influence children's physical activity? A review of the literature. *International journal of behavioral nutrition and physical activity*, *3*(1), 1-17.
- Delidou, E., Matsouka, O., & Nikolaidis, C. (2015). *Influence of school playground size and equipment on the physical activity of students during recess*. *European Physical Education Review*, *22*(2), 215–224. doi:10.1177/1356336x15598790.
- Deporter, B & Mike, H. (2008). *Quantum Learning*. Bandung : Kaifa.
- Depdiknas. (2006). *Kurikulum Tingkat Satuan Pendidikan (KTSP)*. Jakarta: Depdiknas.
- Dauenhauer, B. D., & Keating, X. D. (2011). The Influence of Physical Education on Physical Activity Levels of Urban Elementary Students. *Research Quarterly for Exercise and Sport*, *82*(3), 512–520. doi:10.1080/02701367.2011.10599784.
- Depertemen Kesehatan. (2018). *Potret Sehat Indonesia dari Rresearch kesehatan dasar 2018*. Jakarta: Kemenkes.
- Doane, D. P., & Seward, L. E. (2011). *Applied Statistics in Business & Economics*, McGraw-Hill/Irwin.
- Dobbins, M., Husson, H., DeCorby, K., & LaRocca, R. L. (2013). School-based physical activity programs for promoting physical activity and fitness in children and adolescents aged 6 to 18. *Cochrane Database of Systematic Reviews*. doi:10.1002/14651858.cd007651.pub2.
- Dollman, J. (2018). Social and Environmental Influences on Physical Activity Behaviours. *International Journal of Environmental Research and Public Health*, *15*(1), 169, doi:10.3390/ijerph15010169.
- Dollman, J., Norton, K., & Tucker, G. (2002). Anthropometry, Fitness and Physical Activity of Urban and Rural South Australian Children. *Pediatric Exercise Science*, *14*(3), 297–312. doi:10.1123/pes.14.3.297.

- Domazet, S.L., Tarp J., Huang T., Gejl A.K., Andersen L.B., Froberg K & Bugge A. (2016). Associations of physical activity, sports participation and active commuting on mathematic performance and inhibitory control in adolescents. *PLoS One*, *11(1)*, e0146319, doi: 10.1371/journal.pone.0146319.
- Donnelly, J.E & Lambourne, K. (2011). Classroom-based physical activity, cognition, and academic achievement. *Preventive medicine*.;52:S36-S42.
- Driver, B. L., Brown, P. J., & Peterson, G. L. (1991). Benefits of leisure. In *Preliminary drafts of the chapters in this volume were presented at a workshop of the authors in Snowbird, Utah, May 1989.*. Venture Publishing.
- Economos, C. D., Mueller, M. P., Schultz, N., Gervis, J., Miller, G. F., & Pate, R. R. (2018). Investigating best practices of district-wide physical activity programmatic efforts in US schools– a mixed-methods approach. *BMC Public Health*, *18(1)*. doi:10.1186/s12889-018-5889-4.
- Elizabeth B. H. (2003). *Psikologi Perkembangan*. Jakarta: Erlangga.
- Ericsson, I. (2011). Effects of increased physical activity on motor skills and marks in physical education: an intervention study in school years 1 through 9 in Sweden. *Physical Education & Sport Pedagogy*, *16(3)*, 313–329. doi:10.1080/17408989.2010.545052.
- Erwin, H., Abel M, Beighle A, et al. (2012). The contribution of recess to children’s school-day physical activity. *Journal of Physical Activity and Health* *9*: 442–448.
- Escalante, Y., Backx K., Saavedra JM, et al. (2012) Play area and physical activity in recess in primary schools. *Kinesiology. International Journal of Fundamental and Applied Kinesiology* *44*: 123–129.
- Fairclough, S. J. (2004). Physical education makes you fit and healthy. Physical education’s contribution to young people’s physical activity levels. *Health Education Research*, *20(1)*, 14–23. doi:10.1093/her/cyg101.
- Fairclough, S. J., & Stratton, G. (2006). Effects of a physical education intervention to improve student activity levels. *Physical Education & Sport Pedagogy*, *11(1)*, 29–44. doi:10.1080/17408980500467613.
- Farias, D. F. (2009). Physiological and physico-chemical characterization of dietary fibre from the green seaweed *Ulva fasciata* Delile. *Braz J Biol*.*69(3)*:969-77.

- Fatmawati, Endang. (2015). Technology Acceptance Model (TAM) Untuk Menganalisis Penerimaan Terhadap Sistem Informasi Perpustakaan. *Jurnal Iqra* 09.
- Faught, E.L., Ekwaru J.P., Gleddie D., Storey K.E., Asbridge M & Veugelers P.J. (2017). The combined impact of diet, physical activity, sleep and screen time on academic achievement: a prospective study of elementary school students in Nova Scotia, Canada. *International Journal of Behavioral Nutrition and Physical Activity*, 14(1), 29, doi: 10.1186/s12966-017-0476-0.
- Faught, E.L., Gleddie D., Storey K.E., Davison C.M & Veugelers P.J. (2017). Healthy lifestyle behaviours are positively and independently associated with academic achievement: an analysis of self-reported data from a nationally representative sample of Canadian early adolescents. *PLoS One*, 12(7), e0181938, doi: 10.1371/journal.pone.0181938.
- Faulkner, G., Zeglen, L., Leatherdale, S., Manske, S., & Stone, M. (2014). The relationship between school physical activity policy and objectively measured physical activity of elementary school students: a multilevel model analysis. *Archives of Public Health*, 72(1). doi:10.1186/2049-3258-72-20.
- Ferguson, E., James, D & Mandeley, L. (2002). Factor associated with success in medical school: Systematic review of the literature. *British Medical Journal*, 324: 952-957.
- Finnish National Board of Education (FNBE). (2011). *Perusopetuksen aamu- ja iltapäivätoiminnan perusteet [The national core curriculum for before- and after-school activities for schoolchildren]*. Available at: [https://www.oph.fi/sites/default/files/documents/131412\\_po\\_aamu\\_ja\\_iltapaivatoiminnan\\_perusteet\\_2011.pdf](https://www.oph.fi/sites/default/files/documents/131412_po_aamu_ja_iltapaivatoiminnan_perusteet_2011.pdf) (accessed 2 April 2020).
- Furnham, A., Cook, R., Martin, N., & Batey, M. (2011). Mental health literacy among university students. *Journal of Public Mental Health*, 10(4), 198–210. doi:10.1108/17465721111188223.
- Fraenkel, F., Wallen. N & Hyun. H. (2011). *How to Design and Evaluate Research in Education, 8th Edition -McGraw-Hill Humanities\_Social Sciences\_Languages*. New York: McGraw-Hill Inc.
- Garber, Carol Ewing., et al. (2011). *Quantity and Quality of Exercise for Developing and Maintaining Cardiorespiratory, Musculoskeletal, and*

*Neuromotor Fitness in Apparently Healthy Adults: Guidance for Prescribing Exercise.*

- Gie, T. L. (2000). *Administrasi Perkantoran Modern*. Yogyakarta. Liberty.
- Gouveia, Élvio Rúbio *et al.* (2019). Students' attitude toward physical education: relations with physical activity, physical fitness, and self-concept. In: *The Physical Educator*. vol. 76, no 4, p. 945-963. doi: 10.18666/TPE-2019-V76-I4-8923.
- Greaney, M. L., Sandy A., Sherrie F., Wallington., Perry B. Foley., Lisa M. Quintiliani., Gary G & Bennett. (2017). The effect of a weight gain prevention intervention on moderate-vigorous physical activity among black women: the Shape Program. *International Journal of Behavioral Nutrition and Physical Activity*, 14(139), doi: 10.1186/s12966-017-0596-6.
- Gubbels, J. S., Kremers, S. P. J., van Kann, D. H. H., Stafleu, A., Candel, M. J. J. M., Dagnelie, P. C., ... de Vries, N. K. (2011). Interaction between physical environment, social environment, and child characteristics in determining physical activity at child care. *Health Psychology*, 30(1), 84–90. doi:10.1037/a0021586.
- Guthold, R., Stevens G.A., Riley L.M & Bull FC. (2018). Worldwide trends in insufficient physical activity from 2001 to 2016: a pooled analysis of 358 population-based surveys with 1· 9 million participants. *The Lancet Global Health*, 6:10, Pe1077-e1086, doi: 10.1016/s2214-109x(18)30357-7.
- Ha, A. S., Ng, J. Y. Y., Lonsdale, C., Lubans, D. R., & Ng, F. F. (2019). Promoting physical activity in children through family-based intervention: protocol of the “Active 1 + FUN” randomized controlled trial. *BMC Public Health*, 19(1). doi:10.1186/s12889-019-6537-3.
- Hadi. S. (2000). *Metodologi Research*. Yogyakarta : Andi Yogyakarta.
- Hadiwijoyo, S. S. (2012). *Perencanaan Pariwisata Perdesaan Berbasis Masyarakat (Sebuah Pendekatan Konsep)*. Yogyakarta : Graha Ilmu.
- Hamidah, S. (2014). Pengaruh Self- Efficacy, Lingkungan Keluarga, Lingkungan Sekolah terhadap Minat Berwirausaha Siswa SMK Jasa Boga, *Jurnal Pendidikan Vokasi*, Vol 4, Nomor 2.

- Handy, S. L., Boarnet, M. G., Ewing, R., & Killingsworth, R. E. (2002). How the built environment affects physical activity. *American Journal of Preventive Medicine*, 23(2), 64–73. doi:10.1016/s0749-3797(02)00475-0.
- Harris, M. A. (2018). The relationship between physical inactivity and mental wellbeing: Findings from a gamification-based community-wide physical activity intervention. *Health Psychology Open*, 5(1), 205510291775385. doi:10.1177/2055102917753853.
- Hasbullah. (2013). *Dasar-dasar Ilmu Pendidikan*, Jakarta: Rineka Cipta. Cet. XI.
- Heidarzadeh, M., Zamanzadeh, V., Maghvan, AP, & Oshvandi K. (2010). The effect of physical exercise on physical and psychological problems. *Iran J Nurs Midwifery Res.*;15(1):20-26.
- Hillman, C. H., Buck, S. M., Themanson, J. R., Pontifex, M. B., & Castelli, D. M. (2009). Aerobic fitness and cognitive development: Event-related brain potential and task performance indices of executive control in preadolescent children. *Developmental Psychology*, 45(1), 114–129. doi:10.1037/a0014437.
- Hills Andrew, P., Dengel, R. & Lubans, D. R. (2014). Supporting Public Health Priorities: Recommendations for Physical Education and Physical Activity Promotion in Schools. *Progress in Cardiovascular Diseases* . doi: 10.1016/j.pcad.2014.09.010.
- Hoetomo. (2005). *Kamus Lengkap Bahasa Indonesia*, Surabaya, Mitra pelajar.
- Hollis, J. L., Sutherland, R., Campbell, L., Morgan, P. J., Lubans, D. R., Nathan, N., ... Wiggers, J. (2016). Effects of a “school-based” physical activity intervention on adiposity in adolescents from economically disadvantaged communities: secondary outcomes of the “Physical Activity 4 Everyone” RCT. *International Journal of Obesity*, 40(10), 1486–1493. doi:10.1038/ijo.2016.107.
- Hrafnkelsdottir, S. M., Brychta, R. J., Rognvaldsdottir, V., Gestsdottir, S., Chen, K. Y., Johannsson, E., ... Arngrimsson, S. A. (2018). Less screen time and more frequent vigorous physical activity is associated with lower risk of reporting negative mental health symptoms among Icelandic adolescents. *PLOS ONE*, 13(4), e0196286. doi:10.1371/journal.pone.0196286.

- Huberty, J., Dinkel, D., Coleman, J., Beighle, A., & Apenteng, B. (2012). *The role of schools in children's physical activity participation: staff perceptions. Health Education Research, 27(6), 986–995.* doi:10.1093/her/cys071.
- Hyndman, B., Telford, A., Finch, C. F., & Benson, A. C. (2012). Moving Physical Activity Beyond the School Classroom: A Social-ecological Insight for Teachers of the facilitators and barriers to students' noncurricular physical activity. *Australian Journal of Teacher Education, 37(2).* <http://dx.doi.org/10.14221/ajte.2012v37n2.2>.
- Indra, D. (2005). *Peranan Lingkungan Belajar*. Bandung : Alfabeta.
- Innerd, A. L., Azevedo, L. B., & Batterham, A. M. (2019). The effect of a curriculum-based physical activity intervention on accelerometer-assessed physical activity in schoolchildren: A non-randomised mixed methods controlled before-and-after study. *PLOS ONE, 14(12), e0225997.* doi:10.1371/journal.pone.0225997.
- Institute of Medicine. (2013). *Educating the student body: Taking physical activity and physical education to school*. Washington, DC: The National Academies Press; Available at: <https://doi.org/10.17226/18314>.
- International Physical Activity Questionnaire (IPAQ). (2005). Guidelines for Data Processing and Analysis of the IPAQ.(Online). Tersedia di: <http://www.ipaq.ki.se/scoring.pdf>. Diakses 28 Januari 2019.
- Irianto. D.P. (2004). *Bugar dan Sehat Dengan Olahraga*. Yogyakarta : Andi Offset.
- Ismayanti. (2010). *Pengantar Pariwisata*. Jakarta: PT Gramedia Widiasarana.
- Iswanto & Raharja, N.M. (2015). *Mikrokontroler: Teori dan Praktik Atmega 16 dengan Bahasa C*, Penerbit Deepublish.
- Ivancevich., John, M, dkk. (2008). *Perilaku dan Manajemen Organisasi*, jilid 1 dan 2. Jakarta : Erlangga.
- Jago, R., Macdonald-Wallis, C., Solomon-Moore, E., Thompson, J., L., Lawlor, D., A., & Sebire, S., J. (2017). Associations between participation in organised physical activity in the school or community outside school hours and neighbourhood play with child physical activity and sedentary

time: a cross-sectional analysis of primary school-aged children from the UK. *BMJ Open*, 7(9), e017588. doi:10.1136/bmjopen-2017-017588.

Jakicic, J. M. (2009). The Effect of Physical Activity on Body Weight. *Obesity*, 17(n3s), S34–S38. doi:10.1038/oby.2009.386.

Janssen, I. (2014). Interaction between School Built Environments and Physical Activity Policies and Programs on Student Physical Activity. *Journal of Child and Adolescent Behaviour*, 02(04). doi:10.4172/2375-4494.1000150.

Janssen, I., & LeBlanc, A. G. (2010). Systematic review of the health benefits of physical activity and fitness in school-aged children and youth. *International Journal of Behavioral Nutrition and Physical Activity*, 7(1), 40. doi:10.1186/1479-5868-7-40.

Jhon W. S. (2002). *Adolescence Perkembangan Remaja*. Jakarta: Erlangga.

Johnson, B. L. & Jack, K. N. (1986). *Practical Measurement For Evaluation in Physical Education 4 nd ed*. Macmillan Publishing Company.

Jones, R. A., Downing, K., Rinehart, N. J., Barnett, L. M., May, T., McGillivray, J. A., ... Hinkley, T. (2017). Physical activity, sedentary behavior and their correlates in children with Autism Spectrum Disorder: A systematic review. *PLOS ONE*, 12(2), e0172482. doi:10.1371/journal.pone.0172482.

Kalaja, S. P., Jaakkola, T. T., Liukkonen, J. O., & Digelidis, N. (2012). Development of junior high school students' fundamental movement skills and physical activity in a naturalistic physical education setting. *Physical Education & Sport Pedagogy*, 17(4), 411–428. doi:10.1080/17408989.2011.603124.

Kalaoja & Pietarinen, (2009). Small rural primary schools in Finland: a pedagogically valuable part of the school network. *Int. J. Educ. Res.*, 48 (2009), pp. 109-116.

Kantomaa, M.T., Stamatakis E., Kankaanpää A., Kajantie E., Taanila A & Tammelin T. (2016). Associations of physical activity and sedentary behavior with adolescent academic achievement. *Journal Res Adolesc*, 26(3), 432-442, doi: 10.1111/jora.12203.

Kao, S.-C., Drollette, E. S., Scudder, M. R., Raine, L. B., Westfall, D. R., Pontifex, M. B., & Hillman, C. H. (2016). Aerobic Fitness Is Associated With Cognitive Control Strategy in Preadolescent Children. *Journal of Motor Behavior*, 49(2), 150–162. doi:10.1080/00222895.2016.1161594.

- Kari, J.T., Pehkonen J., Hutri-Kähönen N., Raitakari O.T & Tammelin T.H. (2017). Longitudinal associations between physical activity and educational outcomes. *Medicine & Science in Sports & Exercise*, 49(11), 2158-2166, doi: 10.1249/MSS.0000000000001351.
- Kearns, N. Lewis, T. McCreanor, K & Witten. (2010). School closures as breaches in the fabric of rural welfare: community perspectives from New Zealand. P. Melbourne (Ed.), *Welfare Reform in Rural Places: Comparative Perspectives. Research in Rural Sociology and Development*, vol. 15 (2010), pp. 219-236.
- Kennedy, S. G., Peralta, L. R., Lubans, D. R., Fowweather, L., & Smith, J. J. (2019). Implementing a school-based physical activity program: process evaluation and impact on teachers' confidence, perceived barriers and self-perceptions. *Physical Education and Sport Pedagogy*, 1-16. doi:10.1080/17408989.2019.1571182.
- Kemendiknas. (2010). *Tes Kesegaran Jasmani Indonesia (TKJI) Usia 16-19*. Jakarta. Kemendiknas.
- Kemenkes RI. (2015). *Profil Kesehatan Indonesia tahun 2014*. Jakarta : Kemenkes RI.
- Kiram, Y. (2019). *Belajar Keterampilan Motorik*. Jakarta: Pranada Media Group.
- Knight, N. A. (2015). *Effects of a before school physical activity program on physical activity, musculoskeletal fitness, and cognitive function*. (Master's Thesis, East Carolina University). Retrieved from the Scholarship. (<http://hdl.handle.net/10342/4876>).
- Kolle, E., Solberg, R. B., Säfvenbom, R., Dyrstad, S. M., Berntsen, S., Resaland, G. K., ... Grydeland, M. (2020). The effect of a school-based intervention on physical activity, cardiorespiratory fitness and muscle strength: the School in Motion cluster randomized trial. *International Journal of Behavioral Nutrition and Physical Activity*, 17(1). doi:10.1186/s12966-020-01060-0.
- Korcak, D.J., Madigan, S., Colasanto, M. (2017). *Children's Physical Activity and Depression: A Meta-analysis*. *Pediatrics*, 139(4):e20162266.
- Kriemler, S., Meyer, U., Martin, E., van Sluijs, E. M. F., Andersen, L. B., & Martin, B. W. (2011). Effect of school-based interventions on physical activity and fitness in children and adolescents: a review of reviews and systematic update. *British Journal of Sports Medicine*, 45(11), 923-930. doi:10.1136/bjsports-2011-090186.



- Kremer, P., Elshaug, C., Leslie, E., Toumbourou, J. W., Patton, G. C., & Williams, J. (2014). Physical activity, leisure-time screen use and depression among children and young adolescents. *Journal of Science and Medicine in Sport*, *17*(2), 183–187. doi:10.1016/j.jsams.2013.03.012.
- Kusmaedi, N. (2008). *Olahraga Lansia*. Bandung: FPOK – UPI.
- Kuritz, A., Mall, C., Schnitzius, M., & Mess, F. (2020). Physical Activity and Sedentary Behavior of Children in Afterschool Programs: An Accelerometer-Based Analysis in Full-Day and Half-Day Elementary Schools in Germany. *Frontiers in Public Health*, *8*. doi:10.3389/fpubh.2020.00463.
- Kwon, S., Welch, S. & Mason, M. (2020). Physical education environment and student physical activity levels in low-income communities. *BMC Public Health* **20**, 147. doi: <https://doi.org/10.1186/s12889-020-8278-8>.
- Lahti, A., Rosengren, B. E., Nilsson, J.-Å., Karlsson, C., & Karlsson, M. K. (2018). Long-term effects of daily physical education throughout compulsory school on duration of physical activity in young adulthood: an 11-year prospective controlled study. *BMJ Open Sport & Exercise Medicine*, *4*(1), e000360. doi:10.1136/bmjsem-2018-000360.
- Lehto, S., & Eskelinen, K. (2020). “Playing makes it fun” in out-of-school activities: Children’s organised leisure. *Childhood*, *090756822092314*. doi:10.1177/0907568220923142.
- Lijuan, W., Jiancui, S., & Suzhe, Z. (2016). Parental influence on the physical activity of Chinese children. *European Physical Education Review*, *23*(1), 110–126. doi:10.1177/1356336x16641024.
- Lubans, D., Richards J., Hillman C., Faulkner G., Beauchamp M., Nilsson M., Kelly .P, Smith J., Raine L., Biddle S. (2016). Physical activity for cognitive and mental health in youth: a systematic review of mechanisms. *Pediatrics*, *138*:3. pii: e20161642, doi: 10.1542/peds.2016-1642.
- Lutan, R. (2001). *Asas-asas Pendidikan Jasmani*. Jakarta. Depdiknas.
- Lutan, R. (2000). *Belajar Keterampilan Motorik Pengantar Teori dan Metode*. Jakarta DEPDIBUD.
- Mahendra, A. (2015). *Filsafat Pendidikan Jasmani: Dasar-dasar Pembelajaran Penjas di Sekolah Dasar*. Bandung: CV. Bintang WarliArtika.

- Mahendra, A. (2014). Telaah Kritis terhadap Program PGPJ (Pendidikan Guru Pendidikan Jasmani) di Indonesia. in *ATIKAN: Jurnal Kajian Pendidikan*, Vol.4(2) December, pp.227-238. Bandung, Indonesia: Minda Masagi Press.
- Maksum, A. 2008. *Psikologi Olahraga*. Surabaya : Unesa University Press.
- Ma'mun, M. (2020). *Kebijakan dan Pengembangan Olahraga: Perspektif Historis dan Tantangan Indonesia pada Masa Depan*. Bandung: Lekkas.
- Ma'mun. A. (2015). Development of the Educational Sport in Indonesia: The Policy Study Based on the Law of National Sports System. *Jurnal Kajian Pendidikan*, 5(1).
- Ma'mun. A & Yudha, M. S. (2000). *Perkembangan Gerak dan Belajar Gerak*. Jakarta: Depertemen Pendidikan dan Kebudayaan.
- Mangerud, W., Bjerkeset, O., Lydersen, S., & Indredavik, M. (2014). Physical activity in adolescents with psychiatric disorders and in the general population. *Child and Adolescent Psychiatry and Mental Health*, 8(1), 2. doi:10.1186/1753-2000-8-2.
- Maryana. R. (2010). *Pengelolaan lingkungan belajar*. Jakarta: Kencana Prenada Media Group.
- McCombs J, Whitaker A, PY Yoo. (2017). *The value of out-of-school time programs*. Santa Monica, CA: RAND Corporation. Available at: <https://www.rand.org/pubs/perspectives/PE267.html>.
- McPhie, M.L & Rawana J.S. (2015). The effect of physical activity on depression in adolescence and emerging adulthood: a growth-curve analysis. *Journal of Adolescence*, 40, 83-92, doi: 10.1016/j.adolescence.2015.01.008.
- Morton, K. L., Atkin, A. J., Corder, K., Suhrcke, M., & van Sluijs, E. M. F. (2015). The school environment and adolescent physical activity and sedentary behaviour: a mixed-studies systematic review. *Obesity Reviews*, 17(2), 142–158. doi:10.1111/obr.12352.
- Mota J, Silva P., Santos MP., et al. (2005) Physical activity and school recess time: Differences between the sexes and the relationship between children's playground physical activity and habitual physical activity. *Journal of Sports Sciences* 23: 269–275.

- Mufrihah, A. (2016). Perundungan Reaktif di Sekolah Dasar dan Intervensi Berbasis Nuansa Sekolah. *Jurnal Psikologi*. Volume 43, Nomor 2, 135 –153.
- Muhajir. (2004). *Pendidikan Jasmani Olahraga dan Kesehatan*. Jilid 1. Jakarta: Erlangga.
- Mulyasa, E. (2005). *Menjadi Guru Profesional*. Bandung: PT. Remaja Rosda Karya. Bandung.
- NASPE (National Association for Sport and Physical Education). (2012). *Instructional framework for fitness education in physical education. Guidance document*. Reston, VA: AAHPERD.
- Nassis, G. P., Klentrou, P., Palmeira, A., & Stensel, D. J. (2012). The Influence of Physical Activity on Obesity and Health. *Journal of Obesity*, 1–2. doi:10.1155/2012/298953.
- National Institute of Mental Health (NIMH). (2010). Dikutip 3 April 2019, dari Major depressive disorders among adults: [www.nimh.nih.gov/statistics/1MDD\\_ADULTS.shtm](http://www.nimh.nih.gov/statistics/1MDD_ADULTS.shtm).1.
- Neuman, W. L. (2003). *Social Research Methods: Qualitative And Quantitative Approaches*. Boston : Allyn and Bacon.
- Nisfiannoor, M. (2009). *Pendekatan Statistika Modern untuk Ilmu Sosial*, Jakarta: Salemba Humanika.
- Norton, K., Norton L., & Sadgrove. D. (2010). Position Statement on Physical Activity and Exercise Intensity Terminology. *Journal of Science and Medicine in Sport*.13(5):496–502.
- Notosoedirdjo, M & Latipun. (2005). *Kesehatan Mental: Konsep dan Penerapan* Malang: Penerbit Universitas Muhammadiyah Malang.
- Nursanti & Elly, IS. (2013). Potensi Keanekaragaman Hayati, Iklim dan Serapan Karbon pada Ruang Terbuka Hijau Kampus Mendalo Universitas Jambi. *Jurnal Fakultas Pertanian, Universitas Jambi, Mendalo Darat*, Vol.2 No. 2 April-Juni 2013.
- Oemar, H. (2009). *Proses Belajar Mengajar*. Jakarta: PT. Bumi Aksara.
- Okely T, Salmon J, Vella S, Cliff D, Timperio A, Tremblay M, Trost S, Shilton T, Hinkley T, Ridgers N, Phillipson L, Hesketh K, Parrish A, Janssen X, Brown M, Emmel J, Marino N. (2012). *A systematic review to update the Australian physical activity guidelines for children and young people.*

*Report prepared for the Australian Government Department of Health,*  
Editor, editors. Canberra. Australia: Commonwealth of Australia.

- Ozdemir, A & Yilmaz, O. (2008). Assessment of outdoor school environments and physical activity in Ankara's primary schools. *Journal of Environmental Psychology* 28: 287–300.
- Packham, A., & Street, B. (2019). The Effects of Physical Education on Student Fitness, Achievement, and Behavior. *Economics of Education Review*. doi:10.1016/j.econedurev.2019.04.003.
- Pan, S. Y., Cameron, C., DesMeules, M., Morrison, H., Craig, C. L., & Jiang, X. (2009). Individual, social, environmental, and physical environmental correlates with physical activity among Canadians: a cross-sectional study. *BMC Public Health*, 9(1). doi:10.1186/1471-2458-9-21.
- Pasya, G. K. (2007). *Perlindungan Hutan melalui Kearifan Lokal*. Ebook Pdf.org.
- Pate, R. R. (2006). Promoting Physical Activity in Children and Youth: A Leadership Role for Schools: A Scientific Statement From the American Heart Association Council on Nutrition, Physical Activity, and Metabolism (Physical Activity Committee) in Collaboration With the Councils on Cardiovascular Disease in the Young and Cardiovascular Nursing. *Circulation*, 114(11), 1214–1224. doi:10.1161/circulationaha.106.177052.
- Patel, Harsh et al. (2017). “Aerobic vs anaerobic exercise training effects on the cardiovascular system.” *World Journal of Cardiology*9(2): 134. <http://www.wjgnet.com/1949-8462/full/v9/i2/134.htm>.
- Peraturan Menteri Pendidikan Nasional RI No. 24 Tahun 2007 tentang Standar sarana dan prasarana untuk Sekolah Menengah Atas atau Madrasah Aliyah (SMA/MA). Jakarta.
- Peraturan Menteri Dalam Negeri nomor 2 Tahun 1987 tentang Pedoman Penyusunan Rencana Kota. Jakarta.
- Poerwopoespito, FX., Oerip & Tatang, U.(2000). *Mengatasi Krisis Manusia di Perusahaan*. Jakarta: Grasindo.
- Poitras, V.J., Gray C.E., Borghese M.M., Carson V., Chaput JP., Janssen I., Katzmarzyk P.T., Pate R.R., Connor Gorber S., Kho M.E., Sampson M & Tremblay M.S. (2016). Systematic review of the relationships between objectively measured physical activity and health indicators in

school-aged children and youth. *Applied Physiology, Nutrition, and Metabolism*, 41 (6) Suppl 3, S 197 - S239, doi: 10.1139/apnm-2015-0663.

Pontifex, M. B., Raine, L. B., Johnson, C. R., Chaddock, L., Voss, M. W., Cohen, N. J., ... Hillman, C. H. (2011). Cardiorespiratory Fitness and the Flexible Modulation of Cognitive Control in Preadolescent Children. *Journal of Cognitive Neuroscience*, 23(6), 1332–1345. doi:10.1162/jocn.2010.21528.

Pop, C. L. (2017). Physical Activity, Body Image, and Subjective Well-Being. *Well-Being and Quality of Life - Medical Perspective*. doi:10.5772/intechopen.68333.

Potter, M., Spence, J.C., Boulé, N.G., Stearns, J.A & Carson, V. (2017). Associations between physical activity, screen time, and fitness among 6- to 10-year-old children living in Edmonton, Canada. *Applied Physiology, Nutrition, and Metabolism*, 42(5), 487-494, doi: 10.1139/apnm-2016-0419.

Pramono, A & Sulchan, M. (2014). Kontribusi Makanan Jajan dan Aktivitas Fisik Terhadap Kejadian Obesitas pada Remaja di Kota Semarang. *Journal of the Indonesian Nutrition Association*, 37(2):129-136.

Purwanto. (2008). *Evaluasi Hasil Belajar*. Surakarta: Pustaka Belajar.

Purwanto, N. (2003). *Ilmu Pendidikan Teoritis dan Praktis*. Bandung: Remaja.

Purwanto, N. (1991). *Administrasi dan Supervisi Pendidikan*, Bandung: PT. Remaja Rosdakarya.

Raspberry, C.N., Tiu G.F., Kann L., McManus T., Michael S.L., Merlo C.L., Lee S.M., Bohm M.K., Annor F & Ethier K.A. (2017). Health-related behaviors and academic achievement among high school students — United States, 2015. *MMWR Morb Mortal Wkly Rep*, 66(35), 921-927, doi: 10.15585/mmwr.mm6635a1.

Reed, J. A., Einstein, G., Hahn, E., Hooker, S. P., Gross, V. P., & Kravitz, J. (2010). Examining the Impact of Integrating Physical Activity on Fluid Intelligence and Academic Performance in an Elementary School Setting: A Preliminary Investigation. *Journal of Physical Activity and Health*, 7(3), 343–351. doi:10.1123/jpah.7.3.343.

- Rezende, L. F. M. de, Azeredo, C. M., Silva, K. S., Claro, R. M., França-Junior, I., Peres, M. F. T., ... Eluf-Neto, J. (2015). The Role of School Environment in Physical Activity among Brazilian Adolescents. *PLOS ONE*, *10*(6), e0131342. doi:10.1371/journal.pone.0131342.
- Richard. (2010). *Coping with Stress In a Changing World*. New York: McGraw-Hill.
- Ringenbach, S. D. R., Holzapfel, S. D., Mulvey, G. M., Jimenez, A., Benson, A., & Richter, M. (2016). The effects of assisted cycling therapy (ACT) and voluntary cycling on reaction time and measures of executive function in adolescents with Down syndrome. *Journal of Intellectual Disability Research*, *60*(11), 1073–1085, doi:10.1111/jir.12275.
- Rita, M & Ali. (2010). *Pengelolaan Lingkungan Belajar*. Jakarta: Kencana Prenada Media Group.
- Robert, W. J. (2015). *The University of Wisconsin Population Health Institute*. County health rankings & roadmaps: Physically active classrooms. Available at: <http://www.countyhealthrankings.org/policies/physically-active-classrooms>.
- Robinson, LE & Goodway. JD. (2009). Instructional climates in preschool children who are at risk. Part I: Object-control skill development. *Research Quarterly for Exercise and Sport*. ;80(3):533–542.
- Rosdiana, R. (2018). Intervensi Gaya Hidup terhadap Pencegahan Obesitas pada Remaja di SMP Khadijah Kota Makassar. *The Indonesian Journal of Health Promotion*, Vol 1, No 2, doi : 10.31934/mppki.v1i2.220.
- Sallis, J. F., Johnson, M. F., Calfas, K. J., Caparosa, S., & Nichols, J. F. (1997). Assessing Perceived Physical Environmental Variables that May Influence Physical Activity. *Research Quarterly for Exercise and Sport*, *68*(4), 345–351. doi:10.1080/02701367.1997.10608015.
- Sallis, JF., McKenzie TL, Conway TL, Elder JP, Prochaska JJ, Brown M, Zive MM, Marshall SJ, Alcaraz JE. (2003). Environmental interventions for eating and physical activity: A randomized controlled trial in middle schools. *American Journal of Preventive Medicine*;24(3):209–217.
- Sallis, JF., Prochaska JJ & Taylor, W. S. (2000). A review of correlates of physical activity of children and adolescents. *Medicine and Science in Sports and Exercise* 32: 963–975.

- Santrock, J.W. (2012). *Life-Span Development (Perkembangan Masa Hidup Edisi 13 Jilid 1, Penerjemah: Widyasinta,B)*. Jakarta: Erlangga.
- Santrock, J.W. (2003). *Adolescence perkembangan remaja*. Jakarta: Erlangga.
- Sari, D.P. (2010). *Keragaan Aktifitas fisik, kondisi gigi, status kesehatan dan pola konsumsi pangan lansia di kota Bogor*. Bogor: Fakultas Ekologi Manusia, Institut Pertanian Bogor.
- Savitri, R. (2003). *Kecemasan Bagaimana Mengatasi Penyebabnya*. Jakarta: Pustaka Populer Obor.
- Semiun, Y. (2006). *Kesehatan Mental 3*, Yogyakarta: Penerbit Kanisius.
- Sekretaris Kemenpora RI. (2010). *Penyajian Data dan Informasi Statistik Keolahragaan Tahun 2010*. Jakarta: Kemenpora RI.
- Schaeffer, D. J., Krafft, C. E., Schwarz, N. F., Chi, L., Rodrigue, A. L., Pierce, J. E., ... McDowell, J. E. (2014). An 8-month exercise intervention alters frontotemporal white matter integrity in overweight children. *Psychophysiology*, *51*(8), 728–733. doi:10.1111/psyp.12227.
- Shearer, E. M., & Moore, B. A. (2013). The Effects of Physical Activity on the Physical and Psychological Health of Adolescents. *Handbook of Adolescent Health Psychology*, 165–174. doi:10.1007/978-1-4614-6633-8\_12.
- Sheu-jen, H., Wen-chi, H., Patricia, A. S., & Jackson, P. W. (2010). Neighborhood environment and physical activity among Urban and Rural Schoolchildren in Taiwan. *Health & Place*, *16*(3), 470–476. doi:10.1016/j.healthplace.2009.12.004.
- Shofianty, N., Widiatoro, & Pramudita. (2007). *Wahana Ips*. Jakarta: Yudistira.
- Sihombing, S. (2004). *Manajemen Sumber Daya Manusia*. Jakarta: Balai Pustaka.
- Singh, K. (2013). The Impact of Physical Education/Activity and Motor Development on Academic Achievement (March 12, 2013). Available at SSRN: <https://sci-hub.se/https://ssrn.com/abstract=2231958> or <https://sci-hub.se/http://dx.doi.org/10.2139/ssrn.2231958>.
- Sirajuddin. (2016). Pengaruh Intervensi Gizi Olah Raga terhadap Kadar Kolesterol, Asupan Karbohidrat, Protein, Lemak dan Volume Oksigen (VO2) Maksimum Usia Dewasa. *Journals Media Kesehatan Politeknik Kesehatan Makassar*, doi: 10.32382/medkes.v11i2.225.

- Slameto. (2003). *Belajar dan faktor-faktor yang mempengaruhinya*. Jakarta: PT. Rineka Cipta.
- Soares, D. B., Porto, E., Marco, A. de, Azoni, C. A. S., & Capelatto, I. V. (2015). Influência da atividade física no desempenho motor de crianças com queixas de dificuldades de aprendizagem. *Revista CEFAC, 17(4)*, 1132–1142. doi:10.1590/1982-0216201517420014.
- Starc, G., & Strel, J. (2012). Influence of the quality implementation of a physical education curriculum on the physical development and physical fitness of children. *BMC Public Health, 12(1)*. doi:10.1186/1471-2458-12-61.
- Strath, S. J. et al. (2013). Guide to the Assessment of Physical Activity: Clinical and Research Applications. pp. 2259–2279. doi: 10.1161/01.cir.0000435708.67487.da.
- Sudjana, N. (2005). *Dasar-dasar Proses\Belajar Mengajar*. Bandung. Sinar Baru Algensindo.
- Suharti & Eka. K. D. (2017). Pengaruh Senam Semangat Pagi (Ssp) Terhadap Peningkatan Kebugaran Siswa Kelas Xi Sman 4 Sidoarjo. *Jurnal Pembelajaran Olahraga* <http://ojs.unpkediri.ac.id/index.php/pjk/index> Volume 3 Nomor 2 Tahun 2017.
- Suherman, A. (2009). *Revitalisasi Pengajaran Dalam Pendidikan Jasmani*. Bandung:FPOK UPI.
- Sugiyono. (2016). *Metode Penelitian Kuantitatif, Kualitatif dan R&D*. Bandung: PT Alfabet.
- Sugiyono. (2012). *Metode Penelitian Kuantitatif Kualitatif dan R&D*. Bandung: Alfabeta.
- Sukmadinata. (2009). *Landasan Psikologi dan Proses Pendidikan*. Bandung: PT Remaja Rosdakarya.
- Sumarto & Hetifa Sj. (2003). *Inovasi, Partisipasi dan Good governance*. Bandung: Yayasan Obor Indonesia.
- Supardi, I. (2003). *Lingkungan Hidup dan Kelestariannya* (Bandung : PT Alumni).
- Sutrisno, H. (2000). *Analisis Regresi*. Yogyakarta ; Andi.
- Syed Ali, S. K., Zahidi, M. A., & Samad, R. S. A. (2014). Influence of school environment in the teaching and learning of physical education. Turkish



*Journal of Sport and Exercise*, 16(2), 70–70. doi:10.15314/tjse.201428108.

- Sylejmani, B., Myrtaj, N., Maliqi, A., Gontarev, S., Georgiev, G., & Kalac, R. (2019). Physical fitness in children and adolescents in rural and urban areas. *Journal of Human Sport and Exercise*, in press. doi:<https://doi.org/10.14198/jhse.2019.144.15>.
- Tandon, P., Grow, H. M., Couch, S., Glanz, K., Sallis, J. F., Frank, L. D., & Saelens, B. E. (2014). Physical and social home environment in relation to children's overall and home-based physical activity and sedentary time. *Preventive Medicine*, 66, 39–44. doi:10.1016/j.ypmed.2014.05.019.
- Tercedor, P., Villa-González, E., Ávila-García, M., Díaz-Piedra, C., Martínez-Baena, A., Soriano-Maldonado, A., ... Huertas-Delgado, F. J. (2017). A school-based physical activity promotion intervention in children: rationale and study protocol for the PREVIENE Project. *BMC Public Health*, 17(1). doi:10.1186/s12889-017-4788-4.
- Thomas, J. R., Nelson, J. K., & Silverman, S. J. (2005). *Research Methods in Physical Activity*. United States of America: Human Kinetics.
- Thompson PD, Buchner D, Pina IL, Balady GJ, Williams MA, Marcuss BH, et al. (2003). Exercise and physical activity in the prevention and treatment of atherosclerotic cardiovascular disease a statement from the council on clinical cardiology (subcommittee on exercise, rehabilitation, and prevention) and the council on nutrition, physical activity, and metabolism (subcommittee on physical activity). *AHA Scientific Statement. Circulation*. 2003;107: 3109- 116. available at <http://www.circulationaha.org>.
- Toftager, M., Christiansen, L. B., Ersbøll, A. K., Kristensen, P. L., Due, P., & Troelsen, J. (2014). Intervention Effects on Adolescent Physical Activity in the Multicomponent SPACE Study: A Cluster Randomized Controlled Trial. *PLoS ONE*, 9(6), e99369. doi:10.1371/journal.pone.0099369.
- Trost, SG. (2007). Active education: Physical education, physical activity, and academic performance. Active Living Research. A National Program of the Robert Wood Johnson Foundation. [www.activelivingresearch.org](http://www.activelivingresearch.org)–Diakses Maret 2019.
- Undang Undang RI. (2009). *Tentang Pengelolaan Lingkungan Hidup*. Jakarta. Kementerian Lingkungan Hidup.

- Undang Undang Republik Indonesia Nomor 6 Tahun 2014. Tentang desa. Jakarta
- OECD. Organization for Economic Cooperation and Development. (2015). PISA 20 Database. Program for Internasional Student Assesment (PISA) Result from PISA 2015. [www.oecd.org/pisa](http://www.oecd.org/pisa).
- O'Dwyer, M. V., Fairclough, S. J., Knowles, Z., & Stratton, G. (2012). Effect of a family focused active play intervention on sedentary time and physical activity in preschool children. *International Journal of Behavioral Nutrition and Physical Activity*, *9*(1), 117. doi:10.1186/1479-5868-9-117.
- Van Hecke, L., Deforche, B., Van Dyck, D., De Bourdeaudhuij, I., Veitch, J., & Van Cauwenberg, J. (2016). Social and Physical Environmental Factors Influencing Adolescents' Physical Activity in Urban Public Open Spaces: A Qualitative Study Using Walk-Along Interviews. *PLOS ONE*, *11*(5), e0155686. doi:10.1371/journal.pone.0155686.
- Von Sommoggy J, Rueter J, Curbach J, Helten J, Tittlbach S and Loss J (2020) How Does the Campus Environment Influence Everyday Physical Activity? A Photovoice Study Among Students of Two German Universities. *Front. Public Health* 8:561175. doi: 10.3389/fpubh.2020.561175.
- Yudik, P. (2013). *Kesadaran Masyarakat Berolahraga Untuk Peningkatan Kesehatan Dan Pembangunan Nasional*. MEDIKORA ,Vol XI. No.2.
- Yusuf, S. (2001). *Psikologi Perkembangan Anak dan Remaja*. Bandung : PT. Remaja Rosdakarya.
- Wang, J., Lee, K., & Kwan, M.-P. (2018). Environmental Influences on Leisure-Time Physical Inactivity in the U.S.: An Exploration of Spatial Non-Stationarity. *ISPRS International Journal of Geo-Information*, *7*(4), 143. doi:10.3390/ijgi7040143.
- Wang, X., Liu, Q.-M., Ren, Y.-J., Lv, J., & Li, L.-M. (2015). Family influences on physical activity and sedentary behaviours in Chinese junior high school students: a cross-sectional study. *BMC Public Health*, *15*(1). doi:10.1186/s12889-015-1593-9.
- Wassenaar, T.M., Wheatley, C.M., Beale, N. et al. (2019). Effects of a programme of vigorous physical activity during secondary school physical education on academic performance, fitness, cognition, mental health and the brain of adolescents (Fit to Study): study protocol for a cluster-randomised trial. *Trials* **20**, 189. <https://doi.org/10.1186/s13063-019-3279-6>.

- Wechsler, H., Devereaux, R. S., Davis, M., & Collins, J. (2000). Using the School Environment to Promote Physical Activity and Healthy Eating. *Preventive Medicine, 31*(2), S121–S137. doi:10.1006/pmed.2000.0649.
- Widodo. (2014). Strategi Peningkatan Aktivitas Jasmani Siswa Sekolah Dasar di Luar Pembelajaran Pendidikan Jasmani, Olahraga, dan Kesehatan di Indonesia. *Jurnal Pendidikan dan Kebudayaan*. Kemendikbud. doi: 10.24832/jpnk.v20i2.144.
- Wilk, P., Clark, A. F., Maltby, A., Smith, C., Tucker, P., & Gilliland, J. A. (2018). Examining individual, interpersonal, and environmental influences on children’s physical activity levels. *SSM - Population Health, 4*, 76–85. doi:10.1016/j.ssmph.2017.11.004.
- World Health Organization. (2020). WHO Guidelines On Physical Activity And Sedentary Behaviour, Geneva: World Health Organization. Licence: CC BY-NC-SA 3.0 IGO. CIP data are available at <http://apps.who.int/iris>.
- World Health Organization. (2018). Global action plan on physical activity 2018–2030. More active people for a healthier world. *World Health Organization*, License: CC BY-NC-SA 3.0 IGO. <http://www.who.int/iris/handle/10665/272722>.
- World Health Organization. (2012). Regional Office for Europe & Department of Public Health, University of Oxford, United Kingdom. Young and physically active : a blueprint for making physical activity appealing to youth. Copenhagen : *WHO Regional Office for Europe*. <http://www.who.int/iris/handle/10665/107304>.
- Wuest D.A, Bucher C.A. (1999). Historical foundations of physical education and sport. In: Wuest DA, Bucher CA, eds. *Foundations of Physical Education and Sport*. 13th ed. Boston, Mass: WCB/McGraw Hill; 1999: 146–193.
- Zask, A., Van B. E., Barnett L, et al. (2001) Active school playgrounds-myth or reality? Results of the “move it groove it” project. *Preventive Medicine 33*: 402–408