DAFTAR PUSTAKA

Adeline, M., & Arieselia, Z. (2017). *Hubungan antara perilaku sedenter dan indeks massa tubuh mahasiswa kedokteran universitas atma jaya angkatan 2017 correlation between sedentary behavior and body mass index in atma jaya university medical students class of 2017*. (Skripsi, Universitas Atma Jaya, 2017). Diakses dari http://ejournal.atmajaya.ac.id.

Alasmari, H. D., Al-Shehri, A. D., Aljuaid, T. A., Alzaidi, B. A., & Alswat, K. A. (2017). Relationship Between Body Mass Index and Obesity Awareness in School Students. *Journal of Clinical Medicine Research*, *9*(6), 520.

Andersson, C., Lyass, A., Larson, M. G., Spartano, N. L., Vita, J. A., Benjamin, E. J., Murabito, J. M., Esliger, D. W., Blease, S. J., & Hamburg, N. M. . et al. (2015). Physical Activity Measured by Accelerometry and its Associations with Cardiac Structure and Vascular Function in Young and Middle-Aged Adults. *J. Am. Heart Assoc*, *4*.

Andini, A., & Indra, E. N. (2016). Perbedaan pengaruh frekuensi latihan senam aerobik terhadap penurunan persentase lemak tubuh dan berat badan pada members wanita. *Medikapora*, *50*, 39–52.

Anjarwati, R. (2019). *Hubungan antara aktivitas fisik dengan indeks massa tubuh mahasiswa pjkr semester 4 di fakultas ilmu keolahragaan universitas negeri yogyakarta tahun 2019.* (Skripsi, Universitas Negeri Yogyakarta, 2019). Diakses dari http://eprints.uny.ac.id.

Ariani, N. L., & Masluhiya, S. (2017). *Keterkaitan aktivitas fisik dengan indeks massa tubuh (imt) siswa sd kota malang*. (Skripsi, Universitas Tribhuwana Tunggadewi, 2017). Diakses dari https://jurnal.unitri.ac.id.

Ashe, M. C., Michalowski, V. I., Chudyk, A. M., Gerstorf, D., Madden, K. M., & Hoppmann, C. A. (2020). Linked lives: exploring gender and sedentary behaviors in older adult couples. *Journal of Applied Gerontology*, *39*(10), 1106–1114. https://doi.org/10.1177/0733464819868060.

Bawadi, H., Hassan, S., Shanbeh Zadeh, A., Sarv, H., Kerkadi, A., Tur, J. A., & Shi, Z. (2020). Age and gender specific cut-off points for body fat parameters among adults in Qatar. *Nutrition Journal*, *19*(1), 1–5. https://doi.org/10.1186/s12937-020-00569-1.

Besti. (2019). *Hubungan keturunan, aktivitas fisik, durasi tidur terhadap obesitas pada remaja di sma 13 padang tahun 2019*. (Skripsi, Stikes Perintis Padang, 2019). Diakses dari http://repo.stikesperintis.ac.id.

Bradbury, K. E., Guo, W., Cairns, B. J., Armstrong, M. E. G., & Key, T. J. (2017). Association between physical activity and body fat percentage, with adjustment for BMI: A large cross-sectional analysis of UK Biobank. *BMJ Open*, *7*(3), 1–10. https://doi.org/10.1136/bmjopen-2016-011843.

Branco, B. H. M., Valladares, D., de Oliveira, F. M., Carvalho, I. Z., Marques, D. C., Coelho, A. A., de Oliveira, L. P., & Bertolini, S. M. M. G. (2019). Effects of the order of physical exercises on body composition, physical fitness, and cardiometabolic risk in adolescents participating in an interdisciplinary program focusing on the treatment of obesity. *Frontiers in Physiology*, *10*(AUG), 1–11. https://doi.org/10.3389/fphys.2019.01013.

Carson, V., Hunter, S., Kuzik, N., Wiebe, S. A., Spence, J. C., Friedman, A., Tremblay, M. S., Slater, L., & Hinkley, T. (2016). Systematic review of physical activity and cognitive development in early childhood. *J. Sci. Med. Sport*, *19*, 573–578. https://doi.org/10.1016/j.jsams.2015.07.011.

Chaput J, Klingenberg L, Rosenkilde M, Gilbert J, Tremblay A, Sj A. Physical Activity Plays an Important Role in Body Weight Regulation. 2011;2011. doi:10.1155/2011/360257.

Cheng, L., Pohlabeln, H., Ahrens, W., Lauria, F., Veidebaum, T., Chadjigeorgiou, C., Molnár, D., Eiben, G., Michels, N., Moreno, L. A., Page, A. S., Pitsiladis, Y., & Hebestreit, A. (2020). Cross-sectional and longitudinal associations between physical activity, sedentary behaviour and bone stiffness index across weight status in European children and adolescents. *International Journal of Behavioral Nutrition and Physical Activity*, *17*(1), 1–13. https://doi.org/10.1186/s12966-020-00956-1.

Damian, M., oltean, A., & damian, C. (2018). The Impact of sedentary behavior on health and the need for physical activity in children and adolescents. *Revista Romaneasca Pentru Educatie Multidimensionala*, *10*(1), 71. https://doi.org/10.18662/rrem/19.

Drenowatz, C., Gribben, N., Wirth, M. D., Hand, G. A., Shook, R. P., Burgess, S., & Blair, S. (2016). The association of physical activity during weekdays and weekend with body composition in young adults. *J. Obes.*, 1–8. https://doi.org/10.1155/2016/8236439.

Easwaran, M., Sivasubramanian, P., & Kannan, G. (2019). Prevalence of central obesity and its association with sociodemographic profile among young adults attending Outdoor Patient Department of Community Health Centre in Madurai, Tamil Nadu. *International Journal of Medical Science and Public Health*, *8*(0), 1. https://doi.org/10.5455/ijmsph.2019.0719721092019.

Effendy, S., Gunawan, M. F., Lintang, D., Argoputra, A., Dian, P., & Abraham, Y. B. (2018). Hubungan Aktivitas Fisik Terhadap Kejadian Obesitas Berdasarkan Body Fat Percentage Di Desa Banjaroyo, Kalibawang, Kulon Progo, D.I. Yogyakarta. *Jurnal Farmasi Sains Dan Komunitas*, *15*(1), 29–36.

Ekasari, M. F., Made Riasmini, N., & Hartini, T. (2019). *Meningkatkan kualitas hidup lansia konsep dan berbagai usia*. Wineka Media.

Ekelund, U., Steene-Johannessen, J., Brown, W. J., Fagerland, M. W., Owen, N., Powell, K. E., Bauman, A., Lee, I. M., Ding, D., Heath, G., Hallal, P. C., Kohl, H. W., Pratt, M., Reis, R., Sallis, J., Aadahl, M., Blot, W. J., Chey, T.,

Deka, A., … Yi-Park, S. (2016). Does physical activity attenuate, or even eliminate, the detrimental association of sitting time with mortality? A harmonised meta-analysis of data from more than 1 million men and women. *The Lancet*, *388*(10051), 1302–1310. https://doi.org/10.1016/S0140-6736(16)30370-1.

Farradika, Y., Umniyatun, Y., Nurmansyah, M. I., & Jannah, M. (2019). Perilaku aktivitas fisik dan determinannya pada mahasiswa fakultas ilmu - ilmu kesehatan universitas muhammadiyah prof . dr . hamka the behavior of physical activity and determinants of student at faculty health science , University of Muhammadiyah. *Arkesmas*, *4*(1), 134–142.

Gonçalves, V. O., Mart, J. P., By, T., & Inacio, L. (2018). Articles gender and physical exercise in adolescents. *Cadernos de Pesquisa*, *48*(170), 1114–1128.

Grasdalsmoen, M., Eriksen, H. R., Lønning, K. J., & Sivertsen, B. (2019). Physical exercise and body-mass index in young adults: A national survey of Norwegian university students. *BMC Public Health*, *19*(1), 1–9. https://doi.org/10.1186/s12889-019-7650-z.

Gualdi-Russo, E., Rinaldo, N., Toselli, S., & Zaccagni, L. (2021). Associations of physical activity and sedentary behaviour assessed by accelerometer with body composition among children and adolescents: A scoping review. *Sustainability (Switzerland)*, *13*(1), 1–19. https://doi.org/10.3390/su13010335.

Harmouche-Karaki, M., Mahfouz, M., Mahfouz, Y., Fakhoury-Sayegh, N., & Helou, K. (2020). Combined effect of physical activity and sedentary behavior on body composition in university students. *Clinical Nutrition*, *39*(5), 1517–1524. https://doi.org/10.1016/j.clnu.2019.06.015.

Huda, N. N., Bagus, I. G., Dharma, B., & Wasityastuti, W. (2016). Aplikasi metode sequential three-stage integer goal programming untuk penjadwalan kuliah pendidikan dokter sistem blok: studi kasus. *Jurnal Pendidikan Kedokteran Indonesia: The Indonesian Journal of Medical Education*. *5*(1), 29–44.

Jura, M. & Kozak, L. P. Obesity and Related Consequences to Ageing. Age (Omaha). 38, 1–18 (2016).

Joy, A. M., Panchu, P., Bahuleyan, B., Vijayan, V., & Jojy, J. (2018). Age and sex variation in the distribution of visceral fat among healthy doctors. *International Journal of Research in Medical Sciences*, *7*(1), 186. https://doi.org/10.18203/2320-6012.ijrms20185378.

Keating, S. E., Parker, H. M., Pavey, T. G., Baker, M. K., Caterson, I. D., George, J., & Johnson, N. A. (2016). Objectively Quantified Physical Activity and Sedentary Behavior in Predicting Visceral Adiposity and Liver Fat. *Journal of Obesity*, *2016*. https://doi.org/10.1155/2016/2719014.

Khoiriyah, W. (2019). *Hubungan smartphone addiction dan sedentary lifestyle dengan kejadian status gizi lebih pada remaja.* (Doctoral Dissertation, Universitas Airlangga, 2019). Diakses dari http://repository.unair.ac.id.

Kolotkin, R. L., & Andersen, J. R. (2017). A systematic review of reviews: exploring the relationship between obesity, weight loss and health-related quality of life. *Clinical Obesity*, *7*(5), 273–289. https://doi.org/10.1111/cob.12203.

Kristiyandaru, A., Christina, S., Wibowo, S., Wahyudi, H., Ashadi, K., Himawan, I., Ridwan, M., Wijaya, A., Fitroni, H., Budi Prakoso, B., Al Ardha, A., & Sifaq, A. (2020). *Pendidikan jasmani sadarkan arti hidupku*. Zifatama Jawara.

Kurniasari, F. N., Harti, L. B., Ariestiningsih, A. D., Wardhani, S. O., & Nugroho, S. (2017). *Buku ajar gizi dan kanker*. Universitas Brawijaya Press.

Kusumawardhani, I. (2016). Hubungan antara indeks massa tubuh dengan status periodontal. *Poltekkes Kememkes Yogyakarta*, *4*(2), 8–22. http://eprints.poltekkesjogja.ac.id/239/.

Kyral, A. M., Shipherd, A. M., & Hearon, C. M. (2019). The effect of moderate intensity aerobic exercise on affect and exercise intention in active and inactive college students. *International Journal of Exercise Science*, *12*(5), 1070–1079.

Langhammer, B., Bergland, A., & Rydwik, E. (2018). The importance of physical activity exercise among older people. *BioMed Research International*, *2018*, 13–15. https://doi.org/10.1155/2018/7856823.

Laredo-Aguilera, J., Carmona-Torres, J., García-Pinillos, F., & Latorre-Román. (2018). Effects of a 10-week functional training programme on pain, mood state, depression, and sleep in healthy older adults. *Psychogeriatrics*, *18*, 292–298. https://doi.org/10.1111/psyg.12323.

Laredo-Aguilera, J. ., Cobo-Cuenca, A. I., Santacruz-Salas, E., Martins, M. M., Rodríguez-Borrego, M. A., López-Soto, P. J., & Carmona-Torres, J. M. (2019). Levels of physical activity, obesity and related factors in young adults aged 18–30 during 2009–2017. *International Journal of Environmental Research and Public Health*, *16*(20). http://www.embase.com/search/results?subaction=viewrecord&from=export&id=L2002839361%0Ahttp://dx.doi.org/10.3390/ijerph16204033.

Lestari, K. D. P., Wahyuni, N., Nugraha, M. H. S., & Tianing, N. W. (2020). Hubungan indeks massa tubuh, persentase lemak total tubuh dan aktivitas fisik terhadap tingkat volume oksigen maksimal pada remaja putri di denpasar selatan. *Majalah Ilmiah Fisioterapi Indonesia*, 8(1), 28-35.

Li, Y., Wang, H., Wang, K., Wang, W., Dong, F., Qian, Y., Gong, H., Xu, G., Li, G., Pan, L., Zhu, G., & Shan, G. (2017). Optimal body fat percentage cut-off values for identifying cardiovascular risk factors in Mongolian and Han adults: A population-based cross-sectional study in Inner Mongolia, China. *BMJ Open*, *7*(4), 1–9. https://doi.org/10.1136/bmjopen-2016-014675.

Macek, P., Terek-Derszniak, M., Biskup, M., Krol, H., Smok-Kalwat, J., Gozdz, S., & Zak, M. (2020). Assessment of age-induced changes in body fat percentage and bmi aided by bayesian modelling: A cross-sectional cohort study in middle-aged and older adults. *Clinical Interventions in Aging*, *15*, 2301–2311. https://doi.org/10.2147/CIA.S277171.

MacEwen, B. T., Saunders, T. J., J.MacDonald, D., & Burr, J. F. (2017). Sit-stand desks to reduce workplace sitting time in office workers with abdominal obesity: a randomized controlled trial. *Journal of Physical Activity & Health*, *14*(9), 710–715. https://doi.org/https://doi.org/10.1123/jpah.2016-0384.

Martins, P. C., Lima, T. R. de, & Silva, D. A. S. (2018). Association between different contexts of physical activity and abdominal obesity and excess weight in adolescents. *Motriz: Revista de Educação Física*, *23*(spe2), 1–8. https://doi.org/10.1590/s1980-6574201700si00104.

Miko A, Pratiwi M. Hubungan Pola Makan dan Aktivitas Fisik dengan Kejadian Obesitas Mahasiswa Politeknik Kesehatan Kemenkes Aceh. AcTion: Aceh Nutrition Journal. 2017;2(1):1-5.

Moulin, M. S., & Irwin, J. D. (2017). An assessment of sedentary time among undergraduate students at a canadian university. *International Journal of Exercise Science*, *10*(8), 1116–1129. http://www.intjexersci.com.

Myers, A., Gibbons, C., Finlayson, G., & Blundell, J. (2017). Associations among sedentary and active behaviours, body fat and appetite dysregulation: Investigating the myth of physical inactivity and obesity. *British Journal of Sports Medicine*, *51*(21), 1540–1545. https://doi.org/10.1136/bjsports-2015-095640.

Ng, M., Fleming, T., Robinson, M., Thomson, B., Graetz, N., Margono, C., Mullany, E. C., Biryukov, S., Alfonso, R., Ali, M. K., Ali, R., Guzman, N. A., Ammar, W., Anwari, P., Banerjee, A., Chowdhury, R., Courville, K. J., Criqui, M. H., Cundiff, D. K., … Yatsuya, H. (2014). Global , regional , and national prevalence of overweight and obesity in children and adults during 1980 – 2013 : a systematic analysis for the Global Burden of Disease Study 2013. 384. https://doi.org/10.1016/S0140-6736(14)60460-8.

Nisa, N. C., & Rakhma, L. R. (2019). Hubungan persepsi body image dengan asupan lemak dan komposisi lemak tubuh pada siswi di man 2 surakarta. *Jurnal Gizi Masyarakat Indonesia: The Journal of Indonesian Community Nutrition*, *8*(1). https://doi.org/10.30597/jgmi.v8i1.3962.

Noviantika, V. (2020). *Analisis hubungan perilaku sedentari dengan tekanan darah tinggi, obesitas sentral, dan glukosa darah puasa terganggu sebagai komponen sindrom metabolik pada mahasiswa preklinik fakultas kedokteran universitas hasanuddin angkatan 2017*. (Skripsi, Universitas Hasanuddin, 2020). Diakses dari http://repository.unhas.ac.id.

Nugroho, A. R. (2018). Pengaruh sistem blok praktek terhadap kompetensi mahasiswa jurusan teknologi pengolahan kulit politeknik atk yogyakarta. *Berkala Penelitian Teknologi Kulit, Sepatu, Dan Produk Kulit.*, *17*(1), 26–45.

Paley, C. A., & Johnson, M. I. (2018). Abdominal obesity and metabolic syndrome: Exercise as medicine? *BMC Sports Science, Medicine and Rehabilitation*, *10*(1), 1–8. https://doi.org/10.1186/s13102-018-0097-1.

Panahi, S., & Tremblay, A. (2018). Sedentariness and Health: Is Sedentary Behavior More Than Just Physical Inactivity? *Frontiers in Public Health*, *6*(September), 1–7. https://doi.org/10.3389/fpubh.2018.00258.

Peterson, N. E., Sirard, J. R., Kulbok, P. A., DeBoer, M. D., & Erickson, J. M. (2018). Sedentary behavior and physical activity of young adult university students. *Research in Nursing and Health*, *41*(1), 30–38. https://doi.org/10.1002/nur.21845.

Piirtola, M., Kaprio, J., Svedberg, P., Silventoinen, K., & Ropponen, A. (2020). Associations of sitting time with leisure-time physical inactivity, education, and body mass index change. *Scandinavian Journal of Medicine and Science in Sports*, *30*(2), 322–331. https://doi.org/10.1111/sms.13575.

Ploeg, H. P. Van Der, & Bull, F. C. (2020). Invest in physical activity to protect and promote health : the 2020 WHO guidelines on physical activity and sedentary behaviour. 1–4.

Pramono, B. A., Nurhasan, & Fithroni, H. (2019). Teknologi olagraga (perkembangan olahraga era milenial 4.0). Zifatama Jawara.

Prasetya, F., Jumakil, & Sidiq, N. M. (2019). *Prosiding seminar nasional kesehatan: penguatan dan inovasi pelayanan kesehatan dalam era revolusi 4.0*. UHO EduPress.

Puspitasari, N. (2018). Kejadian Obesitas sentral pada usia dewasa. *HIGEIA (Journal of Public Health Research and Development)*, *2*(2), 249–259. https://doi.org/10.15294/higeia.v2i2.21112.

Ręgwelski, M., Lange, E., Głąbska, D., & Guzek, D. (2019). Analysis of the influence of age, BMI, and WHtR on body mass acceptance, attitudes, and motivation towards body mass reduction in overweight and obese caucasian women. *Nutrients*, *11*(3). https://doi.org/10.3390/nu11030542.

Riskawati, Y. K., Prabowo, E. D., & Al Rasyid, H. (2018). Tingkat aktivitas fisik mahasiswa program studi pendidikan dokter tahun kedua, ketiga, keempat. *Majalah Kesehatan*, *5*(1), 27–32. https://doi.org/10.21776/ub.majalahkesehatan.005.01.4.

Safitri, F., Muis, S. F., Sukmadianti, A., Darmono, & Khairuddin. (2020). Kesesuaian lingkar pergelangan tangan terhadap persentase. *Journal of Nutrition and Health*, *8*(2).

Safril. (2020). Analisis penerapan metode pembelajaran sistem blok di masa pandemi covid-19: studi kasus politeknik stmi jakarta. *JARTIKA Jurnal Riset Teknologi Dan Inovasi Pendidikan*, *3*(2), 267–282. https://doi.org/10.36765/jartika.v3i2.263.

Sholihannisa, L. U., & Juliawati, P. (2016). TEMATIK - Jurnal Teknologi Informasi Dan Komunikasi Vol. 3, No. 1 Juni 2016. *Jurnal Teknologi Informasi Dan Komunikasi*, *3*(1), 86–99.

Shook, R. P., Hand, G. A., Drenowatz, C., Hebert, J. R., Paluch, A. E., Blundell, J. E., Hill, J. O., Katzmarzyk, P. T., Church, T. S., & Blair, S. . (2015). Low levels of physical activity are associated with dysregulation of energy intake and fat mass gain over 1 year. *Am. J. Clin. Nutr*, *102*, 1332–1338. https://doi.org/10.3945/ajcn.115.115360.

Silva, B. G. C. d., Silva, I. C. M. d., Ekelund, U., Brage, S., Ong, K. K., De Lucia Rolfe, E., Lima, N. P., Silva, S. G. da, França, G. V. A. de, & Horta, B. L. (2019). Associations of physical activity and sedentary time with body composition in Brazilian young adults. *Scientific Reports*, *9*(1), 1–10. https://doi.org/10.1038/s41598-019-41935-2.

Suliga, E., Cieśla, E., Rębak, D., Kozieł, D., & Głuszek, S. (2018). Relationship between sitting time, physical activity, and metabolic syndrome among adults depending on body mass index (BMI). *Medical Science Monitor*, *24*, 7633–7645. https://doi.org/10.12659/MSM.907582.

Sunami, T., Husaini, A., & Pratama, Y. D. (2017). Analisis tingkat stres mahasiswa keperawatan dalam mengikuti sistem pembelajaran blok. *SAINTEK; Jurnal Ilmiah Sains Dan Teknologi*.

Supriyatna, I., Fitri, M., & Jajat, J. (2019). Aktivitas fisik remaja laki-laki dan perempuan car free day dago kota bandung. *Jurnal Terapan Ilmu Keolahragaan*, *3*(2), 32–36. https://doi.org/10.17509/jtikor.v3i2.10058.

Tandra, H. (2018). *Dari diabetes menuju jantung & stroke*. Gramedia Pustaka Utama.

Tarp, J., Child, A., White, T., Westgate, K., Bugge, A., Grøntved, A., Wedderkopp, N., Andersen, L. B., Cardon, G., Davey, R., Janz, K. F., Kriemler, S., Northstone, K., Page, A. S., Puder, J. J., Reilly, J. J., Sardinha, L. B., van Sluijs, E. M. F., Ekelund, U., … Brage, S. (2018). Physical activity intensity, bout-duration, and cardiometabolic risk markers in children and adolescents. *International Journal of Obesity*, *42*(9), 1639–1650. https://doi.org/10.1038/s41366-018-0152-8.

Tim KPT. (2016). *Panduan penyusunan kurikuum pendidikan tinggi*. Kementrian Riset, Teknologi, dan Pendidikan Tinggi Direktorat jendral Pembelajaran dan kemahasiswaan Direktorat Pembelajaran RISTEK DIKTI 2016.

Tremblay, M. S., Aubert, S., Barnes, J. D., Saunders, T. J., Carson, V., Latimer-Cheung, A. E., & Chinapaw, M. J. (2017). Sedentary behavior research network (SBRN)–terminology consensus project process and outcome. *International Journal of Behavioral Nutrition and Physical Activity*, *14*(1), 1–17.

Viera AJ, Tuttle L, Olsson E, et al. Effects of physical activity calorie expenditure (PACE) labeling : study design and baseline sample characteristics. 2017:1-8. doi:10.1186/s12889-017-4710-0.

Vijayalakshmi, P., Thimmaiah, R., Reddy, S. S. N., Kathyayani, B. V., Gandhi, S., & BadaMath, S. (2017). Gender differences in body mass index, body weight perception, weight satisfaction, disordered eating and Weight control strategies among Indian Medical and Nursing Undergraduates. *Investigacion y Educacion En Enfermeria*, *35*(3), 276–284. https://doi.org/10.17533/udea.iee.v35n3a04.

Weir, C. B., & Jan, A. (2019). BMI classification percentile and cut off points. *StatPearls [Internet]*.

Welis, W., & Rifki, M. S. (2013). *Gizi untuk aktivitas fisik dan kebugaran*. Sukabina Press, Padang. ISSBN 978-602-1650-02-8.

Widayati, A. (2020). *Perilaku kesehatan (health behavior): aplikasi teori perilaku untuk promosi kesehatan*. Sanata Dharma University Press.

Wiklund P. The role of physical activity and exercise in obesity and weight management: Time for critical appraisal. Journal of Sport and Health Science. 2016. 1-4.

Wiyananti, R., & Wibowo, S. (2016). Prototipe sistem blok dalam metode pembelajaran problem based learning: studi kasus di fakultas kedokteran universitas muhammadiyah semarang. *Jurnal Techno*, *15*(1).

Woon, Y. H., Tan, P. L., & Mat Ludin, A. F. (2020). The relationship between physical activity, body mass index and body composition among students at a Pre-University Centre in Malaysia. *International Medical Journal Malaysia*, *19*(2), 83–89. https://doi.org/10.31436/imjm.v19i2.1567.

Yadav, G., Bodat, S., Siwach, I., Sachdeva, K., & Chuahan, N. (2020). Physical activity and its relation with body composition among undergraduate medical students in Delhi: a cross sectional study. *International Journal Of Community Medicine And Public Health*, *7*(11), 4530. https://doi.org/10.18203/2394-6040.ijcmph20204757.

Yang, Y., & Koenigstorfer, J. (2020). Determinants of physical activity maintenance during the Covid-19 pandemic: a focus on fitness apps. *Translational Behavioral Medicine*, *10*(4), 835–842. https://doi.org/10.1093/tbm/ibaa086.

Youssef, M. H., Hifnawy, T. H., Tarhony, S., & El Fadhly, E. (2018). The Relationship Between Age, BMI, Fat Percentage and Body Composition Among Women in Al Madina, Saudi Arabia. *Atherosclerosis Supplements*, *32*(2018), 68. https://doi.org/10.1016/j.atherosclerosissup.2018.04.206.

Zellatifanny, C. M., & Mudjiyanto, B. (2018). Tipe Penelitian Deskripsi Dalam Ilmu Komunikasi. *Diakom : Jurnal Media Dan Komunikasi*, *1*(2), 83–90. https://doi.org/10.17933/diakom.v1i2.20.

Zhang, J., Xu, L., Li, J., Sun, L., Qin, W., Ding, G., Wang, Q., Zhu, J., Yu, Z., Xie, S., & Zhou, C. (2019). Gender differences in the association between body mass index and health-related quality of life among adults:a cross-sectional study in Shandong, China. *BMC Public Health*, *19*(1), 1021. https://doi.org/10.1186/s12889-019-7351-7.

Zheng, C., Huang, W. Y., Sheridan, S., Sit, C. H. P., Chen, X. K., & Wong, S, H. S. (2020). Covid-19 pandemic brings a sedentary lifestyle in young adults : A cross-sectional and longitudinal study. *International Journal of Environmental Research and Public Health*, *17*(17), 1–11. https://doi.org/https://doi.org/10.3390/ijerph17176035.

DAFTAR LAMPIRAN

Lampiran 1. ***Informed Consent***

LEMBAR PERSETUJUAN MENJADI RESPONDEN PENELITIAN

(*INFORMED CONSENT*)

Saya yang bertandatangan di bawah ini, menyatakan (bersedia/tidak bersedia) menjadi responden atas penelitian yang dilakukan oleh Fauziah Salsabil Shafa, mahasiswa Program Studi Fisioterapi Fakultas Keperawatan Universitas Hasanuddin Makassar dengan dosen pembimbing:

1. Irianto, S.Ft., Physio., M.Kes.
2. Rabia, S.Ft., M.Biomed

Telah mendapat keterangan secara terinci dan jelas mengenai :

a. Penelitian yang berjudul "Hubungan Tingkat Aktivitas Fisik dan Perilaku Sedenter terhadap Indeks Massa Tubuh, Persentase Lemak Tubuh, dan Level Lemak Viseral pada Mahasiswa yang Mengikuti Perkuliahan Sistem Blok".
b. Perlakuan yang akan diterapkan pada subyek.
c. Prosedur penelitian.
d. Kerahasiaan informasi.

Subyek penelitian mendapat kesempatan mengajukan pertanyaan mengenai segala sesuatu yang berhubungan dengan penelitian tersebut. Oleh karena itu saya (bersedia/tidak bersedia) secara sukarela untuk menjadi subyek penelitian dengan penuh kesadaran serta tanpa keterpaksaan. Demikian pernyataan ini saya buat dengan sebenarnya tanpa tekanan dari pihak manapun.

Makassar, 2021

Peneliti Responden

(.....) (.....)

Lampiran 2. Identitas Subyek Penelitian

Isilah identitas diri Anda dengan keadaan yang sebenarnya:

7. Nama:
8. Jenis Kelamin:
9. Umur:
10. TTL:
11. Alamat:
12. Fakultas/Prodi:
13. Angkatan:
14. No. Telp/Hp:
15. Riwayat penyakit sesuai dengan pemeriksaan dokter (disertai bukti *medical record*):
    1. Penyakit DM: **(ya/tidak)**
    2. Penyakit kardiovaskular (Hipertensi, penyakit jantung koroner, penyakit jantung bawaan, aritmia, dan penyakit jantung lainnya): **(ya/tidak)**
    3. Penyakit Pulmonal (Asma, pneumonia, tuberkulosis, dan penyakit paru obstruktif kronis lainnya: **(ya/tidak)**
    4. Penyakit Kelenjar Tiroid: **(ya/tidak)**
16. Mengalami cedera muskuloskeletal dalam satu bulan terakhir: **(ya/tidak)**
17. Mengalami disabilitas/keterbatasan fisik: **(ya/tidak)**
18. Memiliki kebiasaan merokok: **(ya/tidak)**
19. Memiliki kebiasaan mengonsumsi alkohol: **(ya/tidak)**
20. Indeks Massa Tubuh: (diisi oleh peneliti)
21. Persentase Lemak Tubuh: (diisi oleh peneliti)
22. Level Lemak Viseral: (diisi oleh peneliti)

Lampiran 3. Data Status Sosial Ekonomi

***Family Affluence Scale* (FAS)**

Pertanyaan	Jawaban
Apakah keluarga Anda memiliki mobil atau kendaraan bermotor lain?	0-Tidak
	1-Ya, Satu
	2- Ya, dua atau lebih
Apakah Anda memiliki kamar tidur sendiri?	0-Tidak
	1-Ya
Berapa kali Anda dan keluarga Anda bepergian ke luar kota untuk liburan / liburan tahun lalu?	0-Tidak sama sekali
	1-Sekali
	2-Dua kali
	3-Lebih dari dua kali
Berapa banyak komputer (termasuk laptop dan tablet, tidak termasuk konsol game dan smartphone) keluarga kamu sendiri?	0-Tidak
	1-Satu
	2-Dua
	3-Lebih dari dua
Apakah keluarga Anda memiliki mesin cuci?	0-Tidak
	1-Ya
Ada berapa kamar mandi (kamar dengan bak mandi / pancuran atau keduanya) di rumah Anda?	0-Tidak
	1-Satu
	2-Dua
	3-Lebih dari dua

Lampiran 4. ***International Physical Activity Questionnaire*** **(IPAQ)**

Kuesioner Aktivitas Fisik IPAQ

BAGIAN 1 : Aktivitas Fisik Berkaitan dengan Pekerjaan di Luar Rumah	
Bagian pertama adalah tentang pekerjaan anda seperti pekerjaan utama pertanian kerja lapangan dan kerja sukarela tanpa dibayar yang anda lakukan di luar rumah.	
1. Apakah anda memiliki pekerjaan di luar rumah (utama/kerja sukarela)?	Ya Tidak →(**loncat ke bagian 2**)
Pertanyaan 2 3 4 5 dan 6 berhubungan dengan pekerjaan anda dalam periode waktu 7 hari terakhir setidaknya selama 10 menit dan sebagai bagian dari pekerjaan anda	
2. Berapa hari dalam seminggu terakhir anda melakukan aktivitas fisik berat seperti mengangkat barang berat ≥ 10 kg (setara ½ zak beras kecil) mencari rumput dan lain sebagainya? Catatan: jika melakukan < 10 menit dihitung 0	.....Hari/minggu Tidak melakukan aktivitas fisik berat (**loncat ke pertanyaan 4**)
3. Dalam sehari, berapa lama (jam, menit) anda melakukan aktivitas fisik berat?	.....Jam/hari .....Menit/hari
4. Berapa hari dalam seminggu terakhir anda melakukan aktivitas fisik ringan seperti mengangat barang ringan? (<10 kg)	.....Hari/minggu Tidak melakukan aktivitas fisik ringan (**loncat ke pertanyaan 6**)
5. Dalam sehari berapa lama (jam, menit) anda melakukan aktivitas fisik ringan?	.....Jam/hari .....Menit/hari
6. Berapa hari dalam seminggu terakhir anda berjalan untuk pergi dan pulang dari tempat kerja anda?	.....Hari/minggu Tidak melakukan aktivitas fisik berjalan (**loncat ke BAGIAN 2**)
7. Dalam sehari berapa lama (jam, menit) anda biasa berjalan?	.....Jam/hari .....Menit/hari

BAGIAN 2 : Aktivitas Fisik yang Berkaitan dengan Transportasi	
Pertanyaan berikut adalah tentang bagaimana cara anda berpergian dari suatu tempat ke tempat yang lain termasuk ke tempat-tempat seperti pekerjaan toko ke pasar dan sebagainya dengan menggunakan jenis kendaraan bermotor: roda dua,roda empat selama 7 hari terakhir	
8. Berapa hari dalam seminggu terakhir anda menaiki kendaraan bermotor roda dua, roda empat?	.....Hari/minggu Tidak menaiki kendaraan (**loncat ke pertanyaan 10**)
9. Dalam sehari,berapa lama (jam, menit) anda menaiki kendaraan bermotor roda dua, roda empat?	.....Jam/hari .....Menit/hari
10. Berapa hari dalam semiggu terakhir anda bersepeda untuk pergi dan pulang kerja?	.....Hari/minggu Tidak bersepeda (**loncat ke pertanyaan 12)**
11. Dalam sehari,berapa lama (jam, menit) anda bersepeda untuk pergi dan pulang kerja ?	.....Jam/hari .....Menit/hari
12. Dalam seminggu terakhir berapa hari anda berjalan untuk pergi dan pulang kerja ?	.....Hari/minggu Tidak berjalan (**loncat ke BAGIAN 3**)
13. Dalam sehari berapa lama (jam, menit) anda berjalan untukpergi dan pulang kerja?	.....Jam/hari .....Menit/hari
BAGIAN 3 : Pekerjaan Rumah Tangga Perawatan Rumah dan Perawatan untuk Keluarga	
Pertanyaan berikut mengenai aktivitas fisik yang anda lakukan dalam 7 hari terakhir di dalam dan sekitar rumah seperti pekerjaan rumah tangga berkebun dan pekerjaan sekitar halaman pekerjaan umum pemeliharaan rumah serta merawat keluarga anda. Pertanyaan 14 16 dan 18 berkaitan dengan aktivitas fisik disekitar rumah dan di dalam rumah dalam periode waktu 7 hari terakhir yang anda lakukan setidaknya selama 10 menit pada suatu waktu	

Di sekitar rumah 14. Berapa hari dalam seminggu terakhir anda melakukan aktivitas fisik berat seperti mengangkat barang berat ≥10 kg (setara ½ zak beras kecil) memindahkan perabot rumah tangga memotong kayu mencangkul disekitar rumah?	.....Hari/minggu Tidak melakukan aktivitas fisik berat (**loncat ke pertanyaan 16**)
15. Dalam sehari berapa lama (jam, menit) anda bisa melakukan aktivitas fisik berat di sekitar rumah?	.....Jam/hari .....Menit/hari
16. Berapa hari dalam seminggu terakhir anda melakukan aktivitas fisik ringan seperti mengangkat barang ringan (<10 kg) menyapu halaman atau taman mencuci mobil dan mencuci?	.....Hari/minggu Tidak melakukan aktivitas fisik ringan (**loncat ke pertanyaan 18**)
17. Dalam sehari berapa lama (jam, menit) anda bisa melakukan aktivitas fisik ringan?	.....Jam/hari .....Menit/hari
Di dalam rumah 18. Berapa hari dalam seminggu terakhir anda melakukan aktivitas fisik ringan seperti mengangkat benda ringan <10kg, memasak, mencuci, menyapu, mengepel lantai?	.....Hari/minggu Tidak melakukan aktivitas fisik ringan (**loncat ke BAGIAN 4**)
19. Dalam sehari berapa lama (jam,menit) anda biasa melakukan aktivitas fisik ringan ?	.....Jam/hari .....Menit/hari
BAGIAN 4 : Aktivitas Rekreasi Olahraga dan Aktivitas Fisik di Waktu Luang	
Pertanyaan berikut mengenai aktivitas fisik yang anda lakukan di waktu luang setidaknya selama 10 menit dalam 7 hari terakhir untuk aktivitas rekreasi berjalan olahraga dan kegiatan lainnya	
20.Berapa hari dalam seminggu terakhir yang anda lakukan diwaktu luang untuk aktivitas rekreasi, aktivitas berjalan,olahraga dan kegiatan lain?	.....Hari/minggu Tidak melakukan aktivitas berjalan (**loncat ke pertanyaan 22**)

21. Dalam sehari, berapa lama (jam, menit) anda melakukan aktivitas di waktu luang untuk rekreasi, aktivitas berjalan, olahraga dan kegiatan lain?	.....Jam/hari .....Menit/hari
22. Berapa hari dalam seminggu terakhir anda melakukan aktivitas fisik berat seperti aerobik, berlari, berenang cepat?	.....Hari/minggu Tidak melakukan aktivitas berat (**loncat ke pertanyaan 24**)
23. Dalam sehari, berapa lama (jam, menit) anda melakukan aktivitas fisik berat seperti aerobik, berlari, berenang cepat?	.....Jam/hari .....Menit/hari
24. Berapa hari dalam seminggu terakhir anda melakukan aktivitas fisik ringan seperti bersepeda dan berenang dengan kecepatan biasa?	.....Hari/minggu Tidak melakukan aktivitas ringan (**loncat ke bagian 5**)
25. Dalam sehari berapa lama (jam, menit) anda biasa melakukan aktivitas fisik ringan seperti bersepeda dan berenang dengan kecepatan biasa?	.....Jam/hari .....Menit/hari
BAGIAN 5 : Waktu yang Digunakan untuk Duduk	
Pertanyaan berikut adalah tentang waktu yang anda biasa lakukan untuk duduk di rumah di tempat kerja mengunjungi teman membaca atau berbaring melihat tv	
26. Dalam sehari berapa lama (Jam, menit) anda bisa duduk di hari kerja?	.....Jam/hari .....Menit/hari
27. Dalam sehari berapa lama (jam, menit) anda biasa duduk pada hari akhir pekan/tidak kerja?	.....Jam/hari .....Menit/hari

Lampiran 5. ***Sedentary Behaviour Questionnaire*** **(SBQ)**

Kuesioner Perilaku Sedenter SBQ

Terima kasih telah meluangkan waktu untuk membantu kami hari ini. Anda akan membantu kami untuk lebih memahami tentang aktivitas yang dilakukan dengan cara menjawab beberapa pertanyaan dalam kuesioner ini mengenai perilaku sedenter. Setiap jawaban Anda bersifat rahasia, maka dari itu, silahkan menjawab setiap pertanyaan dengan jujur.

Bagian I. Pada minggu terakhir **selama hari kerja (hari Senin sampai jumat)**, berapa lama waktu yang anda habiskan (dari saat bangun tidur hingga tidur pada malam hari) melakukan hal-hal berikut?

Kegiatan	Tidak ada	≤15 menit	30 menit	1 jam	2 jam	3 jam	4 jam	5 jam	≥6 jam
Menonton TV (termasuk DVD)									
Menggunakan komputer atau bermain *video game*									
Duduk mendengarkan musik									
Duduk dan menelepon									
Mengerjakan tugas dan/atau pekerjaan kuliah									
Duduk membaca buku, koran, atau majalah									
Memainkan alat musik									
Mengerjakan karya seni									
Duduk di dalam kenderaan seperti mobil, bus, dan kereta api.									

Bagian II. Pada minggu terakhir **selama hari libur (hari Sabtu dan Minggu)**, berapa lama waktu yang anda habiskan (dari saat bangun tidur hingga tidur pada malam hari) melakukan hal-hal berikut?

Kegiatan	Tidak ada	≤15 menit	30 menit	1 jam	2 jam	3 jam	4 jam	5 jam	≥6 jam
Menonton TV (termasuk DVD)									
Menggunakan komputer atau bermain *video game*									
Duduk mendengarkan musik									
Duduk dan menelepon									
Mengerjakan tugas dan/atau pekerjaan kuliah									
Duduk membaca buku, koran, atau majalah									
Memainkan alat musik									
Mengerjakan karya seni									
Duduk di dalam kenderaan seperti mobil, bus, dan kereta api.									

Lampiran 6. Tabel Master Data

No.	Inisial	Usia	Jenis Kelamin	Status Sosial Ekonomi	Nilai IPAQ	Nilai SBQ	Nilai IMT	Nilai Persentase Lemak Tubuh	Nilai Level Lemak Viseral
1.									
2.									
3.									
4.									
5.									
6.									
7.									
8.									
9.									
10.									

Lampiran 7. Surat Izin Penelitian

1 2 0 2 1 1 9 3 0 0 4 0 1 6

PEMERINTAH PROVINSI SULAWESI SELATAN
DINAS PENANAMAN MODAL DAN PELAYANAN TERPADU SATU PINTU
BIDANG PENYELENGGARAAN PELAYANAN PERIZINAN

Nomor : **13629/S.01/PTSP/2021**
Lampiran :
Perihal : **Izin Penelitian**

KepadaYth.
Rektor Univ. Hasanuddin Makassar

di-
Tempat

Berdasarkan surat Dekan Fak. Keperawatan UNHAS Makassar Nomor : 2035//UN4.18.1/PT.01.04/2021 tanggal 12 April 2021 perihal tersebut diatas, mahasiswa/peneliti dibawah ini:

N a m a	:	**FAUZIAH SALSABIL SHAFA**
Nomor Pokok	:	C041171514
Program Studi	:	Fisioterapi
Pekerjaan/Lembaga	:	Mahasiswa(S1)
Alamat	:	Jl. P. Kemerdekaan Km. 10, Makassar

Bermaksud untuk melakukan penelitian di daerah/kantor saudara dalam rangka penyusunan Skripsi, dengan judul :

" HUBUNGAN TINGKAT AKTIVITAS FISIK DAN PERILAKU SEDENTER TERHADAP INDEKS MASSA TUBUH, PERSENTASE LEMAK TUBUH, DAN LEVEL LEMAK VISERAL PADA MAHASISWA YANG MENGIKUTI PERKULIAHAN SISTEM BLOK "

Yang akan dilaksanakan dari : Tgl. ***22 April s/d 22 Mei 2021***

Sehubungan dengan hal tersebut diatas, pada prinsipnya kami ***menyetujui*** kegiatan dimaksud dengan ketentuan yang tertera di belakang surat izin penelitian.
Dokumen ini ditandatangani secara elektronik dan Surat ini dapat dibuktikan keasliannya dengan menggunakan ***barcode***,
Demikian surat izin penelitian ini diberikan agar dipergunakan sebagaimana mestinya.

Diterbitkan di Makassar
Pada tanggal : 21 April 2021

A.n. GUBERNUR SULAWESI SELATAN
KEPALA DINAS PENANAMAN MODAL DAN PELAYANAN TERPADU SATU PINTU PROVINSI SULAWESI SELATAN
Selaku Administrator Pelayanan Perizinan Terpadu

Dr. JAYADI NAS, S.Sos., M.Si
Pangkat : Pembina Tk.I
Nip : 19710501 199803 1 004

Tembusan Yth
1. Dekan Fak. Keperawatan UNHAS Makassar di Makassar;
2. *Pertinggal.*

SIMAP PTSP 21-04-2021

Jl.Bougenville No.5 Telp. (0411) 441077 Fax. (0411) 448936
Website : http://simap.sulselprov.go.id Email : ptsp@sulselprov.go.id
Makassar 90231

Lampiran 8. Surat Izin Etik Penelitian

KEMENTERIAN PENDIDIKAN DAN KEBUDAYAAN
UNIVERSITAS HASANUDDIN
FAKULTAS KESEHATAN MASYARAKAT
KOMITE ETIK PENELITIAN KESEHATAN
Sekretariat :
Jl. Perintis Kemerdekaan Km. 10 Makassar 90245, Telp. (0411) 585658, 516-005,
Fax (0411) 586013E-mail : kepkfkmuh@gmail.com, website : www.fkm.unhas.ac.id

REKOMENDASI PERSETUJUAN ETIK
Nomor : **3491/UN4.14.1/TP.01.02/2021**

Tanggal : 17 Mei 2021

Dengan ini Menyatakan bahwa Protokol dan Dokumen yang Berhubungan dengan Protokol berikut ini telah mendapatkan Persetujuan Etik :

No.Protokol	1521091055	No. Sponsor Protokol	
Peneliti Utama	**Fauziah Salsabil Shafa**	Sponsor	Pribadi
Judul Peneliti	**Hubungan Tingkat Aktivitas Fisik dan Perilaku Sedenter Terhadap Indeks Massa Tubuh, Persentase Lemak Tubuh, dan Level Lemak Viseral pada Mahasiswa yang Mengikuti Perkuliahan Sistem Blok**		
No.Versi Protokol	1	Tanggal Versi	1 Mei 2021
No.Versi PSP	1	Tanggal Versi	1 Mei 2021
Tempat Penelitian	**Prodi Fisioterapi Fakultas Keperawatan Universitas Hasanuddin**		
Judul Review	[x] Exempted [ ] Expedited [ ] Fullboard	Masa Berlaku **17 Mei 2021 sampai 17 Mei 2022**	Frekuensi review lanjutan
Ketua Komisi Etik Penelitian	Nama : Prof.dr.Veni Hadju, M.Sc, Ph.D	Tanda tangan	Tanggal 17 Mei 2021
Sekretaris komisi Etik Penelitian	Nama : Dr. Wahiduddin, SKM., M.Kes	Tanda tangan	Tanggal 17 Mei 2021

Kewajiban Peneliti Utama :

1. Menyerahkan Amandemen Protokol untuk persetujuan sebelum di implementasikan
2. Menyerahkan Laporan SAE ke Komisi Etik dalam 24 Jam dan dilengkapi dalam 7 hari dan Lapor SUSAR dalam 72 Jam setelah Peneliti Utama menerima laporan
3. Menyerahkan Laporan Kemajuan (progress report) setiap 6 bulan untuk penelitian resiko tinggi dan setiap setahun untuk penelitian resiko rendah
4. Menyerahkan laporan akhir setelah Penelitian berakhir
5. Melaporakn penyimpangan dari protocol yang disetujui (protocol deviation/violation)
6. Mematuhi semua peraturan yang ditentukan

Lampiran 9. Surat Keterangan telah Menyelesaikan Penelitian

KEMENTERIAN PENDIDIKAN DAN KEBUDAYAAN
UNIVERSITAS HASANUDDIN
FAKULTAS KEPERAWATAN
PROGRAM STUDI S1 FISIOTERAPI

JL. PERINTIS KEMERDEKAAN KM.10 MAKASSAR 90245 FAKULTAS KEPERAWATAN LANTAI 2
email : keperawatan.unhas.ac.id

SURAT - KETERANGAN
Nomor : 2709/UN4.18.8/PT.01.05/2021

Ketua Program Studi S1 Fisioterapi Fakultas Keperawatan Universitas Hasanuddin, menerangkan bahwa :

Nama	:	FAUZIAH SALSABIL SHAFA
NIM	:	C041171514
Program Studi	:	S1 Fisioterapi
Fakultas	:	Keperawatan Universitas Hasanuddin

Benar telah melaksanakan penelitian pada Mahasiswa Program Studi S1 Fisioterapi Fakultas Keperawatan Universitas Hasanuddin dengan Judul Skripsi **"Hubungan Tingkat Aktifitas Fisik Dan Perilaku Sedenter Terhadap Indeks Massa Tubuh, Persentase Lemak Tubuh Dan Level Lemak Viseral Pada Mahasiswa Yang Mengikuti Perkuliahan Sistem Blok"** yang dilaksanakan mulai tanggal 21–27 April 2021.

Demikian Surat keterangan ini di berikan kepada yang bersangkutan untuk dipergunakan sebagaimana mestinya, dalam rangka proses penyelesaian Studi (Skripsi) pada Program Studi S1 Fisioterapi Fakultas Keperawatan Universitas Hasanuddin.

Makassar, 10 Mei 2021
Ketua Program Studi S1 Fisioterapi,

KEMENTERIAN PENDIDIKAN DAN KEBUDAYAAN UNIVERSITAS HASANUDDIN FAKULTAS KEPERAWATAN PROGRAM STUDI FISIOTERAPI

Andi Besse Ahsaniyah A.Hafid, S.Ft.,Physio.,M.Kes
NIP.19901002 201803 2 001

Lampiran 10. Hasil Uji Data SPSS

1. Karakteristik Responden Penelitian

Jenis Kelamin

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Laki-laki	11	9.4	9.4	9.4
	Perempuan	106	90.6	90.6	100.0
	Total	117	100.0	100.0	

Usia

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18	3	2.6	2.6	2.6
	19	38	32.5	32.5	35.0
	20	53	45.3	45.3	80.3
	21	20	17.1	17.1	97.4
	22	3	2.6	2.6	100.0
	Total	117	100.0	100.0	

Status Sosial Ekonomi

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Sedang	102	87.2	87.2	87.2
	Tinggi	15	12.8	12.8	100.0
	Total	117	100.0	100.0	

Perilaku Sedenter

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Rendah	46	39.3	39.3	39.3
	Sedang	26	22.2	22.2	61.5
	Tinggi	45	38.5	38.5	100.0
	Total	117	100.0	100.0	

Aktivitas Fisik

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Rendah	68	58.1	58.1	58.1
	Sedang	39	33.3	33.3	91.5
	Tinggi	10	8.5	8.5	100.0
	Total	117	100.0	100.0	

Indeks Massa Tubuh

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Underweight	25	21.4	21.4	21.4
	Normal	63	53.8	53.8	75.2
	Overweight	11	9.4	9.4	84.6
	Obesitas 1	11	9.4	9.4	94.0
	Obesitas 2	7	6.0	6.0	100.0
	Total	117	100.0	100.0	

Persentase Lemak Tubuh

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Rendah	5	4.3	4.3	4.3
	Normal	64	54.7	54.7	59.0
	Tinggi	35	29.9	29.9	88.9
	Sangat Tinggi	13	11.1	11.1	100.0
	Total	117	100.0	100.0	

Level Lemak Viseral

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Normal	106	90.6	90.6	90.6
	Tinggi	8	6.8	6.8	97.4
	Sangat Tinggi	3	2.6	2.6	100.0
	Total	117	100.0	100.0	

2. Uji Normalitas

One-Sample Kolmogorov-Smirnov Test

		Perilaku Sedenter	Aktivitas Fisik	Indeks Massa Tubuh	Persentase Lemak Tubuh	Level Lemak Viseral
N		117	117	117	117	117
Normal Parameters[a,b]	Mean	1.99	1.50	2.25	2.48	1.12
	Std. Deviation	.886	.652	1.082	.750	.397
Most Extreme Differences	Absolute	.262	.362	.343	.328	.524
	Positive	.262	.362	.343	.328	.524
	Negative	-.257	-.219	-.196	-.219	-.382
Test Statistic		.262	.362	.343	.328	.524
Asymp. Sig. (2-tailed)		.000[c]	.000[c]	.000[c]	.000[c]	.000[c]

a. Test distribution is Normal.
b. Calculated from data.
c. Lilliefors Significance Correction.

3. Uji Korelasi

a. Data Kategorik

Correlations

			Perilaku Sedenter	Aktivitas Fisik	IMT	Persentase Lemak Tubuh	Level Lemak Viseral
Spearman's rho	Perilaku Sedenter	Correlation Coefficient	1.000	.078	.081	.001	.123
		Sig. (2-tailed)	.	.403	.387	.990	.187
		N	117	117	117	117	117
	Aktivitas Fisik	Correlation Coefficient	.078	1.000	-.186*	-.393**	-.235*
		Sig. (2-tailed)	.403	.	.044	.000	.011
		N	117	117	117	117	117
	IMT	Correlation Coefficient	.081	-.186*	1.000	.609**	.823**
		Sig. (2-tailed)	.387	.044	.	.000	.000
		N	117	117	117	117	117
	Persentase Lemak Tubuh	Correlation Coefficient	.001	-.393**	.609**	1.000	.548**
		Sig. (2-tailed)	.990	.000	.000	.	.000
		N	117	117	117	117	117
	Level Lemak Viseral	Correlation Coefficient	.123	-.235*	.823**	.548**	1.000
		Sig. (2-tailed)	.187	.011	.000	.000	.
		N	117	117	117	117	117

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

b. Data Nilai

Correlations

			Nilai Perilaku Sedenter	Nilai Aktivitas Fisik	Nilai IMT	Nilai Persentase Lemak Tubuh	Nilai Level Lemak Viseral
Spearman's rho	Nilai Perilaku Sedenter	Correlation Coefficient	1.000	.144	-.019	.071	.006
		Sig. (2-tailed)	.	.121	.837	.449	.950
		N	117	117	117	117	117
	Nilai Aktivitas Fisik	Correlation Coefficient	.144	1.000	-.286**	-.506**	-.215*
		Sig. (2-tailed)	.121	.	.002	.000	.020
		N	117	117	117	117	117
	Nilai IMT	Correlation Coefficient	-.019	-.286**	1.000	.576**	.426**
		Sig. (2-tailed)	.837	.002	.	.000	.000
		N	117	117	117	117	117
	Nilai Persentase Lemak Tubuh	Correlation Coefficient	.071	-.506**	.576**	1.000	.437**
		Sig. (2-tailed)	.449	.000	.000	.	.000
		N	117	117	117	117	117
	Nilai Level Lemak Viseral	Correlation Coefficient	.006	-.215*	.426**	.437**	1.000
		Sig. (2-tailed)	.950	.020	.000	.000	.
		N	117	117	117	117	117

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

c. Split Data

Correlations

	Jenis Kelamin			Perilaku Sedenter	Aktivitas Fisik	IMT	Persentase Lemak Tubuh	Level Lemak Viseral
Spearman's rho	laki-laki	Perilaku Sedenter	Correlation Coefficient	1.000	.100	.336	.424	.083
			Sig. (2-tailed)	.	.770	.312	.194	.809
			N	11	11	11	11	11
		Aktivitas Fisik	Correlation Coefficient	.100	1.000	-.373	-.273	-.087
			Sig. (2-tailed)	.770	.	.259	.416	.798
			N	11	11	11	11	11

	IMT	Correlation Coefficient	.336	-.373	1.000	.893**	.708*
		Sig. (2-tailed)	.312	.259	.	.000	.015
		N	11	11	11	11	11
	Persentase Lemak Tubuh	Correlation Coefficient	.424	-.273	.893**	1.000	.862**
		Sig. (2-tailed)	.194	.416	.000	.	.001
		N	11	11	11	11	11
	Level Lemak Viseral	Correlation Coefficient	.083	-.087	.708*	.862**	1.000
		Sig. (2-tailed)	.809	.798	.015	.001	.
		N	11	11	11	11	11
Perempuan	Perilaku Sedenter	Correlation Coefficient	1.000	.066	.060	-.020	.112
		Sig. (2-tailed)	.	.501	.539	.839	.252
		N	106	106	106	106	106
	Aktivitas Fisik	Correlation Coefficient	.066	1.000	-.155	-.374**	-.243*
		Sig. (2-tailed)	.501	.	.113	.000	.012
		N	106	106	106	106	106
	IMT	Correlation Coefficient	.060	-.155	1.000	.569**	.827**
		Sig. (2-tailed)	.539	.113	.	.000	.000
		N	106	106	106	106	106
	Persentase Lemak Tubuh	Correlation Coefficient	-.020	-.374**	.569**	1.000	.532**
		Sig. (2-tailed)	.839	.000	.000	.	.000
		N	106	106	106	106	106
	Level Lemak Viseral	Correlation Coefficient	.112	-.243*	.827**	.532**	1.000
		Sig. (2-tailed)	.252	.012	.000	.000	.
		N	106	106	106	106	106

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Correlations

	Jenis Kelamin			Nilai Perilaku Sedenter	Nilai Aktivitas Fisik	Nilai IMT	Nilai Persentase Lemak Tubuh	Nilai Level Lemak Viseral
Spearman's rho	laki-laki	Nilai Perilaku Sedenter	Correlation Coefficient	1.000	.186	.136	.338	-.124
			Sig. (2-tailed)	.	.584	.690	.309	.717
			N	11	11	11	11	11
		Nilai Aktivitas Fisik	Correlation Coefficient	.186	1.000	-.555	-.676*	-.412
			Sig. (2-tailed)	.584	.	.076	.022	.208
			N	11	11	11	11	11
		Nilai IMT	Correlation Coefficient	.136	-.555	1.000	.810**	.713*
			Sig. (2-tailed)	.690	.076	.	.002	.014
			N	11	11	11	11	11
		Nilai Persentase Lemak Tubuh	Correlation Coefficient	.338	-.676*	.810**	1.000	.561
			Sig. (2-tailed)	.309	.022	.002	.	.072
			N	11	11	11	11	11
		Nilai Level Lemak Viseral	Correlation Coefficient	-.124	-.412	.713*	.561	1.000
			Sig. (2-tailed)	.717	.208	.014	.072	.
			N	11	11	11	11	11
	Perempuan	Nilai Perilaku Sedenter	Correlation Coefficient	1.000	.132	-.037	.032	.015
			Sig. (2-tailed)	.	.178	.707	.744	.878
			N	106	106	106	106	106
		Nilai Aktivitas Fisik	Correlation Coefficient	.132	1.000	-.247*	-.494**	-.189
			Sig. (2-tailed)	.178	.	.011	.000	.052
			N	106	106	106	106	106
		Nilai IMT	Correlation Coefficient	-.037	-.247*	1.000	.538**	.377**
			Sig. (2-tailed)	.707	.011	.	.000	.000
			N	106	106	106	106	106
		Nilai Persentase Lemak Tubuh	Correlation Coefficient	.032	-.494**	.538**	1.000	.405**
			Sig. (2-tailed)	.744	.000	.000	.	.000
			N	106	106	106	106	106

Nilai Level Lemak Viseral	Correlation Coefficient	.015	-.189	.377**	.405**	1.000
	Sig. (2-tailed)	.878	.052	.000	.000	.
	N	106	106	106	106	106

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

4. Uji Regresi Linear Berganda

a. IMT

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.289[a]	.083	.067	1.04493

a. Predictors: (Constant), Nilai Aktivitas Fisik, Nilai Perilaku Sedenter

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11.339	2	5.669	5.192	.007[b]
	Residual	124.473	114	1.092		
	Total	135.812	116			

a. Dependent Variable: Nilai IMT

b. Predictors: (Constant), Nilai Aktivitas Fisik, Nilai Perilaku Sedenter

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.955	.305		9.703	.000
	Nilai Perilaku Sedenter	.009	.111	.007	.078	.938
	Nilai Aktivitas Fisik	-.482	.151	-.290	-3.187	.002

a. Dependent Variable: Nilai IMT

b. Persentase Lemak Tubuh

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.289[a]	.083	.067	1.04493

a. Predictors: (Constant), Nilai Aktivitas Fisik, Nilai Perilaku Sedenter

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15.506	2	7.753	17.787	.000[b]
	Residual	49.690	114	.436		
	Total	65.197	116			

a. Dependent Variable: Nilai Persentase Lemak Tubuh

b. Predictors: (Constant), Nilai Aktivitas Fisik, Nilai Perilaku Sedenter

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	T	Sig.
1	(Constant)	3.065	.192		15.925	.000
	Nilai Perilaku Sedenter	.131	.070	.155	1.871	.064
	Nilai Aktivitas Fisik	-.564	.095	-.490	-5.901	.000

a. Dependent Variable: Nilai Persentase Lemak Tubuh

c. Level Lemak Viseral

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.290[a]	.084	.068	3.58611

a. Predictors: (Constant), Nilai Aktivitas Fisik, Nilai Perilaku Sedenter

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	134.559	2	67.280	5.232	.007[b]
	Residual	1466.060	114	12.860		
	Total	1600.620	116			

a. Dependent Variable: Level Lemak Viseral

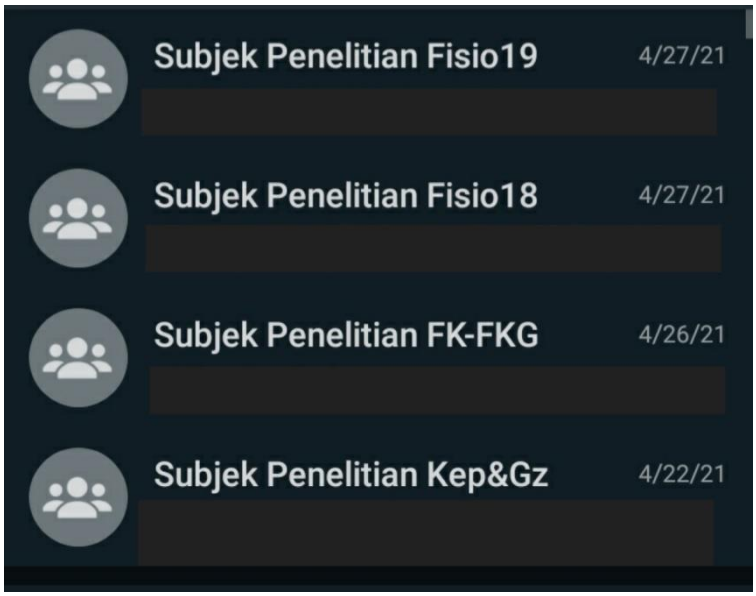
b. Predictors: (Constant), Nilai Aktivitas Fisik, Nilai Perilaku Sedenter

Coefficients[a]

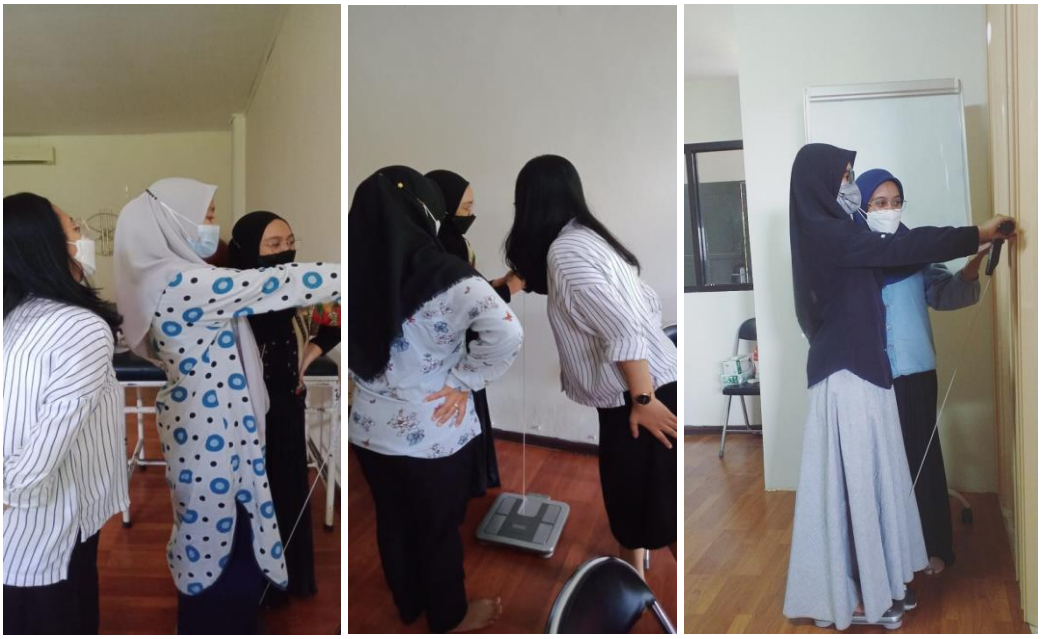
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5.469	1.045		5.233	.000
	Nilai Perilaku Sedenter	.454	.382	.108	1.190	.237
	Nilai Aktivitas Fisik	-1.643	.519	-.288	-3.168	.002

a. Dependent Variable: Level Lemak Viseral

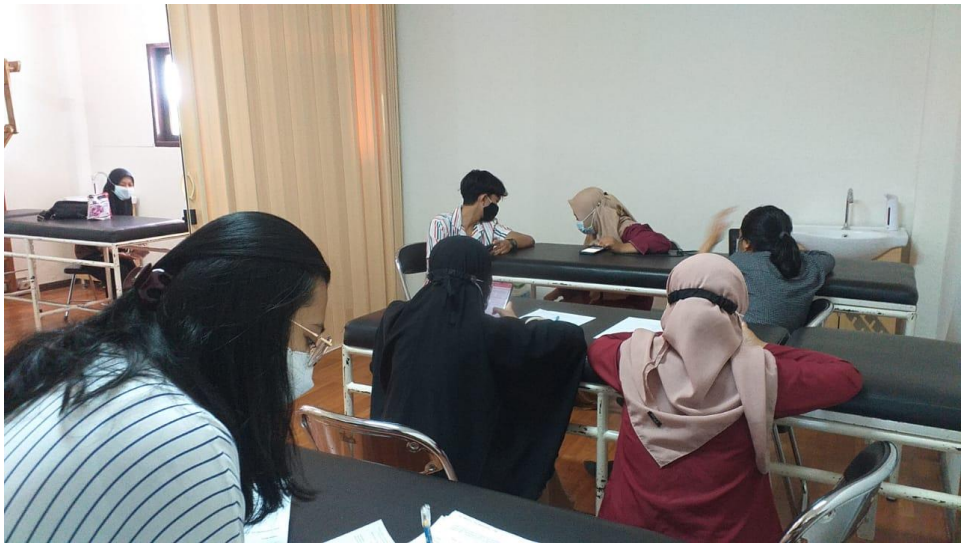
Lampiran 11. Dokumentasi Penelitian



(*Follow up* responden dan pembagian kuesioner secara online via *whatsapp group)*



(Pengukuran IMT, persentase lemak tubuh, dan level lemak viseral secara langsung)



(Mendata hasil pengukuran)

Lampiran 12. Draft Penelitian

THE CORRELATION BETWEEN PHYSICAL ACTIVITY LEVELS AND SEDENTARY BEHAVIOUR ON BODY MASS INDEX, BODY FAT PERCENTAGE, AND VISCERAL FAT LEVELS IN STUDENTS ON BLOCK SYSTEM LECTURES

Fauziah Salsabil Shafa[a]*, Irianto[a], Rabia[a]

[a]*Physiotherapy Dept, Faculty of Nursing, Hasanuddin University, Makassar Makassar, South Sulawesi, Indonesia, 90245*

Email: Fauziah.slsbls@gmail.com

Abstract

The phenomena of block system lectures and online lectures during the COVID-19 pandemic to students can trigger an increase in sedentary behavior and a decrease in physical activity, which is associated with an increase in acute and chronic morbidity. Meanwhile, the problem of weight at the transitional age of adolescents to adulthood continues to increase every year. This study aims to determine the relationship between physical activity level and sedentary behavior on body mass index, body fat percentage, and visceral fat level in students who take block system lectures. This research method used a cross-sectional design with a sample size of one hundred and seventeen people (n = 117). The data was collected using questionnaires and direct measurements in compliance with the COVID-19 health protocol. The results of this study indicated that there was a significant correlation between the level of physical activity and BMI, body fat percentage, and visceral fat level ($p < 0.05$). This study also showed that there was no correlation between sedentary behavior and BMI, body fat percentage, and visceral fat level ($p > 0.05$). Based on the multiple linear regression test, it showed that the level of physical activity and sedentary behavior simultaneously affected BMI, body fat percentage, and visceral fat levels in students who attended lectures on the block system ($p < 0.05$). However, data from the correlation coefficient showed that the level of physical activity had a more significant effect on BMI, body fat percentage, and visceral fat level.

Keywords: physical activity, sedentary behavior, BMI, body fat, visceral fat

---

INTRODUCTION

Block system learning is applied to student lectures in the health sector. The application of the student block system is very draining for the mind and energy, where the materials and assignments are completely compacted. From compacting the learning time, it is carried out continuously, starting from learning theory, practicum, to assignments according to competence (Sunami et al., 2017). Thus, in terms of the level of physical activity it may decrease and the behavior continues to increase. The sedentary behavior that occurred among students then experienced an increase from the previous situation due to regulations related to the causes of the COVID-19 outbreak, which required students to learn courageously from home (Zheng et al., 2020).

Continuous low physical activity and high sedentary behavior associated with poor physical and mental health have the potential to increase the risk of death specific to a disease or multiple causes (Yang & Koenigstorfer, 2020). Together with the decrease in physical activity and the occurrence of high sedentary behavior, it is a serious public health problem (Cheng et al., 2020). It is hoped that focusing on this topic can identify behaviors and self-regulation related to weight maintenance that starts with oneself such as physical activity. This is because physical activity is a protective factor for non-communicable diseases such as cardiovascular disease, stroke, diabetes and some types of cancer. Additionally, physical activity is associated with improved mental health, dementia, and improved quality of life and well-being. The health benefits of this physical activity are well documented at higher levels and at high frequency associated with reduced risk and improved health in a number of key areas (Langhammer et al. 2018). The general objective of this study was to determine the relationship between physical activity level and sedentary behavior on BMI, body fat percentage, and visceral fat level in students who attended the block system lecture.

METHOD

This research is an analytical study using a cross sectional design by assessing the relationship between physical activity level and sedentary behavior on BMI, body fat percentage and visceral fat level.

This research was conducted at the Physiotherapy Laboratory, Faculty of Nursing, Hasanuddin University, Makassar City, in April 2021. The population in this study were students who were studying the block system at Hasanuddin University, Faculty of Medicine, Nursing, Dentistry and Public Health for the Science study program. Nutrition, by assigning students to levels two and three. The sample size calculation in this study was carried out using the sample size formula for the large population proportion. In this study, the confidence level was set at 95% with an error limit of 5%. According to Gay and Diehl (1992) in Zellatifanny and Mudjiyanto (2018), the determination of the sample must be as large as possible. And to determine the minimum sample in this study can be

determined as much as 30% from the results of the formula for the proportion of the large population, so that the minimum sample size is 30% of 385. The results obtained are 116 respondents divided into four faculties consisting of five study programs.

In taking the sample of this study using purposive sampling technique because not all students have the same opportunity to be sampled, there are predetermined criteria in the form of inclusion and exclusion criteria, as follows, Inclusion Criteria; (1) Willing to take part in research, (2) Registered as active students, (3) Students who take part in the block system lecture program at Hasanuddin University, (4) Students of 2018 and 2019, (5) Ages 18-22 years. Exclusion Criteria; (1) Students who have a history of diabetes mellitus based on a doctor's examination, (2) Students who have a history of cardiovascular disease (hypertension, coronary heart disease, congenital heart disease, arrhythmias, and other heart diseases) based on a doctor's examination, (3) Students who have a history of pulmonary disease (asthma, pneumonia, bronchitis, and other chronic obstructive pulmonary diseases) based on a doctor's examination, (4) Students who have a history of thyroid disease based on a doctor's examination, (5) Students who have suffered musculoskeletal injuries in the past month, (6)) Students with disabilities / physical limitations (7) Students who have a smoking habit, (8) Students who have a habit of consuming alcohol.

Variables

The variables in this study consisted of the independent variable and the dependent variable, namely the independent variable consisting of the level of physical activity and sedentary behavior. The dependent variable consisted of body mass index, body fat percentage, and visceral fat level. Assessment of the level of physical activity using the International Physical Activity Questionnaire (IPAQ). Assessment of sedentary behavior uses the Sedentary Behavior Questionnaire (SBQ). Assessments of BMI, body fat percentage, and visceral fat levels were carried out using the Omron Karada Scan Body Composition Monitor HBF-357 and microtoise.

Data Collection

This data is done directly by the researcher. Researchers recorded the number of student populations who took the block system lectures at Hasanuddin University, namely at the Faculty of Medicine, Nursing, Dentistry, and Public Health, especially in the Nutrition Science study program. Then calculate the minimum total sample required in this study by adjusting the inclusion and exclusion criteria so that the research sample is met. After that, the researcher asked the respondent's willingness to be a sample in the study by filling out the informed consent that had been provided online via the google form.

After agreeing to the informed consent, the respondent was asked to fill in the respondent's identity data which of course was kept confidential by the researcher. Then proceed to fill out the socioeconomic status questionnaire and fill out the questionnaire related to the measurement of the variables that have been determined by the researcher. (The questionnaires are conducted online via google form. On the google form, respondents fill out a validated IPAQ and ASAQ questionnaire consisting of several questions about physical activity carried out for one week and answered according to the respondent's actual condition. Measurements related to height used microtoise and continued to measure BMI, body fat percentage, and visceral fat levels using the omron karada scan HBF-357 body composition monitor in accordance with the procedure specified in the instructions for use. The results of these calculations will then be adjusted to the interpretation table of IPAQ, SBQ, BMI values, interpretation of body fat percentage, and visceral fat levels, then the data is analyzed.

Data Analysis

Data management is carried out using the Statistical Product and Service Solutions (SPSS) program and the data presentation is made in the form of a frequency distribution table with a percentage and clarity of the table. The data that has been obtained are processed first with steps starting from editing, where in this stage the completeness and continuity of the data that has been collected from the respondents is checked. Furthermore, coding is carried out, namely giving the form of a code on all the variables that have been collected. Then tabulation is carried out, for this stage the data is arranged in such a way that it can easily be added, arranged, and arranged to be presented and then analyzed.

Characteristic distribution data obtained are primary data from measurements of physical activity levels, sedentary behavior, BMI values, body fat percentages, and visceral fat levels presented in the form of frequency and percentage. All data presentation was then analyzed using univariate, bivariate and multivariate analysis through the SPSS program. Univariate analysis was used to determine the distribution frequency of each variable. Meanwhile, the bivariate analysis was processed by using the data normality test first using the Kolmogrov-Smirnov normality test, then the Spearman test was carried out to determine the relationship between the independent variable and the dependent variable on each independent variable. Then, the relationship between the two independent variables and all dependent variables was tested by linear regression to determine the relationship in the multivariate analysis.

Ethical Aspects

This research has received a request for a recommendation for a research permit from an institution in this case the dean of the Hasanuddin University Nursing Faculty and a research permit from the South Sulawesi Province Investment and PTSP Office as well as an ethical permit from the Ethics Commission of the Hasanuddin University Faculty of Public Health. So this research has applied research ethics such as informed consent, anonymity, confidentiality, and ethical clearance.

RESULTS

Based on gender, this study was dominated by the female group (90.6%) where the most distribution was obtained, namely having low category physical activity 53%, low-level sedentary behavior 36.8%, normal BMI 49.6%, low category body fat percentage 50.4%, fat level. visceral normal category 82.9%. Based on age, this study was dominated by the age group of 20 years (43.5%) where the most distribution was obtained, namely having a low level of physical activity 22.2%, low-level sedentary behavior 16.2%, normal BMI 53.8%, body fat percentage of normal category 27.4%, level 41% normal visceral fat. Based on socioeconomic status, this study was dominated by the medium socioeconomic status group (82.7%) where the most distribution was obtained, namely having a low level of physical activity 52.1%, low-level sedentary behavior 36.8%, normal BMI 44.4%, body fat percentage of normal categories 46.2 %, the normal level of visceral fat is 78.6%.

There was a significant correlation between the level of physical activity with BMI, the percentage of body fat, and the level of visceral fat in students who attended the block system lectures ($p < 0.05$). There was no correlation between sedentary behavior and BMI, body fat percentage, and visceral fat level in students who attended the block system lecture ($p > 0.05$). Based on the multiple linear regression test, it was found that a significance value < 0.05 means that physical activity and sedentary behavior simultaneously affect BMI, body fat percentage, and visceral fat level.

DISCUSSION

Based on the results of the study using a linear regression test, it was found that there was a relationship between the level of physical activity and sedentary behavior on BMI, body fat percentage, and visceral fat level. Although the bivariate test shows that only activity level is related to BMI, body fat percentage and visceral fat level, the two independent variables if connected together will show a related result. So from the research results it can be seen that if the two independent variables are linked together, it can be seen that there is a relationship in each of the dependent variables. This means that when a person has high sedentary behavior it does not mean that the level of physical activity is always low,

and vice versa. So, these two things are related to each other so that from the relationship the two things will affect both BMI, body fat percentage, and visceral fat levels.

However, other studies have shown different results by Keating et al. (2016) using bivariate correlation and multiple regression analysis. From the results, it was found that there was no relationship between physical activity or sedentary behavior and visceral fat tissue. Sedentary behavior and moderate and vigorous physical activity only contributed 3% for visceral fat tissue and 0.003% for liver fat. Higher levels of visceral fat tissue were associated only with time spent in moderate activity but not associated with sedentary behavior. And the association was found that the level of physical activity and sedentary behavior measured objectively did not affect the visceral and fatty liver tissue.

Another study supporting this research was conducted by Myers et al. (2017) showed a clear relationship between objective measures of physical activity and sedentary behavior, energy expenditure, adiposity and appetite control. The study measured body composition, waist circumference, adding cardiovascular fitness, total energy expenditure and rest, and various markers of health. Appetite control was assessed with a validated eating behavior questionnaire. The data suggest a strong association between physical inactivity and weight gain or obesity. This relationship tended to be two-way, sedentary behavior was positively correlated with fat mass and waist circumference, moderate to vigorous physical activity was negatively associated with fat mass and remained significantly correlated with adiposity after controlling for sedentary behavior.

Another study that reinforces this topic also found that even though students spend long hours sitting, they can offset the negative effects of the behavior by practicing moderate leisure time. Based on regression analysis which was also carried out on literature data, sedentary behavior variables and physical activity levels were found to be predictors that could significantly influence body composition, apart from age and gender. However, further studies using standardized methodologies to assess physical activity and body composition are urgently needed. In addition, it is important to understand this phenomenon and to provide stronger evidence about the determinants of body composition in order to prevent the risk of obesity in a person (Gualdi-Russo et al., 2021).

The limitations of this research that should be corrected for further research are the limitations of the conditions during the research implementation so that researchers cannot collect samples evenly and are distributed across all study programs carrying out block system lectures. In addition, to measure sedentary behavior, instruments that are more objective and relevant to student activities are still needed.

BIBLIOGRAPHY

Cheng, L., Pohlabeln, H., Ahrens, W., Lauria, F., Veidebaum, T., Chadjigeorgiou, C., Molnár, D., Eiben, G., Michels, N., Moreno, L. A., Page, A. S., Pitsiladis, Y., & Hebestreit, A. (2020). Cross-sectional and longitudinal associations between physical activity, sedentary behaviour and bone stiffness index across weight status in European children and adolescents. *International Journal of Behavioral Nutrition and Physical Activity*, *17*(1), 1–13. https://doi.org/10.1186/s12966-020-00956-1.

Gualdi-Russo, E., Rinaldo, N., Toselli, S., & Zaccagni, L. (2021). Associations of physical activity and sedentary behaviour assessed by accelerometer with body composition among children and adolescents: A scoping review. *Sustainability (Switzerland)*, *13*(1), 1–19. https://doi.org/10.3390/su13010335.

Keating, S. E., Parker, H. M., Pavey, T. G., Baker, M. K., Caterson, I. D., George, J., & Johnson, N. A. (2016). Objectively Quantified Physical Activity and Sedentary Behavior in Predicting Visceral Adiposity and Liver Fat. *Journal of Obesity*, *2016*. https://doi.org/10.1155/2016/2719014.

Langhammer, B., Bergland, A., & Rydwik, E. (2018). The importance of physical activity exercise among older people. *BioMed Research International*, *2018*, 13–15. https://doi.org/10.1155/2018/7856823.

Myers, A., Gibbons, C., Finlayson, G., & Blundell, J. (2017). Associations among sedentary and active behaviours, body fat and appetite dysregulation: Investigating the myth of physical inactivity and obesity. *British Journal of Sports Medicine*, *51*(21), 1540–1545. https://doi.org/10.1136/bjsports-2015-095640.

Sunami, T., Husaini, A., & Pratama, Y. D. (2017). Analisis tingkat stres mahasiswa keperawatan dalam mengikuti sistem pembelajaran blok. *SAINTEK; Jurnal Ilmiah Sains Dan Teknologi*.

Yang, Y., & Koenigstorfer, J. (2020). Determinants of physical activity maintenance during the Covid-19 pandemic: a focus on fitness apps. *Translational Behavioral Medicine*, *10*(4), 835–842. https://doi.org/10.1093/tbm/ibaa086.

Zellatifanny, C. M., & Mudjiyanto, B. (2018). Tipe Penelitian Deskripsi Dalam Ilmu Komunikasi. *Diakom : Jurnal Media Dan Komunikasi*, *1*(2), 83–90. https://doi.org/10.17933/diakom.v1i2.20.

Zheng, C., Huang, W. Y., Sheridan, S., Sit, C. H. P., Chen, X. K., & Wong, S, H. S. (2020). Covid-19 pandemic brings a sedentary lifestyle in young adults : A cross-sectional and longitudinal study. *International Journal of Environmental Research and Public Health*, *17*(17), 1–11. https://doi.org/https://doi.org/10.3390/ijerph17176035.