

DAFTAR PUSTAKA

1. Sutopo H, Susilowati IH, Utami DL. Determinants of Musculoskeletal Disorders (MSDs) Complaints Among Employees of the Claim and Provider Division at PT . BNI Life Insurance in 2024 Determinan Keluhan Musculoskeletal Disorders (MSDs) pada Karyawan Claim dan Provider Division PT . BNI Li. 2024;6(2):66–74.
2. Nuryaningtyas B ka M roh, Martiana T. Analisis Tingkat Risiko Muskuloskeletal Disorders (MSDs) Dengan The Rapid Upper Limbs Assessment (RULA) DAN Karakteristik Individu Terhadap Keluhan MSDs. Indones J Occup Saf Heal [Internet]. 2014;3(2):160–9. Available from: [https://journal.unair.ac.id/K3@analisis-tingkat-risiko-muskuloskeletal-disorders-\(msds\)-dengan-the-rapid-upper-limbs-assessment-\(rula\)-dan-karakteristik-individu-terhadap-keluhan-msds-article-9194-media-39-category-16.html](https://journal.unair.ac.id/K3@analisis-tingkat-risiko-muskuloskeletal-disorders-(msds)-dengan-the-rapid-upper-limbs-assessment-(rula)-dan-karakteristik-individu-terhadap-keluhan-msds-article-9194-media-39-category-16.html)
3. Dewi NF. Identifikasi Risiko Ergonomi dengan Metode Nordic Body Map Terhadap Perawat Poli RS X. J Sos Hum Terap. 2020;2(2).
4. Cahyono MH, Sukadarwanto, Sugiono. Pengaruh Neck Cailliet Exercise dan Neuromuscular Taping 9NMT) Terhadap Pengurangan Nyeri Pada Kasus Nyeri Leher Non-Spesifik. J Nas Fisioter (JURNAFISIO). 2023;1(1):1–8.
5. Situmorang CK, Widjasena B, Wahyuni I. Hubungan Antara Durasi Dan Postur Tubuh Penggunaan Komputer Terhadap Keluhan Neck Pain Pada Tenaga Kependidikan Fakultas Kesehatan Masyarakat Universitas Diponegoro. J Kesehat Masy [Internet]. 2020;8(5):672–8. Available from: <http://ejournal3.undip.ac.id/index.php/jkm>
6. Nurhidayanti O, Hartati E, Handayani PA. Pengaruh Mckenzie Cervical Exercise terhadap Nyeri Leher Pekerja Home Industry Tahu. Holist Nurs Heal Sci. 2021;4(1):34–43.
7. Safiri S, Kolahi AA, Hoy D, Buchbinder R, Mansournia MA, Bettampadi D, et al. Global, regional, and national burden of neck pain in the general population, 1990-2017: Systematic analysis of the Global Burden of Disease Study 2017. BMJ. 2020;368.
8. Wu AM, Cross M, Elliott JM, Culbreth GT, Cousin E, Haile LM, et al. Global, regional, and national burden of neck pain, 1990–2020, and projections to 2050: a systematic analysis of the Global Burden of Disease Study 2021. Lancet Rheumatol. 2024;6(3):e142–55.

9. Li Y, Zhang S, Shu P. Global burden of neck pain in 204 countries from 1990–2019. *Arch Med Sci.* 2023;19(6):1811–21.
10. Maulidya L, Kurniawidjaja LM. Keluhan Nyeri di Bagian Tengkok Leher pada Pekerja Perkantoran: A Systematic Review. *Prev J Kesehat Masy.* 2024;14(3):665–79.
11. Ranasinghe P, Perera YS, Lamabadusuriya DA, Kulatunga S, Jayawardana N, Rajapakse S, et al. Work-related complaints of arm, neck and shoulder among computer office workers in an Asian country: Prevalence and validation of a risk-factor questionnaire. *BMC Musculoskelet Disord.* 2011;12.
12. Kim EA, Nakata M. Work-related Musculoskeletal Disorders in Korea and Japan: A Comparative Description. *Ann Occup Environ Med.* 2014;26(1):1–7.
13. Alfidyani KS, Lestantyo D, Wahyuni I. Hubungan Pelatihan K3, Penggunaan APD, Pemasangan Safety Sign, dan Penerapan SOP Dengan Terjadinya Risiko Kecelakaan Kerja (Studi Pada Industri Garmen Kota Semarang). *J Kesehat Masy [Internet].* 2020;8(4):478–84. Available from: <http://ejournal3.undip.ac.id/index.php/jkm>
14. Jaleha B, Gede Adiatmika IP, Sugijanto S, Muliarta IM, Tirtayasa K, Krisna Dinata IM. McKenzie Neck Exercise Lebih Baik Dalam Menurunkan Disabilitas Leher Daripada Dynamic Neck Exercise Pada Penjahit Dengan Myofascial Pain Syndrome Otot Upper Trapezius. *Sport Fit J.* 2020;8(2):41.
15. Wong, J. J., Côté, P., Quesnele, J. J., Stern, P. J., & Mior SA. A systematic review on the effectiveness of conservative treatments for mechanical neck pain. *J Manipulative Physiol Ther.* 2020;
16. Rochman T, Astuti RD, Setyawan FD. Perancangan Ulang Fasilitas Fisik Kerja Operator di Stasiun Penjilidan pada Industri Percetakan Berdasarkan Prinsip Ergonomi. *J Performa.* 2012;11(1):1–8.
17. Altiparmarkogullary Y. Integrating Human Factors and Ergonomics Practices Into Design Studio Courses Through Action Research. *Ergonomi.* 2022;5(3):129–43.
18. Pramono T, Sayuti AM, Gaffar MR, Puspitaningrum RA. Penilaian Risiko Ergonomi Pada Lingkungan Kerja Perkantoran Menggunakan Metode Rapid Office Strain Assessment (ROSA). *J Pendidik Adm Perkantoran.* 2022;10(3):246–55.

19. APM Anggarani, RK Djoar, ED Zefanya SW. Muskuloskeletal Disorder (MSD's) Pada Pekerja Kamtoran Di Surabaya. *J Endur*. 2022;7(2):323–8.
20. Sadegh M. Effectiveness of an ergonomics training program on musculoskeletal disorders, job stress, quality of work-life and productivity in office workers: a quasi-randomized control trial study. *Int J Occup Saf Ergon*. 2023;
21. Santos W, Rojas C, Isidoro R, Lorente A, Dias A, Mariscal G, et al. Efficacy of Ergonomic Interventions on Work-Related Musculoskeletal Pain: A Systematic Review and Meta-Analysis. *J Clin Med*. 2025;14(9).
22. Genebra CVDS, Maciel NM, Bento TPF, Simeão SFAP, Vitta A De. Prevalence and factors associated with neck pain: a population-based study. *Brazilian J Phys Ther*. 2017;21(4):274–80.
23. Motimath B, Ahammed N. Comparative Study on Effectiveness of Trigger Point Release Versus Cervical Mobilization in Chess Players with Mechanical Neck Pain. *Int J Phys Educ Sport Heal* [Internet]. 2017;4(3):207–11. Available from: www.kheljournal.com
24. Hidalgo B, Hall T, Bossert J, Dugeny A, Cagnie B, Pitance L. The efficacy of manual therapy and exercise for treating non-specific neck pain: A systematic review. *J Back Musculoskelet Rehabil*. 2017;30(6):1149–69.
25. Muhammad Umar Jamil, Masooma Gull B. Frequency of Neck Pain Among Call Center Employees of Lahore Pakistan. 2018;88–94.
26. Munawaroh N, Sugiarto SI, Wahyudati S, Setiawati E. Perbandingan McKenzie dan Isometric Neck Exercise terhadap Keseimbangan pada Forward Head Posture : Uji Kuasi Eksperimental. 2022;9(1):55–61.
27. Kazeminasab S, Nejadghaderi SA, Amiri P, Pourfathi H, Araj-Khodaei M, Sullman MJM, et al. Neck pain: global epidemiology, trends and risk factors. *BMC Musculoskelet Disord* [Internet]. 2022;23(1):1–13. Available from: <https://doi.org/10.1186/s12891-021-04957-4>
28. Depari RDS, Rambe AS. Hubungan Posisi Menunduk saat Menggunakan Telepon Seluler dengan Nyeri Tenguk. *Scr SCORE Sci Med J*. 2021;3(1):17–22.
29. Diva Putra AIY, Wardana ING, Yuliana ., Muliani . Prevalensi Dan Derajat Nyeri Leher Akibat Penggunaan Telepon Genggam Pada Mahasiswa Psskpd Fk Unud Berumur 18-23 Tahun. *E-Jurnal Med Udayana*. 2021;10(10):15.
30. Olani F, Hasta Baruna A, Mariyana D. Penyuluhan Mc Kenzie Cervical

Exercise Untuk Mengurangi Neck Pain Pada Pegawai Poli KIA Puskesmas Singosari. *J Pengabdian Masyarakat Multidisiplin*. 2023;6(3):279–86.

31. Ehsani F, Mosallanezhad Z, Ghazaleh V. The Prevalence, Risk Factors and Consequences of Neck Pain in Office Employees. *Middle East J Rehabil Heal*. 2017;Inpress(Inpress).
32. Ratunuman YM, Suoth LF, Joseph WB. Hubungan Antara Sikap dan Beban Kerja dengan Keluhan Muskuloskeletal dada Kelompok Tani di Desa Rok-Rok Kecamatan Kema Kabupaten Minahasa Utara. *J KESMAS*. 2018;7(4):1–7.
33. Zanchetta MS, Maheu C, Kolisnyk O, Mohamed M, Guruge S, Kinslikh D, et al. Canadian Men's Self-Management of Chronic Diseases: A Literature Analysis of Strategies for Dealing With Risks and Promoting Wellness. *Am J Mens Health*. 2017;11(4):1077–95.
34. Nugraha MHS, Juni Antari NKA, Karunia Saraswati NLP. Efektivitas Penerapan Edukasi Sikap Kerja, Elektroterapi dan Terapi Latihan untuk Penderita Mechanical Neck Pain. *J Ergon Indones (The Indones J Ergon)*. 2019;5(2):83.
35. Hasanpour-Dehkordi A, Dehghani A, Solati K. A comparison of the effects of pilates and mckenzie training on pain and general health in men with chronic low back pain: A randomized trial. *Indian J Palliat Care*. 2017;23(1):36–40.
36. Kinasih KK, Rahmanto S, Rahmawati NA. The Effect Of Combination Of Progressive Muscle Relaxation And Mckenzie Neck Exercise On Functional Ability In The Case Of Myofascial Pain Syndrome Muscle Upper Trapezius On Students. *J Keperawatan Dan Fisioter*. 2022;5(1):42–52.
37. Winaya IMN, Tianing NW, Widnyana M, Pramana Putra IPY. Perbedaan Efektivitas Intervensi Microwave Diathermy Dan Deep Tissue Massage Lebih Efektif Daripada Microwave Diathermy Dan Mckenzie Neck Exercise Untuk Koreksi Postur Pada Penderita Forward Head Posture. *Sport Fit J*. 2019;001:51–63.
38. Wibowo A, Putri S. Pedoman Praktis Penyusunan Naskah Ilmiah. 2021 ; (July):66. Available from: https://www.researchgate.net/publication/352981861_Pedoman_Praktis_Penyusunan_Naskah_Ilmiah_Dengan_Metode_Systematic_Review/link/60e1df3a92851ca944a79ab9/download
39. Hadi S, Thahjono HK, Palupi M. Systematic Review: Meta Sintesis Untuk Riset Perilaku Organisasi. *Journal of Psychiatric Research*. 2020. 4–25

p.

40. İŞ, Griffiths MD. Şalvarlı-Griffiths 2021_Article_Internet Gaming Disorder AndIts As.pdf. 2021;1420–42.
41. Page MJ, Moher D, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. PRISMA 2020 explanation and elaboration: Updated guidance and exemplars for reporting systematic reviews. *BMJ*. 2021;372.
42. C Tufanaru, Z Munn, E Aromataris, J Campbell LH. Checklist for randomized controlled trials. *Joanna Briggs Inst*. 2020;
43. Sugiyono S. Metode Penelitian Kuantitatif, Kualitatif dan R&D. Bandung Alfabeta. 2017;
44. Kartiko Pertiwi J, Tirtayasa K, - S, Pangkahila JA, Muliarta IM, Lesmana SI. Kombinasi McKenzie Exercise Dan Ultrasound Lebih Baik Daripada Myofascial Release Dan Ultrasound Untuk Memperbaiki Disabilitas Pada Mechanical Neck Pain. *Sport Fit J*. 2017;5(3):78–84.
45. Lee JH, Lee MY, Lim TH, Kim TY, Kim SM, Suh DW, et al. Effectiveness of an application-based neck exercise as a pain management tool for office workers with chronic neck pain and functional disability: A pilot randomized trial. *Eur J Integr Med* [Internet]. 2017;12:87–92. Available from: <http://dx.doi.org/10.1016/j.eujim.2017.04.012>
46. Hyongsoo LP, Yoonhwan KP. Effects of McKenzie Cervical Exercise Program on Cervical Pressure Pain and Balance in Industrial Workers. *J Korean Soc Integr Med* [Internet]. 2018;6(2):107–15. Available from: <https://doi.org/10.15268/ksim.2018.6.2.107>
47. Jaleha B, Gede Adiatmika IP, Sugijanto S, Muliarta IM, Tirtayasa K, Krisna Dinata IM. McKenzie Neck Exercise Lebih Baik Dalam Menurunkan Disabilitas Leher Daripada Dynamic Neck Exercise Pada Penjahit Dengan Myofascial Pain Syndrome Otot Upper Trapezius. *Sport Fit J*. 2020;8(2):41.
48. Kaljić E, Hadžipašić E, Jaganjac A, Trtak N, Katana B, Pecar M. Effect of physical therapy in daily life and work activities for people with chronic cervical pain syndrome. *J Heal Sci*. 2021;11(2):78–83.
49. Jehaman I, . S, Tantangan R, Harahap FR. The Effect Of McKenzie Exercise And Neck Stabilization Exercise On Neck Pain On Garments. *J Keperawatan Dan Fisioter*. 2022;4(2):299–306.
50. Karunia Saraswati NLP, Thanaya SAP, Negara AAGAP. Analisa Rosa Pada Intervensi Deep Neck Flexor Strengthening Exercise Dan McKenzie

- Neck Exercise Meningkatkan Fungsional Leher Penderita Cervicogenic Headache. *Maj Ilm Fisioter Indones*. 2022;10(3):186.
51. Sari IP, Faridah F. Pengaruh Mc. Kenzie Cervical Exercise Terhadap Nyeri Leher Pada Pembatik. *Qual J Kesehatan*. 2023;17(1):19–24. Available from: <https://ejournal.poltekkesjakarta1.ac.id/index.php/adm/article/view/862>
 52. H E, Kesoema T ajoe, Peni Julianti H, Handoyo R. Comparison of McKenzie and Isometric Exercises on Neck Functions of Computer Users with Forward Head Posture. *Indones J Phys Med Rehabil*. 2023;12(02):109–20.
 53. Imanurrohman Z, Datukaramat RRF, Multazam A, Rahmanto S, Rahim AF. Perbandingan Contract Relax Stretching dan Mckenzie Neck Exercise terhadap Lingkup Gerak Sendi Leher pada Pekerja Dengan Nyeri Leher. *Indones J Physiother Res Educ [Internet]*. 2023;4(1):14–20. Available from: <https://journal.aplifi.org/index.php/ijopre/article/view/83%0Ahttps://journal.aplifi.org/index.php/ijopre/article/download/83/45>
 54. Exercise CT, Exercise E, Side M, Exercise B. Pengaruh McKenzie Neck Exercise Terhadap Nilai Nyeri Leher Pada Karyawan Dengan Spasme Upper Trapezius Di Rumah Sakit Premier Surabaya. *J Ilm keperawatan*. 2024;
 55. Elviani, FR, Romadhoni DL. Pengaruh Mc Kenzie Cervical Exercise Terhadap Neck Pain Akibat Forward Head Posture Di Masa Pandemi Covid 19 Pada Pekerja Kantor. *Physio J*. 2023;3(2):41–8.
 56. Nazariah DAN, Susilo T, Sulaiman. Perbedaan Pemberian Mc Kenzie Neck Exercise Dan Neck Cailliet Exercise. 2024;1:74–80.
 57. Nayak D, Nayak P. McKenzie protocol - A modalities to treat with mechanical cervical spine. *Eur J Mol Clin Med*. 2020;7(11):1108–13.
 58. Rutuja R. Avaghade SBS, , Sayalee B. DhaneRutuja R. Avaghade SBS, Sayalee B. Dhane. Effectiveness of McKenzie approach and segmental spinal stabilization exercises on neck pain in individuals with cervical postural syndrome: An experimental study. 2023;(January):1–6.
 59. Chaiyawijit S, Kanlayanaphotporn R. McKenzie neck exercise versus craniocervical flexion exercise on strength and endurance of deep neck flexor muscles , pain , disability , and craniocervical angle in individuals with chronic neck pain : a randomized clinical trial. *J Man Manip Ther [Internet]*. 2024;32(6):573–83. Available from: <https://doi.org/10.1080/10669817.2024.2337979>
 60. Ullah N, Amin A, Rizwan, Ullah Z, Jamil F, Atif M. Effects of McKenzie

Therapy on Cervical Proprioception and Postural Control in Patients with Chronic Non-Specific Neck Pain: A Randomized Controlled Trial. *Heal J Physiother Rehabil Sci*. 2025;5(2):38–44.

61. Moffett JK, Jackson DA, Gardiner ED, Torgerson DJ, Coulton S, Eaton S, et al. Randomized trial of two physiotherapy interventions for primary care neck and back pain patients: “McKenzie” vs brief physiotherapy pain management. *Rheumatology*. 2006;45(12):1514–21.
62. Mohebi S, Parham M, Sharifirad G, Gharlipour Z. Social Support and Self - Care Behavior Study. 2018;(January):1–6.
63. Ramasubramani P, Kar SS, Sarkar S. Association of Social Capital With Tuberculosis: A Community-Based Cross-Sectional Analytical Study in South India. *Cureus*. 2023;15(10).
64. shin oe, Yu Yamato, Tomohiko Hasegawa, Go Yoshida, Tomohiro Banno, Hideyuki Arima, Koichiro Ide, Tomohiro Yamada, Kenta Kurosu, Keiichi Nakai, Haruo Niwa & Yukihiro Matsuyama Yu Yamato, Tomohiko Hasegawa, Go Yoshida, Tomohiro Banno, Hideyuki Arima, Koichi HN& YM. The relationship between frailty and spinal alignment in the elderly general population: a two-year longitudinal study. *Eur spine J* [Internet]. 2023; Available from: <https://link.springer.com/article/10.1007/s00586-023-07759-5>
65. El-Kablawy, M. A., Zuhairy, N. A., Elazab, D. R., & Hassan MA. The combined effect of kendell and mckenzie postural correction exercises on neck pain and function in chronic non-specific neck pain.
66. Triyulianti S. Pengaruh Neuromuscular Taping Dan Contract Relax Stretching Pada Kondisi Myofascial Pain Syndrome Otot Upper Trapezius Terhadap Penurunan Nyeri Leher. *J Ilm Fisioter*. 2022;5(02):34–8.
67. Muralidharan CK. Azerbaijan Pharmaceutical and Pharmacotherapy Journal Effectiveness of Mckenzie ’ s Method and Kinesiotapingon Pain and Neck Range of Motion In Upper Cross Syndrome Subjects Effectiveness of Mckenzie ’ s Method and Kinesiotapingon Pain and Neck Range of M. 2024;(June).
68. Zheng B, Zheng L, Li M, Lin J, Zhu Y, Jin L, et al. Sex differences in factors associated with neck pain among undergraduate healthcare students: a cross-sectional survey. *BMC Musculoskelet Disord*. 2022;23(1):1–10. Available from: <https://doi.org/10.1186/s12891-022-05782-z>
69. Wu H, Li Y, Zou C, Guo W, Han F, Huang G, et al. Global burden of neck

- pain and its gender and regional inequalities from 1990 - 2021: a comprehensive analysis from the Global Burden of Disease Study 2021. *BMC Musculoskelet Disord.* 2025;26(1). Available from: <https://doi.org/10.1186/s12891-025-08331-6>
70. Chen YL, Chan YC, Alexander H. Gender differences in neck muscle activity during near-maximum forward head flexion while using smartphones with varied postures. *Sci Rep.* 2024;14(1):1–11. Available from: <https://doi.org/10.1038/s41598-024-63734-0>
 71. Gao Y, Chen Z, Chen S, Wang S, Lin J. Risk factors for neck pain in college students: a systematic review and meta-analysis. *BMC Public Health.* 2023;23(1):1–13. Available from: <https://doi.org/10.1186/s12889-023-16212-7>
 72. Azadvari M, Sarzaeim M, Rajabi S, Yahyaee A, Razavi SZE, Haghparast A, et al. Associations between exposure to common technology devices and reported neck pain among Iranian school-age adolescents: a cross sectional study. *BMC Musculoskelet Disord.* 2023;24(1):1–7.
 73. Tersa-Miralles C, Bravo C, Bellon F, Pastells-Peiró R, Rubinat Arnaldo E, Rubí-Carnacea F. Effectiveness of workplace exercise interventions in the treatment of musculoskeletal disorders in office workers: A systematic review. *BMJ Open.* 2022;12(1).