DAFTAR PUSTAKA

Abdullah, K., Jannah, M., Aiman, U., Hasda, S., Fadilla, Z., Taqwin, Masita, Ardiawan, K. N., & Sari, E. M. (2021). *Metode Penelitian Kuantitatif*. Yayasan Penerbit Muhammad Zaini. https://penerbitzaini.com

Adiputra, I., Trisnadewi, N., Oktaviani, N., Munthe, S., Hulu, V., Budiastutik, I., Faridi, A., Ramdany, R., Fitriani, R., Tania, P., Rahmiati, B., Sianturi, E., & Suryana. (2021). *Metodologi Penelitian Kesehatan*. Yayasan Kita Menulis. https://repo.uinmybatusangkar.ac.id/xmlui/handle/123456789/23648

Alamer, A., Alharbi, F., Aldhilan, A., Almushayti, Z., Alghofaily, K., Elbehiry, A., & Abalkhail, A. (2022). Healthcare-Associated Infections (HAIs): Challenges and Measures Taken by the Radiology Department to Control Infection Transmission. *Vaccines*, *10*(12). https://pubmed.ncbi.nlm.nih.gov/36560470/

Ali, W., Hu, Z., Tang, Z. R., Liu, S. Y., Nasir, Z. A., Coulon, F., Liu, P., & Yan, C. (2025). *Quantitative microbial risk assessment of bioaerosol emissions from squat and bidet toilets during flushing. Risk Analysis, 45*(8), 2083–2096. https://onlinelibrary.wiley.com/doi/10.1111/risa.70000

Amri, U. S., Ikhtiar, M., & Baharuddin, A. (2022). Hubungan Kualitas Lingkungan Fisik Dengan Keberadaan Angka Kuman Udara Di Ruang Rawat Inap Dan Ruang Isolasi Selama Pandemi Di Rumah Sakit Universitas Hasanuddin Makassar. *Journal of Muslim Community Health (JMCH) 2022*, *3*(3), 47–58. https://pasca-umi.ac.id/index.php/jmch/article/view/985/1064

Aranke, M., Moheimani, R., Phuphanich, M., Kaye, A. D., Ngo, A. L., Viswanath, O., & Herman, J. (2021). *Disinfectants in interventional practices. Current Pain and Headache Reports, 21*(25). https://link.springer.com/article/10.1007/s11916-021-00938-3

Artasensi, A., Mazzotta, S., & Fumagalli, L. (2021). *Back to basics: Choosing the appropriate surface disinfectant. Antibiotics, 10*(6). https://www.mdpi.com/2079-6382/10/6/613

American Society of Heating, Refrigerating and Air-Conditioning Engineers, American Society for Health Care Engineering, & American National Standards Institute. (2017). *ANSI/ASHRAE/ASHE Standard 170–2017: Ventilation of health care facilities.* ASHRAE. https://www.ashrae.org/technical-resources/standards-and guidelines/standards-addenda/ansi-ashrae-ashe-standard-170-2017

Asthana, A., Thomas, S., Sahana, & Nigam, S. (2024). *Effectiveness of ventilation systems in operating rooms during surgical procedures: A short review. IOSR Journal of Dental and Medical Sciences (IOSR-JDMS), 23*(1), 53–55. https://www.iosrjournals.org/iosr-jdms/papers/Vol23-issue1/Ser-4/J2301045355

Bednarek, R. S., Nassereddin, A., & Affiliations, M. L. R. (2023). *Skin Antiseptics Geisinger WakeMed Health and Hospitals Geisinger Health System*. StatPearls Publishing. https://pubmed.ncbi.nlm.nih.gov/29939630/

Cahyono, T. (2022). *Rekayasa pengendalian angka kuman udara*. Deepublish.

Chairunnisa, A., Subarno, & Erawati, E. (2022). Studi Angka Kuman Udara Di Instalasi Bedah Sentral (IBS) RSUD Dr. Moewardi Study of Airborne Germ in Central Operation Theater (COT) RSUD Dr. Moewardi. *Prosiding Seminar Nasional UNIMUS*, *5*. https://prosiding.unimus.ac.id/index.php/semnas/article/view/1303

Chezganova, E. A., Efimova, O. S., Sakharova, V. M., Efimova, A. R., Sozinov, S. A., Ismagilov, Z. R., & Brusina, E. B. (2021).*The additional reservoir of hospital environment microorganisms at healthcare facilities.* Journal of Microbiology, Epidemiology and Immunobiology, 98(3). https://microbiol.crie.ru/jour/article/view/1039/615

Chiletzari, S., Barbouni, A., & Kesanopoulos, K. (2025). *Impact of microbial load on operating room air quality and surgical site infections: A systematic review. Acta Microbiologica Hellenica (Switzerland), 70*(2). https://www.mdpi.com/2673-947X/70/2/20

Cintya, D. W., Raharjo, M., & Wahyuningsih, N. E. (2023). Literatur Review : Hubungan antara Kualitas Udara Ruang dengan Gangguan Kesehatan pada Pekerja Literature Review : Link Between Space Air Quality and Health Interference in Workers. *Jurnal Kesehatan Masyarakat*, *8*(1), 2021. DOI:10.31602/ann.v8i1.4815

Curcio, D., Cane, A., Fernández, F., & Correa, J. (2019). Surgical site infection in elective clean and clean-contaminated surgeries in developing countries. *International Journal of Infectious Diseases, 80*, 34–45. https://www.sciencedirect.com/science/article/pii/S1201971218330664

Drago, J., Scollo, S., Cosmai, S., Cattani, D., Modena, G., Mancin, S., Morales Palomares, S., Petrelli, F., Marfella, F., Cangelosi, G., Lopane, D., & Mazzoleni, B. (2025). *The impact of intraoperative traffic and door openings on surgical site infections: An umbrella review. Surgeries (Switzerland), 6*(3). https://www.mdpi.com/2673-4095/6/3/61

Gerilmez, A., Kayalar, A. E., Onen, M. R., Yuvruk, E., & Naderi, S. (2017). Can The Airborne Contamination Of Surgical Instruments Be Responsible For Surgical Site Infection? *The Journal of Turkish Spinal Surgery*, *28*(1). https://www.jtss.org/pdf/f942abf9-a73b-4057-b48b-c3a4b7d0c2a5/articles/28092/jtss-28-27-En.pdf

Gradisnik, L., Bunc, G., Ravnik, J., & Velnar, T. (2024). *Enhancing surgical safety: Microbiological air control in operating theatres at University Medical Centre Maribor. Diagnostics, 14*(10). https://www.mdpi.com/2075-4418/14/10/1054

Guldana, A., Niyetbay, S., Zhanguzhinov, A., Kassabekova, G., Jartayeva, D., Alimova, K., Zhakapbayeva, G., & Bostandyk, K. (2025). *Impact of airflow disturbance from human motion on contaminant control in cleanroom environments: A CFD-based analysis. Buildings, 15*(13). https://www.mdpi.com/2075-5309/15/13/2264

Hipkabi. (2015). *Buku Pelatihan Dasar-Dasar Keterampilan Bagi Perawat Kamar Bedah* (15th ed.). Hipkabi Press.

Hutahaean, S. (2023). *Pencegahan dan Pengendalian Infeksi: Penguatan fungsi dan peran Kepala Ruan*. Salemba Medika.

Ibrahim, F., Samsudin, E. Z., Ishak, A. R., & Sathasivam, J. (2022). *Hospital indoor air quality and its relationships with building design, building operation, and occupant-related factors: A mini-review. Frontiers in Public Health.* https://www.frontiersin.org/articles/10.3389/fpubh.2022.1067764

Ismawati, N. D. S., Kurniati, N. D., Nugraha, A. P., Baehaqi, R., Taufiqurrahman, I., & Nurrahman, T. (2025). *Comparison of germ count levels based on zone at central operating theatre facility Dr. Soetomo General and Academic Hospital*. CoMPHI Journal: Community Medicine and Public Health of Indonesia Journal, 6(2), 113–124. https://comphi.sinergis.org/comphi/article/view/309

Kartika, D. (2022). Kualitas Udara dalam Sanitasi Rumah Sakit Beresiko terjadi Infeksi pada Pasien Rawat Inap. *HumanTech Jurnal Ilmiah Multidisiplin Indonesia*,*1*. https://journal.ikopin.ac.id/index.php/humantech/article/view/1928

Kaslam, P., Widodo, D., Satari, H. I., Karuniawati, A., & Kurniawan Liliana. (2021). *Buku Pedoman Pencegahan Pengendalian Infeksi*. Universitas Indonesia Publishing.

Kayta, G., Manilal, A., Tadesse, D., & Siraj, M. (2022). Indoor Air Microbial Load, Antibiotic Susceptibility Profiles of Bacteria, and Associated Factors in Different Wards of Arba Minch General Hospital, Southern Ethiopia. *PLoS ONE*, *17*(7). https://pubmed.ncbi.nlm.nih.gov/35797393/

Kemenkes. (2021). *Pedoman dan Standar Etik Penelitian dan Pengembangan Kesehatan Nasional*.

Kementerian Kesehatan RI. (2016a). *Peraturan Menteri Kesehatan Nomor 66 tahun 2016 tentang Keselamatan dan Kesehatan Kerja Rumah Sakit*.

Kementerian Kesehatan RI. (2016b). *Peraturan Menteri Kesehatan Republik Indonesia Nomer 24 Tahun 2016 tentang Persyaratan Teknis Bangunan dan Prasarana Rumah Sakit*.

Kementerian Kesehatan Republik Indonesia. (2017). *Peraturan Menteri Kesehatan Republik Indonesia Nomor 27 Tahun 2017 tentang Pedoman Pencegahan dan Pengendalian Infeksi di Fasilitas Pelayanan Kesehatan*.

Kementerian Kesehatan RI. (2022). *Peraturan Menteri Kesehatan Republik Indonesia Nomor 40 tahun 2022 tentang Persyaratan Teknis Bangunan Prasarana, dan Peralatan Kesehatan Rumah Sakit*.

Kementerian Kesehatan RI. (2023). *Peraturan Menteri Kesehatan Republik Indonesi Nomor 2 Tahun 2023 tentang Peraturan Pelaksanaan Peraturan Pemerintah Nomor 66 Tahun 2014 tentnag Kesehatan Lingkungan*.

Khankari, K. (2018). Computational Fluid Dynamics (CFD) Analysis of Hospital Operating Room Ventilation Systems Part I: Analysis of Air Change Rates. *ASHRAE Journal*. https://www.ashrae.org/technical-resources/ashrae-journal/featured-articles/computational-fluid-dynamics-cfd-analysis-of-hospital-operating-room-ventilation-systems-part-i-analysis-of-air-change-rates

Kim,In-Ju. (2020). *Hospital flooring safety and health: Knowledge gaps and suggestions.* Ergonomics, 63(9), 1116–1135. https://www.tandfonline.com/doi/full/10.1080/00140139.2019.1701245

Komalaningsih, S., Muharam, G., Deliani, S., & Suparni. (2023). Hubungan Faktor Sanitasi Ruang Perawatan Rumah Sakit dengan Peredaran Kuman Patogen di Udara Penyebab Infeksi di RS "X" 2022. *Seminar Nasional Biologi (SEMABIO)*, *35*. https://conferences.uinsgd.ac.id/index.php/gdcs/article/view/1948

Krishnankutty, V. V., Muraleedharan, C., & Palatel, A. (2025). *Numerical analysis of airflow and temperature distribution in surgical operating rooms. Buildings, 16*(1), 171. https://www.mdpi.com/2075-5309/16/1/171

Lansing, S. S., Moley, J. P., McGrath, M. S., Stoodley, P., Chaudhari, A. M. W., & Quatman, C. E. (2021). *High number of door openings increases the bacterial load of the operating room. Surgical Infections, 22*(7), 684–689. https://www.liebertpub.com/doi/10.1089/sur.2020.361

Liu, Z., Liu, H., Yin, H., Rong, R., Cao, G., & Deng, Q. (2021). *Prevention of surgical site infection under different ventilation systems in operating room environment.* Frontiers of Environmental Science & Engineering, 15(3), 36. https://pmc.ncbi.nlm.nih.gov/articles/PMC7453373/

Luwu, A. B. T., Mallongi, A., Masni, Syam, A., Yanti, I. H., Gafur, A., & Rauf, A. U. (2020). Air Germ Numbers in Bougenville's Care Room at H. Andi Sulthan Daeng Radja Bulukumba Hospital. *Enfermeria Clinica*, *30*, 415–418. https://www.sciencedirect.com/science/article/abs/pii/S1130862120302308

Mellinghoff, S. C., Vehreschild, J., & Cornely, O. (2018). *Epidemiology of surgical site infections with Staphylococcus aureus in Europe: Protocol for a retrospective, multicenter study. JMIR Research Protocols, 7*(3), e8177. www.doi.org/10.2196/resprot.8177

Mengistu, D. A., Alemu, A., Abdukadir, A. A., Ahmed, F., Mohammed, B., & Musa, I. (2023). Global Incidence of Surgical Site Infection Among Patients: Systematic Review and Meta-Analysis. *INQUIRY: The Journal of Health Care Organization, Provision, and Financing*, *60*, 1–11. https://pubmed.ncbi.nlm.nih.gov/36964747/

Mirhoseini, S. H., Didehdar, M., Akbari, M., Moradzadeh, R., Jamshidi, R., & Torabi, S. (2020). *Indoor exposure to airborne bacteria and fungi in sensitive wards of an academic pediatric hospital.* Aerobiologia, 36, 225–232.https://link.springer.com/article/10.1007/s10453-020-09624-0

Muganid, M. S., Ghannam, A. A., & Alomari, R. D. (2024). *Behind the mask: The hidden crisis of operating room technicians facing infectious hazards with inadequate protection. Journal of Healthcare Safety and Management, 18*(2), 145158. https://search.proquest.com/openview/d3b79c2a892cf1a8ce7c2511701f0e3d/1

Mohammadi Gorji, S., Joseph, A., Mihandoust, S., Ahmadshahi, S., Allison, D., Catchpole, K., Neyens, D., & Abernathy, J. H., III. (2024). *Anesthesia workspaces for safe medication practices: Design guidelines.* Health Environments Research & Design Journal, 17(1), 64–83. https://pubmed.ncbi.nlm.nih.gov/37553817/

Moletta, L., Pierobon, E. S., Capovilla, G., Costantini, M., Salvador, R., Merigliano, S., & Valmasoni, M. (2020). *International guidelines and recommendations for surgery during COVID-19 pandemic: A systematic review*. *International Journal of Surgery, 79*, 180–188. https://www.sciencedirect.com/journal/international-journal-of-surgery

Monegro, A., Muppidi, V., & Regunath, H. (2023). *Hospital-Acquired Infections*. StatPearls Publishing. https://www.ncbi.nlm.nih.gov/books/NBK441857/

Nafida, V. N., Shafa, P. J., & Haryanto. (2024). *Studi pengaruh lingkungan fisik terhadap angka kuman lantai dan dinding di ruang ICVCU RSUD Dr. Moewardi* [Universitas Muhammadiyah Surakarta]. https://share.google/8sMnmQUsHTlkdMdaq

National Healthcare Safety Network (NHSN). (2025). *Surgical Site Infection Event (SSI)*. https://www.cdc.gov/nhsn/pdfs/ps-analysis resources/ImportingProcedureData.pdf.

Negi, S., Sahoo, R. K., Sinha, A., Bhattacharya, D., Pati, S., & Kanungo, S. (2023). *Airborne contamination in and around hospitals: Effect of ventilation and survival of bioaerosols.* In *Bioaerosols emission from anthropogenic sources: Influencing factors, microbial diversity, epidemiological threats, and control approaches* (pp. 101–116). Elsevier. https://www.sciencedirect.com/science/article/pii/B978044315319800006X

NICE. (2020). *Joint Replacement (Primary) : Hip, Knee and Shoulder*. National Institute for Health and Care Excellence (UK). https://www.nice.org.uk/guidance/ng157

National Institute for Occupational Safety and Health (NIOSH). (2020). *Criteria for a recommended standard: Occupational exposure to heat and hot environments* (Revised 2020). U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. www.cdc.gov/niosh/docs/2016-106

Oswin, H. P., Haddrell, A. E., Hughes, C., Otero-Fernandez, M., Thomas, R. J., & Reid, J. P. (2023). *Oxidative stress contributes to bacterial airborne loss of viability. Microbiology Spectrum, 11*(2). https://journals.asm.org/doi/10.1128/spectrum.03347-22

Peir, G. H., Fink, A., Mantasas, N., Cheng, J. J., Worten, K., & Shah, R. K. (2022). *Slips, trips, and falls: A quality improvement initiative.* Cureus, 14(3), e23486. https://pmc.ncbi.nlm.nih.gov/articles/PMC8970105/

Permana, I., Lee, K., & Wang, F. (2024). *Performance investigation of a novel positively or negatively pressurized operating room for infection control.* Journal of Building Engineering, 89**,** 109356. https://www.sciencedirect.com/science/article/pii/S2352710224009356

Praptiwi, J., & Raharjo, S. (2020). Difference In The Number Of Air Germs In The Treatment Room Based On The Patient's Visit Time Z. *The International Journal of Health, Education and Social (IJHES)*, *3*(12), 1–13. https://ijhes.com/index.php/ijhes/article/download/127/111

Rabbani, Y., Keshavarz, H., Hosseinpour, A., Nourmohammadi, M., & Mortazavi, M. (2025). *Air quality and hospital-acquired infections: A case study of ventilation and bioaerosols in an educational hospital. Health Scope, 3*(14). https://brieflands.com/articles/healthscope-159328

Rahayuni, W., Sumadewi, N. L. U., & Astuti, N. P. W. (2023). Description of German Numbers Index Based on Temperature and Humidity in the Operating Room of Central Surgical Installation RSUP Sanglah Denpasar. *Jurnal Kesehatan, Sains, Dan Teknologi (JAKASAKTI)*, *02*(02), 177–182. https://jurnal.undhirabali.ac.id/index.php/jakasakti/index

Republik Indonesia. (2023). *Undang-undang No. 17 tahun 2023 tentang Kesehatan.*

Rezapoor, M., Alvand, A., Jacek, E., Paziuk, T., Maltenfort, M. G., & Parvizi, J. (2018).*Operating room traffic increases aerosolized particles and compromises the air quality: A simulated study.* The Journal of Arthroplasty, 33(3), 851–855. https://pubmed.ncbi.nlm.nih.gov/29174409/

Sadrizadeh, S., Pantelic, J., Sherman, M., & Clark, J. (2018). Airborne particle dispersion to an operating room environment during sliding and hinged door opening. *Energy Procedia, 180*, 1296–1305. https://www.sciencedirect.com/science/article/pii/S1876034118300327

Sahli, I. T., Kurniawan, F. B., Setiani, D., Asrianto, A., & Hartati, R. (2021). *Kualitas bakteri udara ruang operasi rumah sakit di wilayah Kota Jayapura. Health Information: Jurnal Penelitian (HIJP), 13*(2). https://journal.poltekkesjayapura.ac.id/index.php/hijp/article/view/301

Sandle, T. (2021). *A humidex for the cleanroom: Why temperature and humidity control matters. Journal of GXP Compliance, 25*(3). https://www.ivtnetwork.com/article/humidex-cleanroom-why-temperature-and-humidity-control-matters

Sardi, A. (2021). Infeksi Nosokomial: Jenis Infeksi dan Patogen Penyebabnya. In *Seminar Nasional Riset Kedokteran* (Vol. 2). https://conference.upnvj.ac.id/index.php/sensorik/article/download/1023/852

Sari, N., Akbar, H., Masliah, I. N., Sartika, Kamaruddin, M., Sinaga, S., Nuryati, E., & Chiani, S. H. (2021). *Teori Dan Aplikasi Epidemiologi Kesehatan*. Zahir Publishing.

Sentosa, R. A., & Hapsari, R. (2019). *Jumlah dan pola bakteri udara pre dan post pembersihan: Studi observasional di ruang operasi Rumah Sakit Nasional Diponegoro Semarang. Jurnal Kedokteran Diponegoro, 8*(2), 811–822. http://ejournal3.undip.ac.id/index.php/medico

Sikora, A., & Zahra, F. (2023). *Nosocomial infections*. In StatPearls.

Singh, J. P., Sahu, P. K., & Sahu, D. K. (2023). *Floor finish selection in hospital design: A survey of facility managers. International Journal of Research Publication and Reviews, 4*(8), 2352–2356. https://ijrpr.com/uploads/V4ISSUE8/IJRPR16368.pdf

Shaw, L. F., Chen, I. H., Chen, C. S., Wu, H. H., Lai, L. S., Chen, Y. Y., & Wang, F. D. (2018). *Factors influencing microbial colonies in the air of operating rooms. BMC Infectious Diseases, 18*(1). https://bmcinfectdis.biomedcentral.com/articles/10.1186/s12879-017-2928-1

Shetye, S. M., Kamat, M., & Singh, N. P. (2022). Incidence of surgical site infection in patients undergoing clean, clean contaminated cases with respect to antibiotic prophylaxis: A prospective observational study. *International Surgery Journal, 9*(11), 1835–1841. https://www.ijsurgery.com/index.php/isj/article/view/8868

Suyanto, J., Pramaningsih, V., & Muhammadiyah Kalimantan Timur, U. (2025). *Analysis of the effect of room temperature and humidity on the number of germs in the air in operating rooms. Jurnal Kesehatan Integratif, 7*(3). https://journalversa.com/s/index.php/jki

Valla, V., Koukoura, A., Lewis, A., Dahlerup, B., Tsianos, G. I., & Vassiliadis, E. (2020).*The impact of human factors on the safety of operating rooms and everyday surgical practice.* Journal of Patient Safety and Risk Management, 25(2). https://www.researchgate.net/publication/341452459_The_Impact_of_Human_Factors_on_the_Safety_of_Operating_Rooms_and_everyday_Surgical_Practice

Verbeek, J. H., Rajamaki, B., Ijaz, S., Sauni, R., Toomey, E., Blackwood, B., Tikka, C., Ruotsalainen, J. H., & Balci, F. S. K. (2020). *Personal protective equipment for preventing highly infectious diseases due to exposure to contaminated body fluids in healthcare staff. Cochrane Database of SystematicReviews,2020*(4).https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD011621.pub4/abstract

World Health Organization. (2022). *WHO guidelines on hand hygiene in health care: First global patient safety challenge clean care is safer care.* Geneva: WorldHealthOrganization. https://www.who.int/publications/i/item/9789241597906

World Health Organization (WHO). (2023). *High-level messaging on the HAI and AMR burden*. https://www.who.int/campaigns/world-hand-hygiene-day/key-facts-and-figures

Xie, A., Sax, H., Daodu, O., Alam, L., Sultan, M., Rock, C., Stewart, C. M., Perry, S. J., & Gurses, A. P. (2024). *Environmental cleaning and disinfection in the operating room: A systematic scoping review through a human factors and systems engineering lens. American Journal of Infection Control, 52*(3), 300–309.https://www.ajicjournal.org/article/S0196-6553(23)00516-4/fulltext

Yonata, Q. U., Thohari, I., & Marlik, M. (2020). Faktor yang Berhubungan dengan Angka Kuman Udara di Rumah Sakit Soemitro Surabaya. *Jurnal Penelitian Kesehatan "SUARA FORIKES" (Journal of Health Research "Forikes Voice")*, *11*(3), 264. https://forikes-ejournal.com/index.php/SF/article/view/sf11308

Zhu, S., Yang, X., Zhang, P., & Chen, C. (2025). *Operating room-related risk factors for surgical site infection in general surgeries: A retrospective cohort study. Medicine, 104*(37), e44565. https://journals.lww.com/md-journal/fulltext/2025/09270/operating_room_related_risk_factors_for_surgical.65.aspx