

REFERENCES

- Abdulrhim, S., Sankaralingam, S., Ibrahim, M.I.M., and Awaisu, A., 2020. The impact of pharmacist care on diabetes outcomes in primary care settings: An umbrella review of published systematic reviews. *Primary care diabetes*, **14**: 393–400.
- Aboufaras, M., Selmaoui, K., and Ouzennou, N., 2023. Attitudes and beliefs towards the use of complementary and alternative medicine in cancer patients. *European Journal of Integrative Medicine*, **63**: 102294.
- Abubakar, M. and Atif, M., 2021. Impact of Pharmacist-Led Interventions on Diabetes Management at a Community Pharmacy in Pakistan: A Randomized Controlled Trial. *Inquiry : a journal of medical care organization, provision and financing*, **58**: 469580211036283.
- Achmad, G.N.V., Yufria, L.N., Rahem, A., and Pristianty, L., 2023. Factors that contribute to blood sugar control in type 2 diabetes mellitus. *Pharmacy Education*, **23**: 48–52.
- ACSQHC, 2019. *Medication without Harm WHO Global Patient Safety Challenge: Discussion Paper for Public Consultation*. Australian Commission on Safety and Quality in Health Care, Sydney, Australia.
- ADA, 2014. Diagnosis and Classification of Diabetes Mellitus. *Diabetes Care*, **37**: S81–S90.
- Aggelidis, V. and Chatlogsou, P., 2009. Using a modified technology acceptance model in hospitals. *International Journal of Medical Informatics*, **78**: 115–126.
- Agrawal, A., 2009. Medication errors: prevention using information technology systems. *British journal of clinical pharmacology*, **67**: 681–6.
- Ahammed, A., Pathan, F., Afsana, F., Ahammed, I., Mir, A., and Yusuf, A., 2018. The burden of severe hypoglycemia on quality of life among diabetes mellitus patients in a tertiary level hospital of Bangladesh. *Indian Journal of Endocrinology and Metabolism*, **22**: 499.
- Ahmad, N.S., Islahudin, F., and Paraidathathu, T., 2014. Factors associated with good glycemic control among patients with type 2 diabetes mellitus. *Journal of diabetes investigation*, **5**: 563–9.
- Akirov, A., Amitai, O., Masri-Iraqi, H., Diker-Cohen, T., Shochat, T., Eizenberg, Y., et al., 2018. Predictors of hypoglycemia in hospitalized patients with diabetes mellitus. *Internal and Emergency Medicine*, **13**: 343–350.
- Al Mazroui, N.R., Kamal, M.M., Ghabash, N.M., Yacout, T.A., Kole, P.L., and McElhay, J.C., 2009. Influence of pharmaceutical care on health outcomes in patients with Type 2 diabetes mellitus. *British Journal of Clinical Pharmacology*, **67**: 547–557.
- Alfadl, A.A., Alrasheedy, A.A., and Alhassun, M.S., 2018. Evaluation of medication counseling practice at community pharmacies in Qassim region, Saudi Arabia. *Saudi pharmaceutical journal : SPJ : the official publication of the Saudi Pharmaceutical Society*, **26**: 258–262.
- Alfian, S.D., van Boven, J.F.M., Abdulah, R., Sukandar, H., Denig, P., and Hak, E., 2021. Effectiveness of a targeted and tailored pharmacist-led intervention to improve adherence to antihypertensive drugs among patients with type 2

- diabetes in Indonesia: A cluster randomised controlled trial. *British Journal of Clinical Pharmacology*, **87**: 2032–2042.
- Alim, U., Austin-Bishop, N., Cummings, G., 2016. Pharmacists in a Complex Chronic Disease Management Clinic, dalam: *Can. J. Hosp. Pharm.* hal. 480–482.
- Aljunid, S.M., Aung, Y.N., Ismail, A., Abdul Rashid, S.A.Z., Nur, A.M., Cheah, J., et al., 2019. Economic burden of hypoglycemia for type II diabetes mellitus patients in Malaysia. *PLOS ONE*, **14**: e0211248.
- AlKhalidi, Y., AlKhalidi, A., AlQahtani, A., Al-Shahrani, B., Meshawi, E., and Albishri, B., 2019. Incidence of hypoglycemia and its risk factors among diabetics during Ramadan in Abha city, Aseer Region, KSA. *Journal of Family Medicine and Primary Care*, **8**: 2793.
- Alkhatatbeh, M.J., Abdalqader, N.A., and Alqudah, M.A.Y., 2019. Impaired Awareness of Hypoglycaemia in Insulin-treated Type 2 Diabetes Mellitus. *Current Diabetes Reviews*, **15**: 407–413.
- Alzahrani, A.S., Greenfield, S.M., and Paudyal, V., 2022. Factors affecting complementary and alternative medicine (CAM) use by adult diabetic patients: A systematic review using the theoretical domains framework (TDF). *Research in Social and Administrative Pharmacy*, **18**: 3312–3322.
- American Diabetes Association Professional Practice Committee, 2024. Pharmacologic Approaches to Glycemic Treatment: Standards of Care in Diabetes-2024. *Diabetes care*, **47**: S158–S178.
- Amien, Y., Nur Afiah, A.S., and The, F., 2021. Pola Penggunaan Antidiabetes Oral dan Karakteristik Pasien Diabetes Mellitus Tipe 2 di RSUD Dr. H. Chasan Boesoerie. *Kieraha Medical Journal*, **3**: 7–14.
- Andrade, C., 2015. Understanding Relative Risk, Odds Ratio, and Related Terms: As Simple as It Can Get. *The Journal of Clinical Psychiatry*, **76**: e857–e861.
- Astin, J.A., 1998. Why Patients Use Alternative Medicine. *JAMA*, **279**: 1548.
- Au, N.H., Ratzki-Leewing, A., Zou, G., Ryan, B.L., Webster-Bogaert, S., Reichert, S.M., et al., 2022. Real-World Incidence and Risk Factors for Daytime and Nocturnal Non-Severe Hypoglycemia in Adults With Type 2 Diabetes Mellitus on Insulin and/or Secretagogues (InHypo-DM Study, Canada). *Canadian Journal of Diabetes*, **46**: 196–203.
- Bain, A., Kavanagh, S., McCarthy, S., and Babar, Z.-U.-D., 2019. Assessment of Insulin-related Knowledge among Healthcare Professionals in a Large Teaching Hospital in the United Kingdom. *Pharmacy*, **7**: 16.
- Bakar, A., Qomariah, S.N., Santoso, C.H., Gustomi, M.P., Syaful, Y., and Fatmawa, L., 2020. Factors the incidence of hypoglycemia in diabetes mellitus patients: A pilot study in the emergency room. *Enfermería Clínica*, **30**: 46–49.
- Bansal, N., 2015. Prediabetes diagnosis and treatment: A review. *World Journal of Diabetes*, **6**: 296.
- Bin Rakhis, S.A., AlDuwayhis, N.M., Aleid, N., AlBarrak, A.N., and Aloraini, A.A., 2022. Glycemic Control for Type 2 Diabetes Mellitus Patients: A Systematic Review. *Cureus*, **14**: e26180.
- Bohari, A.A.M., Bidin, Z.A., Rais, S.L.A., and Saferi, M.M., 2019. Exploratory Research as the way forward towards a green procurement practices for the

- construction industry; Research Methodology. *IOP Conference Series: Earth and Environmental Science*, **385**: 012054.
- Bond, C.A., Raehl, C.L., and Franke, T., 2002. Clinical Pharmacy Services, Hospital Pharmacy Staffing, and Medication Errors in United States Hospitals. *Pharmacotherapy: The Journal of Human Pharmacology and Drug Therapy*, **22**: 134–147.
- Bramlage, P., Gitt, A.K., Binz, C., Krekler, M., Deeg, E., and Tschöpe, D., 2012. Oral antidiabetic treatment in type-2 diabetes in the elderly: balancing the need for glucose control and the risk of hypoglycemia. *Cardiovascular Diabetology*, **11**: 122.
- Burns, A., 2008a. Medication therapy management in pharmacy practice: Core elements of an MTM service model (version 2.0). *Journal of the American Pharmacists Association*, **48**: 341–353.
- Burns, A., 2008b. Medication therapy management in pharmacy practice: Core elements of an MTM service model (version 2.0). *Journal of the American Pharmacists Association*, **48**: 341–353.
- Butt, M., Mhd Ali, A., Bakry, M.M., and Mustafa, N., 2016. Impact of a pharmacist led diabetes mellitus intervention on HbA1c, medication adherence and quality of life: A randomised controlled study. *Saudi Pharmaceutical Journal*, **24**: 40–48.
- Büyükkaya Besen, D., Arda Sürücü, H., and Koşar, C., 2016. Self-reported frequency, severity of, and awareness of hypoglycemia in type 2 diabetes patients in Turkey. *PeerJ*, **4**: e2700.
- Cheng, J., Dang, C., Li, X., Wang, J., Huang, X., Li, Y., et al., 2023. The participation of clinical pharmacists in the treatment of patients with central nervous system infection can improve the effectiveness and appropriateness of anti-infective treatments: a retrospective cohort study. *Frontiers in Pharmacology*, **14**: .
- Chow, E.P., Hassali, M.A., Saleem, F., and Aljadhey, H., 2016. Effects of pharmacist-led patient education on diabetes-related knowledge and medication adherence: A home-based study. *Health Education Journal*, **75**: 421–433.
- Clark questionnaire, 2022. Quick guide: Assessing hypoglycaemia awareness. *Journal of Diabetes Nursing*, **26**: 1.
- Cowart, K., Patel, V., Bianco, J., Martinez, A., and Castro, J., 2022. Pharmacist-Physician Collaborative Practice to Improve Diabetes Care at Tampa General Medical Group. *Clinical Diabetes*, **40**: 240–244.
- Dahlan, M.S., 2013. *Besar Sampel Dan Cara Pengambilan Sampel Edisi 3*, 3rd ed. Salemba Medika, Jakarta.
- Davis, T.M.E., Brown, S.G.A., Jacobs, I.G., Bulsara, M., Bruce, D.G., and Davis, W.A., 2010. Determinants of Severe Hypoglycemia Complicating Type 2 Diabetes: The Fremantle Diabetes Study. *The Journal of Clinical Endocrinology & Metabolism*, **95**: 2240–2247.
- De Buck, E., Borra, V., Carlson, J.N., Zideman, D.A., Singletary, E.M., and Djärv, T., 2019. First aid glucose administration routes for symptomatic hypoglycaemia. *The Cochrane database of systematic reviews*, **4**: CD013283.

- Eades, C.E., Ferguson, J.S., and O'Carroll, R.E., 2011. Public health in community pharmacy: a systematic review of pharmacist and consumer views. *BMC public health*, **11**: 582.
- Ejegi, A., Ross, A.J., and Naidoo, K., 2016. Knowledge of symptoms and self-management of hypoglycaemia amongst patients attending a diabetic clinic at a regional hospital in KwaZulu-Natal. *African Journal of Primary Health Care & Family Medicine*, **8**: .
- Fajriansyah, Iskandarsyah, A., Puspitasari, I.M., and Lestari, K., 2020. Impact of pharmacist counseling on health-related quality of life of patients with type 2 diabetes mellitus: a cluster randomized controlled study. *Journal of Diabetes & Metabolic Disorders*, **19**: 675–682.
- Farag, M., Hoti, K., Hughes, J., and Chalmers, L., 2022. Impact of a clinical pharmacist on medication safety in mental health Hospital-in-the-Home: a retrospective analysis. *International journal of clinical pharmacy*, **44**: 947–955.
- Farag Mohamed, H., Allam, M.M., Hamdy, N.A., Ghazy, R.M., and Emara, R.H., 2021. A Community Pharmacy-Based Intervention in the Matrix of Type 2 Diabetes Mellitus Outcomes (CPBI-T2DM): A Cluster Randomized Controlled Trial. *Clinical Medicine Insights: Endocrinology and Diabetes*, **14**: .
- Farland, M.Z., Byrd, D.C., McFarland, M.S., Thomas, J., Franks, A.S., George, C.M., et al., 2013. Pharmacist-Physician Collaboration for Diabetes Care: The Diabetes Initiative Program. *Annals of Pharmacotherapy*, **47**: 781–789.
- Farsaei, S., Sabzghabae, A.M., Zargarzadeh, A.H., and Amini, M., 2011. Effect of pharmacist-led patient education on glycemic control of type 2 diabetics: a randomized controlled trial. *Journal of research in medical sciences: the official journal of Isfahan University of Medical Sciences*, **16**: 43–9.
- Fego, M.W., Yasin, J.T., and Aga, G.M., 2021. Knowledge, Attitude and Practice Towards Insulin-Self Administration Among Diabetic Patients Attending Bedele Hospital, Southwest Ethiopia, 2019/2020. *Diabetes, Metabolic Syndrome and Obesity: Targets and Therapy*, **Volume 14**: 1919–1925.
- Filion, K.B., Douros, A., Azoulay, L., Yin, H., Yu, O.H., and Suissa, S., 2019. Sulfonylureas as initial treatment for type 2 diabetes and the risk of adverse cardiovascular events: A population-based cohort study. *British Journal of Clinical Pharmacology*, **85**: 2378–2389.
- Forni, A., Chu, H., and Fanikos, J., 2010. Technology Utilization to Prevent Medication Errors. *Current Drug Safety*, **5**: 13–18.
- Foster, N.C., Beck, R.W., Miller, K.M., Clements, M.A., Rickels, M.R., DiMeglio, L.A., et al., 2019. State of Type 1 Diabetes Management and Outcomes from the T1D Exchange in 2016–2018. *Diabetes Technology & Therapeutics*, **21**: 66–72.
- García-Pérez, L.-E., Alvarez, M., Dilla, T., Gil-Guillén, V., and Orozco-Beltrán, D., 2013. Adherence to therapies in patients with type 2 diabetes. *Diabetes therapy : research, treatment and education of diabetes and related disorders*, **4**: 175–94.
- Gebremariam ET, M.B., 2019. A Qualitative Review of Strengths, Weaknesses,

- Opportunities and Threats of Clinical Pharmacy Services Provided by Tirunesh Beijing General Hospital. *J Pharma Care Health Sys*, **6**: 1–6.
- Gebrie, D., Manyazewal, T., Ejigu, D.A., and Makonnen, E., 2021. Metformin-Insulin versus Metformin-Sulfonylurea Combination Therapies in Type 2 Diabetes: A Comparative Study of Glycemic Control and Risk of Cardiovascular Diseases in Addis Ababa, Ethiopia. *Diabetes, Metabolic Syndrome and Obesity: Targets and Therapy*, **Volume 14**: 3345–3359.
- Gómez-Huelgas, R., Sabán-Ruiz, J., García-Román, F.J., Quintela-Fernández, N., Seguí-Ripoll, J.M., Bonilla-Hernández, M.V., et al., 2017. Safety and efficacy of a basal-plus regimen with insulin glargine and insulin glulisine for elderly patients with high cardiovascular risk and type 2 diabetes mellitus. *Revista Clínica Española (English Edition)*, **217**: 201–206.
- Greenway, F.L., 2016. Severe hypoglycemia in the Look AHEAD Trial. *Journal of Diabetes and its Complications*, **30**: 935–943.
- Gupta, L., Khandelwal, D., Lal, P.R., Gupta, Y., Kalra, S., and Dutta, D., 2019. Factors Determining the Success of Therapeutic Lifestyle Interventions in Diabetes - Role of Partner and Family Support. *European endocrinology*, **15**: 18–24.
- Harashima, S., Nishimura, A., Ikeda, K., Wang, Y., Liu, Y., and Inagaki, N., 2016. Once Daily Self-Monitoring of Blood Glucose (SMBG) Improves Glycemic Control in Oral Hypoglycemic Agents (OHA)-Treated Diabetes. *Journal of Diabetes Science and Technology*, **10**: 378–382.
- Hatle, H., Bjørgaas, M.R., Skriverhaug, T., Åsvold, B.O., Graveling, A.J., Frier, B.M., et al., 2020. Assessing awareness of hypoglycemia in children and adolescents with type 1 diabetes: Evaluation of established questionnaires. *Pediatric Diabetes*, **21**: 300–309.
- Health Foundation, 2012. *Reducing Prescribing Errors*. The Evidence Centre on behalf of the Health Foundation., United Kingdom.
- Heianza, Y., Hara, S., Arase, Y., Saito, K., Fujiwara, K., Tsuji, H., et al., 2011. HbA1c 5.7–6.4% and impaired fasting plasma glucose for diagnosis of prediabetes and risk of progression to diabetes in Japan (TOPICS 3): a longitudinal cohort study. *The Lancet*, **378**: 147–155.
- Hemmingsen, B., Christensen, L.L., Wetterslev, J., Vaag, A., Gluud, C., Lund, S.S., et al., 2012. Comparison of metformin and insulin versus insulin alone for type 2 diabetes: systematic review of randomised clinical trials with meta-analyses and trial sequential analyses. *BMJ*, **344**: e1771–e1771.
- Holden, R.J. and Karsh, B.-T., 2010. The Technology Acceptance Model: Its past and its future in health care. *Journal of Biomedical Informatics*, **43**: 159–172.
- Hovey, S.W., Mistic, M., Jacobson, J.L., and Click, K.W., 2023. Effect of a Pharmacist-Led Discharge Counseling Service at a Children’s Hospital. *The journal of pediatric pharmacology and therapeutics : JPPT: the official journal of PPAG*, **28**: 116–122.
- Ikawati, Z., Adi Jaya, M.K., Rahmawati, F., and Yasin, N.M., 2024. Evaluation of Insulin and Sulfonylurea Types on Severe Hypoglycemia Event Among Ambulatory Type 2 Diabetes Mellitus Patients. A Case-Control Hospital-Based Study in Bali. *Biomedical and Pharmacology Journal*, **17**: 2249–2257.

- Iloh, G.P. and Amadi, A., 2018. Epidemiology of hypoglycemia among ambulatory Type 2 diabetic patients in a primary care clinic of a tertiary hospital in Southeastern Nigeria. *Journal of Health Research and Reviews*, **5**: 57.
- Intergovernmental Panel on Climate Change (IPCC) and Ministry of Health Republic of Indonesia, 2014. Summary for Policymakers, dalam: *Climate Change 2013 – The Physical Science Basis*. Cambridge University Press, hal. 1–30.
- International Diabetes Federation., 2021. *IDF Diabetes Atlas, 10th Edn*. International Diabetes Federation, Brussels, Belgium.
- Inzucchi, S.E., 2012. Diagnosis of Diabetes. *New England Journal of Medicine*, **367**: 542–550.
- Jameson, J.P. and Baty, P.J., 2010. Pharmacist collaborative management of poorly controlled diabetes mellitus: a randomized controlled trial. *The American journal of managed care*, **16**: 250–5.
- Jaya, M., Rahmawati, F., Yasin, N., and Ikawati, Z., 2025. A case-control study on factors associated with hypoglycemia unawareness among the ambulatory type 2 diabetes mellitus patients in Bali, Indonesia. *Trop J Pharm Res*, **24**: 109–116.
- Jaya, M.K.A., Endarti, D., Ayu Kartika, I.G.A., Veryanti, R., and Swastini, D.A., 2020. The Role Of Medication Reminder Technology As An Enhancement Of Patients Compliance. *International Journal of Pharmaceutical Research*, **12**: .
- Jaya, M.K.A., Rahmawati, F., Yasin, N.M., and Ikawati, Z., 2025a. Risk factors contributing to hypoglycemia among diabetes mellitus patients: a systematic review and meta-analysis. *Journal of Public Health and Development*, **23**: 339–362.
- Jaya, M.K.A., Rahmawati, F., Yasin, N.M., and Ikawati, Z., 2025b. Development and Validation of an Instrument to Assess the Safe Use of Antidiabetic Medication to Prevent Hypoglycemia Requiring Hospitalization Among Ambulatory Patients With Type 2 Diabetes Mellitus in Bali, Indonesia. *Journal of Preventive Medicine and Public Health*, **58**: 52–59.
- Jha, A.K., Prasopa-Plaizier, N., Larizgoitia, I., and Bates, D.W., 2010. Patient safety research: an overview of the global evidence. *Quality and Safety in Health Care*, **19**: 42–47.
- Jiang, Y., Hwang, M., Cho, Y., Friese, C.R., Hawley, S.T., Manojlovich, M., et al., 2024. The Acceptance and Use of Digital Technologies for Self-Reporting Medication Safety Events After Care Transitions to Home in Patients With Cancer: Survey Study. *Journal of Medical Internet Research*, **26**: e47685.
- Jimmy, B. and Jose, J., 2011. Patient Medication Adherence: Measures in Daily Practice. *Oman Medical Journal*, **26**: 155–159.
- Kaboli, P.J., Hoth, A.B., McClimon, B.J., and Schnipper, J.L., 2006. Clinical pharmacists and inpatient medical care: a systematic review. *Archives of internal medicine*, **166**: 955–64.
- Kahn, S.E., Cooper, M.E., and Del Prato, S., 2014. Pathophysiology and treatment of type 2 diabetes: perspectives on the past, present, and future. *The Lancet*, **383**: 1068–1083.
- Karter, A.J., Warton, E.M., Lipska, K.J., Ralston, J.D., Moffet, H.H., Jackson,

- G.G., et al., 2017. Development and Validation of a Tool to Identify Patients With Type 2 Diabetes at High Risk of Hypoglycemia-Related Emergency Department or Hospital Use. *JAMA Internal Medicine*, **177**: 1461.
- Koh, Y., Yap, C.W., and Li, S.C., 2008. A quantitative approach of using genetic algorithm in designing a probability scoring system of an adverse drug reaction assessment system. *International Journal of Medical Informatics*, **77**: 421–430.
- Kong, A.P.S., Yang, X., Luk, A., Ma, R.C.W., So, W.Y., Ozaki, R., et al., 2014. Severe Hypoglycemia Identifies Vulnerable Patients With Type 2 Diabetes at Risk for Premature Death and All-Site Cancer: The Hong Kong Diabetes Registry. *Diabetes Care*, **37**: 1024–1031.
- Lamounier, R.N., Geloneze, B., Leite, S.O., Montenegro, R., Zajdenverg, L., Fernandes, M., et al., 2018a. Hypoglycemia incidence and awareness among insulin-treated patients with diabetes: the HAT study in Brazil. *Diabetology & metabolic syndrome*, **10**: 83.
- Lamounier, R.N., Geloneze, B., Leite, S.O., Montenegro, R., Zajdenverg, L., Fernandes, M., et al., 2018b. Hypoglycemia incidence and awareness among insulin-treated patients with diabetes: the HAT study in Brazil. *Diabetology & Metabolic Syndrome*, **10**: 83.
- Lenander, C., Elfsson, B., Danielsson, B., Midlöv, P., and Hasselström, J., 2014. Effects of a pharmacist-led structured medication review in primary care on drug-related problems and hospital admission rates: a randomized controlled trial. *Scandinavian Journal of Primary Health Care*, **32**: 180–186.
- Leon, C., Hogan, H., and Jani, Y.H., 2024. Identifying and mapping measures of medication safety during transfer of care in a digital era: a scoping literature review. *BMJ Quality & Safety*, **33**: 173–186.
- Li, T.-C., Li, C.-I., Liu, C.-S., Lin, W.-Y., Lin, C.-H., Yang, S.-Y., et al., 2018. Development and validation of prediction models for the risks of diabetes-related hospitalization and in-hospital mortality in patients with type 2 diabetes. *Metabolism*, **85**: 38–47.
- Lichtner, V., Gerrett, D., Slee, A., Gul, N., and Cornford, T., 2017. The Role of Technology in Medication Safety Incidents: Interpretative Analysis of Patient Safety Incidents Data. *Studies in health technology and informatics*, **245**: 1369.
- Lim, P.C., Lim, K., Embee, Z.C., Hassali, M.A.K., Thiagarajan, A., and Mehmood, T., 2016. Study investigating the impact of pharmacist involvement on the outcomes of diabetes medication therapy adherence program Malaysia. *Pak. J. Pharm. Sci*, **29**: 595–601.
- Lipska, K.J., Yao, X., Herrin, J., McCoy, R.G., Ross, J.S., Steinman, M.A., et al., 2017. Trends in Drug Utilization, Glycemic Control, and Rates of Severe Hypoglycemia, 2006–2013. *Diabetes Care*, **40**: 468–475.
- Lo, C.K.-L., Mertz, D., and Loeb, M., 2014. Newcastle-Ottawa Scale: comparing reviewers' to authors' assessments. *BMC Medical Research Methodology*, **14**: 45.
- Logan, S.W., Ross, S.M., Bogart, K.R., Feldner, H.A., Kenyon, L.K., and Woekel, E., 2022. Item development, internal consistency, and known-groups validity

- of the Self-Directed Mobility Scale. *Disability and Rehabilitation: Assistive Technology*, **17**: 318–324.
- Lu, C.-L., Hsu, P.-C., Shen, H.-N., Chang, Y.-H., Chen, H.-F., and Li, C.-Y., 2015. Association Between History of Severe Hypoglycemia and Risk of Falls in Younger and Older Patients With Diabetes. *Medicine*, **94**: e1339.
- Maillet, É., Mathieu, L., and Sicotte, C., 2015. Modeling factors explaining the acceptance, actual use and satisfaction of nurses using an Electronic Patient Record in acute care settings: An extension of the UTAUT. *International Journal of Medical Informatics*, **84**: 36–47.
- Mathew P.; and Thoppil D., 2022. *Hypoglycemia*. Treasure Island (FL): StatPearls Publishing, Treasure Island (FL): StatPearls Publishing.
- Maynard, G.A., Huynh, M.P., and Renvall, M., 2008. Iatrogenic Inpatient Hypoglycemia: Risk Factors, Treatment, and Prevention. *Diabetes Spectrum*, **21**: 241–247.
- McCoy, R.G., Van Houten, H.K., Ziegenfuss, J.Y., Shah, N.D., Wermers, R.A., and Smith, S.A., 2012. Increased Mortality of Patients With Diabetes Reporting Severe Hypoglycemia. *Diabetes Care*, **35**: 1897–1901.
- Mehuys, E., Van Bortel, L., De Bolle, L., Van Tongelen, I., Annemans, L., Remon, J.-P., et al., 2011. Effectiveness of a community pharmacist intervention in diabetes care: a randomized controlled trial. *Journal of clinical pharmacy and therapeutics*, **36**: 602–13.
- Menkes, R., 2022. Keputusan Menteri Kesehatan Republik Indonesia Nomor Hk.01.07/Menkes/1128/2022 Tentang Standar Akreditasi Rumah Sakit, dalam: *Permenkes RI HK 01.07/MENKES/1128/2022*. Jakarta, hal. 1–324.
- Miller, C.D., Phillips, L.S., Ziemer, D.C., Gallina, D.L., Cook, C.B., and El-Kebbi, I.M., 2001. Hypoglycemia in Patients With Type 2 Diabetes Mellitus. *Archives of Internal Medicine*, **161**: 1653.
- Mitchell, P.H., 2008. *Defining Patient Safety and Quality Care*, Patient Safety and Quality: An Evidence-Based Handbook for Nurses.
- Moon, J.S., Ha, K.S., Yoon, J.S., Lee, H.W., Lee, H.C., and Won, K.C., 2014. The effect of glargine versus glimepiride on pancreatic β -cell function in patients with type 2 diabetes uncontrolled on metformin monotherapy: open-label, randomized, controlled study. *Acta Diabetologica*, **51**: 277–285.
- Morales, J. and Schneider, D., 2014. Hypoglycemia. *The American Journal of Medicine*, **127**: S17–S24.
- Nakhleh, A. and Shehadeh, N., 2021. Hypoglycemia in diabetes: An update on pathophysiology, treatment, and prevention. *World Journal of Diabetes*, **12**: 2036–2049.
- Nassar, D.T., Habib, O.S., and Mansour, A.A., 2016. Predictors of hypoglycemia in insulin-treated patients with type 2 diabetes mellitus in Basrah. *World Journal of Diabetes*, **7**: 470.
- Nasution, A., Dalimunthe, A., and Khairunnisa, K., 2019. Pharmacists Intervention Reduced Drug-Related Problems in the Treatment of Patients with Type 2 Diabetes Mellitus. *Open Access Macedonian Journal of Medical Sciences*, **7**: 3856–3860.
- Nguyen, T.H., Tran, T.T.T., Nguyen, N.K., Diep, H.G., Vo, S.D., Taxis, K., et al.,

2022. A randomized controlled trial of a pharmacist-led intervention to enhance knowledge of Vietnamese patients with type 2 diabetes mellitus. *International Journal of Pharmacy Practice*, **30**: 449–456.
- NICE Guideline, 2022. *Type 2 Diabetes in Adults: Management*. UK.
- Nkemdirim Okere, A., Balogun, A., Smith, A., and Stevens, J., 2023. Association between pharmacist-led telehealth services and improvements in cardiovascular outcomes among patients with cardiovascular risk factors: A scoping review. *International journal of cardiology. Cardiovascular risk and prevention*, **19**: 200206.
- Odegard, P.S. and Gray, S.L., 2008. Barriers to medication adherence in poorly controlled diabetes mellitus. *The Diabetes educator*, **34**: 692–7.
- Ong, S.W., Jassal, S. V., Porter, E.C., Min, K.K., Uddin, A., Cafazzo, J.A., et al., 2021. Digital Applications Targeting Medication Safety in Ambulatory High-Risk CKD Patients. *Clinical Journal of the American Society of Nephrology*, **16**: 532–542.
- Orozco-Beltrán, D., Guillen-Mollá, A., Cebrián-Cuenca, A.M., Navarro-Pérez, J., Gil-Guillén, V.F., Quesada, J.A., et al., 2021. Hospital admissions trends for severe hypoglycemia in diabetes patients in Spain, 2005 to 2015. *Diabetes Research and Clinical Practice*, **171**: 108565.
- Phumipamorn, S., Pongwecharak, J., Soorapan, S., and Pattharachayakul, S., 2008. Effects of the pharmacist's input on glycaemic control and cardiovascular risks in Muslim diabetes. *Primary Care Diabetes*, **2**: 31–37.
- Poonprapai, P., Lerkiatbundit, S., and Saengcharoen, W., 2022. Family support-based intervention using a mobile application provided by pharmacists for older adults with diabetes to improve glycaemic control: a randomised controlled trial. *International Journal of Clinical Pharmacy*, **44**: 680–688.
- Pratiwi, C., Rumende, M., Kshanti, I.A.M., and Soewondo, P., 2022. Risk Factors for Inpatient Hypoglycemia in a Tertiary Care Hospital in Indonesia. *Journal of the ASEAN Federation of Endocrine Societies*, **37**: 28–33.
- Pratley, R.E., Kanapka, L.G., Rickels, M.R., Ahmann, A., Aleppo, G., Beck, R., et al., 2020. Effect of Continuous Glucose Monitoring on Hypoglycemia in Older Adults With Type 1 Diabetes. *JAMA*, **323**: 2397.
- Pristanty, L., Abdullah, I., Rhamadan, P.Z., and Hermansyah, A., 2022. Assessment of doctor-pharmacist collaboration in the treatment of diabetes mellitus patients at Airlangga University Hospital Surabaya from the pharmacist's perspective. *Pharmacy Education*, **22**: 974–979.
- Qunneville, S., Labouèbe, G., Basco, D., Metref, S., Viollet, B., Foretz, M., et al., 2020. Hypoglycemia-Sensing Neurons of the Ventromedial Hypothalamus Require AMPK-Induced Txn2 Expression but Are Dispensable for Physiological Counterregulation. *Diabetes*, **69**: 2253–2266.
- Quilliam, B.J., Simeone, J.C., and Ozbay, A.B., 2011. Risk Factors for Hypoglycemia-Related Hospitalization in Patients With Type 2 Diabetes: A Nested Case–Control Study. *Clinical Therapeutics*, **33**: 1781–1791.
- Razak, I.H.A., Kamaruddin, S., and Azid, I.A., 2011. Towards human performance measurement from the maintenance perspective: a review. *International Journal of Engineering Management and Economics*, **2**: 60.

- RI, P., 2016. Peraturan Menteri Kesehatan Republik Indonesia Nomor 72 Tahun 2016 Tentang Standar Pelayanan Kefarmasian Di Rumah Sakit, dalam: *Peraturan Menteri Kesehatan Republik Indonesia*. Ministry of Health Republic of Indonesia, Jakarta, hal. 1–63.
- Richter, B., Hemmingsen, B., Metzendorf, M.-I., and Takwoingi, Y., 2017. Intermediate hyperglycaemia as a predictor for the development of type 2 diabetes: prognostic factor exemplar review. *Cochrane Database of Systematic Reviews*, .
- Romley, J.A., Gong, C., Jena, A.B., Goldman, D.P., Williams, B., and Peters, A., 2015. Association between use of warfarin with common sulfonylureas and serious hypoglycemic events: retrospective cohort analysis. *BMJ*, h6223.
- Rossi, M.C., Nicolucci, A., Ozzello, Alessandro, Gentile, Sandro, Agliatoro, A., Chiambretti, A., et al., 2019. Impact of severe and symptomatic hypoglycemia on quality of life and fear of hypoglycemia in type 1 and type 2 diabetes. Results of the Hypos-1 observational study. *Nutrition, Metabolism and Cardiovascular Diseases*, **29**: 736–743.
- Rudijanto, A., Saraswati, M.R., Yunir, E., Kumala, P., Puteri, H.H., and Mandang, V.V., 2018. Indonesia Cohort of IO HAT Study to Evaluate Diabetes Management, Control, and Complications in Retrospective and Prospective Periods Among Insulin-Treated Patients with Type 1 and Type 2 Diabetes. *Acta medica Indonesiana*, **50**: 26–37.
- Ryan, R.E., Santesso, N., Lowe, D., Hill, S., Grimshaw, J.M., Prictor, M., et al., 2014. Interventions to improve safe and effective medicines use by consumers: an overview of systematic reviews. *Cochrane Database of Systematic Reviews*, **2022**: .
- Sauriasari, R. and Sakti, R.M., 2018. Impact of A Pharmacist-Led Patient Education Initiative on Glycemic Control Of Patients With Type 2 Diabetes Mellitus: A Single-Center Experience In West Jakarta, Indonesia. *International Journal of Applied Pharmaceutics*, **10**: 252.
- Seaquist, E.R., Anderson, J., Childs, B., Cryer, P., Dagogo-Jack, S., Fish, L., et al., 2013. Hypoglycemia and Diabetes: A Report of a Workgroup of the American Diabetes Association and The Endocrine Society. *Diabetes Care*, **36**: 1384–1395.
- Siaw, M.Y.L., Ko, Y., Malone, D.C., Tsou, K.Y.K., Lew, Y.-J., Foo, D., et al., 2017. Impact of pharmacist-involved collaborative care on the clinical, humanistic and cost outcomes of high-risk patients with type 2 diabetes (IMPACT): a randomized controlled trial. *Journal of Clinical Pharmacy and Therapeutics*, **42**: 475–482.
- Song, Z. and Routh, V.H., 2006. Recurrent hypoglycemia reduces the glucose sensitivity of glucose-inhibited neurons in the ventromedial hypothalamus nucleus. *American Journal of Physiology-Regulatory, Integrative and Comparative Physiology*, **291**: 1283–1287.
- Stolar, M.W., 2010. Defining and achieving treatment success in patients with type 2 diabetes mellitus. *Mayo Clinic proceedings*, **85**: S50-9.
- Storr Krogh, C., Skovgard, L., Lynning, M., and Steenberg, J.L., 2023. Reasons for Engaging in Complementary and Alternative Medicine Among Highly

- Educated Women With Multiple Sclerosis. *International journal of MS care*, **25**: 104–110.
- Subakumar, K., Franklin, B.D., and Garfield, S., 2021. Analysis of the third WHO Global Safety Challenge ‘Medication Without Harm’ patient-facing materials: exploratory descriptive study. *European Journal of Hospital Pharmacy*, **28**: e109–e114.
- Sutema, I.A.M.P., Jaya, M.K.A., and Bakta, I.M., 2018. Medicine reminder to improve treatment compliance on geriatric patients with diabetic neuropathy at Sanglah Central Hospital, Bali-Indonesia. *Bali Medical Journal*, **7**: 516–20.
- Taherdoost, H., 2016. Validity and Reliability of the Research Instrument; How to Test the Validation of a Questionnaire/Survey in a Research. *SSRN Electronic Journal*, .
- Tangkiatkumjai, M., Boardman, H., and Walker, D.-M., 2020. Potential factors that influence usage of complementary and alternative medicine worldwide: a systematic review. *BMC complementary medicine and therapies*, **20**: 363.
- Thrasher, J., 2017. Pharmacologic Management of Type 2 Diabetes Mellitus: Available Therapies. *The American Journal of Medicine*, **130**: S4–S17.
- Tilburt, J.C., Miller, F.G., Jenkins, S., Kaptchuk, T.J., Clarridge, B., Bolcic-Jankovic, D., et al., 2010. Factors that influence practitioners’ interpretations of evidence from alternative medicine trials: a factorial vignette experiment embedded in a national survey. *Medical care*, **48**: 341–8.
- Tractenberg, R.E., Yumoto, F., Jin, S., and Morris, J.C., 2010. Sample Size Requirements for Training to a κ Agreement Criterion on Clinical Dementia Ratings. *Alzheimer Disease & Associated Disorders*, **24**: 264–268.
- Turner, R.J., 2007. Book review. *Journal of Minimally Invasive Gynecology*, **14**: 776.
- Venkatesh, Morris, Davis, and Davis, 2003. User Acceptance of Information Technology: Toward a Unified View. *MIS Quarterly*, **27**: 425.
- Vos, R.C., van Avendonk, M.J., Jansen, H., Goudswaard, A.N.N., van den Donk, M., Gorter, K., et al., 2016. Insulin monotherapy compared with the addition of oral glucose-lowering agents to insulin for people with type 2 diabetes already on insulin therapy and inadequate glycaemic control. *Cochrane Database of Systematic Reviews*, **18**: CD006992.
- Wade, C., Malhotra, A.M., McGuire, P., Vincent, C., and Fowler, A., 2022. Action on patient safety can reduce health inequalities. *BMJ*, e067090.
- Wahyudi, W., Nasution, A., Lindarto, D., and Khairunnisa, K., 2025. Pharmacist-led intervention reduced drug-related problems in the management of type 2 diabetes mellitus patients. *Pharmacia*, **72**: 1–7.
- Wang, X., Wang, S., Yu, X., Ma, Z., Wang, H., Yang, J., et al., 2021. Impact of pharmacist-led medication therapy management in ambulatory elderly patients with chronic diseases. *British journal of clinical pharmacology*, **87**: 2937–2944.
- Wen Wei, C., Siew Siang, C., Pauline Siew Mei, L., and Siew Pheng, C., 2014. Effects of a pharmaceutical care model on medication adherence and glycemic control of people with type 2 diabetes. *Patient Preference and Adherence*, **8**: 1185.

- West, M.P., 2014. Acute Care Setting, dalam: *Acute Care Handbook for Physical Therapists*. Elsevier, hal. 1–9.
- WHO, 2019. *Five Moment for Medication Safety*. World Health Organization, Geneva, Switzerland.
- World Health Organization, 2020. 'The top 10 causes of death' *WHO Website*.
- Yarbrough, A.K. and Smith, T.B., 2007. Technology Acceptance among Physicians. *Medical Care Research and Review*, **64**: 650–672.
- Yeboah, J., Bertoni, A.G., Herrington, D.M., Post, W.S., and Burke, G.L., 2011. Impaired Fasting Glucose and the Risk of Incident Diabetes Mellitus and Cardiovascular Events in an Adult Population. *Journal of the American College of Cardiology*, **58**: 140–146.
- Yoon, K.-H., Lee, J.-H., Kim, J.-W., Cho, J.H., Choi, Y.-H., Ko, S.-H., et al., 2006. Epidemic obesity and type 2 diabetes in Asia. *Lancet (London, England)*, **368**: 1681–8.
- Yunir, E., Nugraha, A.R.A., Rosana, M., Kurniawan, J., Iswati, E., Sarumpaet, A., et al., 2023. Risk factors of severe hypoglycemia among patients with type 2 diabetes mellitus in outpatient clinic of tertiary hospital in Indonesia. *Scientific Reports*, **13**: 16259.