

BAB 5

KESIMPULAN DAN SARAN

5.1. Kesimpulan

Berdasarkan hasil kajian pustaka dari 10 artikel ilmiah terkait efektivitas *e-prescribing* pada penurunan tingkat *medication error* yang dilaksanakan pada April 2022 - September 2022, dapat disimpulkan bahwa:

1. Kejadian *medication error* yang paling sering terjadi pada *electronic prescribing* dengan melihat persentase *medication error* yang paling besar pada tahap *prescribing error* adalah terkait tidak ada durasi pemberian obat.
2. Penggunaan *electronic prescribing* efektif pada penurunan tingkat *medication error* dibandingkan resep tulis tangan yang ditunjukkan dengan penurunan persentase kesalahan. Secara keseluruhan, parameter yang menunjukkan penurunan tingkat kesalahan adalah pada kelengkapan data pasien (berat badan dan jenis kelamin pasien) dan nama obat yang salah. Terdapat 3 artikel menyatakan penurunan tingkat kesalahan pada durasi pemberian yang salah dan 4 artikel menyatakan penurunan tingkat kesalahan pada rute pemberian yang salah. Terdapat 7 artikel menyatakan penurunan tingkat kesalahan pada dosis obat yang salah, dan 3 artikel menyatakan penurunan tingkat kesalahan pada kekuatan obat yang salah. Terdapat 4 artikel menyatakan penurunan tingkat kesalahan pada bentuk sediaan yang salah dan 4 artikel menyatakan penurunan tingkat kesalahan pada interaksi obat. Terdapat 4 artikel yang menyatakan penurunan tingkat kesalahan pada frekuensi obat yang salah dan 2 artikel yang menyatakan penurunan tingkat kesalahan pada duplikasi obat.

5.2. Saran

1. Perlu dilaksanakan penelitian lebih lanjut terkait efektivitas *electronic prescribing* pada penurunan tingkat *medication error* dengan metode eksperimental dan pencarian lebih lanjut untuk artikel yang membandingkan *electronic prescribing* dengan sistem lainnya selain resep tulis tangan sehingga dapat memperkuat pernyataan mengenai efektivitas *electronic prescribing*.
2. Perlu dilakukan penelitian lebih lanjut untuk mengetahui faktor risiko yang dapat memicu terjadinya kesalahan pengobatan dalam penerapan *electronic prescribing*.

DAFTAR PUSTAKA

- Ababneh, M. A., Azzam, S. I., Alzoubi, K. H. and Rababa'h, A. M. 2020, Medication errors in outpatient pharmacies: Comparison of an electronic and a paper-based prescription system, *Journal of Pharmaceutical Health Services Research*, **11(3)**: 1-4.
- Adrizal, A., Sriwahyuni, F. and Aldi, Y. 2019, Analisis pelayanan resep konvensional dan elektronik serta pengaruhnya terhadap kualitas pelayanan kefarmasian di RSUD M. Natsir Solok Indonesia, *Jurnal Sains dan Farmasi Klinis*, **6(3)**: 195-199.
- Agarwal, V. 2016, Medication errors and role of clinical pharmacist in identification, assessment and prevention : Need of the time, *Asian Journal of Pharmacy and Life Science*, **6(4)**: 1-14.
- Al-Sarawi, F., Polasek, T.M., Caughey, G.E. and Shakib, S. 2019, Prescribing errors and adverse drug reaction documentation before and after implementation of e-prescribing using the enterprise patient administration system, *Journal of Pharmacy Practice and Research*, **49(3)**: 27–32.
- Almohammadi, A. M., Al-Dhahri, H. M. and Al-Harbi, S.H. 2021, Impact of electronic prescription on prescribing errors, *Journal of Pharmaceutical Research International*, **33(32A)**: 212–220.
- Australian Government Department of Health. 2022, Electronic prescribing, Diakses pada 13 Juni 2022, <https://www.health.gov.au/initiatives-and-programs/electronic-prescribing#about-electronic-prescribing>.
- Babar, Z. and Austin, Z. 2019, Encyclopedia Of Pharmacy Practice And Clinical Pharmacy, Diakses pada 23 November 2021, <https://www.sciencedirect.com/referencework/9780128127360/encyclopedia-of-pharmacy-practice-and-clinical-pharmacy>.
- Bloch-Teitelbaum, A., Lu  de, S., Rauber-Lu  thy, C., Kupferschmidt, H., Russmann, S., Kullak-Ublick, G. A. and Cesch, A. 2013, Medication wrong route administration: A poisons center-based study, *Expert opinion on drug safety*, **12(2)**: 145–152.
- Brown, C. L., Mulcaster, H. L., Triffitt,K. L., Sittig, D. F., Ash, J. S., Reygate, K., Husband, A. K., Bates, D. W. and Slight, S. P. 2017, A systematic review of the types and causes of prescribing errors generated from using computerized provider order entry systems in

- primary and secondary care background and significance, *Journal of the American Medical Informatics Association*, **24(2)**: 432–440.
- Bushra, R., Aslam, N. and Khan, A. Y. 2011, Food-drug interactions, *Oman Medical Specialty Board Oman Medical Journal*, **26(2)**: 77-83.
- Caldwell, P. H. Y., Bennett, T. and Mellis, C. 2012, Easy guide to searching for evidence for the busy clinician, *Journal of Paediatrics and Child Health*, **48(12)**: 1095–1100.
- Cassidy, N., Duggan, E., Williams, D. J. P. and Tracey, J. A., 2011, The epidemiology and type of *medication errors* reported to the national poisons information centre of ireland, *Clinical Toxicology*, **49(6)**: 485–491.
- Chisholm-Burns, M. A., Vaillancourt, A. M., Shepherd, M., and Birtcher, K. 2014, *Pharmacy management, leadership, marketing, and finance*, Jones & Bartlett Learning, Inggris.
- Cousins, D. H., Gerrett, D. and Warner, B. 2011, A review of medication incidents reported to the national reporting and learning system in England and Wales over 6 years (2005 – 2010), *British Journal of Clinical Pharmacology*, **74(4)**: 597–604
- Davis, K., Guerra, A. and Neumiller, J. J. 2016, *Mosby's pharmacy technician : Principles and practice*, Elsevier Health Sciences, Inggris.
- Edhlund, B. M. and McDougall, A. G. 2014, *Pubmed essentials : Mastering the world's health research database*, Lulu.com, Swedia.
- Efron, S. E. and Ravid, R. 2018, *Writing the literature review: A practical guide*, Guilford Publications, Britania Raya.
- Farida, S., Krisnamurti, D. G. B., Hakim, R. W., Dwijayanti, A. and Purwaningsih, E. H. 2017a, Implementasi peresepan elektronik implementation of *electronic prescribing*, *Jurnal Kedokteran Indonesia*, **5(3)**: 211–216.
- Fatimah, S., Rochmah, N. N. and Pertiwi, Y. 2021, Analisis kejadian *medication error* resep pasien rawat jalan di rumah sakit x, *Majalah Farmasi dan Farmakologi*, **25(2)**: 71–78.
- Ferrari, S. 2015, Writing narrative style literature reviews, *The European Medical Writers Association*, **24(4)**: 230-235.
- Goundrey-Smith, S. 2012, *Principles of electronic prescribing*, Springer

London, Inggris.

- Griffin, P. M., Nembhard, H. B., DeFlitch, C., Bastian, N. D., Kang, H. and Muñoz, D. A. 2016, *Healthcare systems engineering*, Wiley, Jerman.
- Hinojosa-Amaya, J. M., García, F. G. R., Castro, S. G. Y., Cárdenas, M. S., Alarcón, M. Á. V. and Delgado, D. Á. G. 2016, Medication errors: Electronic vs. paper-based prescribing. experience at a tertiary care university hospital, *Journal of Evaluation in Clinical Practice*, **22(5)**: 751–754.
- Hitti, E., Tamim, H., Bakhti, R., Zebian, D. and Mufarrij, A. 2017, Impact of internally developed electronic prescription on prescribing errors at discharge from the emergency department, *Western Journal of Emergency Medicine*, **18(5)**: 943–950.
- Hodgkinson, M. R., Larmour, I., Lin, S., Stormont, A. J. and Paul, E. 2017, The impact of an integrated electronic medication prescribing and dispensing system on prescribing and dispensing errors: A before and after study, *Journal of Pharmacy Practice and Research*, **47(2)**: 110-120.
- Kenawy, A. S. and Kett, V. 2019, The impact of electronic prescription on reducing medication errors in an Egyptian outpatient clinic, *International Journal of Medical Informatics*, **127**: 80–87.
- Koziolek, M. 2019, The mechanisms of pharmacokinetic food-drug interactions – a perspective from the UNGAP group, *European Journal of Pharmaceutical Sciences*, **134**: 31–59.
- Mills, P. R., Weidmann, A. E. and Stewart, D. 2017, Hospital electronic prescribing system implementation impact on discharge information communication and prescribing errors: A before and after study, *European Journal of Clinical Pharmacology*, **127**: 79–87.
- Moris, D. C. 2021, *Calculate with confidence e-book*, Elsevier Health Sciences, Amerika Serikat.
- National Coordinating Council for Medication error Reporting and Prevention (NCC MERP). 2017, Medication error, Diakses pada 22 Februari 2022, <https://www.nccmerp.org/>
- Nurhaeni, N. L. P., Suarjana, K. and Wirawan, I. M. A. 2017, Electronic prescribing reduces prescription errors in sanglah general hospital

- denpasar, *Public Health and Preventive Medicine Archive*, **5(2)**: 84-89.
- Odukoya, O. and Chui, M. A. 2012, Retail pharmacy staff perceptions of design strengths and weaknesses of electronic prescribing, *Journal of the American Medical Informatics Association*, **19(6)**: 1059–1065.
- Pane, S. F., Prastyo, R. and Kesuma, S. N. P. 2020, *Oracle apex for beginner*, Kreatif Industri Nusantara, Bandung.
- Pranata, M., Rosyid, A. and Malikha, A. 2021, Analisis medication error fase prescribing, transcribing dan dispensing di puskesmas kota semarang, *Majalah Farmasi dan Farmakologi*, **25(2)**: 76-79.
- Strom, B. L., Kimmel, S. E. and Hennessy, S. (eds). 2016, *Pharmacoepidemiology*, Wiley Press, New Jersey, USA.
- Riski, Y. R. and Nugraha, F. F. 2019, Identifikasi medication error fase prescribing, transcribing, dispensing pada pasein rawat inap di rumah sakit sentra medika Cikarang, *Jurnal Ilmiah Kesehatan Institut Medika*, **1(1)**: 1-7.
- Ralston, S. H., Penman, I. D., Strachan, M. W. J. and Hobson, R. P. (eds). 2018, *Davidson's principles and practice of medicine*, Elsevier Health Sciences, Britania Raya.
- Rice, J. 2016, *Principles of pharmacology for medical assisting*, Cengage Learning, Amerika Serikat.
- Rikomah, S. E. 2018, *Farmasi klinik*, Deepublish, Sleman.
- Shawahna, R., Rahman, N. U., Ahmad, M., Debray, M., Yliperttula, M. and Decle`ves, X. 2011, Electronic prescribing reduces prescribing error in public hospitals, *Journal of Clinical Nursing*, **20(19)**, 3233–3245.
- Salmon, J. W. and Jiang, R. 2012, E-prescribing: History, issues, and potentials, *Journal of Public Health Informatics*, **4(3)**. 1-14.
- Sin, C. M. H., Young, M. W., Lo, C. C. H., Ma, P. K. and Chiu, W. K. 2021, The impact of computerised physician order entry on prescribing in general paediatric units in Hong Kong, *International Journal of Pharmacy Practice*, **29(2)**: 164–169.
- Sutabri, T. and Yanto, D. H. 2015, 'Implementasi aplikasi e-prescribing menggunakan digital pen pada Rumah Sakit Haji Jakarta',

Prosiding Seminar Nasional Pendidikan Teknik Informatika, Jakarta, Indonesia, pp. 140-145.

- Tariq, R. A., Vashisht, R., Sinha, A. and Scherbak, Y. 2021, *Medication dispensing errors and prevention*, StatPearls.
- Timbongol, C., Lolo, W. A. and Sudewi, S. 2016, Identifikasi kesalahan pengobatan (*medication error*) pada tahap peresepan (prescribing) di Poli Interna Rsud Bitung, *Jurnal Ilmiah Farmasi*, **5(3)**, 1–6.
- Tran, T., Taylor, S. E., Hardidge, A., Mitri, E., Aminian, P., George, J. and Elliott, R. A. 2019, Pharmacist-assisted electronic prescribing at the time of admission to an inpatient orthopaedic unit and its impact on medication errors: A pre- and postintervention study, *Therapeutic Advances in Drug Safety*, **10**: 1-10.
- World Health Organization. 2016, Medication errors: Technical Series on Safer Primary Care, Diakses pada 1 November 2021, <http://apps.who.int/bookorders>.
- Yang, J. H., Liao, Y. F., Lin, W. B. and Wu, W. 2019, Prescribing errors in electronic prescriptions for outpatients intercepted by pharmacists and the impact of prescribing workload on error rate in a Chinese tertiary-care women and children's hospital, *BMC Health Services Research*, **19(1)**: 1-11.
- Yugandhar, B., Shewade, D. G., Dharanipragada, K. and Batmanabane, G. 2017, Impact of electronic prescribing system on prescribing error rate at patients' transition of care: An interventional study, *Journal of Young Pharmacists*, **9(3)**: 441-445.
- Zucker, I. and Prendergast, B. J. 2020, Sex differences in pharmacokinetics predict adverse drug reactions in women, *Biology of Sex Differences*, **11(1)**: 1–14.