



Polypharmacy among Patients with Diabetes Mellitus Attending the Diabetic Clinic, National Hospital, Galle

D.M.K. Lakshika¹, K.B. Gunawardana^{2}, S.A. Mendis³, P.L.G.C. Liyanage³*

¹ Department of Pharmacy, Faculty of Allied Health Sciences, University of Ruhuna

² Department of Medical Laboratory Science, Faculty of Allied Health Sciences, University of Ruhuna

³ Department of Pharmacology, Faculty of Medicine, University of Ruhuna

**Corresponding author: kalanigunawardana@ahs.ruh.ac.lk*

Patients with diabetes mellitus are at a higher risk of exposure to polypharmacy due to the presence of multiple comorbid conditions, which heavily impact their overall health outcomes. This study aimed to assess the prevalence, appropriateness, associated factors, and impact of polypharmacy on diabetic patients. A cross-sectional study was conducted among 290 patients aged ≥ 18 years with type 1 or type 2 diabetes attending the diabetic clinic at the National Hospital, Galle. Data were extracted from clinic record books and from both self-administered and interview-administered questionnaires. Polypharmacy was defined as taking five or more medications per day. The appropriateness of polypharmacy was analyzed by two expert clinicians. Descriptive statistics, chi-square tests, odds ratios, and logistic regression were performed using SPSS version 25, with a significance level of $p < 0.05$. The mean age of the study population was 59.2 years (SD = 11.03), and patients were prescribed an average of 5.88 medications (SD = 2.43). The prevalence of polypharmacy was 69% (200/290). Inappropriate polypharmacy was observed in 12.4% of participants (36/290). Polypharmacy was significantly associated with multimorbidity ($p < 0.05$), including hypertension (OR = 4.49; 95% CI: 2.633–7.675), dyslipidaemia (OR = 3.60; 95% CI: 2.107–6.146), asthma (OR = 8.27; 95% CI: 1.083–63.117), and heart failure (OR = 11.00; 95% CI: 1.459–82.93). Lipid-modifying (86.3%) and antithrombotic drugs (63.1%) were the most frequently prescribed in combination with antidiabetic medications. The prevalence of polypharmacy showed a significant association with age ($p < 0.001$), duration of treatment ($p < 0.001$), and low knowledge about medications ($p = 0.002$). Polypharmacy had a significant impact on forgetfulness, difficulty in managing cost, adverse side effects, healthcare utilization barriers, medication adherence, and patient dissatisfaction with their treatments ($p < 0.001$). In conclusion, the study revealed a high prevalence of polypharmacy among patients with diabetes, and the findings indicate the importance of continuous medication review, improving prescribing practices, and enhancing patient education to minimize inappropriate polypharmacy and optimize therapeutic outcomes.

Keywords: Diabetes mellitus, Multimorbidity, Polypharmacy, Inappropriate polypharmacy