

Prescribing Patterns and Polypharmacy in Type II Diabetes Management in Nagapattinam Using Who Indicators

Nithyaasri Sekar*, Yasotha Kalidoss, Johnvi Ulaganathan, Monisha Packirisami,
Maheshwaran Karunanithi, Vanitha Devi Rajendran

Sir Issac Newton College of Pharmacy, Nagapattinam, Tamil Nadu – 611 102.

*Presenting Author - Email:gvsekar903@gmail.com; Mobile: +91 76392 23017

ABSTRACT

Introduction: Type II diabetes mellitus is a growing public health concern in India, with prescribing patterns influencing treatment outcomes. Understanding these patterns, particularly polypharmacy, is critical in regions like Nagapattinam District, Tamil Nadu, where healthcare access varies.

Aim & Objective: This retrospective observational study aims to evaluate drug prescribing patterns for type II diabetes mellitus using World Health Organization (WHO) prescribing indicators, focusing on rationality, appropriateness, and the prevalence of polypharmacy.

Methods: Data were collected from 1032 patient encounters (male and female, aged 34–79) across primary, secondary healthcare facilities, and private clinics in Nagapattinam from October 2024 to February 2025. WHO indicators assessed included average number of drugs per encounter, percentage of drugs prescribed by generic name, antibiotics and injection encounters, and adherence to WHO and India essential drugs lists. Fixed-dose combinations (FDCs) and specific drug classes were analysed.

Results: The average number of drugs per encounter was 5.11, with 32.5% prescribed by generic name, 8.5% of encounters including antibiotics, 13.0% including injections (insulin: 18.7%), and 32.7% (WHO) and 83.4% (India) from essential drugs lists. FDCs comprised 87.0% of prescriptions. Metformin was prescribed in 82% of cases, sulfonylureas in 42.3%. Polypharmacy was prevalent, with 48.3% of prescriptions containing four drugs, 17.6% five, 14.8% six, 11.3% seven, and 4.41% eight. Private clinics used more insulin and newer agents (e.g., SGLT2 inhibitors), while rural facilities showed lower WHO list adherence.

Summary & Conclusion: Polypharmacy and low generic prescribing highlight concerns about drug interactions and access to essential medications. Interventions are needed to promote rational prescribing and equitable therapy access in Nagapattinam.

Keywords: type II diabetes, WHO prescribing indicators, Nagapattinam, insulin injections, polypharmacy, rational prescribing

Presented at: Two-Day National Conference on “Artificial Intelligence and Machine Learning: A Game Changer in Healthcare,” held on the 3rd and 4th of September 2025. The event was organized by Vellalar College of Pharmacy, Erode, Tamil Nadu.

Guided by: Mrs. R. Vanitha Devi, Associate Professor.