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Determination of knowledge, attitude, and practices of insulin handling and injection techniques in diabetic patients who attend Diabetic Centre and Medical Clinics in Teaching Hospital, Jaffna

Aaqil Sharaff M¹, Karthiga S¹, Soumiya S¹, Shashmitha Ashani E¹, Asjath SA¹, Sanchayan K², Aravinthan M³

¹ Faculty of Medicine, University of Jaffna

² Department of Pharmacology, Faculty of Medicine, Faculty of Medicine, University of Jaffna

³ Endocrinology Unit, Teaching Hospital, Jaffna

Background and objective: Diabetes mellitus remains a major global health challenge, especially in low-resource settings such as Sri Lanka. Insulin therapy is essential for glycaemic control, yet improper storage, administration, and disposal practices compromise its effectiveness. This study aimed to evaluate the knowledge, attitudes, and practices (KAP) regarding insulin handling and injection techniques and their association with sociodemographic factors among diabetic patients attending Teaching Hospital, Jaffna.

Methods: A hospital-based descriptive cross-sectional study was conducted at the Diabetic Centre and Medical Clinics of Teaching Hospital Jaffna from August to November 2024 among 388 diabetic patients aged ≥ 18 years who had been on insulin therapy for at least three months. A validated, interviewer-administered questionnaire was used which is developed by the research team and content validated by two experts. Knowledge (0–7), attitude (6–30), and practice (0–7) domains were scored, with a total KAP score out of 44. Data were analyzed using descriptive statistics and chi-square tests to determine associations between KAP scores and sociodemographic variables (SPSS v26). Ethical approval was obtained from the Ethics Review Committee, Faculty of Medicine, University of Jaffna.

Results: Participants were equally distributed by gender (50.3% female), predominantly aged 51–70 years (69.3%), unemployed (55.9%), and educated up to grade 10 (36.9%). While 96.9% of participants achieved a total KAP score of 22 or higher out of 44, critical gaps persisted. Most participants (73.5%) stored insulin in refrigerator doors exposing it to temperature fluctuations and 42.8% discarded used needles in household trash. Knowledge scores were significantly associated with age ($p=0.019$) and education ($p=0.011$); practice scores correlated strongly with education ($p<0.001$). Attitudes were generally positive (96.9% scored $\geq 23/30$). No significant associations were found with gender or insulin therapy duration ($p>0.05$).

Conclusion: Although most participants achieved relatively higher total KAP scores, notable discrepancies existed between knowledge and practice, particularly in storage and sharps disposal. Strengthening structured patient education through repeated counselling and hands-on training is essential to promote safe insulin handling.

Keywords: diabetes mellitus, insulin therapy, needle disposal