**Quality of AI Chatbot Assisted Medical Nutrition Therapy Meal Planning for Persons with Diabetes Nephropathy**

**Background & Aim**

Artificial intelligence (AI) advancements have transformed diabetes care, facilitating intelligent and personalized disease management. Diabetic kidney disease (DKD), a prevalent complication of diabetes, is a leading cause of end-stage renal disease and dialysis. Effective DKD management requires tailored dietary strategies to optimize health outcomes and slow disease progression. Crafting individualized meal plans based on renal function, medication profiles, chewing ability, and dietary preferences is complex and time-consuming for clinicians. AI-assisted dietary recommendations could enhance the ability of clinical dietitians to deliver precise, efficient nutrition interventions for diabetes and DKD management, improving quality of care.

**Methods**

This study evaluated dietary recommendations for various DKD stages provided by three AI chatbots (ChatGPT, Claude, Grok). Prompts incorporated comprehensive case data, including demographics, medical history, nutrition assessment, and diagnosis, collected by professional dietitians. Relevant literature on DKD nutrition care was provided to guide AI outputs. The quality of AI-generated menus was assessed using the Diet Quality Index for Chronic Kidney Disease (DQI-CKD) to ensure alignment with clinical standards.

**Results**

All three AI chatbots generated meal plans aligned with the persons’ habitual dietary patterns and incorporated locally sourced, seasonal ingredients, based on the provided personal data. Nutritional analysis revealed that the menus achieved DQI-CKD scores of 60/70 (86%) or higher, indicating excellent diet quality. The AI tools demonstrated the ability to propose high-quality meal plans tailored to different stages of kidney disease. Additionally, the AI models provided supplementary recommendations addressing blood glucose control, body weight management, lifestyle factors, and emotional well-being.

**Discussion/Conclusion**

This study demonstrates the high feasibility of AI tools in delivering individualized DKD nutritional guidance. High-quality outcomes depend on dietitian-collected personal data and relevant literature to optimize AI performance. These findings highlight AI’s potential to support clinical practice, with professional oversight essential to ensure accurate, clinically relevant recommendations.