

## **Development and Feasibility of the Diet Wizard Application: Automating the Kenyan Food Exchange List for Clinical Meal Planning**

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### **Abstract**

Malnutrition remains a significant clinical and public health burden in Kenya, with hospital prevalence estimated at 30–76%. Despite advances in nutrition informatics globally, diet planning among Kenyan nutritionists largely relies on manual computation using the Kenyan Food Exchange List. This process is time-consuming, prone to error, and excludes many locally consumed foods. To address these challenges, this study developed and tested a prototype mobile application, Diet Wizard, to automate the use of the Kenyan Food Exchange List and enhance efficiency in personalized meal planning. A cross-sectional mixed-methods design was used. Laboratory analysis established metric measures and macronutrient profiles for 48 commonly consumed Kenyan foods missing from the Kenyan Food Exchange List. These data were integrated into the Diet Wizard database. The application was developed using the React and Bootstrap frameworks and evaluated through an online feasibility survey among 103 Kenyan nutritionists. Quantitative data were analyzed using SPSS Version 20, with descriptive and inferential statistics used to determine predictors of adoption. Most respondents were aged 20–39 years (74%) and worked in hospital settings (50.5%). A majority (76.5%) reported a significant reduction in time spent on meal planning, and 73% noted marked improvements in accuracy. Overall, 95.1% rated the app as usable, with 69.9% “very easy” and 25.5% “easy.” Logistic regression revealed ease of use as a significant predictor of willingness to adopt (OR = 7.58; 95% CI 1.12–51.28;  $p = 0.038$ ). Correlation analysis showed a strong association between perceived accuracy and time efficiency ( $\rho = 0.466$ ;  $p = 0.001$ ). Diet Wizard significantly enhanced efficiency, accuracy, and usability in clinical meal planning, demonstrating the feasibility of automating the Kenyan Food Exchange List. The study recommends integrating such digital tools into Kenya’s national nutrition care framework to modernize dietetic practice and improve patient outcomes.

**Keywords:** *Kenyan Food Exchange List, Diet Wizard, M-Health, Clinical nutrition, Meal planning automation*

## **1.0 Introduction**

Malnutrition remains a major public health concern globally and in Kenya, particularly among hospitalized patients, where prevalence ranges from 30% to 76%. Malnutrition lengthens hospital stays, increases treatment costs, and impairs recovery from chronic diseases and surgical conditions (Blaauw et al., 2019; Guinhut et al., 2020; Roberts et al., 2024). Nutrition support, defined as the adequate provision of nutrients to maintain health and prevent undernutrition, is therefore a critical component of clinical care (Guinhut et al., 2020). However, the effectiveness of such support is often constrained by the manual, time-consuming nature of dietary planning in most Kenyan health facilities (Coulibaly & Galibois, 2009; Mustafa et al., 2020). Nutritionists commonly rely on the Kenyan Food Exchange List (KFEL), a standard tool for planning balanced meals based on equivalent macronutrient exchanges (Yusof & Noah, 2017). While the Food Exchange List concept has been successfully adapted and automated in several countries, such as Thailand, Qatar, and Nigeria, to support individualized diet planning (Bawadi et al., 2022; Chotwanvirat et al., 2021; Coulibaly & Galibois, 2009; Mustafa et al., 2020), Kenya still depends largely on paper-based systems.

This manual process of computing food exchanges and portion sizes is tedious, prone to errors, complex, inefficient, and limits the number of patients whose meal plans are prepared. This reduces the time needed for patient education, leaving nutritionists to spend much of their time generating menus and diet plans (Mustafa et al., 2020; Yusof & Noah, 2017). Moreover, the existing KFEL is

incomplete, omitting many commonly consumed indigenous foods, thereby reducing cultural relevance and limiting clinical precision (Njoroge et al., 2017). Despite rapid mobile phone penetration and the government's national e-health strategy launched in 2011, Gatero (2011) the Kenyan nutrition sector has lagged in leveraging digital tools to improve the delivery of nutrition care (Tadesse et al., 2025). Studies elsewhere have shown that mobile health (mHealth) technologies improve diet accuracy, adherence, and counseling efficiency through automation and personalized feedback (Chen et al., 2018; Fallaize et al., 2019).

There is thus a pressing need to develop localized, clinician-oriented solutions that integrate the KFEL with current digital capabilities to improve the accuracy and efficiency of diet planning. This study, therefore, sought to design and test a prototype application, "Diet Wizard," that automates the use of the KFEL for professional meal planning. The app computes individual caloric needs, assigns appropriate food exchanges, and automatically generates culturally tailored meal plans. By bridging the gap between traditional exchange-based diet planning and modern automation, Diet Wizard aims to enhance clinical efficiency, reduce planning time, and strengthen evidence-based nutrition practice across Kenyan healthcare settings.

## **2.0 Materials and Methods**

### ***Study Design and Sampling***

This study used a cross-sectional design to achieve the overall objective of developing and testing a prototype tool to automate the KFEL for clinical use between July 2023 and

March 2024. The target population comprised qualified nutritionists and dietitians practicing in Kenya, representing both the public and private sectors. According to the Kenya National Bureau of Statistics (KNBS, 2022), approximately 1,300 licensed nutritionists were employed nationally, forming the sampling frame for this study. A systematic random sampling method was used to select respondents from across Kenya, ensuring representation from hospital, community, academic, and private practice settings. A total of 103 nutritionists participated in the study, exceeding the minimum required sample for feasibility and usability testing.

***Design and Deployment of the Diet Wizard App***

We developed Diet Wizard, a mobile/web application that automates the use of the KFEL to support clinical meal planning. The design addressed well-documented constraints of manual exchange calculations and the limited cultural coverage of existing tools. Development followed a user-centered, iterative process with practicing Kenyan nutritionists as the primary end users. We identified commonly consumed local foods that were missing from KFEL and recorded household measures and gram weights for each. We mapped them to energy and macronutrients using the Kenyan Food Composition Tables (FAO/Government of Kenya, 2018). These items and metrics were added to a KFEL-based master table, yielding exchangeable portions for starches, milk, meats/legumes, fruits, vegetables, fats/oils, and sugars. The app was built as a lightweight single-page application using React (UI & state), Bootstrap (responsive layout), and VS Code (development). All processing occurs on

the client side, ensuring that no protected health information is transmitted or stored externally. This architecture enables rapid system performance, supports potential offline functionality through caching or Progressive Web App features, and allows easy deployment across major mobile application platforms. We prioritized low cognitive load (three-step flow), clear labels, input validation, and printable/exportable summaries for counseling. No personally identifiable data is stored on the server-side. Testing covered internal unit tests of calculations, face-validity checks with dietitians, and field feasibility with end users.

*“This study concludes that the Diet Wizard application enhances meal planning by automating the Kenyan Food Exchange List, improving accuracy, speed, and usability for nutritionists”*

The core algorithms of the Diet Wizard application translate user inputs into precise, balanced meal plans. The system begins by collecting basic demographic and anthropometric data, including age, sex, height, weight, and physical activity level, with optional entries for clinical or stress-related modifiers and food preferences. Using these inputs, the application automatically computes key nutritional indices, including Body Mass Index (BMI), Basal Metabolic Rate (BMR) based on the Harris–Benedict

equation, and the Estimated Energy Requirement (EER), derived by multiplying BMR by the appropriate activity or stress factor. Calorie targets are then adjusted therapeutically based on BMI classification, typically by 500 kcal to support weight management goals. Once the energy target is established, the system distributes total calories across food exchange groups following Kenyan clinical dietary norms, for example, starch (6–11 servings), milk (2–4), fruits (2–4), vegetables (3–5), fats (2–3), and sugars (6–9), ensuring macronutrient balance within each plan. The menu generation engine then selects culturally relevant foods from the enriched KFEL database to populate each meal with appropriate portion sizes and gram weights. A built-in regeneration function allows users to substitute acceptable food alternatives while maintaining the same nutritional and caloric integrity, thereby supporting both personalization and consistency in clinical diet planning.

#### ***Data Collection and Analysis***

A structured digital questionnaire was used to collect data from participating nutritionists. The instrument captured socio-demographic characteristics, professional experience, and perceptions of the developed prototype regarding usability, accuracy, time efficiency, and willingness to adopt. The questionnaire was distributed electronically, and responses were submitted via email to enhance nationwide participation. Quantitative data were analyzed using SPSS Version 26 and Microsoft Excel. Descriptive statistics summarized participant characteristics and usability outcomes. Spearman's correlation assessed relationships among perceived accuracy, time efficiency, and ease of use,

while binary logistic regression identified predictors of willingness to adopt the application.

#### ***Ethical Considerations***

Ethical approval for the study was obtained from the Kenya Methodist University Institutional Scientific Ethics Review Committee (KeMU-ISERC) and the National Commission for Science, Technology, and Innovation (Permit No: NACOSTI/P/23/22999) prior to data collection. Confidentiality was strictly maintained throughout the study.

### **3.0 Results and Discussion**

#### ***Sociodemographic Characteristics of Respondents***

The sociodemographic profile of respondents (Table 1) reflects a diverse, representative sample of nutrition professionals across Kenya. The near gender balance contrasts slightly with the traditionally female-dominated field of nutrition, possibly reflecting increased male participation in digital health-related research. The majority of respondents were young professionals aged 20–39 years (74%), indicating that the emerging generation of practitioners is driving innovation and technology adoption in clinical nutrition. Most participants held a bachelor's degree or higher (47.6%), indicating a well-educated cohort equipped to evaluate and integrate new tools, such as the Diet Wizard application. Notably, 38.6% had less than five years of experience, indicating that early-career nutritionists form a substantial proportion of those open to using digital solutions. This aligns with global trends showing that younger professionals are more

enthusiastic about integrating health technology (Chen et al., 2018; Okoroafor et al., 2022; Turner-McGrievy et al., 2019; Williams et al., 2021).

Regarding workplace distribution, half of the respondents (50.5%) worked in hospitals, indicating that the Diet Wizard app’s clinical functionality directly targets the primary setting for its intended use. The remaining respondents worked in private practice, academia, and community health programs, highlighting the tool’s broad applicability across professional settings. Regional

participation spanned all major Kenyan zones, with the Nairobi (29.1%) and Central (17.5%) regions contributing the largest shares, consistent with the higher concentration of health facilities and professionals in urban areas. Overall, these findings depict a technologically receptive, youthful, and well-trained professional community, ideally positioned to benefit from and champion digital transformation in nutrition service delivery through platforms like the Diet Wizard (Chen et al., 2018; Gatero, 2011; Okoroafor et al., 2022).

**Table 1**

*Sociodemographic Characteristics of Respondents (n = 103)*

<b>Variable</b>	<b>Category</b>	<b>n (%)</b>
Gender	Male	54 (52.9)
	Female	49 (47.1)
Age Group (years)	20–29	38 (36.9)
	30–39	38 (37.1)
	40–49	19 (18.0)
	≥50	8 (7.8)
	Highest Level of Education	Diploma
	Bachelor’s degree	49 (47.6)
	Master’s degree	22 (21.4)
	Doctorate	6 (5.8)
Years of Professional Experience	0–5	40 (38.6)
	6–10	29 (27.4)
	11–15	18 (17.6)
	>15	16 (15.7)
Work Setting	Hospital	52 (50.5)
	Private practice	23 (22.3)
	Academia/Training	14 (13.6)
	NGO/Community programs	9 (8.7)
	Other	5 (4.9)
Region of Practice	Nairobi	30 (29.1)
	Central	18 (17.5)
	Rift Valley	17 (16.5)
	Coast	15 (14.6)
	Western	11 (10.7)
	Eastern/North Eastern	12 (11.6)

***Overview and Functional Attributes of the Diet Wizard Application***

Table 2 summarizes Diet Wizard’s data inputs, computational engine, and user-facing

outputs, designed to streamline clinical meal planning in the Kenyan context. Diet Wizard operationalizes the Kenyan exchange-based method into a repeatable, rule-driven

workflow. By anchoring plans to KFEL exchanges and enriched local foods (with gram weights and household measures), the app converts individual assessments (BMI/BMR/EER) into balanced meal plans without manual arithmetic. The Regenerate function offers practical flexibility, allowing clinicians to maintain calorie/exchange fidelity while rapidly swapping foods to meet patient preferences, allergies, or availability. The net effect is a marked reduction in the cognitive and time burden of planning, with consistent macronutrient control and improved documentation quality (Mustafa et al., 2020; Yusof & Noah, 2017). The feasibility evaluation revealed that the Diet Wizard app notably reduced the time required for meal planning (Figure 1), and ease of use emerged as the strongest predictor of adoption

(Table 3). This efficiency stems from its automated exchange allocation, culturally tailored Kenyan food database, and simple three-step workflow that minimizes re-entry during counseling (Table 2). The positive correlation between perceived accuracy and time efficiency underscores the system’s reliability and trustworthiness (Table 4). Unlike general calorie-tracking apps, Diet Wizard integrates clinical functionality and cultural localization, making it better suited to Kenyan healthcare settings. Future scaling should emphasize regular database updates, micronutrient integration, and interoperability with electronic medical records (Chen et al., 2018; Chisaguano-Tonato et al., 2023; Mustafa et al., 2020; Skouroliakou et al., 2009).

**Table 2**

*Overview of the Diet Wizard App: Inputs, Engine, and Outputs*

<b>Component</b>	<b>What It Includes</b>	<b>How It Works</b>	<b>Why It is Better</b>
<b>User Inputs</b>	Basic details like age, gender, height, weight, activity level, food preferences, or restrictions	The app checks if the details are realistic, then calculates body needs like BMI, BMR, and daily energy (EER)	Faster and more accurate than manual calculations
<b>Data Sources</b>	Uses the Kenyan Food Exchange List (KFEL) plus extra local foods with measured nutrients (grams, kcal, protein, fat, carbs)	Links foods to standard measures (like cups or spoons)	More relatable to Kenyan diets than foreign food databases
<b>Therapeutic Targets</b>	Goal settings such as weight loss or gain (e.g., add or reduce 500 kcal)	Automatically adjusts the daily energy goal based on the user’s needs	Easier for nutritionists and patients to follow
<b>Exchange Allocator</b>	Food groups like starch, milk, meat/legumes, fruits, vegetables, fats, and sugars	Divides calories among these groups using Kenyan nutrition standards	Distributes calories across groups to meet the target
<b>Meal Planning Engine</b>	A computer program that selects foods and correct portion sizes for each meal	Builds a full-day meal plan that matches the calorie and food group goals; users can click “Regenerate” to get new options.	Creates quick, customized meal plans that fit local preferences

Component	What It Includes	How It Works	Why It is Better
<b>Usability Features</b>	Simple 3-step process, one-click meal changes, and it works even without an internet connection.	Runs as a fast, mobile-friendly app using React and Bootstrap	Saves time and works well even in areas with poor internet
<b>Outputs</b>	Lists of food groups, meal portions, total calories, and nutrients	Allows printing or exporting of plans for counseling or record keeping	Gives ready-to-use meal guides for patients
<b>Safeguards &amp; Limits</b>	Checks for wrong entries, keeps data private (no personal info saved online), and updates lists regularly.	Alerts users to unusual inputs and food improves data with updates	Maintains privacy by design and allows for ongoing improvement

***Predictors of Willingness to Adopt the Diet Wizard App***

The logistic regression analysis (Table 3) examined factors influencing nutritionists' willingness to adopt the Diet Wizard App. The results indicate that ease of use was the only statistically significant predictor of willingness to adopt (OR = 7.58; 95% CI: 1.12–51.28; p = 0.038). This finding aligns with prior evidence that usability and perceived ease of use are the strongest predictors of adoption of digital health technologies (Chen et al., 2018; Hasan & Bao, 2022). Respondents who found the application easy to use were approximately 7.6 times more likely to express a high willingness to adopt it than those who did not. Although the application's accuracy showed a positive association (OR = 5.27), the relationship was not statistically significant (p = 0.115),

suggesting that while perceived reliability may enhance user confidence, accuracy alone rarely drives adoption of health apps without usability synergy (Vasiloglou et al., 2021). Conversely, time efficiency (OR = 0.24) showed a negative but non-significant association (p = 0.260), suggesting that perceived time savings did not significantly influence willingness to adopt the app. Gender was also not a significant predictor (p = 0.846), indicating no notable difference in the likelihood of adoption between male and female respondents. Overall, these findings reinforce that usability remains the most critical determinant of adoption among clinicians and nutritionists, emphasizing the need to design intuitive, user-friendly digital tools for effective integration into clinical nutrition practice (Chen et al., 2018; Turner-McGrievy et al., 2019).

**Table 3**

*Logistic Regression of Predictors of Willingness to Adopt the Diet Wizard App among Nutritionists*

Predictor	OR	95% CI	p-value
Ease of Use	7.58	1.12 – 51.28	0.038
Accuracy	5.27	0.67 – 41.73	0.115
Time Efficiency	0.24	0.02 – 2.90	0.260
Gender (Male)	0.82	0.11 – 5.92	0.846

**Correlation Between Key Usability Attributes**

The Spearman’s rank correlation results in Table 4 indicate a moderate, statistically significant positive correlation between perceived accuracy and time efficiency ( $\rho = 0.466$ ,  $p = 0.001$ ). This suggests that nutritionists who perceived the Diet Wizard application as more accurate were also more likely to perceive it as time-efficient. Additionally, there was a weak but significant positive correlation between years of professional experience and ease of use ( $\rho = 0.199$ ,  $p = 0.046$ ). This indicates that more experienced nutritionists found the application slightly easier to use than their less-experienced counterparts, perhaps due to greater familiarity with food-exchange principles and clinical meal-planning procedures (Sahoo et al., 2025). These findings highlight the interrelated nature of usability attributes in digital health tools. The strong link between accuracy and time

efficiency suggests that users equate reliability with performance. When an application generates precise results, users perceive the process as faster and more efficient. This is consistent with earlier studies on nutrition and mHealth apps, which found that perceived system reliability strongly predicts user satisfaction and sustained use (Chen et al., 2018; Njoroge et al., 2017; Vasiloglou et al., 2021). The significant, though weaker, relationship between experience and ease of use underscores that professional familiarity may facilitate smoother navigation of new digital tools (Sahoo & al., 2025). Nonetheless, even novice nutritionists rated the application positively, suggesting that the Diet Wizard’s interface is broadly usable across experience levels. Collectively, these associations reinforce the importance of developing accurate, intuitive, and time-saving applications to enhance adoption among healthcare professionals (Talens & al., 2025).

**Table 4**

*Spearman’s Rank Correlation Between Selected Variables Related to the Diet Wizard App*

<b>Variable Pair</b>	<b><math>\rho</math> (rho)</b>	<b>p-value</b>
Perceived Accuracy ↔ Time Efficiency	0.466	0.001
Years of Experience ↔ Ease of Use	0.199	0.046

**Impact on Meal-Planning Efficiency**

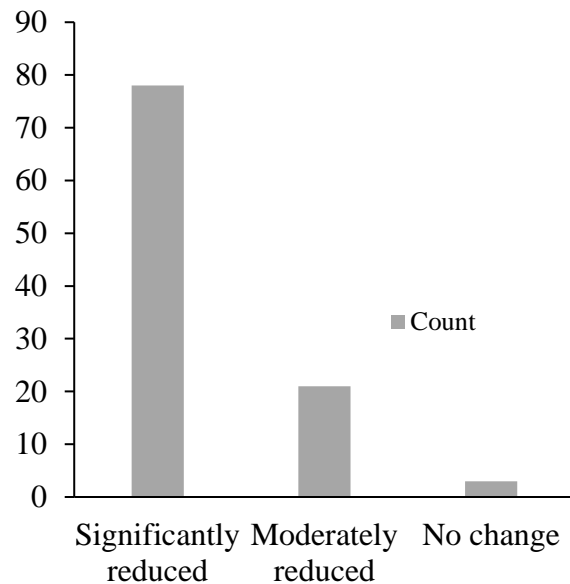
Figure 1 shows the reported changes in the time required for meal planning after adopting the Diet Wizard App. A substantial majority of respondents (76%) reported that meal planning took significantly less time when using the application. These results suggest that the Diet Wizard App substantially improved efficiency, allowing nutritionists to create meal plans more quickly than with the traditional manual method (Buss et al., 2024). The findings demonstrate that automating the

KFEL through the Diet Wizard App improves workflow efficiency in clinical and community nutrition practice. Most nutritionists perceived notable time savings, which aligns with global evidence showing that digital meal-planning systems reduce administrative workload and enhance productivity (Chen et al., 2018; Skouroliahou et al., 2009). The small proportion of users reporting no change may reflect early adopters still adjusting to the system interface or using it in settings with limited technical

infrastructure. Overall, these findings underscore the efficiency advantage of integrating locally tailored digital tools into clinical nutrition practice. The application demonstrates how technology can streamline diet planning, optimize the use of professional time, and improve service delivery in resource-limited healthcare settings (Buss et al., 2024; Sahoo et al., 2025; Tadesse et al., 2025; Talens et al., 2025).

**Figure 1**

*Effect of the Diet Wizard Application on Time Spent in Meal Planning Among Nutritionists*



***Comparison Between the Manual Use of the KFEL and the Diet Wizard App in Meal Planning***

Table 5 compares meal planning using the manual Kenyan Food Exchange List (KFEL) method with the automated Diet Wizard App. Findings showed that the manual method was time-consuming, inconsistent, and required users to exert technical effort. About 61.4% of respondents identified lengthy calculations as the main challenge, 17.8% cited inconsistent portion sizes, and 26.7% cited limited local food options. These challenges made the manual process tedious and error-prone. In contrast, the Diet Wizard App automated key steps such as calculations, portion distribution, and food group classification, producing quick and accurate meal plans. It also provided detailed nutritional information and a wider variety of foods relevant to Kenyan diets. Overall, the app significantly improved efficiency, accuracy, and cultural suitability in dietary planning compared with the manual KFEL method.

**Table 5**

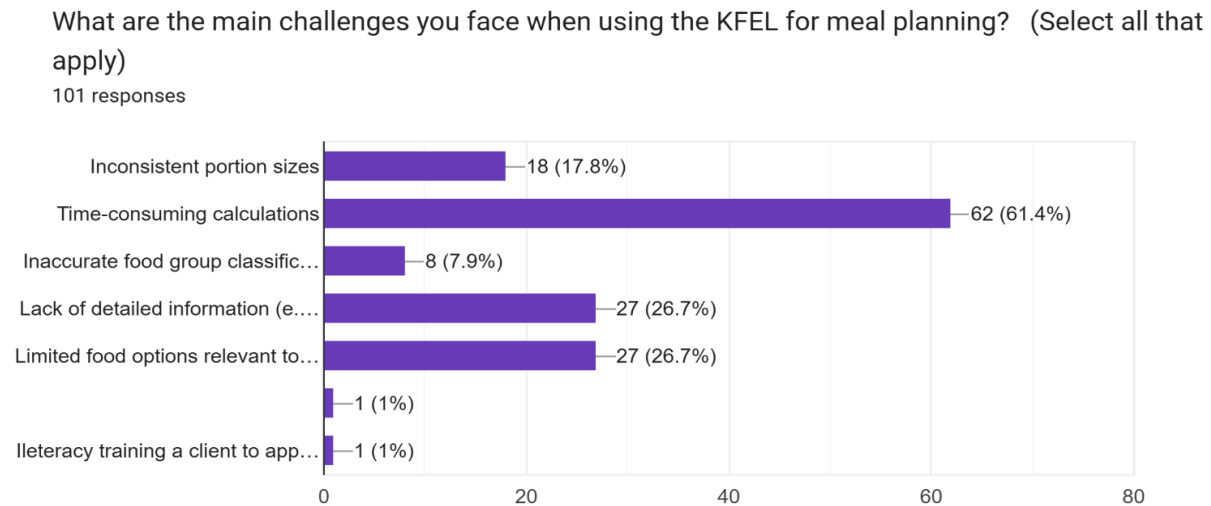
*Comparison between manual use of KFEL and the automated KFEL by the diet wizard app*

<b>Challenge / Feature</b>	<b>Manual KFEL Method</b>	<b>Diet Wizard App</b>	<b>Improvement</b>
<b>Time spent on calculations</b>	Very time-consuming, reported by 61.4% of users	Automatically calculates BMI, EER, and food exchanges in seconds	Saves time and reduces workload
<b>Portion consistency size</b>	Inconsistent; users must estimate portions (17.8%)	Standardized food weights and household measures	Ensures accuracy and consistency
<b>Food group classification</b>	Sometimes inaccurate or confusing (7.9%)	Uses pre-coded, validated food groups	Improves accuracy and reliability

Challenge / Feature	Manual KFEL Method	Diet Wizard App	Improvement
<b>Detailed information.</b>	Limited detail on local foods (26.7%)	Includes full nutrient data for local foods	Gives clear and complete nutritional info
<b>Food options relevant to Kenyan diets</b>	Limited variety (26.7%)	Expanded local food database	More culturally appropriate meal plans
<b>Client understanding or literacy</b>	Requires training to explain (1%)	User-friendly visuals and simple workflow	Easier for both clients and nutritionists

**Figure 1**

*The main challenges experienced by nutritionists when using the KFEL manually in meal planning are.*



***Comparative Evaluation with Global Nutrition Applications***

The comparative analysis (Table 5) shows that Diet Wizard offers distinct advantages over global applications such as MyFitnessPal® (MyFitnessPal, Inc.), ENutri, and Good Measures® (Good Measures, LLC) by integrating Kenya’s clinical and cultural dietary context. Unlike general calorie-counting apps designed for the public, Diet Wizard was built for professional use, anchored in the KFEL to align with local dietary guidelines and common foods. Its structured, clinically oriented interface

supports precise meal planning, while offline functionality enhances reliability in low-connectivity settings. These design features ensure greater usability, accuracy, and professional relevance than global, consumer-oriented nutrition apps (Chen et al., 2018; Fallaize et al., 2019; Mustafa et al., 2020). Similarly, Chen et al. (2018), Piernas et al. (2024), Talens et al. (2025), and Turner-McGrievy et al. (2019) note that the absence of localization and professional integration limits the clinical utility of mainstream nutrition apps. By embedding the KFEL and enabling automated diet prescription, Diet

Wizard provides a structured approach that aligns with both local dietary patterns and the professional workflow of dietitians. However, its evolving food database suggests the need for ongoing updates and the inclusion of a more diverse range of Kenyan foods to improve comprehensiveness. Overall, the comparison underscores that cultural adaptation, clinical usability, and offline

functionality are critical determinants of app relevance in low- and middle-income country contexts (Goldschmidt et al., 2018; Vincze et al., 2021). Diet Wizard’s model demonstrates how digital health innovations can be tailored to national nutrition systems, offering a scalable framework to improve dietetic practice and patient care.

**Table 6**  
*Comparative Analysis of the Diet Wizard and Other Nutrition Applications*

<b>Feature/Dimension</b>	<b>Diet Wizard</b>	<b>MyFitnessPal®</b>	<b>ENutri</b>	<b>Good Measures®</b>
<b>Target User</b>	Nutritionists & clinicians (Kenya)	General population	General public (UK research users)	Healthcare patients (USA)
<b>Clinical Integration</b>	Designed for clinical diet planning	No	Some integration in research settings	Integrated into care teams
<b>Cultural Adaptation</b>	Kenyan Food Exchange List integrated	Generic (US/Western foods)	UK foods (moderate localization)	US foods: limited cultural adaptation
<b>Usability</b>	High (perceived ease & accuracy)	High (popular, but manual logging)	Medium (research-focused interface)	Moderate (complex setup for clinicians)
<b>Meal Planning Logic</b>	Based on KFEL exchanges	Calorie counting	Personalized nutrient optimization	Registered dietitian-designed plans
<b>Offline Capability</b>	Possible for clinical use	Mostly online	Web-based (limited offline)	Online platform
<b>Customization</b>	Supports local clinical goals	User-driven entries	Research algorithms	Clinician-guided customization
<b>Limitations</b>	Limited food database, still evolving	Data entry burden, not clinical	Research-only, limited deployment	US-based, costly access for institutions

#### 4.0 Conclusion

The Diet Wizard application enhances meal planning by automating the Kenyan Food Exchange List, improving accuracy, speed, and usability for nutritionists. It integrates local foods, supports offline use, and simplifies diet formulation through an intuitive, user-friendly design. By reducing manual calculations and standardizing

outputs, the app empowers nutritionists to deliver faster, evidence-based, and patient-centered care. Its locally tailored approach and efficient workflow position it as a transformative digital tool for clinical nutrition practice in Kenya and beyond, bridging the gap between traditional methods and modern, technology-driven nutrition management.

## 5.0 Recommendations

The study recommends integrating the Diet Wizard application into Kenya's nutrition and eHealth systems nationwide to improve accuracy, efficiency, and standardization in clinical meal planning. Continuous updates to its food database, inclusion of indigenous foods, and digital literacy training for nutrition professionals are essential for sustained use.

The Kenya Nutritionists and Dietitians Institute and the Ministry of Health should champion its adoption within hospitals and electronic medical record systems to strengthen data-driven nutrition care. Embedding such tools in policy frameworks will modernize clinical nutrition practice and advance Universal Health Coverage and nutrition security goals.

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