

NEWSLETTER



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NUTRITION IN THE DIGITAL AGE

Nutrition in the digital age is transforming how we understand, access, and practice healthy eating. With the rise of mobile apps, wearable devices, and online platforms, individuals can now track their diet, monitor health parameters, and receive personalized nutrition advice in real time. Digital tools have made nutrition information more accessible, but also highlight the challenge of misinformation. This era emphasizes the importance of combining technology with evidence-based knowledge to make informed dietary choices.

FOREWORD MESSAGE



Dr. Sarath Gopalan
National President- Nutrition Society of India (NSI)

This issue of the Newsletter addresses the subject of Digital Systems and Artificial Intelligence (AI) for Nutritional Counselling.

Over the past decade, digital technology and artificial intelligence have transformed the way health and nutritional well being is perceived. Health and nutrition information dissemination has moved from conventional methods to digital platforms, social media , artificial intelligence tools and other newer methods of faster and more effective information dissemination with a much wider outreach. However, the word of caution is that information dissemination must be scientifically or factually correct and must prioritize the most important health and nutritional challenges requiring urgent attention. Many of these newer methods which are very effective are also a double – edged sword because , although the dissemination is swift and the outreach much more than ever before, scientifically or factually incorrect messages can cause more harm than benefit to society. So, it is very important to cultivate a team approach involving health and nutrition research scientists, specialists in health and nutrition communication working in specific Governmental and Non – Governmental organizations and policy makers to come together under one roof so that the intended beneficiaries get clear, concise scientifically correct information pertaining to health and nutrition which can influence behaviour modification in a potentially beneficial way.

This Newsletter educates the reader about how the currently available digital systems and artificial intelligence tools can influence nutritional counselling.

FROM EDITOR'S DESK



Dr. Rupali Sengupta
Convener-Nutrition Society of India(NSI), Mumbai Chapter



Dr. Neha Sanwalka
Secretary-Nutrition Society of India(NSI), Mumbai Chapter

The field of nutrition is experiencing significant changes in the digital age. Information that was traditionally obtained from textbooks, clinics, and academic discussions is now readily accessible through digital platforms, mobile apps, and AI-powered tools. Although this transition has broadened access and engagement, it has also brought about new challenges in the development, interpretation, and application of nutritional knowledge.

The theme of this issue, "Nutrition in the Digital Age," brings together perspectives that reflect the evolving interface between technology and nutrition practice, research, and public engagement.

In the realm of nutrition counselling, digital platforms have emerged as a key resource for those seeking advice. People are increasingly swayed by content on social media, and AI-generated suggestions, often before they consult a professional. While this easy access has raised awareness, it has also led to a proliferation of misinformation and confusion. As a result, the nutritionist's role has grown to encompass not only dietary planning but also the critical assessment of digital content, the correction of false beliefs, and the promotion of sustainable behaviour change. Although AI-based tools are beneficial for enhancing efficiency and personalization, they should be used with caution, acknowledging that nutrition decisions are highly contextual and cannot be entirely automated. From a research perspective, digital systems and AI have significantly enhanced the scope and depth of nutrition science. Advanced tools now support multiple stages of research, including dietary assessment, data integration, and analytical modelling. The ability to capture longitudinal and real-world data has strengthened the potential for more nuanced and personalized insights into diet-disease relationships. However, the increasing reliance on AI necessitates careful methodological and ethical considerations.

Digital systems in food labelling and consumer literacy represent another critical advancement. Ensuring regulatory compliance across diverse markets has been complex and resource-intensive. AI-driven labelling systems enable efficient validation of nutritional information, claims, and regulatory requirements, reducing errors and enhancing transparency. These developments support industry compliance and strengthen consumer trust by improving information accuracy at the point of purchase.

These contributions underscore a key theme: technology is reshaping the tools of nutrition practice and research, and the expectations of nutrition professionals. Digital literacy, interdisciplinary collaboration, and ethical responsibility are integral competencies in this landscape. As we navigate this transition, we must adopt a balanced approach. While digital innovations offer advantages in reach, efficiency, and data-driven insights, they must complement—not replace—the foundational principles of nutrition science and human-centred care.

In conclusion, the future of nutrition lies in the effective integration of technological advancements with professional expertise. By maintaining scientific rigor, ethical standards, and a commitment to evidence-based practice, the nutrition community can harness the potential of the digital age while continuing to provide credible, context-sensitive, and impactful guidance.



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Digital Systems and AI for Nutrition Counseling

By, Vandana Chawla, Regd. Nutritionist UKVRN, Certified Breastfeeding Specialist



The digital age has transformed the way nutrition information is created, disseminated, and consumed. Digital platforms, social media, mobile health applications, and artificial intelligence (AI) tools now play a significant role in how people learn about food, make dietary choices, and seek professional guidance. While these technologies offer opportunities for easy access, personalization, and engagement, they also contribute to misinformation, information overload, and behavioural challenges. Hence, for ethical, effective, and relevant practice, it is very essential to understand how digital platforms and AI tools influence nutrition knowledge and eating behaviours.

Digital Platforms -The main source of Nutrition Knowledge. Clients nowadays, rarely come to a consultation without prior exposure to nutrition content online. From Instagram reels on “gut healing” to AI-generated meal plans and calorie-tracking apps, digital platforms are now primary sources of nutrition information. While increased accessibility has empowered individuals to take interest in their health, it has made them shift away from evidence-based information. Social media serves as a major, often unregulated source of nutrition misinformation, which negatively impacts public health by promoting unhealthy eating behaviours and spreading unverified nutrition information. (Berman et al., 2022).

Social media favour short, visually appealing, and emotionally engaging content, often at the expense of scientific accuracy. As a result, complex nutrition science is frequently reduced to absolutes, like, “carbs are bad,” “detox cleanses heal,” or “one superfood can fix everything.” These messages create strong beliefs and behaviours long before a client meets a nutrition professional.

For nutritionists, consultations involve not only assessment and counselling, but also myth-busting, re-education, and emotional reassurance. Their own strong nutrition foundation is often challenged.

Let’s see how does digital platform bring these changes.

Digital Platforms and Behavioural Change
Digital platforms do more than deliver information, they slowly and gradually shape eating behaviours. They continue to remind users to log meals, drink water, or avoid certain foods. Influencers model dietary patterns, body ideals, and lifestyle habits that followers often try to emulate.

While this can be beneficial for healthy habits, it can also contribute to disordered eating patterns, food guilt, and unrealistic expectations. Constant exposure to “perfect” meals and bodies can cause comparison, anxiety, and an unhealthy focus on restriction rather than nourishment.

It is, therefore, all the more important for a Nutritionist to understand the psychological impact of digital exposure. Advising a client on balanced eating today may also require addressing their relationship with food apps, social media content, and online health narratives.

AI in Nutrition Practice

Artificial intelligence has rapidly entered the nutrition space. AI-powered tools can analyse dietary intake, suggest meal plans, track nutrient gaps, and even predict health risks using large datasets. These technologies offer scalability, efficiency, and personalised feedback, making them attractive for both consumers and practitioners (Jiang et al., 2022).

However, AI tools are only as reliable as the data and assumptions behind them. Most of the information rely on generalized population data and may not account for cultural food practices, individual medical histories, emotional eating patterns, or socioeconomic realities. Nutrition is deeply personal, and influenced by lived experience, factors that AI cannot fully interpret. Rather than viewing AI as a replacement, nutritionists should see it as a support tool. When used intelligently and wisely, AI can free up time for deeper counselling, behaviour change strategies, and fruitful engagement, areas where none can beat the human expertise.

Challenges faced by Nutritionists

One of the most pressing challenges of the digital age is misinformation. Anyone can present themselves as a “nutrition expert” online, often without formal training. Conflicting advice, sensational headlines, and fear-based messaging have led to confusion and scepticism among the public.

This overload of information has created an issue of trust. Clients may struggle to know whom to believe, leading to frustration or disengagement. Some arrive convinced by online narratives, while others confused by too many choices.

Nutritionists play a critical role as trusted interpreters of science. This requires staying digitally literate, understanding trending diets, viral claims, and popular apps. This way the professionals can meet clients well prepared, with expected doubts and confusions and gently guide them toward evidence-based clarity.

Ethical Responsibilities in a Digital World

As nutrition practice becomes more intertwined with technology, ethical considerations grow in importance. Data privacy, informed consent, transparency, and professional boundaries must be carefully managed. Many digital tools collect sensitive health data, and clients may not fully understand how their information is used (WHO,2021).

Nutritionists who recommend apps or digital platforms should evaluate their scientific credibility, data security, and potential psychological impact. Similarly, nutritionists who create online content must balance engagement with accuracy and avoid fear-based messaging.

Practicing ethically online means knowing when AI or virtual care cannot help and referring the client to the right health expert.

Digital Literacy and the Future of Nutrition Consultations.

An increasingly important requirement in modern nutrition practice is digital literacy, the ability of both nutritionists and clients to think and align on the same plane through digital sources. While access to nutrition information has expanded dramatically, true understanding has not improved. This gap highlights the increased responsibility of nutritionists to function not only as providers of dietary advice but also as educators in these key areas.

For clients, poor understanding of the nutrition as a science, results in frequent diet switching, reliance on restrictive online programs, or confusion created by contradictory recommendations. It is here that nutritionists need to bring these discussions into counselling sessions, guiding individuals on how to evaluate sources, recognise false nutrition claims, and understand what works for them. Educating clients in this way, creates a healthy relationship and at the same time reduces susceptibility to misinformation.

Digital apps offer increased engagement and continuity of care and enable regular follow-up than traditional in-person methods. However, when used appropriately, these tools can strengthen accountability and allow earlier identification of behavioural or nutritional concerns. Combining both models of care, that is, virtual and face-to-face interaction can work best both for the nutritionist and the client.

However, effective digital engagement requires thoughtful communication strategies. Nutritionists must therefore apply empathy, and use of appropriate language throughout, ensuring that in spite of technological support, human touch remains intact.

Another key aspect in the future of nutrition is the integration of large data and its analysis. Dietary, biometric, and behavioural data collected through electronic health records, and public health surveys have the potential to bring about targeted interventions and can help in policy decisions. Yet these possibilities also raise concerns related to privacy, consent etc.

Looking ahead, training programs for nutritionists may increasingly include competencies in digital communication, data interpretation, behavioural science, and ethical technology use. Collaboration with technologists, psychologists, and public health experts will further strengthen the nutritionists.

Redefining the Role of the Nutritionist

In the digital age, the role of the nutritionist extends beyond meal planning and nutrient analysis. Nutritionists are now educators, digital guides, and behaviour change specialists. Helping clients navigate online information, develop media literacy, and build sustainable habits is as important as prescribing dietary recommendations.

This evolution calls for continuous learning, not only in nutrition science, but also in technology, psychology, and communication. Nutritionists who embrace digital tools thoughtfully, while maintaining a strong foundation are best positioned to make a meaningful impact.



Moving Forward Through Integration, Not Resistance

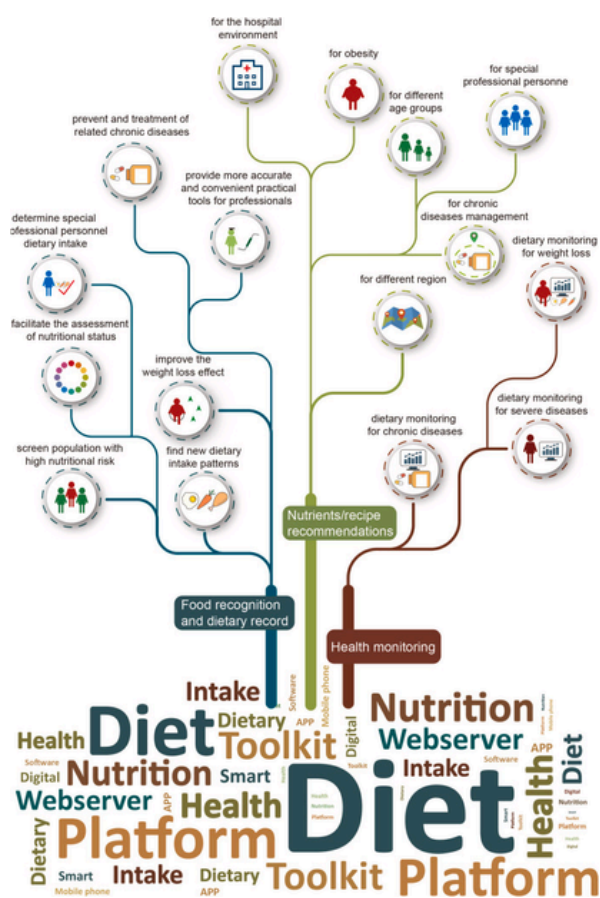
The digital age is not a passing trend, it is the environment in which modern nutrition practice will continue to exist. Resisting technology may widen the gap between professionals and the public they serve. Hence, integration is the key.

By understanding how digital platforms and AI tools shape nutrition knowledge and behaviours, nutritionists can maintain their role as credible, compassionate, and evidence-based authorities. When technology is used as a friend and not as a substitute, it can enhance reach, efficiency, and outcomes.

To conclude, the future of nutrition lies in combining the precision of technology with the wisdom of human connection. In a world overflowing with information, the nutritionist's greatest value may be the ability to bring clarity, context, and care.

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Digital Systems and AI for Labelling and Consumer Literacy

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Digital Systems and AI for Labelling and Consumer Literacy

In an era where information flows faster than ever, consumers are empowered with that information but also overwhelmed by food choices. Digital transformation and artificial intelligence (AI) are rapidly reshaping how nutrition information is communicated, understood, and acted upon. The back-end systems used by food manufacturers, exporters and quality teams are the engines of compliance and trust. They have emerged as vital tools that support food businesses in meeting rigorous label standards and empower consumers to make evidence-based dietary choices thereby having an influence on public health nutrition and consumer behaviour.

The Regulatory and Industry Context for Food Label Compliance

Food labelling compliance is legally mandatory in virtually all markets. In India, companies must adhere to the Food Safety and Standards (Labelling and Display) Regulations, Advertising and Claims Regulations formulated by the Food Safety and Standards Authority of India (FSSAI), Legal metrology and Guidelines by Consumer Protection Act (CPA) and Advertising Standards Council of India (ASCI). These rules cover ingredient lists, nutritional statements, allergen declarations, and health claims. Similar regulations exist across other jurisdictions, from the FDA in the USA to the EU's food information regulation in Europe.

The challenge multiplies for products destined for export: each market has unique formatting, language and declaration rules.

Traditionally, compliance teams manually reviewed label artwork, oftentimes spending weeks ensuring that every element including font size, wording, nutrient reference values, and claim language meet legal requirements. Failure to comply can result in regulatory rejection, fines, product recalls, and reputation damage, making reliable compliance systems a strategic necessity for food companies.

By converting regulatory rules into machine-readable logic and embedding automated checks into label workflows, modern SaaS platforms enable companies to scale compliance at speed and scale even as regulations evolve. These systems act as regulatory intelligence engines that reduce manual burden, enhance accuracy, and provide strategic visibility across product portfolios.

The Challenge for Companies

Traditionally, labelling compliance has largely been a manual process. Manual processes are time-consuming, error-prone, and inefficient, as labels vary by market, language, and product category and the regulations are constantly evolving. For businesses with large SKU portfolios or multiple export targets, manually managing compliance becomes untenable.

This complexity has driven adoption of digital labelling platforms and AI engines that ingest regulatory logic, automate validation, and generate compliance reports, all within minutes rather than days.

AI-led Digital Food Labelling SAAS Solutions like FoLSol® work in the space of digitizing food labelling solutions for domestic and global markets to strengthen food labelling compliances by digitizing labelling requirements for Packed Food, Fresh Food, Food Ecommerce and Food Export Companies. This makes food labelling compliance efficient for regulatory teams by reducing dependency on manual processes and streamlines workflows end to end, from label creation to label validation.

The technology uses large learning models trained on regulatory parameters to assess nutritional information, ingredient lists, claims, font placement, barcode integrity and more.

Core Capabilities

- AI-Based Label Validation - replaces manual review with an intelligent, machine-driven assessment that can be completed within minutes instead of hours. AI engines like FoLSol® reviews finished label artworks against 50+ regulatory parameters and returns a clear “Compliant / Needs Review” output, supported by contextual regulatory references and summaries. This validation checks not just text accuracy but regulatory positioning, presence of mandatory elements, formatting rules, thresholds (e.g., for declarations), and language tied to regulatory definitions.
- Globalisation and Multi-Market Compliance - Companies exporting products must navigate a complex set of rules across countries. The right SaaS solutions can integrate multiple market standards into a single platform, ensuring packaging for India, the EU, North America, Southeast Asia, and others meet local requirements. This simplifies what would otherwise be a tangled multi-jurisdictional compliance exercise.
- Print-a-label Feature - Once a formulation and regulatory criteria are met, companies can auto-generate compliant labels directly within the platform. This reduces dependency on external design tools and ensures consistency across SKUs and markets while saving time.
- Regulatory Intelligence Engine - Through continuous updates and embedded regulatory logic, the platform ensures that .

compliance checks are always grounded in current rules. This regulatory intelligence layer helps companies future-proof their labels against evolving standards

- AI-Driven Claims Verification - A key component of modern food regulation involves claims made on labels or in associated marketing materials. Regulations such as the Food Safety and Standards (Advertising and Claims) Regulations require that all claims be truthful, unambiguous, meaningful and not misleading. Unsubstantiated language, especially absolute terms like “100%” without defined regulatory backing can trigger non-compliance and enforcement action. LabelBlind® study of labelling claims in India's packaged food industry is one of India's most extensive, evidence-based evaluations of food labelling claims to highlight market practices and benchmark the compliance status for major packaged food categories and claim types. The aim to create an AI model that can analyze regulatory databases and scientific literature to verify whether such claims are defensible. Natural language processing (NLP) tools scan label text to compare it with accepted regulatory language, flagging unsupported statements before they reach shelves.



Benefits of Digital and AI-Driven Compliance for Food and Beverage Companies

Digital systems and AI technologies strengthen the food sector at multiple levels:

1. Efficiency and Speed

Automating compliance checks reduces review time dramatically. Companies transitioning from manual validation to AI engines report up to 90% reduction in review time.

This speed enables product teams to iterate quickly, reduce bottlenecks at the final stages of packaging, and launch products faster both domestically and internationally.

- Error Reduction and Risk Management

Human review, while knowledgeable, is prone to oversight, especially when dealing with large SKU portfolios and frequent regulatory changes. Automated systems maintain high consistency, track changes, and provide audit logs showing how each compliance decision was made.

- Standardisation Across Teams

Independent of geographic location or internal team systems like R&D, quality, or marketing, a centralized SaaS platform ensures every stakeholder sees the same compliance checkpoints, rules logic, and status reports.

- Scalability for Export Readiness

Companies targeting multi-market distribution often struggle with different labelling languages, formats, regulatory nuances, and claim standards. With a platform like FoLSol® that extends support across regulatory regimes, businesses can scale export compliance without replicating manual processes for each destination.

- Operational Efficiency and Risk Mitigation for Companies

By automating complex regulatory checks, companies minimize costly recalls, and avoid non-compliance fines. This operational efficiency also frees internal teams to focus on innovation rather than repetitive manual review processes.

Benefits for the Consumer

By ensuring the above, consumers get products with labels that are compliant and that can be relied upon.

- Greater Label Accuracy:

When companies eliminate errors and ensure that regulated elements are present and correct, consumer confidence in labels increases.

- Reduced Risk of Misleading Claims in the Marketplace

By automating claims evaluation, companies are less likely to release products with unsupported or potentially misleading statements.

- Consistent Multi-Market Messaging

For brands selling internationally, compliant labels aligned with local standards reduce regulatory rejections or product withdrawal orders. Over time, this improves overall market transparency, strengthens regulatory trust, and supports a healthier competitive landscape where compliance and integrity are embedded in product workflows.

Conclusion

Digital systems and AI are reshaping the bridge between food labelling, regulatory compliance, and consumer literacy. By automating compliance for companies and clarify label data for consumers, these technologies enhance trust, support evidence-based nutrition decisions, and align food systems with public health imperatives. As the food sector continues to evolve, investments in AI-driven labelling tools will catalyze greater transparency, more informed consumer behavior, and a higher standard of nutrition communication, ultimately benefiting industry performance and individual well-being.

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Digital systems and AI for nutrition research

Mugdha Deshpande, Researcher, HCJMRI

Artificial intelligence (AI) comprises a set of computational methods that allow machines to learn from data, identify and characterize patterns, and make predictions. These systems function using algorithms that repetitively improve performance with advanced exposure to a plethora of information. In today's world, learning and effectively utilizing AI has become a non-negotiable. If today's researchers are not equipped to use AI to their benefit, they might as well be from an era of laying out their data on the floor and counting frequencies by hand.

Every step of the research process is populated with AI-based tools that may replace human contribution altogether, albeit with limited context-specific interpretation and applicability. Right from defining a research problem,

developing research questions, conducting literature review to formulating hypotheses, to selecting a research design, assisting in data collection, analysis, cleaning, managing and writing up the results, reports, thesis, to rephrasing, paraphrasing, running grammar checks, and checking for flow, clarity, consistency, and content to making illustrations, presentations and posters; AI has managed to delve in all, and with pizzazz.

AI bots like Bing AI, Gemini, and the crowd favorite- ChatGPT are extremely useful in concept simplification, idea generation; however, their capacity in scientific translation is extremely limited and requires human intervention. Usage of AI has limited critical reasoning and creative thinking in individuals who constantly rely on answers generated by these AI bots without verifying the information. Furthermore, AI tools such as Elicit, Connected Papers, Scite, etc are reasonably good literature searching tools; however, they are limited in their context specificity and direct clinical translations. PaperBrain, HumataAI, etc. collates articles to generate summaries, but human intervention is a critical step in connecting the dots. Paperpal, Grammarly, and CharleyAI that assist in scientific writing generated well-constructed scripts, but it is considered machine-generated material, which is unacceptable academically and from a research standpoint, and for a good reason, in that it limits involvement of human centric approach. The constrained translational capacity of current AI tools underscores the necessity of human oversight and methodological grounding. AI should not be viewed as a replacement for scientific reasoning or domain expertise, but rather as an adjunct to established research methodologies.



<https://stockphoto.com/50-batter-recipe-with-101-recipe/>

AI has transformative implications for evidence-based nutrition practice by enhancing data collection, analysis, and personalized intervention strategies. These technologies enable the integration of large-scale and diverse datasets, including dietary intake, metabolic biomarkers, genetic information, and lifestyle factors, facilitating a comprehensive understanding of nutritional status and health outcomes. Nutrition research has always utilized self-reported dietary assessments, biochemical markers, anthropometry, and longitudinal observational study designs to evaluate associations between health and diet. These methods have generated foundational evidence, but they are limited by methodological limitations such as recall bias, measurement error, and challenges in capturing the complexity of habitual dietary behaviors. AI-driven analytics can identify complex patterns and relationships within nutrition data that traditional methods might overlook, hence improving the accuracy and relevance of dietary recommendations. Machine learning models and predictive analytics are useful, but it limits the utilization of methods for identifying nutritional risks and tailoring interventions to individual needs, which must be interpreted contextually and not in a 'one-size-fits-all' manner.

In the digital age, it is increasingly important for nutrition researchers to critically examine how digital systems and AI influence the quality of evidence produced, the questions that can be addressed, and the validity of inferences drawn. Digital systems have fundamentally altered the manner and granularity at which nutrition data can be collected. Dietary assessment, which was considered the weakest link in nutrition research for the longest time, is now a central focus of digital innovation. Mobile-based dietary recalls, digital food records, image-based dietary intake logging, and automated nutrient databases are increasingly used in population studies and cohort research. These methods also facilitate remote nutrition counseling and longitudinal outcome tracking, thus expanding access to research and evidence-based care. The key benefit of digital dietary tools lies in their ability to support repeated measurement. Therefore, rather than relying on single measurements or infrequent assessments, researchers can now capture dietary intake across multiple time points, thus allowing analysis of intra-individual variability, dietary trajectories, and health outcomes.

This is crucial and particularly relevant for studying chronic diseases, growth patterns, and nutritional transitions.

AI enables integration of dietary data with anthropometry, biochemical markers, medication-supplement usage, physical activity, sleep quality, and environmental exposures. Linkage with electronic health records has expanded opportunities to generate real-world evidence, enhancing external validity and enabling pragmatic nutrition research in clinical populations. Overall, digital systems and AI support evidence-based nutrition practice by enabling personalized, scalable, and data-driven approaches that assist in decision-making, favorable patient outcomes, and better efficiency of nutrition research and care execution.

AI also aids in conducting systematic reviews and meta-analyses by automating literature screening and data extraction, thus improving evidence generation to better inform clinical guidelines. Yet, challenges regarding data quality, privacy, algorithm transparency, and the need for interdisciplinary collaboration to ensure ethical and effective implementation are major concerns. The hold of AI, especially for handling large, complex, and high-dimensional datasets, is tremendous, especially for nutrition research that may directly translate to public policy. Machine learning methods are increasingly applied to dietary pattern analysis, prediction modelling, and identification of non-linear associations between diet and health outcomes. This helps establish causal inferences for efficient translation, generalizability, and thus, informed research-based public health policy.

One significant contribution of AI is its ability to move beyond reductionist nutrient-based analyses. Dietary patterns, food combinations, and contextual behaviours can be analysed simultaneously, allowing researchers to better reflect real-world eating behaviours. AI-driven clustering and classification methods have been used to identify distinct dietary profiles within populations, supporting more nuanced epidemiological insights. AI has also facilitated the analysis of multimodal data, integrating dietary intake with genetic, metabolic, behavioural, and environmental variables. Such approaches are particularly relevant for studying heterogeneity in diet-disease relationships and for generating hypotheses related to inter-individual variability.

Despite these advances, interpretability remains a central concern. Many AI models function as black boxes, which limits the understanding of the underlying mechanisms. For nutrition and health research, where biological plausibility and causal reasoning are critical, a lack of transparency poses challenges for evidence interpretation and translation.

The use of digital systems and AI has important implications for how evidence is generated in nutrition science. Increased data volume and analytical complexity do not automatically translate into stronger evidence. Without an appropriate study design and theoretical grounding, AI-driven findings risk reinforcing spurious associations. This is where human-based interpretation of findings comes into play. AI methods are excellent at performing prediction models, but they do not establish causality. This needs to be context-specific, which limits AI usability. In nutrition research, where dietary recommendations influence policy and clinical practice, distinguishing association from causation remains paramount. Digital data streams must therefore be incorporated within robust epidemiological frameworks, including longitudinal designs, triangulation of evidence, and integration with biological mechanisms. Another critical consideration is generalizability. AI models trained on digitally engaged populations may not represent broader or more vulnerable groups, particularly in low- and middle-income settings like India. Hence, researchers must explicitly address issues of selection bias and missing data when interpreting digitally derived evidence.

With the new era of digitalization and AI, issues of ethical challenges related to data privacy, consent, and governance are more pronounced than ever. This is because dietary data are personal and culturally embedded, necessitating careful stewardship and transparent use. Reproducibility and transparency are ongoing concerns that limit usage and dependence on AI for policy-related work. Proprietary algorithms, undocumented preprocessing steps, and a lack of open-access models limit independent validation.

These issues challenge the principles of open science and evidence credibility. Nutrition researchers must therefore balance innovation with methodological rigour, ensuring that digital tools complement rather than compromise and/or replace established scientific standards.

The future of nutrition research lies in the hybrid nature of methodological approaches that integrate digital data capture with classical study design and theory-driven analysis. There needs to be a collaboration between nutrition scientists, data scientists, and public health experts, which is essential to ensure the application of AI to meaningful research questions. Importantly, digital systems and AI should be evaluated not only for analytical performance but also for their contribution to knowledge quality, interpretability, and applicability.

Conclusion

Digital systems and artificial intelligence are transforming nutrition research by expanding data sources, enabling advanced analytical approaches, and offering new perspectives on dietary behavior and health outcomes. These technologies have the potential to strengthen evidence generation, particularly when used to capture longitudinal patterns and complex interactions. However, their contribution to nutrition science depends on careful validation, transparency, and integration within robust research frameworks. In the digital age, advancing nutrition knowledge requires not only technological innovation but also critical appraisal, methodological discipline, and ethical responsibility. When applied judiciously, digital systems and AI can serve as powerful tools for generating credible, evidence-based insights that inform nutrition policy and practice.

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Will Digital Systems and AI help Nutritionists or replace them ? Please share your original, genuine and AI-free thoughts in 50 - 100 words !! Don't forget to enter your name and your college name.

Post your response to the discussion topic by clicking the plus button below.



Aprajita pandey
18 days ago

"Digital Systems, AI and Nutrition" have become very prominent in recent years. Earlier, we asked our moms what to eat. But now, from calorie-tracking apps to AI-powered diet plans, technology tells us not just what to eat, but why and how.

AI analyses blood glucose patterns, activity levels, and even sleep to personalise nutrition, making Medical Nutrition Therapy smarter and more precise. For dietitians, digital systems reduce guesswork and improve monitoring. Of course, no app replaces human empathy "Siri can count calories, but she can't say beta, eat properly."

As someone rightly said, "Technology is a powerful tool, but the hand that uses it matters more." AI can enhance nutrition care, but humans will always lead the way. Technology is helpful, yes. But nutrition still needs common sense, culture, and care. It cannot replace human emotions or the comfort attached to food. At the end of the day, health isn't just data; it's discipline, decisions, and daily habits. In my view, the future of nutrition is not humans versus AI; it is humans empowered by AI.

By Aprajita Pandey
S.N.D.T Women's University, Juhu Campus



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Uncharted Sailor
15 days ago

AI V/S Nutritionist!

I asked a question in an AI platform, Give me a diet chart for a Renal patient with Fluid Restriction. It did a fair job.

Honestly quite well of a job but it has also given me soups and tea without milk. Which is valid but it is also very basic, that we avoid giving Soups to the patient has he already has very little water to drink. AI can be trained and it will go far ahead. Today, however it is helpful in aiding the Nutritionist in helping them have a basic layout but the necessary changes needs to be made by the nutritionist. Hopefully very soon we might find a mid point in which both AI and Nutritionist will be able to meet to address the common goal which is to help as many people as they can.

Name: Harshini Thakur

College: Dr. BMN College of Home science



1



Hinal Waghela
21 days ago

AI can aid nutritionists in creating educational and promotional content using evidence based data. It can be utilised to increase efficiency and save time. However, AI generates generalized information & cannot accurately produce individualised data or data that is specific to a country or ethnicity. Certain knowledge is also derived from experience of working in the field, interacting with various clients & identifying similarities, which cannot be replicated by AI.

AI has proven to be dangerous if used by a user providing incomplete information to AI which could lead to consequences.

Therefore, I believe that though AI can act as a tool for nutritionists to promote efficiency, it cannot replace them.

Name:- Hinal Waghela

Dr. BMN College of Home Science



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Gayatri Dhople
21 days ago

AI can calculate calories in seconds, generate meal plans instantly, and make nutrition guidance more accessible to people who cannot afford regular consultations. It can organize vast research, detect health patterns, and strengthen preventive care. But nutrition is not just numbers on a screen it is behavior, emotions, culture, ethics, and lived struggles. AI cannot question biased research, understand social inequalities, or truly grasp why someone skips meals due to stress or societal pressure. If we rely on it blindly, we risk reducing nutrition to algorithms. The future belongs to nutritionists who lead AI responsibly using it as a powerful assistant while preserving human judgment, empathy, and trust.

Gayatri

B K Birla College, Kalyan - LSI Institute



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TO READ MORE LOG IN

Padlet Link: <https://padlet.com/lakshminenon/will-digital-systems-and-ai-help-nutritionists-or-replace-th-gl4pe0ki65i6uowz>

COLLABORATIVE ACTIVITIES

Anemia awareness and testing Camp - Community Outreach Program
Date: 9th September 2025



Pediatric Nutrition Nourish to Flourish – Prioritizing Child Health through Nutrition, Policy and Awareness: One Day National Conference
Date: 17th September 2025



COLLABORATIVE ACTIVITIES

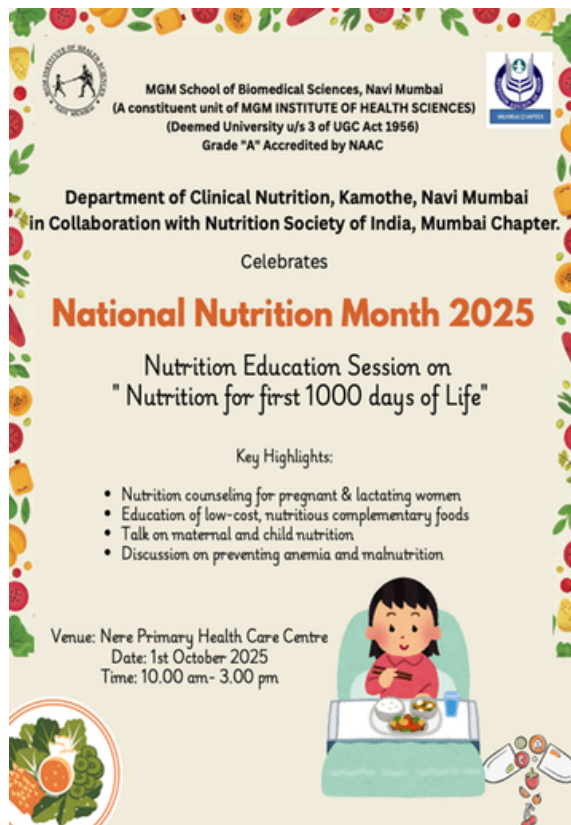
Nutriprenurship for Community Development Seminar
Date: 26th September 2025



AI for Nutrition Communication – Enhancing Content Writing for Dietitians & Nutritionists Workshop
Date: 27th September 2025



Nutrition for first 1000 days of life – Nutrition Education - Community Outreach Program
Date: 1st October 2025



COLLABORATIVE ACTIVITIES

Nutritional Status Screening Camp –
Community Outreach program
Date: 8th to 16th October

CRP Training Program -
Community Outreach Program
Date: 13th December 2025

From Waste to Nourishment: A
Community Approach Food
Insecurity Webinar
Date: 31st October 2025

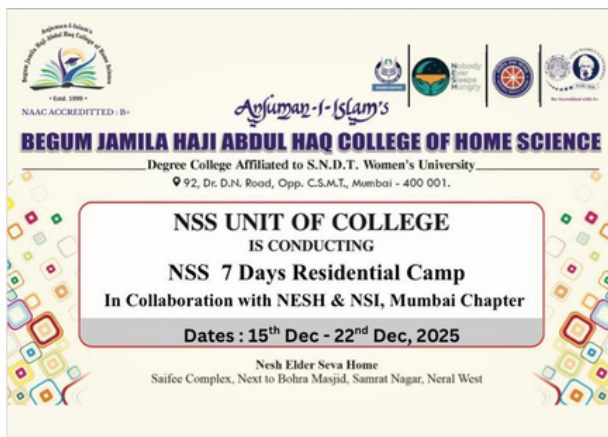
Health and Wellness National
Conference
Date: 16th and 17th December 2025

COLLABORATIVE ACTIVITIES

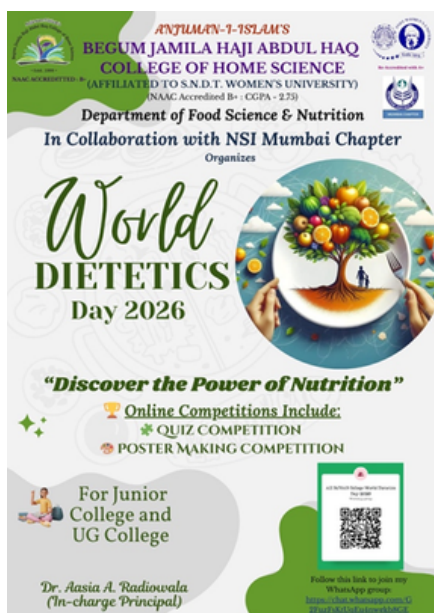
Nutritional Education Program for Primary and secondary school students – Community Outreach Program
Date: 16th and 17th December 2025



Nutrition Education Programme - Community Outreach Program
Date: 19th December 2025

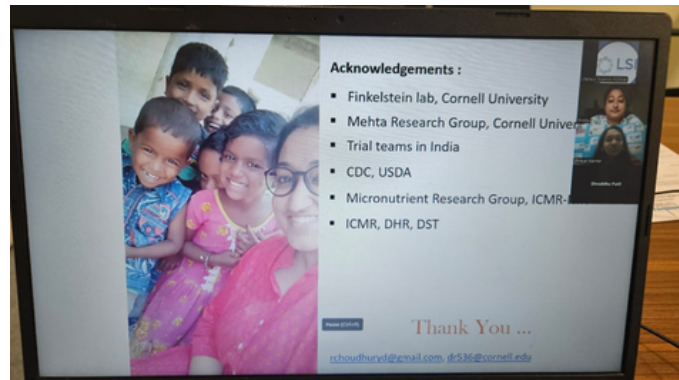


From Classroom to Clinic: Practical Applications of Nutrition Science and Fuelling Health Through Smart Nutrition Choices – Expert talks
Date: 10th January 2026



COLLABORATIVE ACTIVITIES

VishwaSwasthyam 2026- International Conference
Date: 9th and 10th January 2026



International Conference "Enhancement of Quality of Life: Echoes of the Past, Vision for a Sustainable Resilient Future"
Date: 16h and 17th January 2026

