



**Nutrition
Informatics**

SMAART Hub for Informatics enabled Nutrition Education (SHINE™)

Research, Innovate, Policy, Practice, Entrepreneurship

Welcome Message

Welcome to the 15th issue of the Nutrition Informatics newsletter SHINE (March 2023) of the Foundation of Healthcare Technologies Society. This newsletter aims to bring together the advancements in the field of Nutrition Informatics Research, Innovation, Policy, Practice, and Entrepreneurship. The newsletter will also provide recent updates about the various national and International nutrition informatics projects, and highlight some of the major nutritional challenges that can potentially be solved through various nutrition informatics interventions using data, information, and knowledge frameworks. We also highlight some of the student successes in the field of nutrition informatics research and practice. In addition, we bring together stories of the student's learning experience with the real nutrition informatics projects addressing real public health challenges. I encourage you to make a meaningful contribution to this newsletter by sharing data-driven, evidence-based ideas, innovations, and interventions that aim to address nutritional challenges impacting health among individuals, families, and communities across diverse Indian settings.



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DIGITAL INNOVATION AND FOOD SECURITY

DIGITAL INNOVATIONS

The combination of two words, “digital” and “innovations,” is significant and meaningful in and of itself. When you combine them, you get a heavier phrase, which in today’s era and generation is a dominant factor in almost every area and field.

When we talk about healthcare, digital technologies have shown evidence that they have a lot of potential to produce successful results with respect to medical diagnosis, data-based treatment decisions, clinical trials, and many more.

Digital health innovations have aided in the self-management of care while also creating more and more evidence-based knowledge, skills, and competence for healthcare professionals to support healthcare.

FOOD SECURITY

Food is one of the most basic necessities and requirements for everyone to survive. Apart from this, it is also the right of every human being, rather than every living being on this planet, to have access to food, irrespective of any factor. In layman’s terms, practising and following this norm is basically food security.

According to the 1996 World Food Summit, food security can be defined as when all people, at all times, have physical and economic access to sufficient, safe, and nutritious food that meets their dietary needs and food preferences for an active and healthy life.

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NUTRITION RESEARCH IN GLOBAL SETTINGS



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PLANT-BASED MEAT ALTERNATIVES: TECHNOLOGICAL, NUTRITIONAL, ENVIRONMENTAL, MARKET, AND SOCIAL CHALLENGES AND OPPORTUNITIES

There is growing recognition that promoting plant-based diets with reduced meat consumption is important for mitigating the negative impacts of the food system on the environment and improving human health and animal welfare. One potential way to achieve this reduction is by increasing the consumption of plant-based meat alternatives (PBMAs), which have been developed to closely resemble the sensory characteristics of animal meat. However, these products often contain many ingredients and differ greatly from animal meat in terms of nutrition. This interdisciplinary review aims to discuss the opportunities and challenges associated with the production and consumption of PBMAs.

The review covers aspects such as production technology, nutritional profiles, potential impacts on health and the environment, and market and consumer acceptance. The paper also highlights research gaps in the area of PBMAs that should be addressed in the future, with the collaboration of different stakeholders to support the transition towards sustainable plant-based diets.

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AI-ENABLED WEARABLE MEDICAL INTERNET OF THINGS IN HEALTHCARE SYSTEM: A SURVEY

The article discusses the role of technology, specifically Artificial Intelligence (AI) and the Internet of Things (IoT), in improving healthcare and quality of life. Wearable devices have gained popularity in healthcare applications, including individual healthcare, activity alerts, and fitness. The paper explores advancements in the wearable Medical Internet of Things (IoMT) for healthcare systems, examining their efficacy in detecting, preventing, and monitoring diseases.

The paper also addresses current healthcare issues, such as COVID-19 and monkeypox, and proposes directions for improving healthcare through wearable devices and AI. Researchers' approaches to enhancing the accuracy, efficiency, and security of healthcare systems are discussed, along with the constraints and opportunities of developing AI-enabled IoT-based healthcare systems.

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THE DIGITAL METAVERSE: APPLICATIONS IN ARTIFICIAL INTELLIGENCE, MEDICAL EDUCATION, AND INTEGRATIVE HEALTH

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The potential applications of the metaverse in healthcare are extensive and may have a significant impact when used in conjunction with AI, AR, and VR technologies. These may include improving medical education and literacy, promoting diversity, and expanding the reach of healthcare through enhanced telemedicine. While efforts have already been made to incorporate the metaverse into healthcare, there is still ample room for growth in this area. It is also essential to consider potential drawbacks that may arise from the use of the metaverse in medicine, particularly for patients with psychiatric conditions who may benefit from virtual therapy options.

Additionally, some universities are already using augmented and virtual reality tools to supplement medical education, and the adoption of these tools in surgical training may transform the conventional approach to medical education. Moreover, the metaverse may offer new opportunities for underserved populations to gain access to educational resources and connect with mentors. In summary, the metaverse's incorporation into the medical field could broaden options available to patients, healthcare providers, and educators, ultimately benefiting more individuals.



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