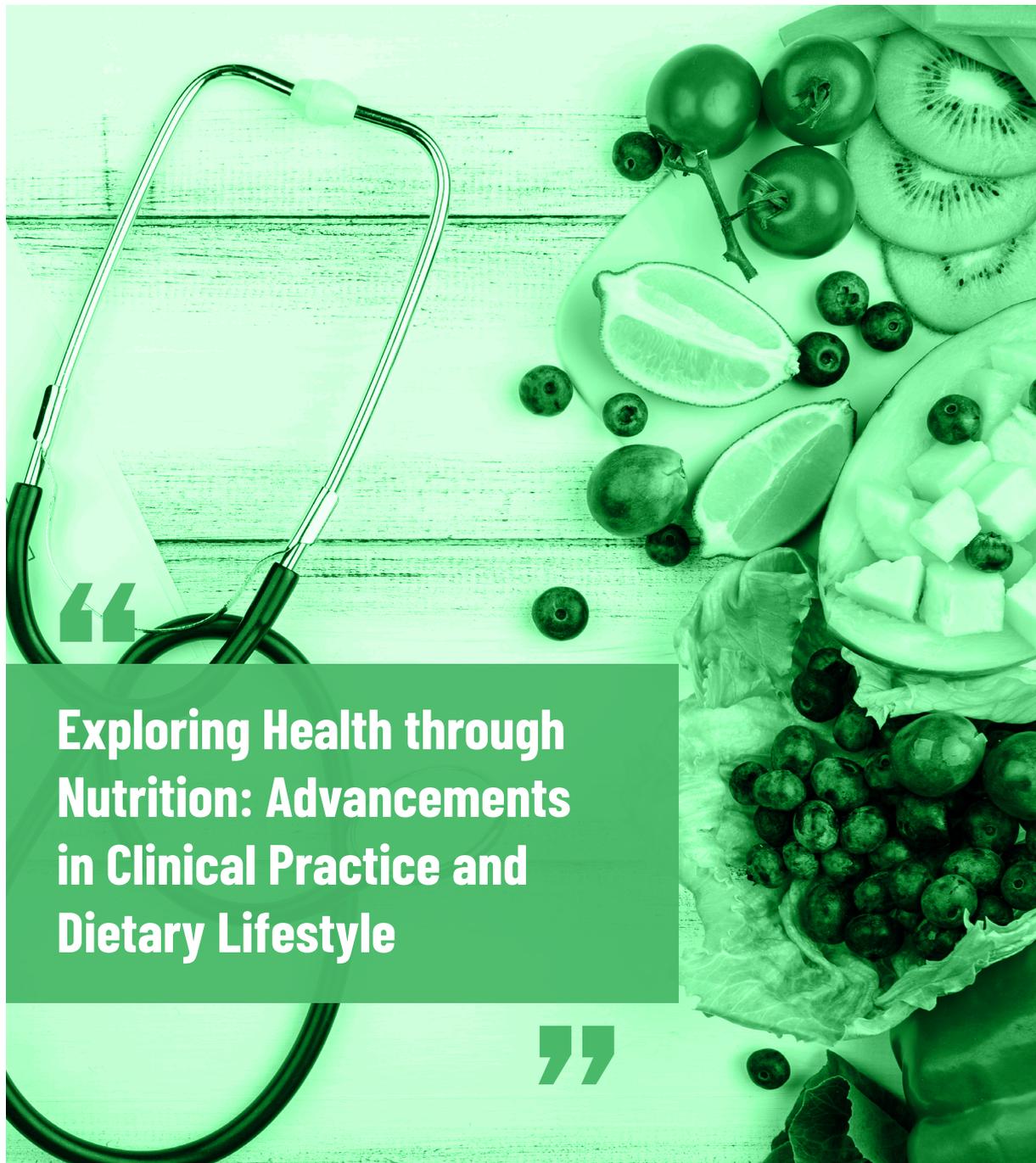


2ND INTERNATIONAL CONFERENCE ON **CLINICAL NUTRITION & DIETARY LIFESTYLE**

22ND & 23RD FEBRUARY 2024 | VIRTUAL CONFERENCE



“
**Exploring Health through
Nutrition: Advancements
in Clinical Practice and
Dietary Lifestyle**
”



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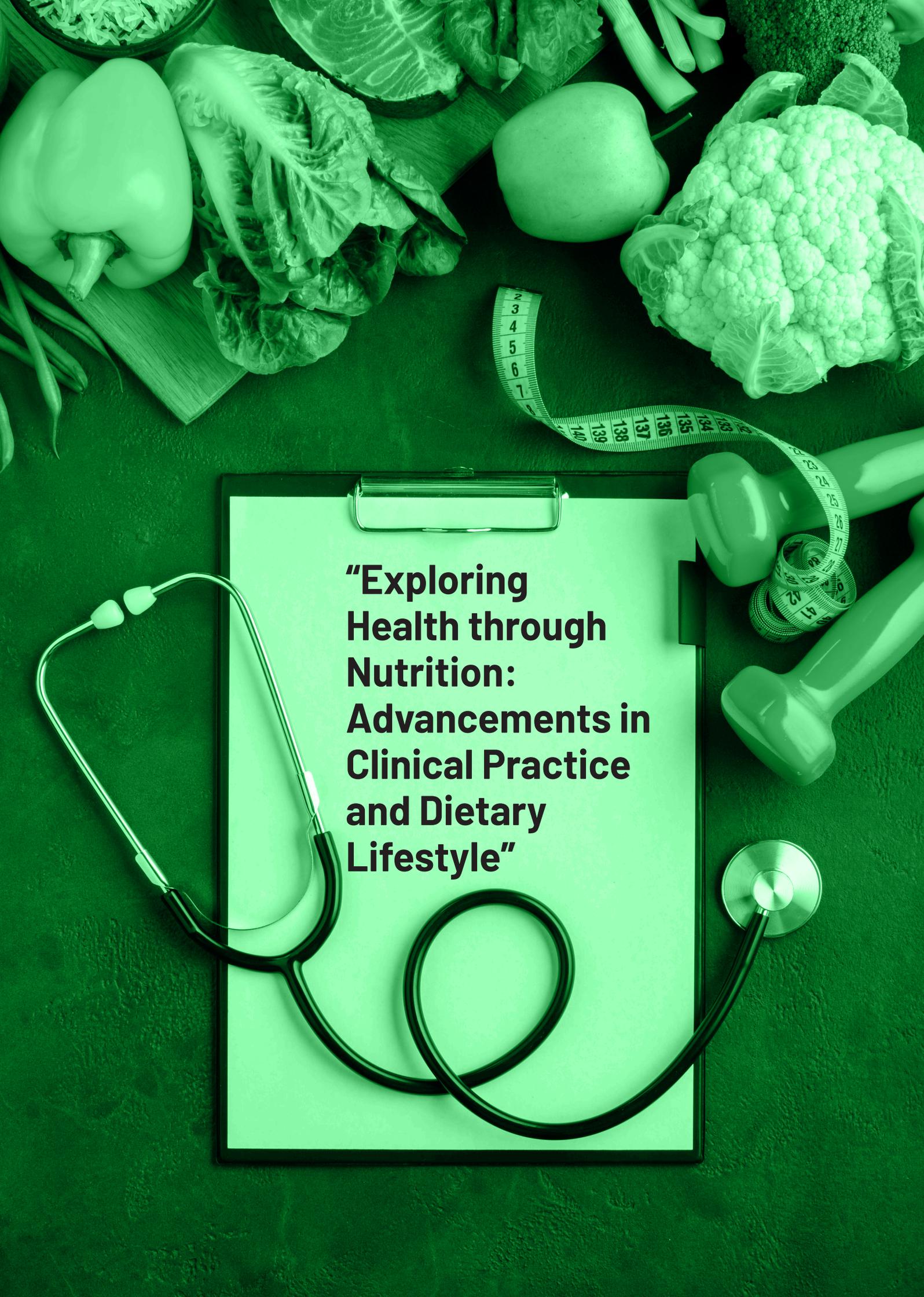
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**“Exploring
Health through
Nutrition:
Advancements in
Clinical Practice
and Dietary
Lifestyle”**

PREFACE

This book reports the Proceedings of the “2nd International Conference on Clinical Nutrition & Dietary Lifestyle” held on 22nd & 23rd February 2024 organized by Universal Society of Food and Nutrition (USFN) & BioLEAGUES.

The publishing department has accepted more than 110 abstracts. After an initial review of the submitted abstracts, 70 papers were presented at the conference and were accepted for publication in the Conference Proceedings. The topics that are covered in the conference include Clinical Nutrition Research and Innovations, Dietary Behaviors and Education, Dietary Lifestyle and Wellness, Food Accessibility & Equity, Food Science & Chemistry and Nutrition and Public Health. We would like to thank all the participants for their contributions to the conference and the proceedings.

Reviewing papers of the 2nd ICNDL 2024 was a challenging process that relies on the good will of those people involved in the field. We invited more than 10 researchers from related fields to review papers for the presentation and the publication in the 2nd ICNDL 2024 Proceedings. We would like to thank all the reviewers for their time and effort in reviewing the documents.

Finally, We would like to thank all the proceeding team members who with much dedication have given their constant support and priceless time to bring out the proceedings in a grand and successful manner. I am sure this 2nd ICNDL 2024 will be a credit to a large group of people, and each one of us should be proud of its successful outcome.

ABOUT 2ND ICNDL

The 2nd International Conference on Clinical Nutrition & Dietary Lifestyle (2nd ICNDL) on 22nd & 23th February 2024, Virtual with a unique theme of “Exploring Health through Nutrition: Advancements in Clinical Practice and Dietary Lifestyle” is an esteemed gathering of nutritionists, dietitians, healthcare professionals, researchers, academicians, and industry experts from around the world. We extend our warm welcome to all specialists and researchers interested in presenting their research and take part in this remarkable Conference on Clinical Nutrition & Dietary Lifestyle. The conference aims to discuss the latest scientific advancements, research findings, and best practices in the field of clinical nutrition and dietary lifestyles.

ABOUT BioLEAGUES ABOUT USFN

BioLEAGUES is a non-profitable professional association meant for the promotion of research and development in the field of Medical & Life Science. BioLEAGUES is also involved in helping researchers in the grass root level rigorously network with life science professionals & medical professionals to aid the sustainable development of the field of medical science.

BioLEAGUES provides a world class platform for Doctors, Scientists, Physicians, Researchers, Academicians, Business figures and Healthcare professionals by organizing conferences and publishing research articles. BioLEAGUES conferences bring together the professional wizards and leaders who have explored all avenues to reinforce the field of Life Sciences and Medicine Technology.

We work with a motto of creating a better tomorrow by organizing conferences and creating a network which will lead to a better tomorrow with the help of advanced technology, thus helping achieve sustainable development.

Universal Society of Food and Nutrition (USFN) is one of the Non-profitable professional associations meant for research and development in the field of Food Science & Technology. USFN is a paramount body which has brought technical revolution and sustainable development in the field of Food Science & Technology.

USFN is a forum where innovations & research interest could be supported and developed prioritizing our mutual interest. Our forums & Associates constitute Professional leaders, Universities, Organizations & Associations connecting each other with a mission to work as wizards of science for defending the earth.

USFN forms partnerships with colleges, universities, professional associations, societies and organizations to operate our local chapter functions worldwide. USFN is one of the leading publishers of research articles in its high quality peer reviewed journals, proceedings and research magazines. USFN is a platform to promote the advancement and dissemination of the knowledge of Food Science & Technology. USFN fulfill the need of professionals even for their end to end research & development. USFN is a leading publisher of scientific research works in highly cited, high indexed and high standard International Journals such as SCOPUS,SCI/ESCI, Web of Science, UGC, Springer, Inderscience etc.

FROM BioLEAGUES's DIRECTOR



Mr. A. Siddh Kumar Chhajer

Managing Director
BioLEAGUES, India

On behalf of BioLEAGUES, I am delighted to welcome all the delegates and participants around the globe to the "2nd International Conference on Clinical Nutrition and Dietary Lifestyle" which is going to be held on 22nd and 23rd February 2024.

This conference will revolve around the theme "Exploring Health through Nutrition: Advancements in Clinical Practice and Dietary Lifestyle".

It will be a great pleasure to join with Doctors, Research Scholars, Dietitian, Students, Academician, Nutritionist and physicians all around the globe. You are invited to be stimulated and enriched by the latest innovations in all the aspects of Food and Nutrition while delving into presentations surrounding transformative advances provided by a variety of disciplines.

I congratulate the Committee Members, Keynote Speakers, Session Chair, Moderators, coordinator BioLEAGUES and all the people involved for their efforts in organizing the 2nd ICNDL 2024 and successfully conducting the International Conference and wish all the delegates and participants a very pleasant conference.

FROM USFN's FOUNDER



Mr. Rudra Bhanu Satpathy

Founder & CEO
USFN & BioLEAGUES, India

It is indeed a privilege to acknowledge and thank all the supporters and organizers of the "2nd International Conference on Clinical Nutrition and Dietary Lifestyle", who contributed greatly to organize the conference successfully.

I would like to acknowledge and thank the Chief Guest for his/her valuable contribution to the "2nd International Conference on Clinical Nutrition and Dietary Lifestyle".

My special thanks to all our Special Guests and Keynote Speaker who so graciously accepted our invitation to participate in the conference.

I would like to specially thank our Organizing Committee Members from various Organization whose continuous support have helped us in planning and execution the conference successfully.

I am highly indebted to the contribution given by all the Nutritionist, Dieticians, Professors, Deans, Scientists, Researchers, Research Scholars, Health experts, Delegates, Industrialists and students to the conference.w

KEYNOTE SPEAKERS



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Dietary Behavior Patterns Among Minangkabau Ethnicity High School Students in A Tourism Region Based on Gender Stratification in Indonesia

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Abstract:

Poor dietary behavior could develop throughout adolescence. It is one of the biggest risk factors for various noncommunicable diseases (NCDs), including cardiovascular diseases, cancer, diabetes, and also the leading cause of obesity. The tourist's behavior could directly relate to the status of the tourism destination, its amenities, attractions, as well as how local residents behave and perceive the tourist. The aim of this study was to provide an overview pattern of dietary behavior among Minangkabau ethnicity high school students in a tourism region based on gender stratification in Indonesia. This was a cross sectional study in 118 high school students (aged 15-18 years old). The sampling technique was multistage random sampling. The participants were interviewed using dietary behavior questionnaire. Chi-square test was used for data analysis. P-value <0.05 was considered significant. This study found that the dietary behavior patterns among male students were higher in fish and fresh seafood consumption compared to female (32.6% and 9.7%, respectively). Furthermore, we also found the fruit consumption was higher among male (47.8%) compared to female (27.8%). There were significant differences in the fish, seafood, and fruit consumption among male and female students ($p < 0.05$). This study confirmed that the fish, seafood, and fruit consumption were higher among male than female. Gender disparities

in dietary behaviors suggest to potential opportunities for personalizing nutrition and health programs in schools.

Keywords:

Dietary Behavior Patterns, Minangkabau Ethnicity High School, Tourism, Indonesia





Effect of Nutrition education on young sportspersons in the Thiruvananthapuram district, Kerala

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Abstract:

Nutrition plays a crucial role in the performance and overall well-being of athletes and sportspeople. The nutritional knowledge, attitudes, and practices of sportspeople are critical factors that can significantly impact their performance, recovery, and overall well-being. This study aimed to determine the effect of health education on young sportspersons in the Thiruvananthapuram district, Kerala. This study was conducted on 100 sportspersons of the age group 13-24 years (18.73 ± 2.35). In this study, descriptive statistics (mean, frequency, and standard deviation), and paired sample t-tests were used.

The results showed that the mean score of nutritional knowledge before the session was 69.30 ± 16.530 , immediately after the session (75.20 ± 13.742), after 1 month (73.50 ± 14.933) and after 3 months (72.30 ± 16.197). The score increased following the session ($t = -5.030$, $p = .000$) while the score declined as time passed. The mean score of the attitude after the session was 78.48 ± 7.718 , after 1 month was 83.86 ± 6.788 and after 3 months was 80.66 ± 8.195 . After three months, scores showed a decline ($t = -3.733$, $p = .000$) compared with after 1 month. The mean score of the practice after the session (63.80 ± 10.774), after 1 month (66.26 ± 11.609) and after 3 months (65.98 ± 10.520). When compared with the after 1 month, the scores declined after 3 months ($t = -1.002$, $p = .177$). In all of the above situations, the amount of retention decreased over time.

It was concluded that providing continuous nutrition education that can be achieved through seminars, workshops, use of educational materials and consultation with nutrition professionals can ensure that athletes have the knowledge and skills to make informed dietary choices throughout their careers, contributing to long-term health and athletic success.

Keywords:

Nutritional knowledge, Attitude, Practices, Nutrition education, Performance



Efficacy of Vitamin D₂ Enriched Mushroom Powder Supplementation on Vitamin D Deficiency and Metabolic Syndrome Biomarkers in Adults- A Randomized Control Trial

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Abstract:

The prevalence of metabolic syndrome (MetS) and vitamin D deficiency are increasing dramatically worldwide. The objective was to evaluate the effectiveness of Vitamin D₂ enriched mushroom powder on Vitamin D status and metabolic syndrome biomarkers in adults through randomized control trial. Fresh mushrooms were exposed to UV-B radiations that resulted in a significant increase (400 times) in vitamin D₂ content. A total of 90 (20-40 years) subjects were recruited, having vitamin D levels within the range of 12-20 ng/ml, and were further categorized into three groups i.e. Group I (Control), Group II (vitamin D₂ mushroom powder), and Group III (synthetic vitamin D sachet). After 12 weeks of intervention, subjects in Group II and III exhibited a significant ($p < 0.05$) increase in serum vitamin D levels (21.32 and 44.1 ng/ml), calcium levels (9.34 and 9.26 mg/ml), Parathyroid hormone (48.8 and 48.2 pg/

ml) and Bone mineral density (-0.27) respectively. Moreover, Group II exhibited a significant ($p < 0.05$) decrease in the incidence of metabolic syndrome biomarkers including Blood pressure levels of (121.46 /76.06 mm Hg), Triglycerides (121.76 mg/ml) and Total cholesterol (167.9 mg/ml). Group III exhibited a significant ($p < 0.05$) decrease in Blood pressure levels (121.51/77.56 mm Hg). No significant changes were recorded in the group I. This it was concluded that UV-treated mushroom powder intervention helped in improving vitamin D status and reduction of metabolic syndrome biomarkers in adults. For obtaining better results, long-term intervention is recommended. Thus, vitamin D₂ enriched mushroom powder can be used as a food based approach for better health and nutrition.

Keywords:

Vitamin D₂ enriched mushrooms, Vitamin D status, Metabolic syndrome biomarkers, randomized control trial.





Clinical Effects of Dietary Polyphenols in Weight Control Management

Anjali Pandurang Jagtap

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Abstract:

Dietary polyphenols, abundant in various natural sources, have emerged as promising contributors to weight control with diverse clinical effects. These bioactive compounds, including catechins and capsaicin, have demonstrated significant efficacy in mitigating obesity-related challenges. Dietary polyphenols constitute a diverse group of compounds present in various foods, including fruits, vegetables, wine, tea, extra virgin olive oil, chocolate, and cocoa products. This class of compounds encompasses derivatives and isomers of flavones, isoflavones, flavonols, catechins, and phenolic acids, showcasing a wide array of chemical structures.

Studies suggest that natural polyphenols play a crucial role in reducing body weight gain. For instance, catechins and capsaicin, commonly found in green tea and chili peppers, respectively, exhibit practical and effective remedies for obesity treatment. These compounds, as evidenced by research, offer safe alternatives for weight management, making them valuable components in dietary interventions. Incorporating polyphenol-rich foods and formulations into dietary plans holds promise for the development of effective and safe obesity management strategies.

Keywords:

Polyphenols, weight control



Rapid Detection, Characterization and Enumeration of Microbial Load on Fresh Produce: A Paradigm Shift from Culture Plate to Molecular Biology

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Abstract:

Consequent to the rise in lifestyle disorders, the consumption of the fresh produce have increased considerably in India which can also lead to serious cases of foodborne illnesses as these are mainly consumed raw. A wide range of food borne pathogens can be transmitted via fresh produce which also includes bacterial pathogens. Detecting bacterial pathogens using traditional methods like microbiological culture, can be expensive, time-consuming, and labour-intensive. Rapid detection of bacterial pathogens in fresh

produce is crucial for preventing outbreak of diseases. In the present study, we used a two-pronged approach to identify the pathogens prevalent in fresh produce using microbiological and molecular methods. Five hundred samples of fresh produce were procured from retail and local markets of Delhi and NCR region from 2018 to 2023. Most of the samples exhibited the presence of *Escherichia coli*, *Staphylococcus aureus*, and *Salmonella* sp as per the standard microbiological protocols that were used and also evaluated by the in-house developed multiplex-PCR which was more specific and less time consuming. Relationship of the nutritional status of fresh produce and microbial load was analysed and it was found that produce rich in glucose accelerated the bacterial load. Isolated bacterial samples were subjected to antimicrobial susceptibility profiling. Most of the isolated bacteria were found to be resistant to available antibiotics. Since most of the tested samples exhibited high abundance of *Escherichia coli* which were also found to be resistant to many antibiotics, we decided to identify a novel target of food pathogenic *E. coli* O157:H7 and found a moonlight protein, glutamate racemase, that could be used to design natural product inhibitors. The present study delved into the specificities of the Antimicrobial resistance challenge prevalent in fresh produce, identified the potential strategies for mitigating the crisis, and evaluated the broader implications for public health.

Keywords:

Microbial Load, Molecular Biology, *Escherichia coli*, *Staphylococcus aureus*, *Salmonella*





A Study on Assessment of Nutritional Status of Bengalee Children of Age 7-9 Years

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Abstract:

In the past few decades, India has made significant progress in reducing child mortality rate however malnutrition remains one of the country's primary health concerns. The middle Childhood phase, specifically ages 7-9 years, is a critical period which is marked by rapid growth and cognitive advancement. Optimal nutritional status plays a pivotal role in supporting overall health, growth, and cognitive performance during this crucial period of schooling. In this backdrop, the study is being undertaken to assess the nutritional status of Bengali children of 7 to 9 years old. In this study different anthropometric measurements, including body heights in cm and body weight in kg, were obtained using anthropometric measurement set. Waist circumference and MUAC were measured using non stretched tape. All data were tabulated and analyzed. Dietary intake assessment was conducted through 24-hour recall method involving parental input. This study provided valuable insights into the nutritional status of the participants.

Keywords:

Malnutrition, Diet, Anthropometry, Nutritional status



A Comprehensive Analysis of Multivitamin Supplementation: Patterns of Use and Public Attitudes

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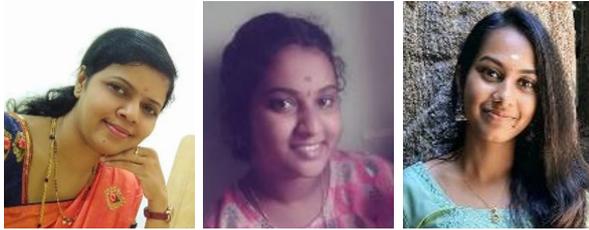
Abstract:

This study delves into the intricate relationship between individuals and multivitamin supplementation, exploring both the patterns of use and the underlying attitudes that shape this health-related behaviour. The research spans a diverse demographic, encompassing various age groups, socio-economic backgrounds, and geographical locations to provide a comprehensive understanding of the subject. The investigation employs a mixed-methods approach, combining quantitative surveys and qualitative interviews to gather rich data on multivitamin usage patterns. Participants are asked to detail their supplementation habits, including frequency, duration, and specific reasons driving their choice to incorporate multivitamins into their daily routines. Concurrently, in-depth interviews aim to unravel the nuanced attitudes that influence these behaviours, shedding light on factors such as health perceptions, knowledge about nutritional needs, and trust in the efficacy of multivitamin supplements. This study aims to contribute valuable knowledge to the ongoing discourse surrounding health behaviour and nutritional practices, offering a nuanced perspective on the use and attitude toward multivitamin supplementation in today's diverse and dynamic society.

Keywords:

Multivitamin, Public Attitudes, health-related behaviour





Production of Beetroot Sweetmeat Enriched with Dry Fruits for Human Health and Disease

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Abstract:

There are many health-based nutritional benefits to be gained from Beetroot sweet meat, which is a highly nutritious sweet dish. In addition, it provides a bright, tempting colour to the, which has anti-oxidant properties. Beetroot is effective in lowering blood pressure and improving blood flow, as well as reducing obesity and overall mortality. 200g of beetroot has 86 calories, while desiccated coconut has 99 calories. It contains jaggery that will help detoxify the liver and enhance immunity.

Beetroot is considered a food that promotes health because it contains essential components like vitamins, minerals, phenolics, carotenoids, nitrate, ascorbic acids, and betalains that promote health. Betalains come in two varieties: betacyanin (red-violet pigment) and betaxanthin (yellow-orange pigment). Their non-precarious, non-toxic, non-carcinogenic, and non-poisonous properties make them a popular food dye in the commercial world. The food industry is greatly benefited from beetroot, which can be utilized as a food coloring or additive in products like ice cream, yogurt, and other foods. Beetroot extract is utilized to elevate the redness of tomato pastes, soups, sauces, desserts, jams, jellies, sweets, and breakfast cereals.

Beetroot have anti-cancer and anti-inflammatory properties, support digestive health and brain, heart health. Beetroot have anti oxidant properties like betanin, saponins,

polyphenols which stimulates the gastrointestinal digestion and cardioprotective effects of beetroots results from the combination of nitrate/nitrite and bioactive compounds.

Keywords:

Anti-cancer, poly phenols, Antioxidants, Betaxanthin, Arginine



Development of Dark Chocolate made Finger Millet Enriched with Pistachios and Groundnut for Human Health and Diet

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Abstract:

Dark chocolate in particular is praised as a nutritious treat. Due to its many health advantages, dark chocolate has gained popularity over the past few decades. Numerous health-promoting elements are present in it, including bioactive substances including procyanidins, flavonoids, polyphenols, and theobromines. Apart from this minerals and vitamins that have a beneficial immune-modulating effect on human. Millet dark chocolate is made from groundnuts, cocoa, jiggery, ghee, pistachios, and finger millet. The natural calcium that millet contains is a great source of calcium for growing youngsters and the elderly. One of the best sources of calcium and sulfur-containing amino acids is finger millet. Presence of nutritional fiber and polyphenols within the finger millet can provide numerous fitness benefits which include antidiabetic, hypocholesterolaemic, Prevention from weight-reduction plan related persistent diseases, antioxidant and antimicrobial effects. Processing technology may be carried out to enhance micronutrients bioavailability and additionally for reinforcing the diets exceptional of finger millet in the in the production of chocolates has been found to have health advantages in the diet.

Keywords:

Finger millet, Cocoa, Pistachios, Groundnut, flavonoids, hypocholesterolaemic





Assessment of sun exposure in Perimenopausal and Postmenopausal Women of Mumbai, Hyderabad and Bidar

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Abstract:

This research aiming to study sunlight exposure per day in 620 perimenopausal and 590 post-menopausal women (40 to 61 years) in Mumbai, Hyderabad and Bidar. Validated sunlight exposure questionnaire includes information on participant's exposure to sun (from 8 a.m. to 5 p.m.) and sun protection measures, use of sunscreens, and wearing cap. Solar radiation between 7-11 a.m. and 3-7 p.m. is 40% of radiation between 11 a.m. and 3 p.m. Therefore, estimated sunlight exposure duration between 8 and 11 a.m. and 3 and 5 p.m. from the questionnaires was converted to 40% and added to sunlight exposure duration between 11 a.m. and 3 p.m. Estimation of skin area percentage based on Lund and Browder chart as 5% (full sleeves+ cap), 10% (half sleeves+ cap) and 15% (half sleeves+ no cap).

Majority of the perimenopausal women [Mumbai (84%), Hyderabad (61.2%), Bidar (96 %)] and post-menopausal women [Mumbai (88%), Hyderabad (64.7%), Bidar (98. %)] had sun exposure less than fifteen minutes per day with 15% exposure of skin area. As per Indian Menopause Society guidelines (2020) to get sufficient vitamin D₃ (25 microgram (1000 IU)) through sun, exposure of 20% skin (face, neck, both arms and forearms) without sunscreen for at least 30 minutes between 10 a.m. to 3 p.m. is required.

We conclude, more percentage of post-menopausal women had sunlight exposure less than fifteen minutes per day. There is need to educate women at postmenopausal age as well perimenopausal about exposure to sun for good bone health along with nutrition to avoid osteoporosis risk.

Keywords:

Sun exposure, Perimenopausal, Post-menopausal



Development of Food Products from Waste Residue

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Abstract:

Considerable amounts of organic waste are generated through the maintenance of farms and crops, as well as the industrialization of food products in the agricultural sector. In the case of Sapota cultivation, Sapota seeds obtained after processing is often considered as waste. The aim of this work is to reduce food waste by repurposing waste into a functional product. Due to lack of research in sapota seeds it became challenging factor for the domestic and industries for its complete utilization. Bread, being one of the earliest known functional foods, has undergone thorough analysis in various research studies to better understand its impact on human health. Wheat and Maida bread can cause adverse reaction to individuals with gluten sensitivity, lack sufficient fiber content which creates a need for low gluten functional bread. The production of gluten-free bread using sapota seed flour is the main goal of this work. Sapota seed bread have less gluten than the other flour-based breads. Also, it possesses the high nutritious value due to the presence of functional compounds. After washing, drying of seeds was carried out for 6 hours at an equal interval of 30 minutes at 60°C and drying kinetic to be done. The dried seeds were milled into flour for which the optimization studies were carried out and different formulations was done. After the development of bread and it can be further analyzed for its characteristics like Texture analysis, proximate analysis, Microbial analysis, sensory analysis and shelf-life studies are will be done.

Keywords:

Food Waste, Sapota seed, Dietary fiber, Gluten less, Value added products





Non-Alcoholic Fatty Liver Disease Patients and Nutrition Awareness about Various Government Programs and Policies for Healthy Eating

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Abstract:

Background: The government of India has launched time to time various education programs to prevent Non-communicable diseases (NCDs), programs like NPCDCS, operational guidelines of NAFLD, and awareness campaigns like Eat Right India, reduction of fat, sugar, and salt, Trans-fat-free India 2022, etc. are launched to sensitize the common population to adopt healthy eating habits.

Rationale & Objective: This study is an attempt to assess the nutrition awareness and knowledge of non-alcoholic fatty liver disease (NAFLD) subjects about various government programs, policies, and guidelines for healthy eating.

Method: A total of 100 subjects, diagnosed as NAFLD patients

were enrolled from various cities of Chhattisgarh state, both male and female of age group 18- 45 years participated in the study. Their anthropometric data was recorded along with the NAFLD stage, they were briefed about different government policies, guidelines, and programs on healthy eating to prevent NCDs, and various printed materials and leaflets were downloaded from respective government websites and used as visual aids for recording the knowledge and awareness of the subjects about these government programs for healthy eating and NCDs prevention. The data were analyzed using SPSS, Chi-square test, and Fisher exact test.

Results: With a special focus on healthy eating, NPCDCS, and operational guidelines for NAFLD: NIN, ICMR – my healthy plate awareness 100 % of subjects are not aware. FASSI - Reduction of HFSS 56 % of subjects are not aware of it and 44 % of subjects know it by television advertisement by celebrities under the line – “aaj se thoda kam”. Eat Right India Campaign 42 % are aware while 58% have no clue about it. Trans-fat-free India 2020 and RUCO awareness program by FASSI has awareness of 0% to 66 % respectively. Efforts of FASSI to sensitize how to read food labels correctly show 43% of low to moderate-level awareness. While government’s program of NPCDCS revealed 7% of awareness among NAFLD subjects for NCDs. Control.

Conclusion: The awareness of NAFLD subjects about various government policies, operational guidelines, and programs is very low. This lack of awareness is dependent on their education, employment status, gender, or age group.

Keywords:

NAFLD, NPCDCS, NCDs, HFSS, FSAAI, LABEL BLIND, RUCO



Regression of Pre-diabetes through Nutrition Intervention and Habit Modification

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Abstract:

Pre diabetes is a precursor before the diagnosis of diabetes mellitus. People with pre diabetes often may show no signs or symptoms of diabetes but will have blood sugar levels higher than normal. The overall prevalence of Pre diabetes in India is 15.3%. Early recognition and preventive measures life style changes and habit modifications are essential for remission of pre diabetes. Our study aims at reversing the pre-diabetic condition. Study participants diagnosed with pre diabetes were enrolled into Sugar fit Virtual programme. Socio demographic profile were collected through questionnaire method, the Anthropometric data was collected through objective tools. The results showed that Average BMI (26.9), waist (93.11) and waist height ratio (0.518) among the study participants. The correlation between the BMI in overweight category and higher waist measurement with pre diabetes was found to be very significant. In the base line assessment done it clearly indicate that this could be the leading cause of Pre diabetes in the present community and if left untreated could progress to Type 2 Diabetes.

Keywords:

Pre diabetes, diabetes mellitus, BMI





Estimation of Vitamin D₂ content in Ultraviolet Irradiation-Treated Dried Cordyceps Mushroom (*Cordyceps militaris*) Powder

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Abstract:

Many people in many different parts of the world suffer from vitamin D deficiency, which is a major health risk. Edible mushrooms are an excellent source of vitamin D, which is extremely beneficial for human health. This present study determines whether or not dry powdered Cordyceps mushroom (*Cordyceps militaris*) extract could effectively convert its precursor, ergosterol, to vitamin D₂ when exposed to UV light. A wavelength of 257 nm (UV-C) and an exposure duration of 2 hours were fine-tuned as the parameters of the UV irradiation. Under optimum conditions, the amounts of vitamin D₂ in cordyceps mushroom powder increased from undetectable to 7097 µg/g (DW) after irradiation with ultraviolet light. Ergosterol concentrations dropped with increasing vitamin D₂ levels, but only a portion of the ergosterol was converted to vitamin D₂; the rest was likely destroyed by UV radiation. Edible mushrooms can have their vitamin D₂ concentration increased and their nutritional value enhanced by exposing them to ultraviolet radiation. In addition to improving consumer health, this exposure makes mushrooms more useful as a source of vitamin D₂.

Keywords:

Vitamin D₂, Ultraviolet Irradiation, Cordyceps Mushroom Powder, *Cordyceps militaris*



Awareness and Consumption of Prebiotics and Probiotics among Adult (Male/Female) in Al Ahsa Region

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Abstract:

Public awareness and interest in food that is highly related to their health benefits are flourishing. Even though there is a gap between the biomedical sciences experiments and the business of marketing, the accessibility of health-promoting channels/media leads the consumer to seek healthier food and drinks. Pre/probiotics have a big role in management and protection of gastrointestinal infection, allergic disease. The aim of study is to find out the awareness and consumption of prebiotics and probiotics among adults (male/female) in Al-Ahsa region. Cross sectional study was conducted in Al Ahsa, KSA among adults using structured questionnaire which included questions related to demographic, anthropometric, frequency of consumption of prebiotics and probiotics and about health status. A clear inclusion and exclusion criteria data was set before the data collection. Arabic version of Questionnaire along with ethical consent form was distributed through social media total of 450 participated in the study with their consent, based on inclusion and exclusion criteria data of 384 respondents was included for statistical analysis, Data was collected, checked for completeness, and further analysis of the data was done by using (SPSS) software version 20, Descriptive statistics was calculated including frequencies and proportions for categorical variables. Approval for this study was obtained from KAIMRC and IRB. Majority of the participants are not aware of the term prebiotic (64.3%) and probiotic (61.2%). However, pre/probiotics products (apples, leeks, garlic,

yogurt) are available in all the supermarkets which (kefir and yakult) are rarely available, also the consumption of these products are in high percentage on regular basis (28% & 35%) daily and weekly basis, respectively. Significant association of age, gender and educational level for awareness & consumption. Pre/probiotics products are available abundantly in all the Al-Ahsa supermarket also the consumption rate, most of them aware of the health benefits of these products. However, the term Pre/probiotics is not very familiar to the population of al Ahsa indicating need for increasing awareness about these products also its health benefits.

Keywords:

Prebiotics, Probiotics, Awareness, Consumption, Adults





Impact of Dietary Changes and Lifestyle Modification in Non-Alcoholic Fatty Liver Disease

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Abstract:

The progression of non-alcoholic fatty liver disease is evidently associated to lifestyle factors, dietary intakes and reduced physical activity and daily exercise. A total of 49 patients were found to develop NAFLD (non-alcoholic fatty liver disease) examined from July 2023 to December 2023 at the clinic situated in Delhi-NCR region. This study showed that out of 49 patients 25 patients were found overweight (BMI ranges 25.4-29.3 kg/m²), 5 patients were found under obese class I (BMI ranges 30.2-35 kg/m²), 15 patients were found under obese class II (BMI ranges 35.3-39.2 kg/m²) and 4 patients were found under obese class III category (BMI ranges 40.2-46.6 kg/m²). All the patients were found to have low vitamin D and HbA1C percentage ranging 6.5-7.7% indicating T2DM. All the patients were advised to have high carbs, high protein and high fiber diet with good amount of healthy fats (monounsaturated fatty acid diet) (CPF ratio 40:40:20) along with nuts, fresh vegetables and fruits with very low milk and dairy products and regular exercise for at least 30 minutes/day. Dietary changes and lifestyle modification showed significant improvement in fatty liver patients with reduced CAP value in fibroscan of liver and weight loss program. Hence, modification of diet and inclusion of regular exercise can be used as a tool to improve non-alcoholic fatty liver disease and hepatic steatosis.

Keywords:

Dietary, Non-Alcoholic Fatty Liver Disease, NAFLD, BMI



Callus Induction from Stem Node Explants of *Andrographis paniculata* (Burm.f) - Antiviral Medicinal Important Plant

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Abstract:

The present study established reliable and reproducible protocol for rapid multiple shoot induction from stem node explants of *Andrographis paniculata* (Burm.f) using different concentrations and combinations of cytokinins. The advantage with micro propagation is most of the *in vitro* propagated plants of many important medicinal species were found to be uniform, showing less variation in the secondary metabolic content than their wild counter parts. *In vitro* stem node segments and shoot induction was achieved in one of the important medicinal plants. Shoot induction was monitored after 4-6 weeks of inoculation by counting the number of shoots induced from each explants. MS medium supplemented with 1.0 mg/l BAP + 2.0 mg/l NAA and 2.0 mg/l L-Glutamic acid was found to be optimum to induce shoots. The effect of benzyl amino purine in inducing shoot induction was already reported in some of the important medicinal plants Komalavalli and Rao, (2000). *In vitro* propagation of Damaskrose Tabesh et. al (2013) & Gago J (2014). *Andrographis paniculata* (Burm.f). *In vitro* Shoot Induction from Stemnode Explants of *Trichosanthes cucumeriana* (L) Mandaloju Venkateshwarlu (2023).

Keywords:

Callus Induction, Stem Node, *Andrographis paniculata* (Burm.f), Antiviral Plant





To Investigate the Relationship between Nutritional Status and Oral Health-Related Quality of Life among Geriatric Denture Wearers - An Observational Cross-Sectional Study

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Abstract:

The demand for dentures is influenced by levels of education and awareness. Furthermore, several factors influence the appetite of the elderly, one of which is the fit of the denture. The elderly who frequently avoid certain types of food are usually denture wearers with loose dentures, and as a result, they have a poor nutritional status.

Aim and Objective: To evaluate and determine the effect of nutritional status and dietary intake on the oral health-related quality of life (OHRQOL) of elderly edentulous complete denture-wearing patients and to know whether elderly complete denture wearers have a higher risk of malnutrition.

Material and Method: An observational study was conducted among 108 completely edentulous patients using the MNA questionnaire. They were asked the questions at baseline and then after they were given complete dentures and evaluate their oral health related quality of life after rehabilitation with complete dentures. All the questions were in the native language, so it was easy to understand the question and respond to it.

Result: It was found that the patient's nutritional status had significant changes, which shows that the dietary advice and complete denture affected the patient's nutritional status.

Conclusion: This study helped assess the efficacy and application of MNA in completely edentulous patients. In this study, we provided nutritional guidance to patients in addition to complete denture prostheses to encourage them to have healthy eating habits. The clinician must be aware of the positive effects of prosthetic treatment and should encourage counteractive dietary advice. As a result, in each individual case, dental and nutritional requirements may differ, and they must be tailored in collaboration with a dietician to meet the patient's specific requirements.

Keywords:

Oral Health-Related Quality, Geriatric Denture Wearers, Nutritional Status



Prevalence of Malnutrition among Primary and Upper Primary Children of an Urban School in Western Maharashtra: A Cross-Sectional Study

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Abstract:

Background: Nutrition is vital to children's overall growth and development. It can affect physical health, cognitive development, and academic performance. Currently, there are supplementary nutrition programs to tackle risk factors of undernutrition but there is a growing problem of overweight/obesity, especially among urban school children belonging to higher socioeconomic strata which is not well understood or addressed.

Objective: To estimate the prevalence of Malnutrition among Primary and Upper Primary Children of an Urban School in Western Maharashtra.

Results: 3103 students were part of the study, 1305 (42.05%) were girls and 1798 (57.94%) were boys. The prevalence of being underweight, and stunting was 0.8%, 0.5% among girls, and 0.6%, 0.4% among boys respectively. The prevalence of mild, severe thinness was 5.9%, 1.9% among girls and 7.3%, 2.7% among boys. Overweight and obesity were 19.2%, 6.3% among girls and 10.7%, 17.6% among boys. A significant increase in overweight/obesity risk was shown among the children with screen time ≥ 2 hr/day, consumption of ultra-processed food more than thrice in the last week, and receiving daily pocket money to buy snacks. A significant decrease in risk was found in children who play outdoor games at least 4 times a week.

Conclusion: Our study shows a higher prevalence of overweight and obesity as compared to underweight and

stunting among the study population. Evidence from our study and other studies conducted in recent times presents a growing trend of overweight/obesity among school children. There is a need for a nationwide survey to estimate the prevalence of malnutrition among school children which would facilitate formulation of evidence-based preventive strategies across the country.

Keywords:

Malnutrition, Primary and Upper Primary Children, School, Western Maharashtra





Low-Glycemic Index Diets in Siddha System of Medicine for Management Type –II Diabetes Mellitus – A Systematic Review

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Abstract:

Siddha system of medicine emphasizes low-GI diets would be effective diet plan in lowering blood glucose level in people with type 2 diabetes, or impaired glucose tolerance. Basic concept of siddha is Unave marunthu, Marunthe unavu (Food is medicine and Medicine is food). Type 2 diabetes mellitus (T2DM) is considered as one of the most common diseases in the world. The objectives of this review are to create awareness about diabetes complications and consequent improvement in dietary knowledge, attitude, and practices lead to better control of the disease. And encourage patients to understand the importance of diet which may help in disease management, appropriate self-care and better quality of life.

Keywords:

Type II DM, Unavemaruthu, Siddha diet plan



Ensuring Adequate Nutrition to Prevent Childhood Malnutrition

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Abstract:

Malnutrition continues to be the world's most serious health problem and the single biggest contributor to child health despite having various significant initiatives focused on addressing this issue. One-third of the world's malnourished children live in India, where the prevalence of under-nutrition among children is consistently high. This indicates that there is a gap in the relationship between agricultural productivity and nutritional security because self-sufficiency in food production has not been transformed into nutritional security. According to data from the Global Hunger Index, which quantifies the rates of under-five mortality, stunting, and malnutrition, one in three Indian children has stunted growth, and 15% of the population is undernourished. In many developing nations, malnutrition, both under-nutrition and increasingly over-nutrition, remains a major problem. Agricultural expansion is very essential for enhancing food security which is a multifarious phenomenon that determines various concerns and initiatives worldwide. Food security and nutrition occur when everyone has physical, social, and financial access to food at all times. This food should be available in sufficient quantity and quality to satisfy the dietary requirements and food preferences. It concerns the basic accessibility of all necessary macro and micronutrients within a community, rather than merely calories. Access, availability, and nutrition are the three pillars of food security, as identified by the Food and Agriculture Organization (FAO).

It recommends that the overall nutritional security is the only solution to solve the problem of malnutrition and other health issues. Approximately, 75% of India's poor people live in rural areas and depend on agriculture as their primary source of food, employment and income. So, in order to tackle wide spread problems of nutrition, it might be necessary to move in nutrition interventions that addresses the underlined causes of under-nutrition. Promoting food security offers various opportunities to encourage financial and development in cost-efficient ways.

Keywords:

Malnutrition, Hunger, Mortality, Stunting, Food security



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Optimization and Blending of Plant Extract to Make Nutritious Sweet Potato Noodles

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Abstract:

This research paper explores the innovative synthesis of nutritious sweet potato noodles enriched with a carefully optimized blend of sapota fruit extract. The study encompasses a multi-faceted approach, delving into the realms of antioxidant potential, phytochemical composition, antibacterial and antifungal activities, as well as a detailed analysis through gas chromatography and mass spectrometry. Our aim was to develop a wholesome and health-promoting food product, combining the natural goodness of sweet potatoes with the unique nutritional profile of sapota fruit. Antioxidant assays revealed a robust capacity of the novel noodle formulation to combat oxidative stress, crucial for maintaining overall health. Phytochemical estimation showcased the diverse array of bioactive compounds present, emphasizing the nutritional richness of the product. Antibacterial and antifungal assays demonstrated the enhanced shelf life and safety of the noodles. Additionally, gas chromatography and mass spectrometry were employed to elucidate the intricate chemical composition of the plant extract, providing insights into potential bioactive compounds contributing to the observed health benefits. Furthermore, a comprehensive nutritional analysis highlighted the enriched content of essential nutrients in the final product, aligning with contemporary dietary trends promoting wellness. This

research represents a significant contribution to the field of food science, offering a novel and nutritious alternative in the form of sweet potato noodles infused with the goodness of sapota fruit extract. The findings hold promise for the food industry, addressing both culinary innovation and the growing demand for health-conscious food choices.

Keywords:

Plant Extract, Nutritious Sweet Potato Noodles, Health-conscious food



Nutritional Impact of Millet- Improving Iron Status, Haemoglobin Level, Body Mass Index on Pregnant and Lactation Mothers

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Abstract:

Pregnancy demand specialized nutritional requirements for the mother to maintain good health and during pregnancy. Aid in proper growth and development of the foetus. Millets are known to help increase blood production, nourish the spleen and stimulate appetite during pregnancy.

Millets are powerhouse of essential such as fiber complex carbohydrates, minerals, and vitamins which is essential for the growth and development of the fetus. Millets are rich in iron, calcium and folic acid nutrients that are vital during pregnancy these nutrients help in preventing anemia ensure proper bone development and support the growth of the neural tube in the foetus.

That mean weight gain for pregnant women was 3.63+5.29kg with mean hemoglobin improvement of 0.5+6.0g/dl., similarly, the mean weight gain for nursing women was 3.0+6.00kg and mean heamoglobin improvement of 0.9+1.6g/dl. This study indicating positive impact of these millet based foods on weight and BMI.

This study showed are excellent source of iron with low-cost potential for reducing iron deficiency anemia for pregnant and lactating women these millets based foods have a positive impact on the nutritional status of pregnant and lactating mothers.

Keywords:

Nutritional Impact, Millet, Iron, Haemoglobin, Body Mass Index, Pregnant and Lactation Mothers





Millets Consumption and Exploration of Its Impact on Women Health

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Abstract:

Millets are superfood which provides vital nutrients including antioxidants and rich on fibre. Millets for women health is versatile it plays crucial role for their health related problems. Millets are miraculous food Its contains mineral, protein and fibre, some amino acids present in millets namely methionine and lysine are very important for producing collagen which improves elasticity of skin, look healthier and delayed aging process of cells. Gut health related problems are major concern for women foxtail millet reduces inflammation and digestive disorders improve bowel movements and boost digestion and absorption. Tryptophan is an amino acid that has calming effect and improves quality of sleep and relaxes mood. As it well known that millets are rich in protein, minerals and fibre which make feel full quickly and delayed frequent eating and this helps in weight management. It improve metabolism process and detoxify our body which improved our immune system and keep cells healthy for longer. Women health issues like calcium , iron, deficiency and high cholesterol are very common, managing all these critical problem millets are the best solution. Ancient time of India Bronze Age (4,500BC) there are evidences available about the use of millets in their diet as mentioned in "Yjurveda". Millets are loaded with fiber and antioxidant this property helps to fight certain type of cancer. Objective of this study is to assess the impact of millets on human health. Methodology- set of quotionare circulated for the data collection. Result- analysis of this study shows that woman those are using millets in their diet since long time their health status is better than

those not using millet in daily diet.

Keywords:

Millets, Antioxidants, Women's Health, Consumption pattern



Development of Millet-based Selected Snack Foods for Therapeutic Condition – Celiac Disease

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Abstract:

The recent trend towards healthy snacking and the development of new product varieties in the healthy food market can be attributed to various factors, including lifestyle modifications, adjustments in behavioral patterns, an increase in the working professional population, and time constraints. This increasing demand presents an opportunity for food scientists and nutritionists to develop nutrient-dense snacks with positive attributes. Millet-based cereal snacks are recognized for their potential advantages over traditional cereal snacks in terms of micronutrient content, satiety, and glycemic control, positioning millets as alternative foods. In this study, we aimed to evaluate the sensory qualities and nutritional contributions of snack foods such as khakra, baked chips, and tortillas made from composite flour consisting of six different types of millets in equal proportions. The composite flour was partially replaced with 10% and 20% amaranth flour. Sensory evaluation results using a 9-point hedonic scale indicated that all combinations were highly favored. However, the partial incorporation of composite flour containing 10% and 20% amaranth was more acceptable than the control sample. Computational nutrient analysis revealed that the macro- (energy, protein, fat) and micronutrient (calcium, iron, zinc, magnesium, potassium, folic acid, pyridoxine, biotin) content of snack foods containing composite flour increased when 20% amaranth flour was added. These

results suggest that incorporating amaranth flour into composite millet flour in snack foods can promote wellness and overall health, particularly for individuals with celiac disease.

Keywords:

Healthy snacking, millet-based snacks, gluten-free, amaranth flour, sensory evaluation, nutrient analysis, micronutrients, celiac disease





Plant-Centric Diet for India- A Trifecta of Public Health, Planetary Wellbeing and Sustainability-A Review

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Abstract:

Objectives: Indian food systems riddled with triple burden of malnutrition and environmental concern, undeniably requires major transformative approach. This paper investigates the potential of plant centric diets as a holistic solution for addressing India's 'trifecta mission' of public health which encompasses physical health, mental wellbeing as well as planetary health.

Materials and Methods: Current data available, was assessed on portals (google scholar and PubMed) to gather scientific evidence about the benefits of sustainable plant based diets.

Results: The in- depth analysis revealed that plant based diets being rich in vegetables, fruits, wholesome grains, nuts and seeds can be very effective in:

1. Enhancing Public health by reducing incidents of non-communicable diseases, improving mental health outcomes, and alleviating malnutrition in India.
2. Alleviate Environmental Concerns: plant-based diets are less resource intensive and can lower the levels of

greenhouse gas emissions, improve biodiversity, minimises water and land footprints compared to meat dominant diets.

3. Promote Sustainability: Plant centric diets are traditional and affordable and can ensure global food security of 11 billion people world Population by 2050 as predicted by linear modelling programmes.

Conclusion: By demonstrating the multi-faceted advantages of plant-based diets in addressing India's complex challenges, this paper aims to provide robust scientific evidence for policymakers, educators, and healthcare professionals to advocate for and implement sustainable dietary shifts towards a healthier and more resilient future for India and the planet. By putting in coordinated efforts towards nutrition transition, a plant centric diets can support India meet its target of UN Global Sustainable Development Goals (2030).

Keywords:

Plant-Centric Diet, Public Health, Planetary Wellbeing,
UN Global Sustainable Development Goals



Extraction and Characterization of Pigments from Various Foods and Its Potential Benefits: A Systematic Review

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Abstract:

This review explores the diverse array of pigments present in different foods and highlights the various extraction methods employed to isolate these pigments. Natural pigments play a crucial role in the coloration of foods and are also associated with potential health benefits due to their antioxidant properties. The study encompasses a wide range of food sources, including fruits, vegetables, spices, and other plant-based materials, each contributing a unique spectrum of pigments.

The extraction methods discussed herein include conventional techniques such as solvent extraction, maceration, and distillation, as well as emerging technologies like supercritical fluid extraction and microwave-assisted extraction. The efficiency of each method is evaluated based on factors such as yield, selectivity, and preservation of pigment integrity. Additionally, the review emphasizes the importance of sustainable and environmentally friendly extraction processes to meet the growing demand for eco-conscious practices in the food industry.

The pigments covered include carotenoids, chlorophylls, anthocyanins, betalains, and other classes of natural colorants. Each pigment is examined in terms of its chemical structure, stability, and potential applications in food and pharmaceutical industries. Moreover, the influence of processing conditions, storage, and pH on pigment stability

is considered, providing insights into optimizing the use of these pigments in various applications.

Furthermore, the review sheds light on the potential health benefits associated with the consumption of foods rich in natural pigments, including their antioxidant, anti-inflammatory, and anti-cancer properties. The synergistic effects of pigments present in complex food matrices are also discussed, emphasizing the importance of studying pigments in their natural context.

In conclusion, this comprehensive review consolidates information on the extraction methods and properties of pigments derived from diverse food sources. The understanding gained from this review can guide researchers, food technologists, and industry professionals in selecting appropriate extraction techniques and utilizing natural pigments for enhancing the visual appeal, nutritional value, and health-promoting attributes of various food products.

Keywords:

Pigments, Antioxidant Properties, Visual Appeal, Nutritional Value, Health-Promoting Attributes



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Prevalence of Obesity among Young Parents of Preschool Children: A Growing Health Concern across Rural-Urban Interface of Bangalore

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Abstract:

Increasing burden of non-communicable diseases and metabolic syndrome are closely linked to the overweight and obesity. High fat, high carbohydrate, sedentary lifestyle, alcohol and junk food consumptions are some of the leading causes of overweight and obesity. These causes are escalating with increasing urbanization and influencing not only urban residents, but also surrounding localities. In this context, study was conducted with the objective to compare extent of prevalence of overweight and obesity among parents of preschool children, who are young adults (25-40) and specifically belonged to lower middle income group across rural urban interface of North Bangalore. A total of 150 households from rural (n=50), transition (n=50) and urban (n=50), involving 300 individuals (father=150, mother=150) were surveyed for their socio-economic information. Anthropometric measurements taken and indices were calculated. Findings revealed that, prevalence of overweight was 18 and 20 per cent among urban and rural men respectively whereas, in transition 38 per cent of men in transition were found to be overweight. Pre obesity (38%) and obesity (12%) was also found to be more among transition men compared to rural and transition. Surprisingly, 64 per

cent of rural men had substantially increased waist hip ratio indicating prevalence of central obesity. According to per cent body fat, 22 per cent of transition men were obese. Similar findings were observed among women also. These findings indicate, increasing obesity especially among transition areas, which is the intermediary expanding zone due to urbanization. Occupation and lifestyle modifications are leading to these anthropometric changes, which if not attended may lead to increase in non-communicable diseases. Hence, timely approach with education and nutrition intervention programmes is essential in order to stop cascading effects of overweight and obesity.

Keywords:

Obesity, Young Parents, Preschool Children, Rural-Urban Interface, Bangalore

We acknowledge the financial support received from Department of Biotechnology, GOI for the project "Dietary diversification, nutritional status and lifestyle patterns among lower middle-class households in rural-urban interface of Bangalore (Phase-II), I-C04 381(F)" as part of the Indo-German collaborative research project FOR-2432.





The Effect of Intermittent Fasting on Ovarian Cysts: A Naturopathic Case Study

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Abstract:

Traditional systems of medicine, Ayurveda and Naturopathy, have constructed principles of health and implemented various fasting therapies as a part of their treatment, aiding in inner detoxification. In the present scenario, studies have shown the importance of fasting, which is advocated globally, especially in cases of chronic lifestyle disorders. This naturopathic case study explores the therapeutic implications of intermittent fasting on a 24-year-old female diagnosed with polycystic ovarian disease (PCOD), presenting with irregular and painful menstrual cycles along with bilateral ovarian cysts, with volumes of 8cc in the right and 23cc in the left ovary. She was admitted to Nature Cure Hospital in Balkampet, Hyderabad. Her vitals at the time of admission were recorded (weight 54kgs, height 5'3"). Despite having a BMI of 21.1 kg/m², indicating an ideal weight, she was advised to undergo intermittent fasting for three months during her in-house treatment period. Following naturopathic principles, she underwent intermittent fasting with liquids, raw and cooked diet. Upon completion of the sequential intermittent fasting plan the patient experienced significant improvements, with menstrual cycles becoming regular and painless. A second abdominal scan revealed a reduction in ovarian volumes to 10cc (with a mature follicle) and 7.3cc in the right and left ovaries, respectively. The naturopathic approach aligns with studies suggesting that intermittent fasting may reduce inflammatory markers, contributing to enhanced metabolic health. This case study underscores the potential of intermittent fasting in

promoting detoxification at the cellular level and its positive impact on managing PCOD.

Keywords:

Ayurveda, Naturopathy, Intermittent fasting, Detoxification



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Product Development and Sensory Evaluation of Foxnut Flour (*Euryale ferox*) Incorporated Recipes

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Abstract:

Introduction: Functional foods play a vital role in health promotion, offering protection against degenerative diseases. Foxnut (*Euryale ferox*) also known as Makhana is one such functional food, which is rich in phytochemicals namely phenols, flavonoids, alkaloids, terpenoids, tannins and glycosides. Foxnut is a significant natural source of antioxidants and has free radical scavenging behavior, exhibiting potential applications in treating conditions like diabetes and hyperlipidemia.

Aim: To develop foxnut flour incorporated recipes and assess consumer acceptability of the developed recipes through sensory evaluation.

Methodology: Ten recipes with foxnut flour incorporation at 3 different levels (15g, 20g and 25g) were developed. The developed recipes were subjected to sensory evaluation. Thirty semi-trained panelists assessed attributes like color, aroma, texture, taste, aftertaste, mouthfeel and overall acceptability of the recipes using the hedonic and composite rating scales. Data was entered in Microsoft excel and statistically analyzed using ANOVA and Student's 't' test. Results were considered to be significant at $p < 0.05$.

Results: Based on the composite rating scale, majority of the foxnut flour incorporated recipes at all 3 levels were comparable to the standard recipe for various attributes like color and appearance, aroma, texture, aftertaste, mouthfeel, and overall acceptability. There was no significant difference between the 15g, 20g and 25g foxnut flour

incorporated recipes indicating acceptability at all levels of incorporation. According to the hedonic rating scale, most recipes received favorable ratings from the panelists. For recipes like Methi Khakhra, Masala Puri, Khichu, Muthiya, Thalipeeth, as compared to the standard recipe the foxnut flour incorporated recipes were liked more by the panelists. Based on the results from the hedonic and composite rating scales, the 20g level of incorporation was identified as the most acceptable level of incorporation.

Conclusion: It can be concluded that foxnut flour can be effectively incorporated into various recipes without causing significant alterations in the sensory attributes. As foxnut contains phytochemicals and exhibits antioxidant properties, recipes made from it should be promoted and incorporated in the diet for prevention and management of various degenerative diseases.

Keywords:

Functional foods, Degenerative diseases, Foxnut (*Euryale ferox*), Makhana, Diabetes, Hyperlipidemia



Is Indian Food Diverse?

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Abstract:

This paper attempts to examine the issue of diversity of food, common in Indian food studies. India is rich in culture, culinary values, traditional food practices even so Indian food is presented in form of regions or province at global level. It has been also reported by many academicians and gourmet tourists that Indian food is diverse. Owing to the lack of involvement of food anthropologist, sociologist and limited working in ethnography, studies done on the functional basis of food or for tourism promotion. So, no fixed food image and identity till date is awarded to Indian food and country is losing food heritage. India is lacking in food identity, national food identity and gastronomic identity as compared to Italy and China. It's really true, food diversity notion and its spread among the gourmet to foodie community is dilemma and concept of diversity is not clear till today on qualitatively and quantitatively backgrounds. This research study concludingly provide understanding of two words, diversity and differences specially to experience Indian gastronomy with issue of product availability, geography and cuisines traditionality, and also going to explain ingredients cooccurrence in different regional dishes and similarity of the ingredients uses in regional cuisines of India.

Keywords:

Diversity of Food, Indian Food, Regional Cuisines



Consumption of Whole Grains by a Sample of Saudi Adults

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Abstract:

This study aimed to assess the consumption of grain groups and their products in a sample of adult Saudis in Riyadh and to determine how much of whole grains and their products were consumed. The study adopted a descriptive method in which a questionnaire designed to include demographic data, a semi-quantitative dietary frequency form and questions regarding the reasons for not consuming whole grains and their products was administered to the participants. Data were collected from 150 adult Saudis of both sexes. The findings revealed that 43.30% of the participants consumed whole grains and their products at a rate of 6–11 portions per day, while 57.30% of the participants did not daily consume any kind of whole grain or their products. Bread and white rice were most often consumed by the participants. Among the participants, 36% reported that not accepting the taste of whole grains and their products was one of the most important reasons for not consuming them. Other reasons, such as their unavailability in various forms on a daily basis in small food supply stores, were mentioned by 31% of the participants.

Keywords:

Diversity of Food, Indian Food, Regional Cuisines



Assessing Street Food Consumption Patterns and Preferences in University Students

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Abstract:

Background: Food and Agriculture organization has defined street foods as ready-to-eat foods and beverages prepared and/or sold by vendors or hawkers especially in the streets and other similar places. Approximately 2.5 billion individuals consume street food on a global scale daily. Street food offers an affordable and accessible option for meals. Primary consumers of street food in many countries include informal sector workers like hawkers and laborers, along with children, students, office workers, and housewives.

Aim: The aim of the study was to assess frequency of street food consumption and street food preferences among university students from Vadodara City, Gujarat, India.

Method: Students (N= 200) were selected from a university in Vadodara, Gujarat, India. Data on street food consumption and street food preferences were collected using a pre- tested, semi- structured questionnaire. Nutritional classification of the recipes into green, amber and red categories was based on the major and minor ingredients present in the recipe.

Results: Out of the 200 students, 89% students were females and 11% were males. Majority of the students (32%) reported once a week consumption of street food and 26% students were consuming street food 3-4 times a week. The survey identified a total of 65 street food items, of which 23.1% were classified as green, 44.6% as amber, and 32.3% as red based on major and minor ingredients present in the recipe. Results revealed that Pani Puri was the most

frequently consumed food item in red category, Vadapav in the amber category, and sandwiches in the green category.

Conclusion: Street foods were frequently consumed by the university students. Notably, the majority of identified street food items fall within the 'red' and 'amber' categories, raising concerns about nutritional choices. This emphasizes the need to promote healthier alternatives and nutritional awareness among the student population.

Keywords:

Street Food Consumption, University Students, Food and Agriculture organization





Development Health Drink Mix to Prevent Acidity using Fresh Fruits

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Abstract:

In response to the escalating concern of acidity-related health issues, our research project focuses on the innovative development of a health drink mix using fresh fruits—pomegranate, papaya, and muskmelon. This comprehensive study integrates various analytical techniques to create a product that not only prevents acidity but also offers enhanced nutritional benefits. We conducted antioxidant assays, unveiling the remarkable radical-scavenging potential of the fruit mix. Photometric estimations and analysis further revealed the intricate phytochemical composition, emphasizing the synergistic effects of pomegranate, papaya, and muskmelon. Antibacterial and antifungal assays underscored the product's potential in promoting digestive health. Employing gas chromatography and mass spectrometry, we elucidated the intricate chemical composition, identifying key bioactive compounds responsible for the health-enhancing properties. This approach provides a deeper understanding of the molecular intricacies that contribute to the efficacy of our health drink mix. Nutritional estimation of the final product highlighted its richness in essential vitamins, minerals, and antioxidants, reinforcing its potential as a functional and health-promoting beverage. Our research not only contributes to the development of an effective acidity prevention solution but also provides valuable insights into the multifaceted nutritional and bioactive aspects of the chosen fruits. This holistic approach positions our health

drink mix as a promising candidate for promoting overall digestive wellness.

Keywords:

Health Drink Mix, Acidity, Fresh Fruits



Health Issues of Transgenders: A Comprehensive Review

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Abstract:

The term Gender refers to the identity that an individual develops through the process of socialization. Transgender person means a person who is neither wholly female nor wholly male. They are a either combination of female and male or neither female nor male and whose sense of gender does not match with their gender. Transgender individuals face various difficulties in their daily life out of which health problems are major issues faced by them. The common health problems known among them are anemia, poor eyesight, tooth decay, etc. But some major health issues faced by them are hypertension, diabetes, AIDS, cancer, HPV, metabolic bone diseases, etc. Among other health problems, trans people are significantly more likely to be targeted for violence and harassment, to contract HIV, and to be at risk for mental health concern such as depression and attempted suicide than the general population. Evidence suggests that HIV prevalence among transgender persons is higher than the general population. Transgender individuals experience mental, sexual and reproductive health issues. The study on the related topics revealed that transgenders suffered from mental stress due to non-acceptance, loneliness, prejudicial treatment, guilt, violence and humiliation from society. This highlights a frequent issue with significant consequences, since mental stress not only impacts their physical well-being but also affect their mental health. The objective of the study is to assess the health problems faced by the transgender community. The above comprehensive review prioritizes the major health issues of trans persons like HIV/ other STDs.

Keywords:

Trans people, Transgender Communities, Health Issues





Adiposity Indicators and Their Role in Predicting Metabolic Syndrome in Arab Adults

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Abstract:

The increasing prevalence of metabolic syndrome compel our strong consideration towards the importance of detecting metabolic syndrome with more efficient and easy practical methods at an early stage. The study aimed to evaluate and identify cut-off values of several indicators of adiposity and their effectiveness in predicting metabolic syndrome (MetS) among general Saudi adults. A cross-sectional study including 833 participants (49% male and 51% female) aged 42.2 ± 11.9 years (408 MetS and 425 as controls) were enrolled and demographics, anthropometrics and biochemical results was retrieved from a registry. MetS was defined based on National Cholesterol Education Program's (NCEP III) criteria.

Among all, the lipid accumulation product (LAP) and waist-TG index (WTI) exhibited the highest predicting ability for MetS (area under the curve (AUC): 0.857 and 0.831), respectively. Moreover, based on gender, these two were the best indicators for discriminating MetS and presented the highest Youden index values, with cut-off values of 49.8 (sensitivity 68.5%, specificity 82.4%), and 8.7 (sensitivity 70.7%, specificity 81.9%), respectively, in females and 46.2 (sensitivity 85.6%, specificity 76.3%) and 8.9 (sensitivity 73.9%, specificity 84.8%), respectively, in males. The LAP and WTI performed well in both genders with a superior ability to identify MetS in males and could be used to predict

MetS in Saudi adults.

Keywords:

Adiposity, Metabolic Syndrome, Arab Adults, Lipid Accumulation Product (LAP)



Effect of Whey Protein Concentrate-Natural Deep Eutectic Solvents Based Edible Coating of Mushroom

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Abstract:

Biopolymer-based coatings have gained popularity due to concerns about limited natural resources and environmental implications of non-biodegradable plastic packaging materials. Whey protein is a high-nutrient source of protein with biological components improving immunity and treating ailments like cardiovascular diseases. Mushroom has a shelf life of 6 to 8 days at refrigeration temperature, although its quality is lost due to spoilage by microorganisms. The short shelf life of mushrooms has remained a main hurdle in its large-scale production and transportation to far-off places from the production plants. Edible coatings are being used to improve quality and shelf life of mushroom. These coatings can also improve food quality and minimize post-harvest losses. The present study attempts to optimize the inclusion level of Whey Protein Concentrate - Natural Deep Eutectic Solvents (WPC-NADES) used for edible coating for the quality of mushroom. NADES have been identified to possess outstanding antimicrobial activity and are chemically and thermally stable against a wide range of spoilage and pathogenic microorganisms. Edible coating of mushroom was done by dipping diced mushroom into a coating solution incorporating four different NADES solutions (Lactic acid: Fructose (LF); Lactic acid: Glucose

(LG); Citric acid: Fructose (CF) and Citric acid: Glucose (CG)) and whey protein concentrate 12 % at 30 ± 1 for 10-15 min followed by drying. Mushroom coated with Lactic acid: Fructose (LF) NADES - 12% WPC showed better sensory qualities and extends the shelf life around 14 days than the control. Mushroom incorporated with milk proteins enhances functionality, nutritional properties and meets consumer demand.

Keywords:

Mushroom, Edible Coatings, Whey Protein Concentrate, NADES





A Study to Assess the Nutritional Status of Teachers in Hyderabad City

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Mariya Fatima

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Abstract:

Teachers may provide instruction in literacy and numeracy, craftsmanship or vocational training, the arts, religion, civics, community roles, or life skill. The study was conducted to assess the nutritional status of teachers by anthropometric measurements, questionnaire and the lifestyle related factors. The questionnaire includes general information, anthropometric information, nutritional information, physical activity, and lifestyle and food frequency questionnaire. A total sample size of 150 teachers from different school and college from Hyderabad was selected. The results showed that 40% of teachers are pre obese and 26.3% of teachers had normal weight of BMI. The data was conducted on teachers who were skipping the meals and the reasons of skipping by statistically analyses using chi square method. The results showed that there is a significant different ($r=53.3$). Medical condition like diabetes, hypertension, Cardiovascular disease and prone to condition like back pain, neck pain and knee pain was conducted data analyzed using Pearson's coefficient of correlation. It shows that there is no relationship between the variables that is the variables are correlated 0.0006 ns. The food frequency questionnaire in which it showed there consumed high amount 76% of fats and oil. Similarly, it observed that the consumption of green leafy vegetables is less 59%. The sleep pattern was less observed 61% of the

teachers sleep only 5- 6 hours there required proper 8 hours of sleep. Sugar and confectionaries are consumed on a daily basis. Hence, it can be concluded that teachers have high BMI. It revealed that most of the subjects are not consuming a balanced diet. Teachers lack awareness about balanced diet and healthy lifestyle on the basics of right nutrition.

Keywords:

Nutritional Status, Teachers, Hyderabad City



Development of A Product- Ragi Tart using Stevia Extract for Diabetic Individuals

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Abstract:

The aim of the present paper was to develop a millet based product- Ragi tart using Stevia extract as a sugar substitute that has almost no calories coming from sugars. The tarts are the convenient products becoming popular among the population. Popularity is high due to ease to prepare, low cost and increased shelf life. The paper is representing the several aspects of the product from the procurement of the ingredients till the consumption and its effects on improving the blood sugar levels. The ragi (finger millet) is highly nutritious millet with low glycemic load and is excellent source of protein, iron and calcium necessary for diabetics to cater the metabolic needs with a better alternative being non-sugar sweetener to make Ragi preparation appealing to the sweet palate of diabetics. A nutrient analysis of the product was conducted where macro nutrients such as energy, carbohydrate, protein, fats and dietary fiber were analyzed and was performed in a laboratory. Sensory evaluation was conducted using 100 panel members with control product, variation 1 and variation 2 out of which sample product was highly appreciated during the sensory analysis. Therefore, the prepared product was highly appreciated and accepted by most of the panelists based on its sensory evaluation and its both physical and biochemical properties.

Keywords:

Millet Based Product, Ragi Tart, Stevia Extract, Sugar Substitute





Optimization of Different Levels of Hydrocolloids on Stability of Functional Beverages from the Blends of Pomelo, Hibiscus and Wheatgrass

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Abstract:

The present investigation is an innovative method to prepare functional beverage through optimization of hydrocolloids combination to avert sedimentation of solid particles in beverage by Response Surface Methodology Design Expert 13. Functional beverage was prepared at pre-optimized Pomelo (*Citrus grandis*) (15%), Hibiscus (*Hibiscus sabdariffa*) (55%) and Wheatgrass (*Triticum aestivum*) (25%) adjusted at 12° Brix and 4 - 4.5 pH. The beverage was pasteurised, bottled in 200 ml containers, and kept in storage for two months. Samples were assessed for particle suspension, cloud stability, and viscosity following the storage period. Beverage containing greater level of carboxymethylcellulose (CMC) was found to have significantly maximum particle suspension and cloud stability than other hydrocolloid combinations. After 2 months of storage, beverage containing high amount of CMC were found to have significantly high viscosity followed by xanthan gum and pectin. The desirable combination of 0.40 % CMC, 0.25 % xanthan gum and 0.29 % pectin per 200 ml bottle was identified to be most suitable for stabilizing the sediments (9.76%), serum cloudiness (0.13 nm) and viscosity (83.48 cP) over 2 months of beverages. The results showed that the stability of functional beverages during long-term storage was improved better when a combination of hydrocolloids was used than when stabilisers were utilised alone. The

developed innovative formulation of hydrocolloids will help the industry and researchers for improving the viscosity and suspension of sediment in the juices and beverages effectively.

Keywords:

Hydrocolloids, Pomelo, Hibiscus, Wheatgrass



Gas Chromatography-Mass Spectrometry Analysis of Bioactive Compounds in Methanolic Extract of *Syzygium aqueum* Fruit

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Abstract:

Over the years, many health conditions have been treated with underutilized fruits. *Syzygium aqueum*, a plant of the Myrtaceae family with enormous therapeutic properties, has the potentiality to treat an extensive array of illnesses. The bioactive components in methanol extracts of *Syzygium aqueum* fruit were identified with the aid of Gas Chromatography-Mass Spectrometry (GC-MS) analysis in the current study. 28 compounds were discovered during the study, with 4H-Pyran-4-one, 2,3-dihydro-3,5-dihydroxy-6 methyl (6.03%), 2,2'-Bioxirane (5.42%), cis-Calamenene (5.25%), Benzene, 1,2,3-trimethoxy-5-2-propenyl (4.41%), and n-Hexadecanoic acid (3.30%) being the primary compounds. However, the compound with the highest percentage (6.03%) of peak area was 4H-Pyran-4-one, 2,3-dihydro-3,5-dihydroxy-6 methyl. The majority of bioactive substances have been documented to have a variety of functions, including anti-inflammatory, antioxidant, anti-allergic, anti-cancer and anti-hyperglycemic properties. The findings of this study offer clear knowledge regarding the plant and also act as a diagnostic aid for accurate identification. As a result, this fruit shows significant phytopharmaceutical value.

Keywords:

GC-MS, *Syzygium aqueum*, bioactive compounds





Olive Leaves (*Olea europaea* L.) – A Valuable Nutraceutical Agent

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Abstract:

Present study is done to review nutraceutical potential of olive leaves. Since ancient times, olive leaves have been used as a remedy for many diseases, mainly found in Mediterranean region. Various phenolic compounds present in it, which are responsible for therapeutic properties. In this review paper, we are trying to collect various health benefits which can be applied in different health conditions. Medicinal properties of olive leaves such as antioxidant, antimicrobial, hypoglycemic, antihypertensive, and anti-atherosclerotic effects are due to oleuropein content present in olive leaves. Plenty of "Oleuropein" (phenolic compound) is found in olive leaves. Phenolic compounds present in olive leaves are accountable for anti-oxidation stability. Oleuropein is the most important biphenol in olive leaf apart from all the phenolic constituents. Another important natural antioxidant i.e. hydroxytyrosol is produced by oleuropein. By decreasing lipid peroxidation in coronary dilation, it protects cells and organisms. It enhances lipid metabolism to overcome obesity problems. In olive oil industries, olive leaves are found in huge amounts as by-products. So, Olive leaves are deliberated as low-cost natural resource which can be used as good source of value-added products.

Keywords:

Olive Leaves, Mediterranean Region



Nutritional Challenges and Morbidity Status of Children in Tribal Communities: A Systematic Review

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Abstract:

Tribal population is one of the vulnerable sections of the society. Despite of several ongoing government efforts over the six decades since India's independence, tribal populations continue to face significant obstacles, notably in terms of livelihood, education, and health. From the tribal population of 104 million, 20 million children aged zero to six experience significantly greater levels of malnutrition than non-tribal children. The reviews of relevant literature underscore the severity of the issue, revealing that 4.7 million tribal children in India endure chronic nutrition deprivation, adversely impacting their survival, growth, educational performance, and future productivity. This highlights a prevalent issue with far-reaching consequences, since malnutrition among tribal children not only impacts their physical well-being but also hinders cognitive development, learning ability, and long-term educational achievements. Tribal children's increased vulnerability towards nutritional status, addressing their nutritional needs becomes a critical necessity for India's overall growth. The objective of the study is to review findings of researchers who have conducted research on related topic on nutritional status of tribal children. The data is obtained by compiling the findings of various related studies conducted in different parts of the country by researchers between the years 2013 and 2023. This comprehensive review emphasizes the major nutritional challenges like undernutrition in the

form of underweight, stunting, wasting, different national deficiency among tribal children. The review contributes to the existing literature by synthesizing data from multiple studies and provides valuable insights for policymakers and healthcare professionals working towards improving the health outcomes of tribal children in India.

Keywords:

Children, Tribal Communities, Nutritional Challenges





A Review on Bad Food Combinations as per Siddha System of Medicine

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Abstract:

Introduction: Siddha is a form of holistic medicine that is focused on promoting balance between your body and mind. According to this ancient school of medicine, five elements make up the universe – Kaatru (air), Neer (water), Aahaayam (space), Thee (fire), and Mann (earth). These elements are believed to form three different kutram, which are defined as types of energy that circulate within your body. Each kutram is responsible for specific physiological functions. Lifestyle-related disorders occur only because the individual is not using or adopting a way of life, according to the self-constitution of the body.

Aim and Objective:

- This study analyse the fundamentals of food, food customs, eating styles, and bad food combinations said in siddha literatures.
- Bad food combinations (mismatch of suvai, gunam, veeriyam) may lead to disturbance of agni, poor digestion, vitiation of kuttrams, and channels obstruction. This does not allow you to gain adequate nourishment.

Methods: To collect the various bad food combinations as per siddha literatures and scientific reason behind that. It is interesting to note that Siddha classics have emphasized the role of faulty lifestyle and inappropriate dietary habits in the causation and pathogenesis of diseases.

Result and Discussion: The Siddha diet is an eating pattern that has been around for thousands of years. Unlike many other diets, the Siddha diet provides personalized recommendations about which foods to eat and avoid based on your body type. As our future researches move along with scientific reasons for these, it is expected that research towards.

Keywords:

Siddha, Vatham, Pitham, Kabam



Superior, Nutrient-Dense Germinated Quinoa Varieties: Formulation of Nutrient rich *Chikki* for Nourishing Future of Celiac-Children

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Abstract:

The study aimed to identify superior varieties of germinated quinoa for developing nutrient-dense *chikki* and assess its impact on the nutritional status of celiac children aged 7 to 12 years. Ten quinoa varieties were analyzed for nutritional, anti-nutritional and antioxidant potential parameters by using Nutrient Quality Score (NQS) based on 11 desirable nutrients and one anti-nutritional factor. *Chikki* was prepared with three highly acceptable germinated quinoa varieties in different ratio using different cooking methods. The highly acceptable formulated *chikki* was further supplemented to the sixty celiac children for the period of 3 months. The data pertaining to childrens' nutrition status, dietary pattern, biochemical and anthropometric parameters before and after intervention validated the efficacy of supplemented quinoa *chikki*. NQS identified three highly nutritional dense

quinoa varieties (EC 507741, EC 507743, EC 507744). Then *chikki* was prepared with the best varieties & found the best combination, consisting of 60% jaggery with 40% dry-roasted germinated quinoa, that was further used for supplementation. The supplemented *chikki* was rich in protein, fiber, minerals & a good source of essential amino acids. Further supplementation of *chikki*, along with nutritional counseling to sixty celiac children for three months, showed significant improvement in anthropometric & biochemical parameters and overall of nutritional status of the respondents. Overall, the findings of this research contribute to the selection of an appropriate quinoa variety and cooking method for the production of *chikki* and study its efficacy through supplementation to enhance overall nutritional status of celiac children .

Keywords:

Germinated quinoa, Nutrient Quality Score, Nutrient-dense *chikki*, Supplementation, Celiac children





Looking Back to Explore the Concept of Balanced Diet

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Abstract:

Diet occupies a valuable role in maintenance of health, keeping the longevity and work ability. It is important and unavoidable not only for the human beings but also for all living objects. Human, animal and plant use nutrient from the surroundings in different forms. Human beings, being the most civilized and wise living organism, collect the ingredients from their surroundings, makes palatable and digestible as per their need by following modifying processes according to their need and knowledge on the techniques. Cooking, frying, combining, adding spices and oils are some of such procedures followed commonly.

Diet provides energy and nutrition, enhances growth and keeps the individual healthy and active. To get all expected benefits of diet it should contain Carbohydrate, Protein, Fat, Vitamins, Minerals and water in appropriate quantity. Excess or less of any one of them can cause disease. Hence, now-a-days creating awareness on "Balanced diet" is being considered as a mission by the different authorities.

Ayurveda, the science of life existing since thousands of years before Christ, is also not lagging behind in this field. Considering diet (ahara) as one of the tri upastambha, panchabhoutika, satrasa are the important markable concepts of Ayurvedic scholars. "SARBARASABHYASA" is an interesting concept of Ayurvedic scholars on diet which needs discussion, understanding and explanation.

Keywords:

Balanced Diet, Diet, Human beings, ahara, SARBARASABHYASA



Antimicrobial Resistance Awareness among Youth in India: A Brief Report

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Abstract:

Food pathogens is one of the major contributors to cause Antimicrobial Resistance (AMR). AMR is a serious public health issue that threatens to topple contemporary healthcare. It is crucial to generate awareness among various stakeholders about the menace of increasing AMR and also taking an initiative to mitigate and eradicate this problem in a multi-dimensional approach. With this objective we have conducted an online survey wherein 500 people voluntarily participated after giving due consent. It was found that 81% respondents were aware about the term antibiotic resistance and almost 75% people knew about its cause and adverse effects on human health; whereas less than 50% people knew the terms AMR and superbugs. Only 66% of the participants believed that the same antibiotics should not be used later for other illnesses. Lastly, more than 27% of the people believed that antibiotics could be taken to treat viral diseases.

The public needs to be educated not only about the proper use of antibiotics and antimicrobial agents but also about the other causes of AMR including the handling and usage of food materials.

We have attempted to study the awareness about AMR amongst the Indian youth. This will help in better understanding of their current knowledge and in better design of strategies against the global threat of AMR.

Keywords:

Food Pathogens, Antimicrobial Resistance (AMR)





Black Rice: An Underrated Super Food

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Abstract:

In recent years, 'superfoods' have gained prominence as a potential solution to the diet-environment-health triad. Black rice (*Oryza sativa* L.), also known as forbidden rice, purple rice, heaven rice, king's rice, is one of the world's underrated superfoods because 95% of rice is grown in Asia and white or brown rice is consumed the majority of the time, whereas black rice is consumed by a very small portion of people in Asia on special occasions. There are various forms of black rice consumed all over the world, but in Manipur, India, it is known as chak-hao. However, black rice is becoming increasingly famous as a superfood or functional food due to its high nutritious value and healing properties. Anthocyanin, a water soluble flavonoid, is responsible for black rice's dark purple color and contains revolutionary cancer-preventive compounds similar to those found in blueberries and blackberries. Black rice contains more minerals, protein, and vitamins, antioxidants, and dietary fiber than white rice. It is high in minerals including iron, zinc, calcium, phosphorus, and selenium as well as phenols, gamma-oryzanol, tocopherols, tocotrienols, and phytosterols. It lowers the risk of diabetes, heart attacks, allergies, inflammation, obesity, and cancer, improves digestion, and has antioxidant properties. Several goods have been developed, including noodles, pasta, wine, vinegar, beer, milk chocolate, mayonnaise, and bread, but they have not gained widespread popularity. Having said that, there are some impediments to its growing popularity, such as poorer production and higher prices, and so on. However, given the benefits, we must raise global knowledge

and more research needs to be done in order to enhance consumption and production habits.

Keywords:

Antioxidative, Black rice, Phytochemicals, Flavonoids



Physicochemical Analysis of Dehydrated Foxtail Millet Milk Powder

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Abstract:

India being the primary producer of millet, has less millet-based products available in the market. Their properties make them highly suitable for being use in food-industry and development of value-added food products. Therefore, this study utilizes millet milk powder and the physicochemical properties of the powder was evaluated. Foxtail millet was soaked for 8 hours in water (1:3 w/v) and foxtail millet milk was obtained. It was dried overnight in hot air oven at 50°C and made into fine dehydrated foxtail millet powder (DFMP). In this study, various physicochemical properties such as total protein, total fat, pH etc. have been analyzed according to AOAC methods. An average of 7g of DFMP was obtained from 100 g of whole foxtail millet. The parameters analyzed are pH (6.24), bulk density (0.5 g/m³), protein content (7%), carbohydrate (55g/100g) particle size was 125 μm and moisture content was 5.8%. This DFMP can be stored for a long time in an air-tight condition and can later be used for different purposes. Like incorporating it into drinks or to other food products to fortify them. It can be used by the food industries for enriching their products.

Keywords:

Foxtail millet, Millet milk, DFMP, Production, Physicochemical properties





Body Mass Index in Relation with the Life Style Habits of Dyslipidemic Subjects

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Abstract:

Over last few decades, epidemiology of dyslipidemia has altered immensely and perilously by taking the ascendance with number of countries being advanced from the rank of pandemic disease to the rank of high mortality rates. This upsurge of mortality risk factor in several years has caused the global burden, predominantly due to impeded body mass index. This impeded body mass index is likely to be correlated with several environmental and life style risk factors among dyslipidemic population. Analyzing the high prevalence of impaired body mass index which is correlated with environmental risk factors, a randomized controlled trial was designed to assess the significant association between body mass index (underweight, normal and obese) and lifestyle habits (smoking, alcohol intake, physical inactivity, screen timing and sleep duration, intake of convenience food, fried food and balanced diet) of dyslipidemic subjects. This pilot project was executed among 116 dyslipidemic males and female of age 18-50 years. Data of dyslipidemic subjects was collected using questionnaire cum interview method where information related to body mass index and life style habits were recorded. Statistical analysis was performed using SPSS software to determine the significant association. Results of the study highlighted that the anthropometric parameters like height, weight and BMI were not found to be statistically different. Dietary habits like intake of convenience food, fried food at 95% confidence interval and balanced diet intake at 99% confidence interval were found to be statistically significant where P was <0.05 and P<0.01

respectively, whereas other traditional life style habits like smoking, alcohol intake, physical inactivity, screen timing and sleep duration were non significantly related to body mass index of dyslipidemic subjects at $P < 0.05$. Thus, this study concludes by stating that the traditional lifestyle habits were not significantly linked with the body mass index whereas dietary habits like intake of convenience food, fried food and adequate balanced diet intake were found to be significantly correlated with body mass index.

Keywords:

Dyslipidemia, Risk Factors, Body Mass Index, Smoking, Alcohol Intake, Sleep Duration, Dietary Habits



Ulunthankali the Forgotten Elixir-A Review

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Abstract:

Siddha system of medicine plays a special emphasis on diet and food habits. According to the quote “Unave marundhu, marundhe unavu” health and nutrition nourishes the mind, body and soul. Ulunthankali, a rustic, traditional dish prepared in Tamilnadu specially for women when they attend puberty. Increased caloric, protein, iron, calcium, zinc, folate, fat and oil needs have to be provided during this critical period of rapid growth. The traditional foods like ulundhu kali (Vigna mungo), gingelly oil, etc., are given at the time of puberty and after puberty to overcome the changes in their body. The goal of this review is to validate the nutritional value for the above mentioned foods and suggesting the essential needs of the traditional foods at the time of puberty. We conclude that traditional food habits like ulunthankali enhances uterine strength, bones and to strengthen the hips. It also improves digestion, protects heart, boosts energy, improves bone health, strengthens nervous system, good for skin and hair.

Keywords:

Siddha System, Unave marundhu, marundhe unavu, Ulunthankali





Beyond the Brain: The Contribution of Gut Dysbiosis to Premenstrual Dysphoric Disorder

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Abstract:

Introduction: Studies highlight the complex connection between the gut microbiome and the brain, which is known as the gut-brain axis. Disruptions in the delicate balance within the gut environment might be linked to the development of mental health conditions.

Objective: This review aimed to summarize current evidence on the potential role of the gut microbiome in PMDD and explore microbiome-targeted interventions.

Methodology: The methodology involved searching through a vast amount of existing research, like studies published in Medline (PubMed), Scopus, and Google Scholar; spanning several years to include relevant papers from the past decade to capture the latest information. Key terms like "gut bacteria," "mind-gut connection," "severe premenstrual symptoms," "unbalanced gut flora," "live beneficial bacteria" and "food for gut bacteria," were used to explore every angle of the topic.

Results: Alterations in microbial composition and diversity as well as increased intestinal permeability have been observed in women with PMDD. The potential mechanisms that are linked to worsen the mood symptoms linking to dysbiosis include reduced neurotransmitter synthesis, neuroinflammation, and hormone-microbiome interactions. Preliminary research indicates microbiome-modulating therapies like probiotics, prebiotics, and diet changes may improve PMDD symptoms.

Conclusion: Further study of microbial contributions to PMDD is justified. Aiming for more research on dysbiotic gut-brain axis shows a promising development in complementary microbiome-based treatments for PMDD.

Keywords:

Gut Microbiome, Gut-Brain Axis, Premenstrual Dysphoric Disorder, Dysbiosis, Probiotics, Prebiotics, Diet



Storage Stability of Naughtat Developed from Dragon Fruit by Co-pigmenting Rhododendron Anthocyanin Pigment

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Abstract:

Fruit pulps, being highly nutritious but perishable, often result in waste due to inadequate storage. This research aimed to maximize utilization of dragon fruit cultivars into confectionery item; “Naughtat” incorporating with rhododendron flower extract to extends their shelf life. The proximate composition and mineral profile of raw materials were assessed following Association of Official Agricultural Chemists (AOAC) methods. Among sixteen formulations, the best ratio (WDF:RDF:RF; 56:40:4) Naughtat was significantly accepted ($p \leq 0.05$ level) by a 25 descriptive panel. The accepted Naughtat underwent further analysis for storage and color stability analysis with different packaging materials (aluminium foil and butter paper) at ambient and refrigerated temperatures for 60 days. Physico-chemical parameters, microbial study, overall acceptability, and color stability using the Hunter scale (L^* , a^* , b^*) were assessed. The data reported in recent study, Rhododendron flower powder had significant high fiber, protein and mineral content. During storage study TSS, titratable acidity, fat, reducing sugars, non-reducing sugars, total sugars, and browning index were significantly increased, while pH, color measurements, and organoleptic quality decreased with time. Microbial growth in Naughtat packed with aluminium foil remained within limits for 60 days under refrigeration condition. Therefore, the inclusion of anthocyanin extract in fruit candies transforms the landscape of empty-calorie

sweets, infusing them with nutritional and therapeutic benefits and elevating them to value-added candies, that is a great calorie replacement which therapeutically aid in boosting the health and fitness of consumers.

Keywords:

Storage stability, Colour stability, Naughtat, Anthocyanin, Temperature





Nourishing Resilience: Nutritional Strategies for Stress Management

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Abstract:

Stress has permeated the lives of individuals across all age groups and backgrounds, from children to senior citizens. Its pervasive presence has taken a toll on the health and wellness of a significant portion of the population. However, nutrition can be a powerful tool that can aid in stress reduction and foster positive emotions, happiness, and overall well-being.

In the present study, a Google Form with basic health-related information, including age, BMI, weight, food habits, sleep quality, and stress levels, along with factors such as anxiety, mood swings, depression, & sadness, was distributed among individuals of diverse age groups, professions, health conditions, & gender. 3 distinct scenarios were considered for case study: those experiencing extremely stressful situations, individuals with unhealthy lifestyles and eating habits, and a control group.

Over a period of 5 months, participants received counselling sessions every 2 weeks along with personalized diet plans focusing on nutrient -rich foods which stimulate release hormones and neurotransmitters like endorphins, serotonin, & dopamine. Behavioral modifications were implemented in these sessions, along with interviews with their close associates to gauge changes in mood and emotions.

The study's findings revealed a significant correlation between nutrition, balanced diet, & stress reduction. Alongside dietary interventions, lifestyle changes such as yoga & stress management techniques were also found to be effective in mitigating stress levels and improving overall well-being.

Keywords:

Nourishing Resilience, Stress Management



The Need for Nutrition Literacy Beyond Ages

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Abstract:

Background: WHO indicates that one of the modifiable factors linked with chronic disease is the consumption of food. The major risks of developing overweight and obesity, type 2 diabetes mellitus (T2DM) and metabolic syndrome are pointing to the high-risk behaviour of unhealthy eating. Hence, modifying dietary behaviour is essential to prevent or delay the development of chronic disease. Here comes the importance of "Nutrition Literacy". Nutrition literacy is defined as the degree to which individuals can obtain, process, and understand nutrition information and skills needed to make appropriate nutrition decisions. Hence, the present study has been taken up to review the purpose of understanding the role of Nutrition Literacy among different age groups.

Materials and Methods: We performed literature searches using keywords: (1) Nutrition Literacy, (2) Diet pattern (3) non-communicable diseases, (4) Nutrients. We searched major bibliographic databases such as the Web of Science, PubMed, ScienceDirect etc.

Results: Studies pointed out that individuals with high nutrition literacy are believed to choose healthier foods and consume fewer calories and vice versa. Also, they would appropriately read food labels. Factors such as gender, educational level, self-efficacy, healthy lifestyles, family and social networks, living environment, and policies were found to influence nutritional literacy. Also, it is essential to enhance the old adults' critical and interactive nutrition literacy.

Conclusion: Very limited research studies are published from developing countries about nutrition literacy and health outcomes. Therefore, more research is warranted to evaluate the proficiency and implementation of good nutritional practices.

Keywords:

Nutrition Literacy, Diet pattern, non-communicable diseases, Nutrients





Phytonutrients: Natural Defense of Human Health

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Abstract:

Plant-based foods contain a variety of nutrients (carbohydrates, proteins, lipids etc.) that can meet almost all our nutritional needs. In addition, there are rich biologically active ingredients in plant-based foods known as “phytonutrients” which have many benefits to human health; these include polyphenols, flavonoids, carotenoids, limonoids, Phytosterols and anthocyanins among others. These active ingredients have special activities affecting human health, such as anti-allergy, anti-diabetes, anti-aging, hypolipidemic and anti-inflammatory. Phytonutrients play a major role in the body by maintaining and modulating immune function to prevent specific diseases. Being natural products, they hold a great promise in clinical therapy as they possess no side effects that are usually associated with radiotherapy or chemotherapy. They are also comparatively cheap and significantly reduce health care costs. In recent years, several technologies related to the comprehensive utilization of phytonutrients in food have emerged. Consumers can use nutraceuticals as supplementation to a poor diet, to improve overall health, to delay the onset of age-related diseases, after illness, for stress, in pregnancy and slimming, to improve sports performance, and to treat symptoms (cold, cough, arthritis, etc.). These functional also called as medicinal foods contain phytonutrients or phytomedicines that play beneficial roles in maintaining well-being, enhancing health, and modulating immune function to prevent specific diseases. “Phytonutrients” and “Phytotherapy” is a more recent term that refers to a science of treatment using a group of natural substances that include certain herbs and their derivatives for use as dietary supplements and regulated as foods.

Keywords:

Phytonutrients, Plant-based foods, Phytotherapy



Effect of Coconut Milk and Cooking Time on Creatine Content in Beef Rendang and Relationship with Antioxidant Properties

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Abstract:

Beef rendang is a traditional meal served during Eid festivals in Malaysia and Indonesia. It is mainly made up of meat protein cooked in a gravy from coconut milk and spices in a prolonged cooking time of up to 4-5 hours. Despite the rich flavor and aroma, the heating process could cause oxidation reaction and chemical changes in the meat protein, therefore causing creatine degradation via a non-enzymatic process that is associated with the risks of cancer and adverse health effects. Therefore, this study aims to determine the effect of heating time and different

concentrations of coconut milk on creatine content in beef rendang and its relationship with antioxidant properties. Rendang samples were prepared in different percentages of coconut milk (0%, 50% and 100%) and cooked at 120°C from 0-4 hours. The samples were then subjected to antioxidant assay including total phenolic content (TPC), 2,2-diphenyl-1-picrylhydrazyl (DPPH) assay and Ferric reducing antioxidant power (FRAP), as well as creatine analysis via creatine assay method. The results showed significant differences ($p < 0.05$) of antioxidant properties and creatine content of beef rendang with different concentrations of coconut milk and cooking time. The reduction of creatine content from 0 to 4 h indicated that prolonged cooking time affects the antioxidant properties in beef rendang. This study will be valuable to food producers to improve food safety as well as consumers would have a better knowledge of the food safety concerns and health hazards.

Keywords:

Beef Rendang; Prolonged Heating; Coconut Milk; Creatine; Creatinine





Development of Business model for Multi-Nutritional Processed Products of Pearl Millet

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Abstract:

There is an increased demand for nutritive and convenient foods among the consumers worldwide. Millets are termed as “nutri-cereals” due to their excellent nutritional qualities as potential source of energy, protein, fibre, B-group vitamins and micronutrients such as iron, zinc, phosphorus, magnesium etc. Millets possess various functional and health benefits and are now processed into Ready-To-Cook (RTC) foods to meet the needs of modern consumers. India is leading country in pearl millet with highest average production of 8.61 million tones and productivity of 1243 kg/ha. Pearl millet was used to prepare health cookies, ready-to-cook flakes, chocolates and extruded products at CAZRI, tested from NABL certified laboratory and licenced by FSSAI registration no. 22220039002265. Nutritional value of cookies showed high energy (448-488 kcal), protein (7.8-8.5g), fat (16-22g), fibre (2.5g) and minerals 27mg/kg, phosphorus 1900 mg/kg, calcium 604 mg/kg. Pearl millet chocolate is developed with unique taste, multi-nutritional and has Pearl millet as core ingredient (21-23%). It is good source of protein (10.97g/100g), energy (485.33 kcal) PUFA (9.52), MUFA (12.48) as ω -6 and ω -9 fatty acids. Pearl millet extrudates are gluten free, Ready to eat, high energy, fibre and protein rich, crispy, low fat product liked by every age group. It has pearl millet as core ingredient (70%). Protein content in extrudates was (8.71-10.48), mineral content

(2.0-4.0 mg%) and calcium (134 to 192 mg %) respectively. Business model of the processed products was developed after careful consideration of techno-economic profile of each and every product for different category of entrepreneurs. All these technologies are useful for producing healthy and nutritious products of pearl millet and transferred to different food processing entrepreneurs to manufacture processed millet products.

Keywords:

Business model, Multi-nutritional Processed Products, Pearl Millet



Assessment of Physical Activity Level of College going Females Residing in Hostels

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Abstract:

Background: In the past few years there has been observed a significant reduction in the physical activity of college/university population globally. Lack of physical activity leads to decline in general health status of youth which is a critically challenging situation to individual and a cause of concern for the nation as well.

Aim: To assess the physical activity level of young girls residing in campus hostels of different college of Dehradun city, capital of state of Uttarakhand.

Method: For this study 500 female college students (18-24 years), residing in campus hostels, were selected from 10 different colleges of Dehradun city. The data collected about the time spent on each activity (sleeping, occupational and non- occupational) was used to compute physical activity level (PAL) values using physical activity ratio (PAR) given by ICMR, (2020) for different activities for adults. Depending upon the PAL value of the subjects, they were categorized as sedentary, moderate and heavy lifestyle (ICMR, 2020).

Results: It was observed that majority of the subjects (59.6%) were sedentary active, 40.4% were moderately active and none of the subject was under the category of heavy activity. From the result of this categorization, it can be inferred that all of the subjects were students spends most of their time sitting, studying and spending majority of their time in sedentary activities. Thus, it can be concluded that college girls have low physical activity which can lead to deterioration of general health condition in long run.

Keywords:

Physical Activity Level (PAL), Physical Activity Ratio (PAR), ICMR





Assessment of the Phytochemical and Nutritional Qualities of Mustard Microgreens at Different Phases of Growth

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Abstract:

Micronutrient deficiencies pose a significant worldwide health issue. An estimated global population exceeding 2 billion individuals suffer from a deficiency in essential vitamins and minerals. The majority of these individuals reside in low income countries and often suffer from several micronutrient deficiencies. Microgreens are edible young vegetables that are readily grown and have numerous potential health benefits. Mustard greens (*Brassica nigra*) are widely cultivated in India and thrive in the Indian climate. In this study mustard greens were cultivated and harvested at three distinct stages of growth: microgreen, babygreen, and mature green. A nutritional study was conducted, analysing both macro- and micronutrients, as well as phytochemicals. The anti-oxidant and anti-microbial functional qualities of mustard were also assessed. Microgreens have twice as much beta carotene, ascorbic acid, iron, calcium, and phosphorus than baby or adult greens. Quality phytochemical study indicated significant phenol and flavanoids in microgreens. Microgreens have stronger radical scavenging antioxidant properties than baby and adult greens. Being rich in minerals and phytochemicals, mustard microgreens may be regarded super food and utilised to fight malnutrition and promote health.

Keywords:

Microgreen, Phytochemical, Nutritional, Analysis



Comparison between Two methods of Physical Activity Assessment in Bengalee Young Adult Females and Its Effect on Indicators of T2DM

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Abstract:

Physical activity (PA) directly affects the health status of young adults and the effect of decline in PA is reflected in parameters of T2DM. The purpose of the present study was to compare the two methods of PA assessment and find out the association between PA and indicators of T2DM. 114 Bengalee Young Adult Females attending higher education institutions situated in and around Kolkata was included in the present study. General socio-demographic information was collected in a pre-designed schedule. PA was assessed by using International Physical Activity Questionnaire- Short Form (IPAQ-SF) and Physical Activity Level (PAL). Waist Circumference (cm) and Body Fat (%) was measured and Body Mass Index (kg.m^{-2}) and Waist to Height Ratio was computed as predictors of T2DM. It has been found that PA, assessed using IPAQ and PAL was statistically significantly correlated ($P < 0.05$). Mean BMI (kg.m^{-2}), WC (cm), WHtR and BF (%) of the participants were 23.71, 84.8, 0.53 and 30.12 respectively. Physical activity was inversely significantly associated with BF (%) in the present study.

Keywords:

Bengalee Young Adult Females, Physical activity (PA), T2DM



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Preparation of Black Berry Fruit Jam Enriched with Oats for Human Health and Diet

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Abstract:

The creation of blackberry jam was accomplished with the use of dates, oats, and apples, all of which have a wealth of health benefits. People are searching for a method that makes jams without any additional preservatives. Here, the jam was made entirely without the need for additional preservatives. Here, the jam was made entirely without the need for additional preservatives. In addition to preventing cancer and other cardio metabolic concerns, this may benefit many diabetics. Additionally, each of the remaining products has unique qualities of its own, such as pectin, fibre, minerals, vitamins, etc. Because there are no preservatives to extend the jam's shelf life, its short shelf life is due to external factors. Additionally, dates are one of the ingredients in the jam that give it its sweet flavour. Additionally, it keeps the jams appropriate sweet. To create reduced-calorie blackberry jam (by filling kind) with advantageous viscosity, moisture activity, and bioactive elements (anthocyanin, total polyphenol, and vitamin C), the jam's viscosity, water activity, and bioactive substances were evaluated and optimised. Since blackberries constituted the key component in the jam, a few additional nutrients can be found in each one hundred grams of the blackberry fruits. Carbohydrates (10.64), lipids (0.63), protein (0.2 gr), and energy (227 kcal). Additionally, apple and blackberries, which are high in C vitamins, may assist avoid cancer. Dates are high in micronutrients that support bone wellness, such as the metal copper, manganese, magnesium, and selenium. Oats are high in fibre, and this could help the jam have the

right consistency.

Keywords:

Black berry, Anthocyanin, Vitamin C, TSS, Cardio metabolic concerns



Assessment of Bacterial Contamination and Antibiotic Resistance in Fresh Produce Across Various Outlets in New Delhi: Challenges and Opportunities for Hygiene and Infection Control

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Abstract:

Presence of bacterial pathogens in fresh produce can

pose significant risks to public health by causing severe foodborne and enteric diseases. With this concern in mind, our study aimed to assess the contamination levels of specific bacterial species, *E. coli*, *Salmonella* spp., and *Staphylococcus aureus*, in various fresh produce items (pear, guava, apple, carrot, turnip, and cucumber) sourced from both local markets and retail outlets. Additionally, we investigated the antibiotic resistance of these bacterial species.

Our findings revealed the presence of *E. coli*, *Salmonella* spp., *S. aureus*, in samples obtained from both retail outlets and local markets. Pear exhibited the highest bacterial load compared to guava and apple among the tested fruits and carrots demonstrated the highest contamination compared to turnip and cucumber. Furthermore, it was observed that *E. coli* consistently showed the highest abundance amongst all bacterial species cultivated from the fresh produce of both local markets and retail outlets. Alarmingly, isolated bacterial species also displayed substantial resistance to commonly used broad-spectrum antibiotics, emphasizing the inherent health risks posed by bacterial pathogens present on raw fresh produce. This resistance underscores the potential threat to consumer health upon the consumption of such contaminated raw produce. We provide scientific evidence to prove that fresh produce may serve as a vehicle of foodborne exposure to antimicrobial-resistant bacteria. It's a global alarming situation, which needs immediate attentions and steps for control. Concerted efforts should be made to mitigate the resistant bacteria at all stages of the food chain, from production to consumption.

Keywords:

Bacterial Contamination, Antibiotic Resistance, Hygiene, Infection Control, *Staphylococcus aureus*





Vitamin D status and Prevalence of Hypertension among Young Adults of Lower Middle Income Group: A Future Health Concern

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Abstract:

Vitamin D in the human body is mainly derived from skin after ultraviolet light exposure and to less extent from dietary sources. Number of factors are reported by studies for causes of vitamin D deficiency among population. The reason behind growing interest about serum vitamin D status globally is, its biological effect relating to wide range of diseases. Hence, study of vitamin D status across different stages of urbanization particularly among lower middle income subjects is of present interest to know, whether urbanization and associated factors are influencing on vitamin D status, which may have expected to cause spike in metabolic diseases in future. With this background study was conducted involving a total of 72 subjects (Young adults) from rural (n=24), transition (n=24) and urban (n=24) localities of north transect across rapidly urbanizing Bangalore city. With university ethical clearance certificate subjects were selected with their consent to participate in the study. Blood samples were collected from young adults [men (n=72) and women (n=72)] and blood pressure was measured. Findings indicated that, vitamin D deficiency was more prevalent among urban residents (70.8%), compared to transition (58.4%) and rural (45.84%). However, 37.50 per cent of rural residents have vitamin D insufficiency. It was surprising to note that, in urban prevalence of hypertension

was 41.6 per cent, followed by transition (12.5%) and rural (12.5%). These findings focus on a new health concern that is vitamin D deficiency especially among lower middle income group and needs to be addressed to avoid future spike in metabolic diseases along with lifestyle modifications.

Keywords:

Vitamin D, Ultraviolet light exposure, Vitamin D deficiency

We acknowledge the financial support received from Department of Biotechnology, GOI for the project "Dietary diversification, nutritional status and lifestyle patterns among lower middle-class households in rural-urban interface of Bangalore (Phase-II), I-C04 381 (F)" as part of the Indo-German collaborative research project FOR-2432.



Application of Different Drying Techniques in Cauliflower Leaf Powder and to Estimate the Iron Nutrient Profile for better Utilization

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Abstract:

India is one of the countries which extensively produces cauliflowers in their states, Still, the population is deficient of micronutrients and causes serious health deficiencies. Cauliflower (*Brassica oleracea*) belongs to Brassicaceae family a Cruciferous seasonal vegetable, grows extensively, best available and consumed by all socio-economic group with reasonable price, but the most neglected part of cauliflower is the leaf, usually the leaf of the cauliflower is discarded as a waste and utilized for animal feed. The main objective of the present study is identifying the best method of drying technique of cauliflower leaf powder and to analyse its macronutrients and micronutrients. Cauliflower leaves were collected from local farmers and washed thoroughly with water and applied for different drying techniques which are sun, shade, roast, oven, cabinet drying to check the iron content. The results show high iron content is retained in roasted dry method with 30mg/g, and with leaf moisture content of 5.7% and good amount of vitamin C 400mg/100gms. The research concludes cauliflower leaves is a good source of iron, calcium and beta carotene, which improves the quality of life and prevent from anaemia, thus incorporation of value-added cauliflower leaves in food can prevent from deficiencies.

Keywords:

Cauliflower Leaves Powder, Cabinet Drying, Deficiencies





The Potential of Dadiah, a Local Yogurt, to Adress Insufficient Nutrient Intake among Pregnant women in West Sumatra

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Abstract:

The positive correlation between optimal supply of maternal nutrient supply during pregnancy and favorable birth outcomes is evident. Dadiah, swamp buffalo yogurt, known as a nutritious local food and potential probiotic source from West Sumatra, Indonesia. This research aims to assess the daily intake adequacy of pregnant women in West Sumatra and explore the potential of dadiah in meeting maternal caloric needs during pregnancy. The study involved evaluating the energy and macronutrient intakes of 208 pregnant women during pregnancy using repeated twenty-four-hour diet recall and comparing it with the Indonesian recommended daily allowance. Dadiah, sourced from Padang Panjang, provided 260kcal per cup. Mothers consumed one cup daily for six days a week during the last two trimester. The findings indicated that only 14.5%, 4.8%, 53.8%, and 38.9% of pregnant women had adequate energy, carbohydrate, protein, and fat intakes, respectively. Introducing dadiah significantly increased maternal daily intake ($p < 0.001$), and no adverse medical events occurred during this study. This research suggests that dadiah could serve as a beneficial maternal supplement during pregnancy to enhance birth outcomes. The trial is registered at clinicaltrials.gov under the identifier NCT05140928.

Keywords:

Dadiah, Intake, Supplement, Pregnant Women



Body Image Concern, Disordered Eating Attitude and Eating Behaviour among Indian Collegiate Female Athletes

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Abstract:

The study sought to assess the prevalence of body image concern and its role in disordered eating attitudes and eating behaviour of collegiate female athletes in India. The study participants include 118 college and university-level female athletes who play any sports within the Indian domain. A web-based survey was conducted to collect data. The findings revealed that 72.03% of female collegiate athletes have concern about their shape, with moderate concern by 28% and severe concern by 9.3% of the athletes. The prevalence exceeding the clinical cut-off score of body image concern is 39.8%. Regarding eating attitude, 27.1% of the collegiate athletes reported a disordered eating attitude and 39.8% reported risky eating behaviour. Further, body image concern was significantly associated with disordered eating attitudes; female athletes who had marked concern with shape were more likely to report food approach and food turning away behaviours. The regression analysis revealed that body shape concern moderately predicts emotional overeating, hunger, and food responsiveness behaviour. The study's findings signify the need for initiating proactive measures such as early diagnosis, intervention, and awareness programs at institutional and national levels to protect the lives of collegiate athletes.

Keywords:

Body Image Concern, Disordered Eating Attitude, Eating Behaviour, Collegiate Athletes





Developing Ragi-based Functional Food: An Innovative Nutrient-Dense Laddoos Incorporated Bioactive Ingredients for Elderly Consumption

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Abstract:

Finger millet or Ragi is a nutrient-rich indigenous climate-resilient crop with high calcium, proteins and antioxidants. Developing acceptable ragi-based nutrient-dense snacks can enable healthy aging. This study aimed to formulate and evaluate sensory and nutritional qualities of ragi laddoos prepared with different bioactive ingredients for elderly consumption. Three ragi laddoo variations were developed – with sugar, with sugar and fenugreek seed powder, with sugar-free and ginger powder. Sensory analysis was done on a 9-point hedonic scale along with nutritional profiling. The ragi laddoos with sugar-free and dry ginger powder received the highest score of 9 for appearance, color and flavor compared to 8 by other variations. These were also most nutrient-dense containing 0.79g moisture, 5.46g protein, 12.82g fat, 5.46g fiber, 1.4g ash and 434 kcal per 100g. Mineral content specifically calcium, phosphorus, potassium, sodium and magnesium were significantly higher. Innovative ragi laddoos made with dry ginger powder and sugar-free were superior in sensory appeal, nutritional composition and promoted ragi's utility for geriatrics and all.

Keywords:

Finger Millet, Climate-Resilient Crop, Healthy Aging, Nutrient Dense, Bio-Active Ingredients

