13 EMBEDDING OF PROVEN NATURAL ANTIVIRAL COMPONENTS IN ACTIVE FOOD PACKAGING FILMS DEVELOPED FROM BANANA PEELS

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Background and Objectives Today mankind is confronting a novel corona virus pandemic which has an oral–faecal route of contamination in which food serves as a potential carrier. Wrapping of food products in food packaging films embedded with clove oil can help the packaged food to fight against corona virus in its active form as antiviral properties of clove oil has already proven against COVID-19 virus.

Methods This study was conducted in Gujarat, India, wherein a low cost active food packaging film was developed, in which clove oil was embedded in polysaccharides (extracted from banana peels) based film (at 0, 0.5, 1, 1.5, 2% w/w) by solvent casting method.

Results The findings showed that increasing the concentration of clove oil ($p<0.05$) decreased the percent moisture content, water vapour permeability and percent solubility with increase in opacity of film. Highest values of thickness and tensile strength were observed at 2% w/w concentration of clove oil whereas percent elongation was highest at 1.5% w/w concentration of clove oil. DPPH (2,2-diphenyl-1-picryl-hydrazyl-hydrate) radical scavenging method showed increase of antioxidant activity with 2% w/w concentration of clove oil at 90 minutes incubation. Shelf life of developed film was evaluated as 196 days when stored at room temperature (35 ± 1°C), incubator (30 ±1°C) and refrigerator temperature (7 ± 1°C) for regular physical and microbial assessment.

Conclusion This study concludes that clove oil as antiviral agent can be successfully embedded in polysaccharide matrix and active food packaging film developed.

14 NATIONAL NUTRITION SURVEY MAPPING EXERCISE TO EXPLORE THE ASSOCIATION BETWEEN VITAMIN D STATUS AND COVID-19

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Background High-risk groups for COVID-19, such as ethnic minorities, also experience the greatest risk for micronutrient deficiencies including Vitamin D. Vitamin D may positively impact COVID-19 prevention and treatment, however, further studies are needed to understand its role.

Objectives To guide further studies exploring Vitamin D and COVID-19, this study aimed to identify national nutrition surveys containing information regarding Vitamin D status, deficiency or supplementation intake.

Methods Systematic searches were performed on MedLine and an extraction template was used to collect information on surveys; country, year of data collection, Vitamin D indicators and access.

Results 27 national nutrition surveys were identified as collecting Vitamin D data across global countries; 8 were publicly available (open-access), 9 required applications and raw-data was not accessible (N/A) for 10. *Table 1* displays survey information, including the Vitamin D indicators used. Surveys

Abstract 14 Table 1 National nutrition surveys collecting vitamin D data

Country	Nutrition Survey	Vitamin D Indicator	Access
Europe			
UK	PHE National Diet & Nutrition Survey (NDNS) [2008–19]	Serum 25-OHD concentration Supplement intake	Open
France	French national dietary survey (INCA1, INCA2, INCA3) [1998–2017]	Serum 25-OHD concentration Supplement intake	Open
Finland	The Finnish National Dietary Survey in Adults and Elderly (FinDiet 2017)	Serum 25-OHD concentration Estimated intake (microgram)	Application
Germany	Nationale Verzehrsstudie II:	Estimated intake (microgram) Supplement usage	Application
Israel	Mabat First Israeli National Health and Nutrition Survey	Estimated intake (microgram)	Application
Netherlands	Dutch National Food Consumption Survey	Supplement usage	Application
Belgium	Belgium Health Examination survey (BELHES)	Estimated intake (microgram)	Application
Austria	Austrian Nutrition Report (OSES) [2017]	Serum 25-OHD concentration	N/A
Denmark	National Survey of Dietary Habits and Physical Activity (DANSDA)	Serum 25-OHD concentration Supplement intake	N/A
Spain	National Food Survey in the adult population, the elderly and pregnant women. (ENALIA) [2012–15]	Supplement usage	N/A
Italy	Italian National Food Consumption Survey (INRAN-SCAI) [2005–06]	Estimated intake (microgram)	N/A
Greece	The Greek National Survey on Health and Nutrition (the HYDRIA Project)	Serum 25-OHD concentration	N/A
Greenland	Inuit Health in Transition Greenland survey 2005–2010	Serum 25-OHD concentration	N/A
Nordic Countries	Nordic dietary surveys: Study designs, methods, results and use in food-based risk assessments	Serum 25-OHD concentration Estimated intake (microgram)	N/A
North America			
USA	CDC National Health and Nutrition Examination Survey (NHANES) [1999–2018]	Estimated intake (microgram) Supplementation usage	Open
Canada	CRDCN Canadian Community Health Survey (CCHS) [2004–15]	Estimated intake	Open
South America			
Brazil	IBGE Consumer Expenditure Survey [2002–18]	Estimated intake (microgram)	Open
Chile	National Health Survey [2009–17]	Estimated intake (microgram)	Open
Argentina	National Nutrition and Health Survey (ENNyS) [2004–19]	Estimated intake (microgram) Supplementation usage	N/A

Asia			
South Korea	Korea National Health and Nutrition Examination Survey (KNHANES) [2019]	Serum 25-OHD concentration	Application
Taiwan	Taiwan; Nutrition and Health Survey in Taiwan (NAHSIT)	Estimated intake (microgram) Supplementation usage	Application
China	China Health and Nutrition Survey (CHNS)	Estimated intake (microgram)	Application
Japan	National Health & Nutrition Survey [1994–2020]	Estimated intake (microgram)	Application
Philippines	FNRI National Nutrition Survey [2019]	Serum 25-OHD concentration Estimated intake (microgram)	N/A
India	National Nutritional Survey [2016–18]	Serum 25-OHD concentration	N/A
Africa			
*Vitamin D data was not collected/reported in national nutrition surveys from South Africa (SANHANES), Kenya (KNMS), Nigeria (NNHS), Ghana (GMS), Ethiopia (NBS), Uganda (DHS/NS) & Tanzania (TNNS).			
Oceania			
Australia	Australian Health Survey- Biomedical results for Nutrients [2011–12]	Serum 25-OHD concentration	Open
New Zealand	Vitamin D Status of New Zealand Adults (from New Zealand Adult Nutrition Survey) [2008–09]	Serum 25-OHD concentration	Open

* 25-OHD: 25-hydroxyvitamin D concentration (nmol/L). N/A – raw data not accessible

recorded either serum 25-hydroxyvitamin D (25-OHD) concentration (nmol/L) or estimated Vitamin D intake from interviews/food diaries.

Additionally, Vitamin D data was rarely collected in low-income countries such as Africa. Data mapping has outlined disease reporting standards in countries and has emphasised the systematic differences between healthcare systems.

Conclusion Vitamin D data can be combined with COVID-19 incidence and mortality data, to explore the relationship between Vitamin D and COVID-19. Further research can explore inter-individual differences in Vitamin D requirements, optimal therapeutic doses required and how individual requirements can be determined. Findings will improve disease pathway understanding, support the generation of aetiological hypotheses and contribute to COVID-19 prevention and treatment. Substandard diagnosis and reporting in low-middle income countries underestimates disease rates, compared to high income countries. Studies investigating countries across income levels may therefore be affected by case-ascertainment bias, however also highlight where future resources should be directed to improve overall health and reduce inequalities, as well as reducing the burden of COVID-19.

15 DIETARY PATTERNS AND ITS ASSOCIATION WITH PERCEIVED STRESS DURING COVID-19 PANDEMIC SITUATION: A COMMUNITY-BASED STUDY AMONG BANGLADESHI ADULTS

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Background The world witnessed a dramatic disruption in our daily lives due to COVID-19 pandemic and Bangladesh is no exception. Such kind of public health crisis instigated by pandemics & its repercussion can elicit significant negative emotions, in line with stress, changed dietary patterns and weakened immune system. All these are inter-linked. As there were merely such studies in Bangladesh, this study aimed to find out association between dietary patterns and perceived stress level of urban adults during COVID-19 pandemic.

Objectives This study intended to find out the association between dietary patterns and perceived stress level among adults in Bangladesh as well as their dietary patterns and perceived stress level during COVID-19 pandemic.

Methods A Cross-sectional study was conducted among 300 adults (aged ≥18 years) of three urban communities in Dhaka city of Bangladesh from February 2021 to June 2021. A semi-structured questionnaire using purposive convenience sampling based on the Perceived Stress Scale (PSS) and minimum dietary diversity for individual adult, 24 hours recall by face to face interviews ensuring proper protective precautions. Measures included baseline and personal characteristics, perceived stress levels, dietary patterns. Data were analyzed by using latest SPSS software.

Results The results showed moderate level of perceived stress among majority of the population with approximate one-in ten (12.0%) and one-fourths (22.0%) of the respondents with a low and high level of stress, respectively. It also revealed the association of perceived stress level with several socio-demographic factors such as age group *($p<0.026$)*, employment status *($p<0.001$)*, monthly income *($p<0.044$)* and sleep quality *($p<0.001$)*. Significant association between dietary patterns (egg consumption) and perceived stress level ($p<0.036$) was identified which is distinguishable to reliance on availability & affordability of the source. Those having poor sleep quality were more likely to get stress and changed dietary patterns (AOR=2.147; 95% CI: 1.153–3.997; $p=0.00$).

Conclusions As higher stress level is associated with less healthy eating behavior and dietary patterns leading to poor nutritional status, proper evidential reasoning can go a long way to emphasize the concern. It will be a prolific initiative if policymakers merge nutrition-related public health interventions along with stress management programs through multi-sectoral collaboration.

16 NUTRITIONAL EVALUATION OF RECIPE POST ON INSTAGRAM SHARED BY DIETITIANS

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Background Nowadays, dietitians widely use social media tools such as Instagram in order to build their clientele as well as share healthy eating tips and recipes.

Objectives This study aimed to evaluate the nutritional content of recipes shared by dietitians on Instagram.

Methods Instagram accounts of Turkish dietitians who had a blue tick (known as the Instagram verified sticker) in their account and more than 100,000 followers were included. We determined the last 10 Instagram recipe posts of each dietitian and divided them into 7 categories according to their content: main dish, soup, healthy bakery products, breakfast, salads,