

Nutrition Economics: Advancing the Research Agenda,

Report of Workshop, held 20th September 2016

Introduction

'Nutrition Economics: Advancing the Research Agenda' was a one-day workshop held at the University of Surrey on 20th September 2016. The event was co-organised by Heather Gage, Professor of Health Economics and Director of the Surrey Health Economics Centre and Monique Raats, Professor of Public Health Nutrition and Director of the Food, Consumer Behaviour and Health Research Centre. There were 22 attendees from 4 different countries, including five speakers. Delegates came from a wide variety of backgrounds, including academia, industry and policy circles (NHS England and Public Health England)

The event was organised as part of the programme of work within the FP7 EU funded REDICLAIM project (<http://www.redicclaim.eu/>) that includes a work package on nutrition economic modelling.

The objective of the workshop was to bring together academics and policy makers from a range of disciplines and locations to explore the existing state of nutrition economic research and how the research agenda can be developed to address methodological challenges and inform public health policies.

Summary of Proceedings

Opening remarks: The delegates were welcomed to the workshop by Professor Raats.

Session 1. Professor Anne Magnus, Deakin University, Australia: Impact and cost effectiveness of a price discount intervention (with or without an in-store nutrition education intervention) on purchases of fruit, vegetables, water and diet soft drinks among remote Indigenous communities (Coauthors: Julie Brimblecombe, Marj Moodie, Linda Cobiac)

Professor Magnus joined by skype link from Deakin University. A pre-prepared presentation comprising powerpoint slides with commentary was shown. The presentation provided an overview of the method and results of a stepped wedge randomised trial involving 20 communities in remote Indigenous Australia with 8000 total population. The communities were randomised to either i) a 20% price discount on fruit, vegetables, water and diet soft-drinks; or ii) a combined price discount and in-store consumer education strategy. Weekly point-of-sale data were collected from each community store before, during, and for 24-weeks after the 24-week intervention period to measure impact on purchasing of discounted food and drinks. Data on physical, social and economic factors influencing weekly store sales were collected in order to identify important covariates. The results showed that the 20% price discount was associated with increases in purchases of fruit and vegetables of 13% (95% CI: 4%, 22%) and an increase of 20% (95% CI: 6%, 35%) post discount, an increase of 12g and 18g per capita per day respectively. Consumer education provided a small additional benefit for vegetable purchases only. Purchases of all other food and sodium intake tended to also increase. The trial-based assessment of the discount strategy could be regarded as cost-effective at the \$50,000 /DALY threshold, if approximately 4 DALYs are modelled from the multiple small dietary changes.

After the presentation, Professor Magnus answered questions from the audience.

Session 2: Professor Janne Martikainen, University of East Finland. Preferred approaches for quantifying the health and economic impacts of nutrition Interventions.

Professor Martikainen discussed the rationale for greater use of economic principles and evaluation in the formulation of nutrition policy. He introduced nutrition economics, a new branch of health economics, which sets out to assess the health and economic consequences of specific changes in daily nutrition and nutrition recommendations. He pointed out the current lack of a systematic approach for assessing these outcomes while taking into account specific features of nutrition, such as associations between the level of daily consumption and future health status. He explained that an international expert group, commissioned by the International Life Science Institute (ILSI) Europe is currently systematically reviewing published literature to establish the current methodologies used to estimate the impact of nutrition interventions on health, health-related quality of life, and costs. The work of the expert group is expected to lead to a better understanding, consensus and standardisation of models applied to quantify the health and economic impacts of different nutrition interventions. During the presentation, Professor Martikainen referred to interventions aiming to reduce daily salt intake will be used as an example to highlight the preliminary findings of the expert group.

Session 3: Dr Stephanie von Hinke, University of Bristol. Do consumers respond to nutritional labels? Evidence from a quasi-experiment. (Coauthor: Eleonora Fichera)

This paper presented findings from an econometric study of the impact of a large-scale UK policy that introduced Front-Of-Pack (FOP) nutrition labels on household spending as well as the nutritional composition of the food basket. Specifically the effects of the introduction of a 'Traffic Light System' and a 'Hybrid system' of nutrition labelling were compared. Kantar (scanner) data allowed an observation of a panel of households over time, and all products they purchase. Within-household changes in dietary choices for those shopping at retailers that introduced labelling were compared to within-household changes in dietary choices for those shopping elsewhere. Preliminary results were presented showing that the Traffic Light System did not affect household expenditure, nor did it affect the nutritional composition of the shopping basket. In contrast, however, the introduction of the hybrid system led to a reduction in spending on affected products (i.e. own-brand products within the seven food categories recommended for labelling by the FSA). Nevertheless, there was no clear indication of any change in healthiness of purchases, suggesting that households reduced their spending on 'treated' foods, but did not change the nutritional composition of the food group.

Session 4: Dr Wei Yang, University of Kent. The effectiveness and cost-effectiveness of plant sterol or stanol-enriched functional foods as a primary prevention strategy for people with cardiovascular disease risk in England: A modelling study. (Coauthors: Heather Gage, Daniel Jackson, Monique Raats)

A nested Markov model was described, taking the perspective of the British National Health Service (NHS), to appraise the effectiveness and cost-effectiveness of consumption of plant sterol-enriched margarine-type spreads for the prevention of cardiovascular disease (CVD) in people hypercholesterolemia in England, compared to a normal diet. Effectiveness outcomes were the 10-year CVD risk of for individuals with mild (4 to 6 mmol/l) and high (above 6mmol/l) cholesterol by gender and age groups (45-54, 55-64, 65-74, 75-85 years); CVD events avoided and QALY gains over 20 years. The results showed that daily consumption of enriched spread reduces CVD risks more for men and older age groups. Assuming 50% compliance, 69 CVD events per 10,000 men and 40 CVD events per 10,000 women would be saved over 20 years. If the NHS pays the excess cost of enriched spreads, for the high cholesterol group, the probability of enriched spreads being cost effective is 100% for men aged over 64 years and women aged 75 and above at £20,000 threshold. Probabilities of cost effectiveness are lower at younger ages and with mildly elevated cholesterol. If consumers bear the full cost of enriched spread, NHS savings arise from reduced CVD events.

Final session: Professor Raats chaired the final session which was a general discussion of lessons from the papers, guidance for the nutrition profession and indications for the direction that future research should take. Time was spent in the final session to specifically consider the need for and format of guidelines for modelling the health and economic impact of nutritional interventions in order to enable more widespread use of robust methods. This discussion was led by Dr Daniel Jackson, University of Surrey.

Event themes: Two linked themes were apparent throughout the workshop, namely the wide scope for evaluations of nutritional interventions and their relevance for public health policy making, and the particular problems that are faced by researchers in this area. Elements of the discussion in the final session relating to methodological considerations were taken forward as a basis for designing nutrition economic modelling guidelines.

Next steps: The papers by Magnus et al, von Hincke and Fichera, and Yang et al have been submitted to international peer reviewed academic journals. Martikainen's work on the science of nutrition economics is integral to the current agenda of the International Life Sciences Institute (Europe branch). The discussion in the final session has informed a paper that was discussed at the ILSI Workshop in Brussels, 6 – 7th April 2017, on 'Identifying Preferred Approaches for Quantifying the Health and Economic Impact of Modifying Nutrient Intakes'. The paper will be refined in the light of feedback and provided to the European Commission as a deliverable for the Redicclaim project.

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