Audiences Questions and Speakers answers

from the symposium Eating to protect our Health and our Planet. Held on Tuesday, June 2nd, 2020, during the annual conference Nutrition 2020.

QUESTIONS & INSIGHTS TO ALL

Insight: "*I believe that focusing nutrition education on food vendors on sustaining healthy feeding will be a big advantage in mitigating unhealthy eating since most people need time to prepare healthy meals and because of lack of time, they give in to public eating.*"

Answer from Jess Haines: I completely agree. Ensuring that the foods that are available for purchase are healthier is needed to support healthy eating among consumers. There is some evidence that policy changes, including school food policies and food labeling policy, can lead to changes that support increased availability of healthful foods. See:

- Jahn JL, Cohen JFW, Gorski-Findling MT, *et al.* Product reformulation and nutritional improvements after new competitive food standards in schools. *Public Health Nutr*. 2018;21(5):1011-1018. doi:10.1017/S1368980017003445

- Muth MK, Karns SA, Mancino L, Todd JE. How Much Can Product Reformulation Improve Diet Quality in Households with Children and Adolescents?. *Nutrients*. 2019;11(3):618. Published 2019 Mar 14. doi:10.3390/nu11030618

Insight: "*Also another note that how we produce our food is something worth advocating for too, as it cannot be sustained (food produced more sustainably = less environmental impact of subsequent food waste!). Working alongside Indigenous folks who have been working with the land for centuries are excellent allies to learning such practices. Carbon sequestration technologies are also extremely promising. Farmer's should receive incentives to sequester carbon! And to confirm yes a large majority of youth are terrified.*"

Answer from Jess Haines: Excellent points. I agree all of these approaches are needed. And thanks to you and others at Climate Strike Canada for serving as a strong voice for change!

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QUESTIONS & INSIGHTS TO ALL

Question: *"Could you tell about Importance of nutri-genetics with regards to these?"*

Answer from Pieter Van't Veer: The DEA model can basically be applied incorporate more individual level variables than the dietary choices. These could be dietary advices for diabetics or to improve; blood lipids. Biomarker values could be added (if available). The essential variable is risk of disease, which varies between people. Genetic variation is responsible for part of this. We know people have different nutrient requirements, partially because of acquired and of inherited susceptibility. First, however, I think we would need to test whether people would be willing and motivated to adapt their habits once we have formulated an individual level advice

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Insight: *"I don't think we need productivity gains. I think the narrative that continuous economic growth is necessary got us into this mess. It's clear we don't need more food, because we're wasting most of what we produce. We don't need productivity; we need to stop being so wasteful. This is a distribution issue, not a productivity issue."*

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PIETER VAN'T VEER – THE NETHERLANDS

Question: *"I would love to hear your ideas on practical applications of these models, especially DEA. How might we leverage such models in policy/public health to affect food behaviour at the population level? e.g., social marketing campaigns, to inform agricultural practices."*

Answer: The DEA model accounts for and provides diet alternatives within the range of what is actually observed, i.e. what is culturally acceptable within the population studied. Traditional Linear Programming (LP) or expert-based advice can come with solutions that are outside the range of acceptability. Simply said, LP can set theoretical targets, DEA helps to identify the best possible solutions within the context of a concrete population. The advantage as compared to other methods derives from the use of whole diets, rather than separate foods as the key input data. The translation to the public can follow several trajectories. It can go into sustainable FBDGs rather than just health FBDGs as a general advisory tool. Second it can be advanced to better individualized advice (using data-based algorithms) to identify the most likely dietary alternatives. Third, it can be used by companies to set their strategic agendas on food groups that are in line with their views on responsible marketing and innovation strategies. Finally, the model can be used to explore the fit of new foods into future diets (like meat-replacers or meat substitution by plant based alternatives), or evaluate how food reformulation (lower salt, sugar, saturated fats) and procurement (sourcing from 'fair' markets and low footprints) can make a difference.

Question: "*Really interesting presentation! I also have a question for Dr. van't Veer: I would like to know if there is a difference between age groups to accept changes in their eating culture, as to consume more nutritious and environmental friendly diets?*"

Answer: There will be surely difference in acceptance by age, gender, culture, up to individual level preferences. If we would apply the model to different age groups (what we haven't done yet) it takes the habits in each group as the starting point. So, for children and teenagers or elderly different diet patterns are used to start with. This reflects how the socio-cultural norms are (consciously and unconsciously) practiced by the people. The alternatives offered will be alternatives from this very same peer group. It fits in behavioral models to suppose that this will increase acceptability.

Question: "*Those diets do not affect the mass muscles ?*"

Answer: Fat free mass (muscles and organs) are dominated by the muscle mass. This is the key driver of resting metabolic rate and daily energy intake. For this reason, the model uses food intake expressed per amount of energy, just like nutrient densities. This way, the energy requirement and diet composition can be treated as separate entities, as is usually done in dietary advice.

Question: "*Why did you use the NRD15.3 diet score in the SHARP model and do you think this is comprehensive enough? For example Iodine (dairy is important source), Magnesium, Phosphorous, Vitamin B3 and B6 excluded in Nutrient Rich Diet (NRD) scores. PAN Diet score seems more comprehensive?*"

Answer: We used NRD15.3 as it has been well described. There are many alternative diet scores, but it is not "all inclusive" as you note. PANdiet would provide a nice alternative to address nutritional adequacy of the diet. This be closer to standards ways to evaluate nutritional adequacy in population surveys and could be easily implemented in the DEA model. The ideal would be to use an integrated measure of dietary quality into the model, i.e. one that accounts for both nutritional adequacy and NCD risk. More work is needed to e.g. use DALYs for specific food groups and risk of nutrient inadequacy to weigh the relative importance of various foods in providing dietary advice.

Question: *"Very interesting study thank you! In relation to environmental factors and diet - do you think factors on food packaging, land use, water use, fertilizer use, climate etc. are required before research can be considered comprehensive or what do you consider as the 'essential' factors?"*

Answer: That's a challenging question. As climate is a UN-agreed global target and data for GHGE are widely available, these are used in most analyses. However, many ecological issue are confronted with local challenges, e.g. water, nitrogen deposition (eutrophication) etc. That requires a much finer grid of LCA-data than currently available. So, there will be a trade off between local efficient food production (monocultures, dairy production) and local ecological issues versus less efficient production methods that keep the local carrying capacity of the earth into account and move the production burden to other places, even though the total (average) ecological burden would increase. Here vested interest and economic issues enter the equation. So what is essential? Most food system models look at the country or regional level and look at nutritional quality only superficially (commodity level). The DEA/SHARP model has a much finer grid of food intake and nutrient data, focusing on sustainability of individual diets; it would be needed to for the ecological variables to arrive at a much finer grid of solutions at the geographical/spatial level. GHGE is just the first step. Agriculture and international trade made us much less dependent on seasonal variation in food intake and helped to achieve nutritional health, at the expense of ecological issues and social issues. As proximity to food production is not essential for survival for most people, many people move to cities, where affordability of food is key. Thus nowadays trade, pricing, taxes, subsidies are key factors that determine socio-economic disparities in health and well-being. The food system challenge is not just a challenge to the life sciences, as a systems issue it is a societal issue with supply chain actors, public health actors and consumers involved.