HARVARD T.H. CHAN | SCHOOL OF PUBLIC HEALTH

NUTRI NEWS

The Department of Nutrition

January 2018

Visiting Scientist Publishes First-of-Its-Kind Breast Cancer Survivor Cookbook

Dr. Hazreen Abdul Majid, Visiting Fellow/Scientist in the Nutrition Department, is Editor of **The Breast Cancer Survivor Cookbook**. Published by the University of Malaya Press, this cookbook includes 64 pages of vibrant photographs and food information for survivors' favourite recipes. Majid, the lead investigator for dietary components in the Malaysian Breast Cancer Cohort Study, says that the idea of producing this recipe book was initiated in a workshop titled "Translating Research into Practice". He hopes that the idea of a recipe book with contributions from breast cancer survivors will inspire and motivate other survivors to maintain a healthy diet and lifestyle.

According to Majid, "Noticing that there are some unhealthy dietary patterns among the breast cancer patients from the current study, we strongly believe that by sharing the modified recipe book would enhance survivors' healthy eating habits. This recipe book is not solely applicable to breast cancer survivors; in fact, any individuals who are keen to learn new recipes can check out this collection of delicious food."

The cookbook begins with recipes for breakfast, then main course dishes and desserts, and also contains some healthy tips at the end. It also provides the nutritional breakdown for each dish; thus, it will help the users to understand more about the recipes and their nutrient content. The uniqueness of this book is the shared recipes by breast cancer survivors—and not just by diet experts. These recipes were modified so that the dishes can also be nutritious and tasty, and it is intended to benefit the breast cancer survivors, in particular, as well as the general public. A proportion of the profit will go to the UM Breast Cancer Survivor's Fund.

YANPING LI EXAMINES HEALTHY LIFESTYLES AND LIFE EXPECTANCIES

Dr. Yanping Li is a Research Scientist in the Department of Nutrition. Originally from China, she received her education in nutritional epidemiology. Dr Li is currently conducting the first large-scale study that analyzes a wide range of dietary, lifestyle and metabolic risk factors that may impact the prevalence of CVD and diabetes in China and is now comparing her results with US populations. Dr Li presented her recent findings at the Monday Nutrition Seminar on January 29, 2018 with her talk titled "Healthy Lifestyle and Life Expectancies".

NN: Yanping, could you please tell us a little bit about yourself, such as where you originally came from and your general academic background?

YL: I was born in the village of Hebei, China, which is four hours by train from Beijing. In 1990 I went to Tianjing Medical University for five years. During that period, I met my husband, **Jiantao Ma**, who was a classmate in Nutrition. I then enrolled in the Master's of Nutrition program in 1997 at the Chinese Academy of Preventive Medicine. (This institution was reorganized as the Chinese Center for Disease Control in 1998.) During 2004-2007, I entered a PhD program at Wageningen University in the Netherlands, focusing on "Childhood Obesity in China". I travelled a lot because the childhood obesity intervention project was located in 20 elementary schools in Beijing, and the PhD training programs was in Wageningen! I received my Ph.D in nutrition from Wageningen. Wageningen also bestowed a second gift to me: **Ryan Ma,** my son!

NN: What brought you to Harvard?

YL: My first visit to the Department of Nutrition was in the winter of 2000, when I did part of my Master's project at the Human Nutrition Research Center, Tufts University. In the fall of 2007, my PhD mentor, ***Prof. Frans Kok***, brought me back to Harvard, together with 40 other PhD candidates from Wageningen. Harvard was just one stop in our PhD tour program, and was where Prof. Kok recommended me to ***Prof. Frank Hu*** during that visit.

NN: How do you like our winters?

YL: During my first two years in Boston, I was quite scared of all of the winter snow. However, as time went on, I started to love winters here much more because the snow is so beautiful, and especially when I see the excited red face of my son in the snow. As Ryan said, "Winter was selected as the best season by the majority of [my] classmates".

NN: You have done some research on the fetal programming of chronic diseases in both Chinese and American populations. What were some of your findings?

YL: Fetal programming of chronic disease was my first project at Harvard. This research question was originally raised by Prof. Hu because the Chinese famine had lasted from the late 1950s to the early 1960s and had caused millions of unnecessary deaths. The famine was far more devastating in rural areas, and the most severe period with the highest mortality rate occurred between 1959 and 1961. To examine the effects of this famine, we used a cohort of people born in China between 1959-1961, and found consistent associations between fetal famine exposure and adulthood diabetes, hypertension, and metabolic syndrome. The effect of this prenatal exposure to the Chinese famine was further exaggerated by later exposure to the Western dietary pattern in middle-aged Chinese adults. As a follow-up to this research topic, we also examined the effects of fetal exposure to a natural disaster such as the Tangshan earthquake in July 1976, which had caused severe *in utero* stress. We found that prenatal exposure to earthquakes was associated with a 70% increased likelihood of developing hyperuricemia in adulthood. In the US cohorts (Nurses' Health Study and Health Professionals' Follow-up Study), we found that a simultaneous improvement in low birth weight and lifestyle factors in adulthood could further prevent additional cases of diabetes. We estimated that the attributable proportions of lower birth weight alone, adulthood unhealthy diet and lifestyle alone, and their interaction were 22%, 59% and 18%, respectively.

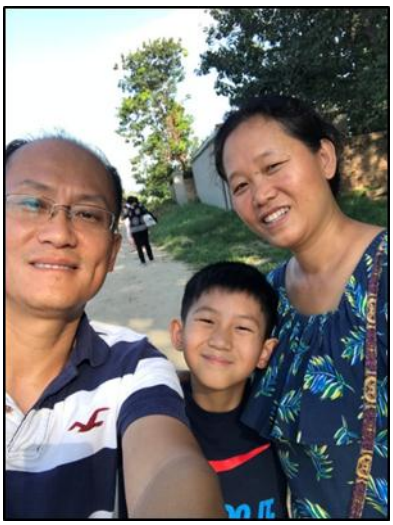
NN: I see that you have recently conducted the first large study that analyzed a wide range of dietary, lifestyle and metabolic risk factors that may impact the prevalence of CVD and diabetes in China, and that this has attracted considerable media attention. Could you please tell us a little bit about your study?

YL: The disease burden project was initiated for the Systematic Explanatory Analyses of Risk Factors Affecting Cardiovascular Health (SEARCH) project, which started in 2013 and sought to understand the most important determinants of health and how to improve health status globally. The project is focused on populations in Brazil, Mexico, India and China. As part of the SEARCH project, we evaluated the transition of lifestyles of the Chinese population from 1989 to 2011, based on the prospective cohorts from the China Nutrition and Health Surveys (CNHSs) and the related burden of CVD and type 2 diabetes in China with research grants supported by Swiss Re Foundation. This is the first large study to analyze a wide range of dietary, lifestyle, and metabolic risk factors that may be impacting the growing burdens of CVD and diabetes in China. Both papers had attracted widespread media attention in both the English and Chinese media.

NN: You will be our speaker for the January 29 Monday Nutrition Seminar in which you will discuss your new study of lifestyle and life expectancy with and without chronic disease. Would you like to give us a little preview of your work?

YL: Our life expectancy project was motivated by the question of how to narrow the gap in life expectancy between the US and other developed countries. Using data from the Nurses' Health Study and Health Professionals Follow-up study as well as data from the CDC and National Health and Nutrition Survey (NHANES), we found that adopting a healthy lifestyle could substantially reduce premature mortality and prolong life expectancy by 12-14 years in US adults. Persons who adhered to a low-risk lifestyle pattern could not only enjoy greater longevity but also have lower risk of developing cancer, cardiovascular diseases and type 2 diabetes. There is also a sizeable benefit for survival after onset of cancer, cardiovascular diseases or diabetes when people adopt a low-risk lifestyle.

NN: What have been your most touching moments at Harvard?



YL: My most touching moment at Harvard was the moment when a problem that stuck me for a long time was solved with the help from my colleagues here. I have been systematically trained in Nutrition Epidemiology, from Bachelor's to Master's to doctoral level. Nevertheless, it appears that the longer I work here, a more challenging task is waiting for me. I feel so lucky that it seems now that no task here is impossible because people here are so willing to help. For example, during one snowy afternoon this past month, ***Ellen Hertzmark*** explained the life expectancy methodology to me for hours and helped to write the programing code step-by-step. I have benefited so much from working closely with many faculty, students, and postdocs in the department.

MONDAY NUTRITION SEMINARS

The Department of Nutrition holds its weekly **Monday Nutrition Seminar Series** every Monday throughout the academic year. The talks are varied, but they highlight the many different aspects of cutting-edge research that is currently being conducted in the fields of nutrition and global public health. These seminars are held from **1:00-1:20 pm in Kresge 502** at the Harvard T.H. Chan School of Public Health. The seminars are free and open to the public.

The following speakers will discuss their work in February:

February 5 ***Dr. Ganmaa Davaasambuu***, Assistant Professor in the Department of Nutrition, *"Vitamin D for the prevention and treatment of respiratory infection"*

February 12 ***Dr. Mingyang Song***, Instructor in Medicine, HMS; Postdoctoral Fellow, Dept. of Nutrition, HSPH, *"Use of group-based trajectory modeling for weight change analysis and other etiologic and clinical applications"*

February 19 President's Day—**No Monday Nutrition Seminar**

February 26 ***Dr. Majken Jensen***, Assistant Professor of Nutrition, HSPH; Assistant Professor of Medicine, HMS, TBD

SAFE BICYCLE ENVIRONMENTS IN MEXICO

Recent research conducted in Mexico by Harvard T.H. Chan School of Public Health and a Mexican researcher has found that cycle tracks — physically separated bicycle-exclusive paths along roads — were associated with improved safety from crashes, lowered crime rates, and heightened economic development.

The article, "Bicycle Facilities that Address Safety, Crime, and Economic Development: Perceptions from Morelia, Mexico" was published in the *International Journal of Environmental Research and Public Health* in December 2017. ***Dr. Ines Alveano-Aguerrebere,*** Independent Researcher, of Mexico was first author, ***Dr. Anne Lusk***, Research Scientist in the Department of Nutrition, was senior author, and ***Dr. Maryam Farvid***, Research Scientist in the Department of Nutrition, was third author. Results showed that cycle tracks (barrier protected-bicycle exclusive paths) were associated with safety from crashes, lower crime, and higher economic development. The cycle tracks in Mexico, a developing nation, had to have higher solid barriers, unlike the low-tilted cobblestones in the Netherlands, because drivers would drive over a low demarcation and park. Thus, the research found that a built environment in a developed nation might not work the same in a developing nation that has different policies, practices, and policing.

To read more: https://www.hsph.harvard.edu/news/hsph-in-the-news/bicycle-preferences-mexico/

DR FRED TABUNG DISCOVERS THAT INFLAMMATION-CAUSING DIETS ARE ASSOCIATED WITH RISK OF COLORECTAL CANCER

A recent study published in the January issue of *JAMA Oncology* has found that a diet high in foods such as red meat, processed meat, refined grains and high-calorie beverages has the potential to cause inflammation, which in turn is associated with increased risk of developing colorectal cancer for women and men. This study is significant because colorectal cancer is a common cancer. Inflammation is believed to play a pivotal role in cancer development, and inflammation can be influenced by what people eat. Inflammation in the body is measured by certain inflammatory biomarkers; thus, diet is seen as a modifiable risk factor for preventing colorectal cancer.

The study, led by ***Fred K. Tabung,*** M.S.P.H., Ph.D., Research Associate in the Department of Nutrition, analyzed data from 121,050 male and female health care professionals who were followed for 26 years in two long-term prospective cohort studies – the Nurses' Health Study and the Health Professionals Follow-Up Study and who had completed food-frequency questionnaires about which kinds of foods they ate. The researchers developed scores based on 18 food groups characterized for their inflammatory potential which were calculated from participants' food questionnaires; the outcome was based on new cases of colorectal cancer diagnosed during a 26-year follow-up period. Tabung et al. found that **higher** scores reflecting higher potential of the diet to cause inflammation, were associated with a higher risk of developing colorectal cancer in men and women; the risk appeared to be higher among overweight or obese men and lean women and among men and women not consuming alcohol.

According to Tabung, "There are several stimulators of chronic inflammation, and diet is one of those factors that can constantly stimulate the body toward a more chronic inflammatory state." The researchers found that those who ate the most pro-inflammatory diet had a 32% greater risk of developing colorectal cancer than those whose diet contained the lowest amounts of inflammation-causing foods. For example, a recent WHO report found that eating processing meats such as bacon, hot dogs and lunch meats, may increase a person's risk of colorectal cancer. Tabung goes a step further and suggests that the inflammation-promoting properties of these foods may be a key factor in this.

Why is this study so important? For one thing, there are two types of inflammation: Helpful inflammation, such as when your body's immune system responds to a foreign invader and your skin heats up to fight off bacteria. Then there is the harmful, or chronic inflammation, which hampers the body's ability to fight off viruses and diseases because it has gone into "overdrive". This can be measured by a certain blood marker called C-reactive protein (CRP), which has been associated with various chronic illnesses such as CVD, arthritis, and cancer. Higher levels of CRP are usually found in people who are inactive, obese, or eat an unhealthy diet. The study's authors found a link between people who ate the most pro-inflammatory diets and increased risk of colorectal cancer. Men eating the most inflammatory diets had a 44 percent higher risk of developing cancer relative to men eating the least inflammatory diets. For women, the relative risk increase — 22 percent — was smaller but still significant.

"The study shows us one potential mechanism through which diet influences cancer risk," said Tabung, who added that more dietary intervention studies are needed to confirm and explore this link. There are many ways to control chronic inflammation. A good amount of exercise, weight management, and medications can all help — as can diet. The idea behind anti-inflammatory diets is that they focus on foods that reduce harmful inflammation in the body, promote healing, and stave off illnesses like cancer and diabetes. The diets that were the most inflammation-promoting tended to include lots of processed meat, red meat, organ meat, sugary beverages, and refined grains. They were also lower in wine, tea, coffee, and vegetable intake. Conversely, anti-inflammatory diets were higher in vegetable, coffee, tea, and wine intake, and lower in sugary beverages and red and processed meat intake.

To read more, read the* Vox *article: Why certain diets may increase your cancer risk

RECIPE CORNER

Spiced Lentil Soup

(by Meghan O'Donnell, Associate Director of Finance)

Ingredients:

- 1 1/2 tablespoons extra-virgin olive oil
- 2 cups (280 grams) diced onion (1 medium/large)
- 2 large garlic cloves, minced
- 2 teaspoons ground turmeric
- 1 1/2 teaspoons ground cumin
- 1/2 teaspoon cinnamon
- 1/4 teaspoon ground cardamom
- 1 (15-ounce/398 mL) can diced tomatoes, with juices

- 1 (15-ounce/398 mL) can full-fat coconut milk*
- 3/4 cup (140 grams) uncooked red lentils, rinsed and drained
- 3 1/2 cups (875 mL) low-sodium vegetable broth
- 1/2 teaspoon fine sea salt, or to taste
- Freshly ground black pepper, to taste
- Red pepper flakes or cayenne pepper, to taste (for a kick of heat!)
- 1 (5-ounce/140-gram) package baby spinach
- 2 teaspoons fresh lime juice, or more to taste

Directions:

1. In a large pot, add the oil, onion, and garlic. Add a pinch of salt, stir, and sauté over medium heat for 4 to 5 minutes until the onion softens.
2. Stir in the turmeric, cumin, cinnamon, and cardamom until combined. Continue cooking for about 1 minute, until fragrant.
3. Add the diced tomatoes (with juices), entire can of coconut milk, red lentils, broth, salt, and plenty of pepper. Add red pepper flakes or cayenne, if desired, to taste. Stir to combine. Increase heat to high and bring to a low boil.
4. Once it boils, reduce the heat to medium-high, and simmer, uncovered, for about 18 to 22 minutes, until the lentils are fluffy and tender.
5. Turn off the heat and stir in the spinach until wilted. Add the lime juice to taste. Taste and add more salt and pepper, if desired. Ladle into bowls and serve with toasted bread and lime wedges.

Photo and recipe from: *http://ohsheglows.com/2016/04/03/glowing-spiced-lentil-soup/*

NUTRITION IN THE NEWS

Dr. Feiby Nassan Tawadros, Research Fellow, received the Society of Male Reproduction and Urology travel award at the American Society of Reproductive Medicine in San Antonio, TX, October 28-November 1, 2017. Dr Nassan received this award for an abstract entitled "**RESIDENTIAL DISTANCE TO MAJOR ROADWAYS AND SEMEN QUALITY AMONG MEN ATTENDING A FERTILITY CLINIC",** by **Feiby L. Nassan, Audrey J. Gaskins**, Cigdem Tanrikut, Russ Hauser, **Jorge E. Chavarro** . *(Dr. Chavarro* is Dr. Nassan's supporting mentor.)

Marta Guasch-Ferre, PhD, Research Associate, has recently been awarded with a 3-year grant from the American Diabetes Association for her project entitled: 'Mechanisms underlying metabolomics and type 2 diabetes in the context of dietary interventions' (mentored by **Dr Frank Hu**).

Dr. Guasch-Ferre also did a recent podcast for clinical chemistry about *´Nutritional Metabolomics´.*

Link to the podcast: https://secure-hwcdn.libsyn.com/p/6/9/9/699bd589be499f38/ClinChem_201801_Guasch-Ferre.mp3?c_id=18464166&expiration=1515789058&hwt=9796b8f4c97291757e876f13a15ad38d

Link to full paper: http://clinchem.aaccjnls.org/content/64/1/82.long

Alvin Tran, Doctoral Candidate (above), recently presented some of his dissertation research on January 10, 2018 at an international conference, Kaohsiung Medical University Research Symposium, where his oral presentation won second place. The title of his winning presentation was "Body Image Ideals and Unhealthy Weight Control Behaviors Among Sexual Minority Men".

Nutrition Source Updates

Mediterranean and DASH Tie for Top Spot in Recent Ranking
In a review of 40 diets, both Mediterranean and Dash received high marks for being healthy and easy to follow.
https://www.hsph.harvard.edu/nutritionsource/2018/01/19/mediterranean-dash-diets-top-ranking/

NEW SERIES: Diet Reviews
Confused by the seemingly endless promotion of weight-loss strategies and diets? A review of popular diets, and the research behind them.
https://www.hsph.harvard.edu/nutritionsource/diet-reviews/

- **Intermittent Fasting**
- **Gluten-Free for Weight Loss**
- **Mediterranean Diet**
- **DASH Diet**

Food Feature: Chickpeas
Whether you call them chickpeas or garbanzo beans, learn more about these versatile legumes—a staple of diets worldwide.
https://www.hsph.harvard.edu/nutritionsource/chickpeas-garbanzo-beans/

Strategies for Health Instead of Hibernating
Eight healthy strategies for when you're cooped-up indoors during cold weather.
https://www.hsph.harvard.edu/nutritionsource/2017/01/06/prioritize-your-health-instead-of-hibernating/

If you would like to remain current as to what is happening in the field of nutrition, please be sure to view our Nutrition Source website for the latest updates!

(See: https://www.hsph.harvard.edu/nutritionsource/)

NUTRITION HAPPENINGS AROUND HARVARD

DIVISION OF NUTRITION AT HARVARD
LONGWOOD NUTRITION SEMINAR 2017-2018

Medical Education Center, Harvard Medical School
260 Longwood Avenue, Cannon Room (Building C1) Boston, MA
12:00 – 1:00 PM 1st Tuesday of Month* (Lunch will be served at 11:30 AM)*except January

February 6, 2018 **Boston's Children Hospital**
Case Study
(*Title and Speaker TBD)*

Supported by the Conrad Taff Educational Fund, Harvard Medical School and Mead Johnson Nutrition

For further information*:* contact **Dr. Christopher Duggan** or **Barbara Ainsley** @ 617-667-2604
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