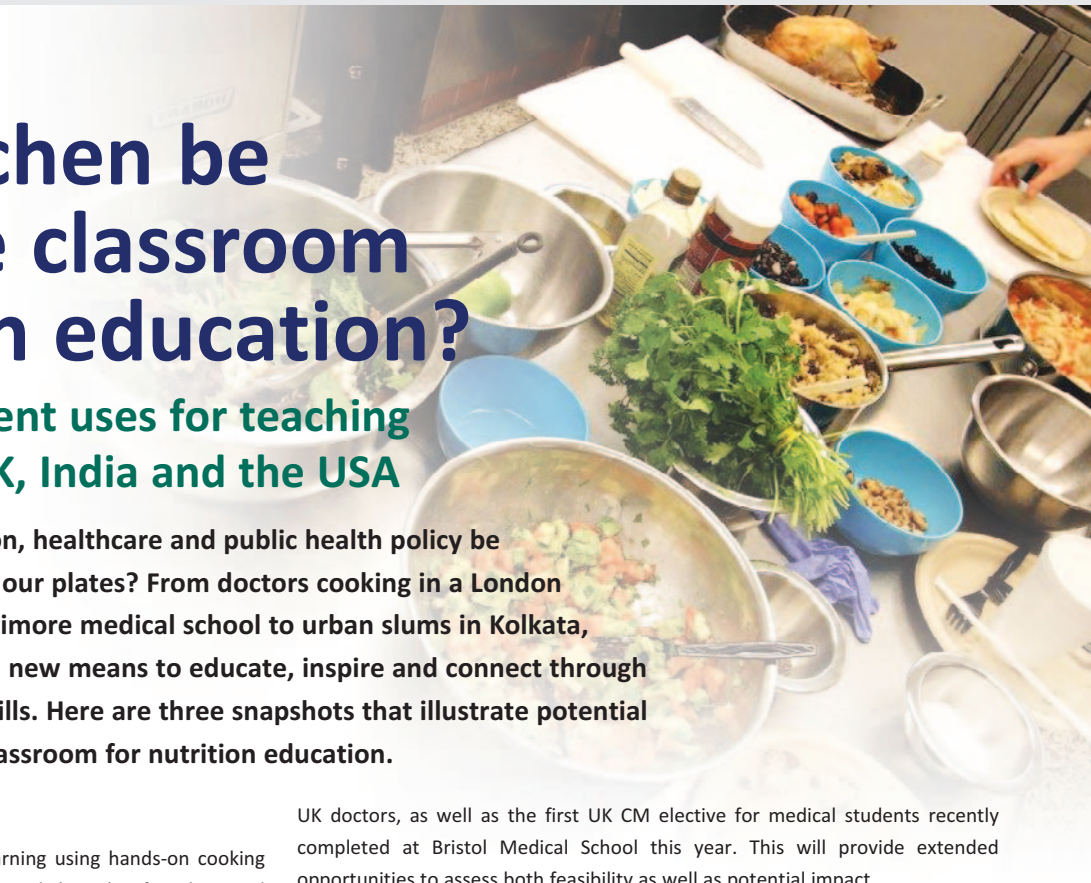
www.nnedpro.org.uk
Celebrating 10 years of nutrition education, research and innovation

NNEdPro Global Centre for Nutrition and Health
Advancing and implementing nutrition knowledge to improve health, wellbeing and society

By **Elaine MacAninch, Kathy Martin, Luke Buckner and Shannon Wongvibulsin**. Edited by **James Bradfield** and **Prof Sumantra Ray**



Can the kitchen be an effective classroom for nutrition education?

Exploring three different uses for teaching kitchens across the UK, India and the USA

How can nutrition science, education, healthcare and public health policy be connected to influence the food on our plates? From doctors cooking in a London professional kitchen, through a Baltimore medical school to urban slums in Kolkata, teaching kitchens are emerging as a new means to educate, inspire and connect through the medium of food and cooking skills. Here are three snapshots that illustrate potential benefits of using the kitchen as a classroom for nutrition education.

Culinary Medicine

Culinary Medicine (CM) provides experiential learning using hands-on cooking and nutrition education to help clinicians understand the role of cooking and food choice to meet individual health goals.[1, 2] The first culinary medicine centre in a US medical school opened at Tulane in 2013 and is now offered as a part of the undergraduate curriculum in over 30 US medical schools with several hospitals now offering culinary medicine programs to clinicians and the public.[3]

Culinary Medicine UK

Culinary Medicine UK ran the first UK CM programme for 16 doctors in in February 2018. Utilising a flipped classroom approach, participants complete pre-course, online learning materials adapted for the UK, as well as a questionnaire assessing self-perceived nutrition knowledge and self-efficacy. During the interactive session, participants prepared recipes under the guidance of chefs and registered dietitians (RD). Additionally, RD's and doctors facilitated group discussions to explore the application of culinary medicine to clinical cases.

All of the 16 participants agreed that diet is important for health despite the fact that 75% had no prior nutrition education. More than 30% agreed that lack of knowledge is a crucial barrier to eating healthily and 50% reported confidence in their nutrition knowledge pre-attendance, which increased to 75% (9 of 12) post-attendance. Only 62.5% reported discussing nutrition regularly with their patients pre-attendance, while all 12 respondents were willing to regularly discuss nutrition post-attendance, and 92% were confident having these discussions. Finally all 12 would register for further modules. This pilot programme encourages further formal evaluation of such interventions and further courses planned for UK doctors, as well as the first UK CM elective for medical students recently completed at Bristol Medical School this year. This will provide extended opportunities to assess both feasibility as well as potential impact.

Johns Hopkins University School of Medicine Teaching Kitchen

At the Johns Hopkins University School of Medicine (JHUSOM), faculty and students joined forces with chefs and experts in clinical nutrition to establish the JHUSOM Teaching Kitchen in 2015. The objective of this Teaching Kitchen is to bridge the gap between learning about nutrition concepts in lectures and confidently applying food and diet related principles in practice.

The JHUSOM Teaching Kitchen is unique in that it was founded by medical students who recruited faculty mentors as well as RDs and culinary experts. This multidisciplinary team have worked together to develop an engaging curriculum, conveying essential nutrition knowledge and skills which can be used to counsel patients. Students are also encouraged to embrace these practices in their own lives and serve as community role models.

With support, the leadership team formed the B'more Healthy Teaching Kitchen, promoting healthy eating in the wider community. Students lead health fairs and interactive workshops on cooking and nutrition, whilst appreciating the socioeconomic barriers to healthy eating.

Transforming the kitchen into a classroom for clinical nutrition education has been well received by both faculty members and students who enjoyed the hands-on approach to learning. Faculty members have also participated in the Teaching Kitchen themselves, and although the JHUSOM Teaching Kitchen is currently a student organisation, faculty are working towards inclusion in the medical curriculum.

NNEdPro's Urban Slum Dwellers' Mobile Teaching Kitchen

In 2015, the NNEdPro Global Centre for Nutrition and Health identified the need for nutrition education in the local populations of Kolkata. An innovative mobile teaching kitchen was created to bring nutrition education to slum dwellings, which are otherwise difficult to reach. A group of local volunteers, including doctors as well as a women's social work group, were trained by dietitians to cook a template menu designed to be nutritious, enjoyable and affordable.

The mobile teaching kitchen targeted women in slum settings of Kolkata, with the goal of improving nutrition and health outcomes for themselves, their children and extended family, as well as, potentially, the families they work for.

The trainees were taught how to cook items on the menus and, more importantly, how to pass on their skills as well as background information relating to nutrition and health, facilitating knowledge transfer. Ultimately, the aim is to create a sustainable and self-sufficient model where trainees become trainers. Working with these marginalised communities provides added opportunity for health checks to be performed by local doctors involved in the project.

The potential for expansion of this project, both across the West Bengal state and indeed internationally, offers an opportunity to influence isolated communities. However, with cultural, agricultural, logistical and religious differences across different communities, the structure of the mobile kitchen and content taught will need to be modified accordingly based on the region served.

Community Kitchens

Community kitchens provide facilities where people can cook, learn new skills and eat together. The Brighton and Hove Food Partnership recently opened a community kitchen, chiefly funded via the People's Postcode Lottery with support from the Jamie Oliver Food Foundation and crowdfunding. It offers courses for many, including those with dementia, learning disabilities and mental health issues, as well as a low-cost meal for people in receipt of means-tested benefits or on a low income.

Independent evaluation of 795 people completing a UK Ministry of Food 8-week course concluded that community-based cooking interventions can have significant effects on dietary behaviour and confidence in cooking skills. After six months, there was a 1.5-fold increase in average fruit and vegetable intake to 4.1 portions per day, while the number of snacks decreased by 0.9 units per day. Participants reported increased confidence in food preparation, budgeting and purchasing skills, as well as greater nutritional awareness. In addition, most participants discussed other social benefits, such as a decrease in social isolation and the opportunity to participate in a group.

Conclusions

Nutrition science can be complex and at times challenging to translate into practice. However, access to affordable, nutritious ingredients to cook and share with friends and family is largely uncontroversial and fits with guidelines highlighting the importance of food and its preparation rather than nutrient-based recommendations.

Opportunity to expand the use of teaching kitchens is limited by availability and access to appropriate facilities and trainers, as well as well-designed and longer term research into effectiveness and sustained impact. However, as the evidence base and enthusiasm increase there are opportunities for collaboration across the culinary, nutrition and medical professions. Utilising community kitchens, culinary schools and expanding the use of mobile teaching kitchens increases capacity for more kitchen-centred multi-disciplinary learning offering a fun, practical and effective alternative to traditional nutrition and health education.

Bibliography: 1. Monlezun DJ, Leong B, Joo E, Birkhead AG, Sarris L, Harlan TS. Novel longitudinal and propensity score matched analysis of hands-on cooking and nutrition education versus traditional clinical education among 627 medical students. Advances in preventive medicine. 2015;2015. 2.La Puma J. What Is Culinary Medicine and What Does It Do?. Population health management. 2016 Feb 1;19(1):1-3. 3.Partner Schools – CulinaryMedicine.org. (2018). Retrieved from https://culinarymedicine.org/about-the-teaching-kitchen/partner-schools/ 4. Hutchinson J, Watt JF, Strachan EK, Cade JE. Evaluation of the effectiveness of the Ministry of Food cooking programme on self-reported food consumption and confidence with cooking. Public health nutrition. 2016 Dec;19(18):3417-27.

Disclaimer: The percentages and proportions included in this descriptive article, whilst suggesting potential trends, cannot be taken as conclusive or generalisable as these figures were generated from a general evaluation of practical interventions rather than research studies and have not adjusted for the effects of chance, confounding and bias.