THE EDUCATION UNIVERSITY OF HONG KONG
FACULTY OF LIBERAL ARTS AND SOCIAL SCIENCES

Research Output/Impact/Knowledge Transfer Prize
for the Dean's Research Fund 2018-19

Brief Introduction of Awardee's
Research/KT Publication/Study/Output and Future Research/KT Development

Awardee (Dept): Dr Chung Ming Yan, Professor (HPE)

Publication Title/KT project: Behavioral feedback in nutrition education

A. *Briefly introduce your research/KT publication/study/output for which you have received the prize.*

For nutrition knowledge, it is an applied knowledge that necessitates the acquisition of scientific facts and repeated practice to result a change of eating habit. This would not be effective if nutrition education to be transferred in lecture basis or one-way dissemination from educator to the recipients. I first testified nutrition education by developing an Internet-based electronic system for dietary recording and self-monitoring. After usability and reliability tests conducted and published, I further conducted rigorous randomised controlled trials with sixty obese participants. Significant weight reduction resulted from the application of the dietary monitoring system indicated strong evidence that nutrition information was acquired by the participants which elicited change in eating behaviour and finally successful weight loss.

I formulated and tested on the theoretical framework of behavioural feedback in online dietary monitoring. I continued to develop the mobile apps of dietary recording and monitoring as knowledge transfer projects and teaching strategies aiming for larger coverage of people to make impact in local and regional society. Nutrition knowledge transfer activities included five essential instruction approaches (lecture, experiential learning, problem-based learning, reflective learning and inquiry-based learning) to facilitate the process of knowledge acquisition and behavioural change.

This instruction approach was testified in Co-curricular courses at EdUHK and the learning outcomes were shown effective for the undergraduates to enhance their nutrition knowledge and impacted changes of their eating behaviour. Another CSL course (CSL3045 Healthy Eating in Action) also applied the dietary monitoring apps to educate twenty undergraduates to scaffold the knowledge and practice in balanced diet and they further contributed to community services by educating twenty elderly their individual eating problems and revising their food choices towards healthy eating. Then, I started the knowledge transfer practices with ninety five secondary students. Evaluative research was conducted to assess the benefits of nutrition learning with the behavioural feedback. Nutrition behaviour and nutrition knowledge were compared and the nominee concluded this behavioural feedback process was effective to engage adolescents in change of healthy eating.

I intended to extend further impact to the society locally, regionally and internationally, so as to spread the significance and impact to all levels of the community. I demonstrated this by applying an external competitive funding of Health Care Promotion Scheme and successfully awarded by Food and Health Bureau in April, 2018. With this funding support, the nominee is conducting the nutrition knowledge transfer activities to three hundred young adults in the community. With the application of dietary monitoring apps, whole grain, fruit and vegetable

consumption of young adults will be the focus. Younger people are found to be unmotivated to use the nutrition label. Therefore, mobile technology in dietary monitoring apps and the behavioural feedback will assist the younger adults in reflecting on their eating patterns and subsequently make changes with ease and convenience.

In connection to the above KT activities, the related publications and competitive external grants were listed as follows:
[1] Chung, L.M.Y., Fong, S.S.M., Law, Q.P.S., Ma, A.W.W., Chow, L.P.Y., & Chung, J.W.Y. (2016) Theoretical examination of behavioural feedback in the application of teledietetics on weight reduction. Journal of Telehealth and Telecare, 22, 244-251. [doi:10.1177/1357633X15595557] [IF:1.736; Rank: 42 out of 85 in Health Care Sciences & Services (SCI)
[2] Chung, L.M.Y., Fong, S.S.M., Ma, A.W.W., Cheng, S.T. (2018). Integration of behavioural feedback in web-based systems nutrition learning among university students. Journal of Computer Assisted Learning, 34,450-457. [IF: 1.253; SSCI; Rank 102 out of 235 in Education & Educational Research.
[3] Chung, L.M.Y., Fong, S.S.M. (2018). Role of Behavioural Feedback in Nutrition Education for Enhancing Nutrition Knowledge and Improving Nutritional Behaviour among Adolescents. Asia Pacific Journal of Clinical Nutrition 27(2), 466-472.] [IF:1.816; Rank: Q1 in Medicine (Miscellaneous) (SCI)
[4] Project Ref: 01170038 Application of dietary monitoring apps in enhancing eating behaviour of balanced diet among younger adults. Health Care And Promotion Scheme. July 2018 – December 2019. HK$442,870.

B. *How you used/will use your prize and perhaps its usefulness to your research/KT development?*

I will use my prize money to customize the dietary monitoring apps to make it more user-friendly. This may include voice-recognition features and food and portion size detecting intelligence. With the aims to extend the knowledge transfer to a wider coverage of the community, the application of dietary monitoring apps must consider those spectrum require special attention. The dietary monitoring apps must be upgraded with features that facilitate the users of layperson. For example, user-friendly interface or hurdle free input method will encourage users to record and monitor their diet even they have low literacy level or they may have physical disabilities which could be barriers for dietary input. Therefore, I believe voice-recognition features and food and portion size detecting intelligence may help to cover the needs of the population with special needs.

C. *Expected research/KT outcomes/outputs/impacts arising from this prize.*

As nutrition education is important for helping people to eat healthier, people with low education or people who have physical disabilities may have lower chance to learn how to have healthy food choices. This results to their higher risk in having diet-related diseases and eventually increasing the government medical and health care burden. Based on the customization of the dietary monitoring apps with the aforementioned features, I plan to submit a competitive external grant amounted HK$1,500,000 to extend my KT development on nutrition education to a wider spectrum. Hopefully, this will help the underprivileged group to acquire nutrition knowledge effectively and efficiently.