Food literacy, culinary aptitude and subjective health measures: evaluations of a 14-day food programme for university students aged 18-24 and living in the United Kingdom

Jessica Chambers [1] Miranda Harris MSc [1,2]
[1] School of Allied Health and Community, University of Worcester, UK.
[2] Corresponding author: Miranda Harris, Senior Lecturer, MSc, SFHEA, BANT, CNHC m.harris@worc.ac.uk; 07887897673

Background

Research shows cooking skills amongst young people are waning[1] while public policies try to encourage more home cooking to improve health and prevent disease[2]. Students often begin their independent culinary journey at university but tend to have increased intake of fast foods, convenience foods and high energy snacks[3]. At the same time, research reports poor dietary habits are associated with reduced energy levels, poor sleep and emotions such as low mood, which are all common amongst university students[4]. A large percentage of students would like to learn to cook yet find the lack of knowledge and skills a barrier[5]. Post-secondary culinary programmes are growing in number[7] but none to date look at associations between increasing culinary skills and subjective health measures using an online programme.

Aim

The study aim was to evaluate the impact of a 14-day culinary FoodNoob programme on subjective health measures of sleep, emotions and energy, and on food literacy and culinary aptitude, as well as assess the relationships between changes in these measures and compliance to the programme.

Research Methods

A quantitative, online, experimental, before-and-after approach was used with a self-reported pre-post test survey. Participants were recruited through the University of Worcester using gatekeepers from the academic Schools and Student Union. The study used non–probability sampling and participants were self-selected throughout the autumn of Semester 1 2023 following ethical approval. Participants were given participant information numbers, therefore protecting their identity[8]. The programme based on the Cook-Ed™ framework[9] used password protected access to folders, which contained guidance and information on meal planning, budgeting, shopping, culinary skills, food storage and hygiene and recipes broken down by meal and dietary preference.

Survey sections included meal planning and budgeting, food preparation and cooking methods from a validated food skills questionnaire. It assessed sleep, energy and emotions using surveys from the Medical Outcomes Study[10]. To assess compliance, there were questions regarding number of meals prepared during the 14 days and a separate 'game sheet' was submitted containing hidden words from the documents in the folders.

1/3 of University students would like to learn how to cook healthy nutritious meals.

Results

Five participants aged between 18-24 completed the online, 14-day programme.

Subjective health measures found a statistically significant improvement in sleep scores ($z = 2.06$, $n = 10$, $p < .05$) with a large effect size ($r = .65$) but non-significant results for combined energy and emotions scales.

Median scores for combined energy and emotions decreased from pre-to post-programme and subscale analysis showed a non-significant increase in energy. Culinary skills and food literacy scores improved over the programme with medium effect sizes but were non-significant.

No statistically significant relationships were reported for any variables, but strong positive relationships were seen between compliance and food literacy ($r = .5$), sleep ($r = .67$), and combined energy and emotions ($r = .6$).

Conclusion

A 14-day online cookery programme providing recipes and culinary education may have a positive impact on sleep and energy, as well as improve food literacy and cooking skills. Further research with a larger sample size, over a longer period, using a blended in-class and at-home course method could strengthen study findings and provide a more robust analysis.

References

1. Lavelle, F., Benson, T., Hollywood, L., Surgenor, D., McCloat, A., et al., (2019) 'Modern transference of domestic cooking skills', *Nutrients*, 11(4). Available at: https://doi.org/10.3390/NU11040870.
2. Fernandes, A.C., Rieger, D.K. and Proença, R.P.C. (2019) 'Perspective: Public health nutrition policies should focus on healthy eating, not on calorie counting, even to decrease obesity', *Advances in Nutrition*, 10(4), p. 549. Available at: https://doi.org/10.1093/ADVANCES/NMZ025.
3. Sprake, E.F., Russell, J.M., Cecil, J.E., Cooper, R.J., Grabowski, P., et al., (2018) 'Dietary patterns of university students in the UK: A cross-sectional study', *Nutrition Journal*, 17(1), pp. 1–17. Available at: https://doi.org/10.1186/S12937-018-0398-Y/TABLES/5.
4. Mehta, K.J. (2022) 'Effect of sleep and mood on academic performance', *Humantities and Social Sciences Communications*, 9(16), pp. 1–13. Available at: https://doi.org/10.1057/s41599-021-01031-1.
5. Bertrand, J., Crerar, A. and Simpson, J.R. (2018) 'A Canadian university "Understanding Foods" course improves confidence in food skills and food safety knowledge', *Canadian Journal of Dietetic Practice and Research*, 79(4), pp. 170–175. Available at: https://doi.org/10.3148/CJDPR-2018-012.
6. Holt, M. and Powell, S. (2017) 'Healthy Universities: a guiding framework for universities to examine the distinctive health needs of its own student population', *Perspect Public Health*, 137(1), pp. 53–58. Available at: https://doi.org/10.1177/1757913916659095.
7. Bernardo, G.L., Jomori, M.M., Fernandes, A.C., Colussi, C.F., Condrasky, M.D., et al., (2017) 'Nutrition and Culinary in the Kitchen Program: a randomized controlled intervention to promote cooking skills and healthy eating in university students – study protocol', *Nutrition Journal*, 16(1). Available at: https://doi.org/10.1186/S12937-017-0305-Y.
8. Tajir, G. Al (2018) 'Ethical treatment of participants in public health research', *Journal of Public Health and Emergency*, 2(2). Available at: https://doi.org/10.21037/jphe.2017.12.04.
9. Asher, R.C., Jakstas, T., Lavelle, F., Wolfson, J.A., Rose, A., et al., (2022) 'Development of the Cook-EdTM Matrix to guide food and cooking skill selection in culinary education programs that target diet quality and health', *Nutrients*, 14(9). Available at: https://doi.org/10.3390/NU14091778
10. Tarlov, A.R., Ware, J.E.J., Greenfield, S., Nelson, E.C., Perrin, E., et al. (1989) 'The Medical Outcomes Study. An application of methods for monitoring the results of medical care', *Journal of the American Medical Association*, 262(7), pp. 925–930. Available at: https://doi.org/10.1001/JAMA.262.7.925.

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3. Sprake, E.F., Russell, J.M., Cecil, J.E., Cooper, R.J., Grabowski, P., et al., (2018) 'Dietary patterns of university students in the UK: A cross-sectional study', *Nutrition Journal*, 17(1), pp. 1–17. Available at: https://doi.org/10.1186/S12937-018-0398-Y/TABLES/5.
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6. Holt, M. and Powell, S. (2017) 'Healthy Universities: a guiding framework for universities to examine the distinctive health needs of its own student population', *Perspect Public Health*, 137(1), pp. 53–58. Available at: https://doi.org/10.1177/1757913916659095.
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