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CLASSROOM TO COMMUNITY: A STUDENT-LED HEALTHY COOKING DEMONSTRATION PROGRAM

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Abstract

Obesity remains a major public health challenge in Malaysia, driven partially due to unhealthy dietary practices and limited food preparation skills across the life course. Culinary nutrition interventions that integrate nutrition education with hands-on cooking experiences may support obesity prevention by improving food literacy, self-efficacy, and healthier food choices. This study evaluated a student-led healthy cooking demonstration program implemented as part of a community nutrition training course in a public university. Fourth-year nutrition science students planned and delivered cooking demonstrations and nutrition education activities to selected community groups, including kindergarten teachers (representing children), community-dwelling older adults, and university students. Participant feedback was collected using structured forms to assess satisfaction, perceived usefulness, and relevance of the program content. Overall, participants reported high satisfaction with the demonstrations, educational materials, and applicability of the healthy menus introduced. The program provided experiential learning opportunities that strengthened students' communication, program planning, and community engagement skills. Although obesity outcomes were not directly measured, the program targeted key behavioural determinants related to obesity prevention, including healthy meal preparation and balanced food choices. This student-led, community-based cooking demonstration model holds promise for broader implementation within higher education settings to support nutrition education initiatives addressing obesity in

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Malaysia.
Keywords: Cooking; Community participation; Health education; Health promotion; Nutritional sciences

Abstrak

Obesiti kekal sebagai satu cabaran utama kesihatan awam di Malaysia, yang sebahagiannya didorong oleh amalan pemakanan yang tidak sihat serta kemahiran penyediaan makanan yang terhad sepanjang kitaran hayat. Intervensi pemakanan kulinari yang mengintegrasikan pendidikan pemakanan dengan pengalaman memasak secara praktikal berpotensi menyokong pencegahan obesiti melalui peningkatan literasi makanan, keberkesanan kendiri, dan pemilihan makanan yang lebih sihat. Kajian ini menilai program demonstrasi memasak makanan sihat yang dikendalikan oleh pelajar dan dilaksanakan sebagai sebahagian daripada kursus latihan pemakanan komuniti di sebuah universiti awam. Pelajar tahun empat sains pemakanan merancang dan melaksanakan demonstrasi memasak serta aktiviti pendidikan pemakanan kepada kumpulan komuniti terpilih, termasuk guru tadika (mewakili kanak-kanak), warga emas yang tinggal di komuniti, dan pelajar universiti. Maklum balas peserta dikumpulkan menggunakan borang berstruktur bagi menilai tahap kepuasan, tanggapan manfaat, serta kesesuaian kandungan program. Secara keseluruhan, peserta melaporkan tahap kepuasan yang tinggi terhadap demonstrasi memasak, bahan pendidikan, dan kebolehlaksanaan menu sihat yang diperkenalkan. Program ini telah menyediakan peluang pembelajaran berasaskan pengalaman yang mengukuhkan kemahiran komunikasi, perancangan program, dan penglibatan komuniti oleh pelajar. Walaupun hasil obesiti tidak diukur secara langsung, program ini menyasarkan penentu tingkah laku utama yang berkaitan dengan pencegahan obesiti, termasuk penyediaan makanan yang sihat dan pemilihan makanan yang seimbang. Model demonstrasi memasak berasaskan komuniti yang dikendalikan oleh pelajar ini menunjukkan potensi untuk dilaksanakan secara lebih meluas dalam persekitaran pendidikan tinggi bagi menyokong inisiatif pendidikan pemakanan dalam menangani isu obesiti di Malaysia.
Kata kunci: Memasak; Pendidikan kesihatan; Penyertaan komuniti; Promosi kesihatan; Sains pemakanan

1.0 INTRODUCTION

Obesity is widely understood to result from an imbalance between energy intake and expenditure, with a positive energy balance closely linked to one's lifestyle and dietary choices (Löffler et al., 2021). Accumulation of excessive fat around the abdomen is referred to as

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'abdominal obesity' and is associated with increased health concerns (Løvsletten et al., 2020). An elevated body mass index (BMI) is a risk factor for non-communicable diseases, including diabetes, cardiovascular conditions, and musculoskeletal disorders. This can significantly reduce quality of life and life expectancy (Lin & Li, 2021). According to the National Health and Morbidity Survey (Institute for Public Health, 2020), 26.5% of children and adolescents and 50.1% of adults in Malaysia were overweight or obese (Institute for Public Health, 2020). These findings indicate that over a quarter of children and adolescents and more than half of adults in Malaysia carry excess weight, a significant public health concern. Addressing the obesity issue is an important priority for promoting the overall health and well-being of the Malaysian population.

One important behavioural contributor to obesity is unhealthy food preparation and a lack of confidence in preparing balanced meals. Culinary nutrition, also known as nutrition education combined with hands-on cooking (Condrasky & Hegler, 2010), is one way to convey nutritional knowledge and provide hands-on experience to the target population. This approach aligns with Social Cognitive Theory (SCT), which states that high self-efficacy for a behaviour, best built through practical experience, makes people more inclined to participate in healthy behaviours like cooking (Bandura, 1998). Hands-on cooking activities provide such mastery experiences and may therefore support healthier eating behaviours relevant to obesity prevention.

Evidence from previous studies suggests that participatory cooking interventions can be beneficial to the targeted groups. A study conducted among adolescents in New Zealand has reported that cooking interventions possess numerous short-term advantages, but cooking self-efficacy appears to be the most responsive and consistent over time (Kuroko et al., 2020). Additionally, family factors influence whether and how adolescents cook after an intervention. A study on participatory cooking demonstrations conducted among nursing students in India found that the sessions were effectively implemented, improving the participants' knowledge and self-efficacy (Ali et al., 2022). Additionally, all participants reported being satisfied with the intervention. However, much of the existing literature focuses on community outcomes, with comparatively less emphasis on how such interventions function as structured learning experiences within higher education curricula. In the context of nutrition and health sciences education, experiential and community-based learning approaches are increasingly recognized as essential for preparing graduates with the practical competencies required for population health promotion.

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In Malaysia, nutritionists are recognized as allied health professionals under the Allied Health Professions Act 2016, with a professional scope that includes community nutrition education and health promotion. Training nutrition science students to design and implement community-based interventions is, therefore, a critical component of higher education in this field. Nevertheless, there is limited published evidence documenting student-led culinary nutrition initiatives as both educational tools and community engagement strategies linked conceptually to obesity prevention. This study aimed to evaluate a student-led healthy cooking demonstration program implemented within a university course, focusing on its relevance to obesity-related dietary behaviours, its reception among selected community groups, and its value as an experiential learning platform for future nutrition professionals.

2.0 MATERIALS AND METHODS

2.1 Study Design and Location

This study employed a cross-sectional descriptive design and was conducted as part of the Community Nutrition Clinic course, a summative assessment for fourth-year nutrition science students at Universiti Kebangsaan Malaysia. The cooking demonstration program followed six phases of the Cook-Ed™ model, including needs identification, consideration of behaviour change factors, capacity assessment, program development, pilot implementation, and process evaluation (Asher et al., 2020). Six out of eight phases proposed in this model were included namely (1) defining the cooking-related need or problem, (2) considering behaviour change factors, (3) conducting the capacity assessment, (4) developing program content and facilitation guides, (5) conducting pilot or feasibility or efficacy or effectiveness study, and (6) conducting a process evaluation. The primary emphasis was on process outcomes and participant feedback rather than clinical obesity indicators.

2.2 Participant Selection and Program Implementation

Participants were selected through purposive sampling based on feasibility, educational relevance, and potential exposure to obesity-related dietary risks across different life stages. Four community settings were engaged: kindergarten teachers (representing children’s food environments), community-dwelling older adults, and university students (representing young adults). These groups were chosen because dietary habits formed or reinforced within these populations are relevant to obesity prevention and because they represent key targets for community nutrition education. Collaboration was initiated through community representatives, and informed consent was obtained prior to program implementation.

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This project started with the brainstorming sessions between students and supervisors. The students were divided into four groups of six to eight students, and several components were discussed, including the justification for selecting the target group, potential collaboration, and preparation for the cooking demonstration. Once finalized, students initiated the collaboration with the representatives of the target group, by which four different settings were approached. Consents were obtained from the target communities involved in the study before its commencement. After several discussions with the supervisors, students prepared the food ingredients, performed dry runs (Figure 1), identified the objective and justification of menu selection (Table 1) and developed nutrition education materials for the program (Figure 2). During the program, students shared about healthy eating and food preparation, followed by practical or hands-on participation with the target group.

Figure 1. Preparation and dry-run sessions by the students

Figure 2. Pamphlets prepared by the students as the education materials for the target population

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Table 1. *Objectives, Menus, and Justifications for Healthy Cooking Demonstrations Across Different Community Groups*

Group	Target community	Number of participants (N)	Objective	Healthy Menu(s)	Justification of menu selection
1	Community-dwelling older adults	30	To introduce alternatives to healthy snacks for older adults	Rice paper wrap with dipping sauce	Preparation using healthy cooking methods, such as boiling, uses less oil
2	University students	13	To advocate the concept of quarters-quarters-half easily for encouraging the selection and consumption of a healthier and more balanced breakfast	Egg mayonnaise wrap, peanut butter banana wrap, salad	Preparation of easy and quick breakfast by the university students
3	Kindergarten children	16	To educate children about the Malaysian healthy plate concept in a fun and engaging way	Bento recipe for children	To encourage the children's participation in healthy meal preparation
4	Community-dwelling older adults	20	To advocate the concept of quarters-quarters-half and balanced meals to fulfil the nutrients required for older adults	Chicken porridge with sweet potato and pak choy, Japanese grilled fish with salsa, and 'Refresher Bowl'	To expose older adults to a variety of foods that can be prepared to meet their nutritional needs

2.3 Data Collection

Data collection focused on program process evaluation and participant feedback. Students developed structured feedback instruments using Google Forms or printed questionnaires, depending on the target group. The forms included items assessing satisfaction with the program, the clarity and usefulness of nutrition messages, the acceptability of the healthy menus, and the perceived applicability of the information shared. For kindergarten children,

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simplified sticker-based feedback was used to capture engagement and enjoyment. These data formed the basis for the subsequent descriptive analysis (Figure 3).

Figure 3. Different methods are used to evaluate the effectiveness of the program

2.3 Data Analysis

Feedback data were analyzed descriptively. Quantitative items were summarized using frequencies and percentages to describe participant satisfaction and perceived usefulness. Open-ended responses from written feedback and student reports were reviewed to identify recurring perceptions regarding program strengths, challenges, and the perceived impact on healthy eating awareness. Each group is required to submit a report one week after program implementation. The content of the report includes (1) the planning of the cooking demo (recipe name, recipe selection justification), (2) preparation before the cooking demonstration, (3) description of the cooking demonstration (number of attendees and program feedback), and (4) the SWOT analysis (Strengths, Weaknesses, Opportunities, and Threats).

3.0 RESULTS AND DISCUSSION

The student groups successfully planned and implemented healthy cooking demonstrations across four community settings. Preparatory activities included ingredient procurement, recipe testing, and multiple dry-run sessions to ensure feasibility and acceptability. Menus were designed based on affordability, ease of preparation, and alignment with the Malaysian Healthy Plate concept, which is particularly relevant given the low awareness of this guideline among Malaysian adults (Mohamad Hasnan et al., 2023; Tan et al., 2023).

This program started with a sharing session about healthy eating and cooking. Specifically, kindergarten children were taught how to wash their hands correctly to ensure the preparation of clean and safe food. The pamphlet's content was explained to participants to

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increase their understanding of the information. This was followed by a cooking demonstration of healthy menus by the students, which later involved the participants (Figure 4). All participants then tasted the prepared menus.

Figure 4. The execution of cooking demonstration programs in different community settings

Across all settings, participant feedback indicated high levels of satisfaction with the program content, delivery, and food demonstrations. Participants reported that the hands-on demonstrations enhanced their understanding of balanced meals and practical food preparation strategies. Among kindergarten teachers and older adults, the educational materials were perceived as clear and appropriate, while university students highlighted the practicality of quick and balanced meal ideas. Overall, most participants were satisfied with the taste, texture, and appearance of the food and the conducted program. Interestingly, most kindergarten children indicated they wanted to try the bento recipe at home with their parents and siblings. Although no anthropometric or behavioural follow-up data were collected, these findings suggest positive reception of obesity-relevant dietary messages.

From an educational perspective, the program functioned as an experiential learning platform that enabled students to apply theoretical knowledge, including SCT principles, in real-world contexts. Consistent with previous studies, participatory cooking demonstrations may enhance self-efficacy and food literacy, which are recognized determinants of healthier eating behaviours linked to obesity prevention (Garcia et al., 2016; Goh et al., 2022). The program also strengthened students' communication and community engagement skills,

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addressing key learning outcomes in nutrition education.

The strengths of this program include the positive response and cooperation received from the students in the communities. The interaction with participants during sharing sessions and cooking demonstrations can be a key factor in the program's success and well-reception by participants (Ali et al., 2022). Furthermore, participants' collaboration and active engagement, as evidenced by their acceptance of the invitation, punctuality, and careful listening during conversations, are some of the positive experiences in conducting the participatory cooking demonstration sessions (Talavera et al., 2020). Participants in cooking demonstration sessions frequently had the opportunity to sample the cooked food and receive take-home educational materials (Goh et al. 2022). The strength of our program lies in selecting affordable, easily accessible, and healthy menus that are introduced to the community. The ingredients for the menu can be found easily at a reasonable cost in the market.

However, the study was limited by its reliance on descriptive feedback and the absence of objective outcome measures related to dietary change or obesity indicators. Logistical constraints, such as limited audiovisual equipment and time restrictions at some venues, also affected program delivery. However, printed brochures were distributed to the participants to facilitate their understanding of the educational content. According to a study conducted in India, the distribution of leaflets, combined with the simultaneous use of audio-visual aids and practical demonstrations, in health education produces far better outcomes than the distribution of printed materials alone (Singh et al., 2016). Some groups need to prepare ingredients before attending the program venue, which implies a specific timing for the program. Some groups reported having limited time to conduct the program and anticipated future collaboration with the participating communities. This aligns with the fact that participatory cooking demonstrations have the potential to be a valuable tool for health profession students to learn nutritional concepts and a great way for students to practice their cooking skills, particularly in terms of meal planning and preparing a healthy diet according to individual needs (Ali et al., 2022). These limitations highlight the need for future intervention studies that incorporate thematic analysis of qualitative data to identify the challenges and opportunities of conducting a successful cooking demonstration, as well as pre–post assessments of nutrition knowledge, attitudes, practices, and longer-term behavioural outcomes.

4.0 CONCLUSION

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The student-led healthy cooking demonstration program demonstrated value as both a community engagement initiative and an experiential learning approach within higher education. While obesity outcomes were not directly measured, the program addressed key behavioural determinants associated with obesity prevention, including healthy food preparation, balanced meal selection, and food literacy. The positive reception among diverse community groups and the educational benefits for students suggest that this model has potential for wider implementation and more rigorous evaluation in addressing obesity-related dietary behaviours in Malaysia.

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