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Jennifer Utter*, Anna Fay and Simon Denny

Exposing young people to cooking and new foods: findings from a feasibility study in an alternative education setting

Abstract

Objective: The current study describes a feasibility study of an experiential cooking program for alternative education students. The aims were to identify potential areas for measuring impact (beyond nutrition) and to identify issues threatening the feasibility and evaluation of the program.

Materials and methods: Weekly cooking sessions were conducted in one alternative education center over a school term. Data were collected through weekly observations, a youth focus group, and staff interview.

Results: Observational data confirmed high levels of participation by students, willingness to try new foods, and enjoyment of foods prepared. Comments from the teacher and students emphasized the wider impact of the cooking sessions on positive youth development and cultural engagement, including opportunities for socio-emotional learning, team work, socializing with peers, and cultural blessings of food.

Conclusion: Future studies should consider measures of positive youth development along with cooking skills and eating behaviors as potential outcomes.

Keywords: alternative education; cooking; culinary skills.

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Introduction

Good nutrition is critical to the healthy development of young people, yet nutrition indicators for adolescents are poor. Data from a 2004 school-based nutrition survey of adolescents in the US found that nearly 30% consumed fast food three or more times a week and the frequency of fast food consumption had increased significantly since 1999 (1). Moreover, few adolescents meet the daily recommendations for fruit and vegetable consumption, and the amount of daily consumption has been markedly decreasing for young people (2). These poor nutrition indicators are compounded by the high prevalence of overweight and obesity observed among adolescents (3). The nutritional indicators for young people living in New Zealand are similar to those living in the US. More than one-third of young people are overweight/obese (4) and fewer than one-quarter met the recommendations for fruit and vegetable consumption (5). Moreover, nearly 30% drink soft drinks four or more times a week, while close to 15% consume fast food at the same frequency (5).

By and large, most of the research on adolescent nutrition has drawn on samples of young people attending mainstream high schools, and fewer studies have examined the nutritional risk of young people in alternative education settings. Young people attending alternative education are more likely to experience greater socioeconomic deprivation and poor health outcomes than their peers in mainstream schooling, and thus, may be at high nutritional risk (6, 7). One study of alternative high school students in the Midwestern region of the US reported that more than 40% of students were overweight (8), 25% did not share any family meals in the previous week (9), more than half consumed soft drinks regularly (10), and approximately half had eaten at a fast food restaurant several times in the past week (10). A study of alternative education students in New Zealand reported similar nutritional concerns, with fewer than 30% always eating breakfast and one quarter eating fast food four or more times a week (11).

Numerous interventions to improve the eating behaviours of adolescents have incorporated a wide range of strategies. Recently, there appears to be a renewed interest in teaching young people how to cook as a means to improve nutrition (12). This approach is supported by studies suggesting that young people who are involved in food preparation have better dietary behaviours (13, 14) than those who are not. As such, there have been multiple programs reported in the recent past, which have attempted to engage young people in cooking with a primary aim of improving nutrition (15–20). Taken at face value, these programs appear to hold promise, but the evaluation designs have been limited in terms of methodological rigor.

Across the numerous cooking programs for young people, few, if any, have attempted to measure any impact of cooking programs on other aspects of health and well-being. This is surprising as involvement in cooking and meal times may also provide children and young people with opportunities for skill building, identity and cultural development, and social engagement with their families. Caraher et al. (21) found that food is a central way for expressing love in families, and some children use foods as a way of reinforcing ethnic identity. Moreover, young people who frequently share meals with their families report greater connection and communication with their families and better emotional well-being than their peers who do not (22).

Thus, the aim of this study is to report on the feasibility of a cooking program for alternative education students. The specific objectives are to: identify potential areas for measuring impact for such interventions (beyond nutrition) as well as issues threatening the feasibility and evaluation of cooking programs with young people.

Materials and methods

Overview of intervention

Six cooking sessions were conducted weekly with all students in an alternative education center over a school term. Program development and implementation was guided by principles of socio-emotional learning (23) and Positive Youth Development (24). Our approach with the young people was to actively engage them in cooking and sharing meals in a positive and supported way, provide opportunities to learn new skills, and foster relationships between adults and students in the sessions. Cooking sessions were held during school time, emphasized active participation of all students in all aspects of the sessions, and included a shared meal for

students and school staff at the end of the sessions. The meals prepared each week emphasized seasonal and affordable ingredients with flexible preparation styles. A description of the core elements of the cooking sessions is described in Table 1. Two members of the research team led the cooking sessions each week. The research team provided all necessary cooking equipment and the ingredients to be prepared.

An alternative education setting was selected for this feasibility study because we were interested in working with young people at risk for poor nutrition and poor health. In New Zealand, alternative education settings provide education services to young people excluded from mainstream schools. Young people in New Zealand are required by law to be engaged with education until the age of 16 years; young people who have been excluded from mainstream schools may attend alternative education centers until they turn 16 or matriculate back to mainstream education. Given that alternative education is not typically funded through the same channels as mainstream schools, they are often under-resourced. We initially approached the alternative education setting to offer an after-school cooking program, but the center staff preferred to hold the sessions during school time to integrate the cooking sessions with other units they were teaching (e.g., Health, Mathematics).

Study design

Given that this was a new intervention, the focus of this evaluation was on process. To identify possible areas of impact of the intervention and issues of feasibility, data were collected through weekly observation logs recorded by the research team, a focus group with students at the end of the school term, and through an interview with a key staff member. A description of these data collection methods is provided in Table 2. On the day of the focus group, ten students were in attendance at school and six students agreed to participate in the focus group. The four students who did not participate were either new to the school (and had yet to have much experience with the cooking sessions) or had declined to participate. All qualitative data were analyzed using the General Inductive Approach (25). The General Inductive Approach is a simplified method of qualitative data analysis, which allows key findings to emerge from frequent and dominant themes in data. This approach provides a systematic process for use in evaluation studies. The University of Auckland Human Participants Ethics Committee granted ethical approval for the study.

Results

Through the data collected as part of this study, there appeared to be multiple areas of potential impacts of the cooking sessions, over and above good nutrition. From the focus group, staff interview, and comments captured in the observation logs, key themes relating to personal indicators (e.g., cooking skills) and social indicators (e.g., teamwork) emerged from the data. Threats to feasibility were also noted.

Table 1 Description of cooking session tasks.

Task	Description
Overview of day's menu and ingredient identification	Research team introduces students to the dishes to be prepared that day. Students participate in ingredient identification. For example, a member of the research team would hold up a vegetable to be used that day and students would identify it and discuss its preparation (e.g., Do you eat it cooked or raw?)
Cooking job allocation and meal preparation	Students work in two teams. One team prepares the main dish while the other prepares the dessert. Sample main meal dishes include vegetable and chicken curry, vegetarian chilli, breakfast burritos, and spaghetti Bolognese. Sample dessert dishes include walnut loaf with fruit salad, cookies and homemade lemonade, and chocolate mousse. Members of the research team supervise each group to ensure that all students are engaged in the activities and that food and cooking implements are handled safely. Meal preparation is communal and fun. Students prepare food in a relaxed and social environment.
Set up for meal	Once main meals and desserts are prepared, students set up the serving table for the shared meal.
Blessing of the food and shared meal	One student says a blessing prior to the food being served. The blessing is often made in the language reflecting the student's cultural background. Students share the meal with their peers, school staff, and members of the research team.
Clean up	At each session, some students are allocated the task of cleaning up. Research team members often help in this task.

Personal indicators

The students and the teacher made numerous comments that the cooking sessions provided students with the opportunity to develop interests and skills in food and cooking. In the focus group, one student commented that he learned “how to turn on the oven to the right temperature” while another expressed, “I wanna learn how to chop a vegetable hard and fast”. During the staff interview, the teacher commented that one student was now working

towards transitioning to a culinary program after experiencing the cooking program (“It has just really opened his eyes”). She noted that the cooking sessions allowed this student to realize the skills and interest he had in cooking.

Comments made in the observation logs were that students were often reluctant to try the new foods prepared, but once they did, they often returned for seconds. As one student commented at the first session, “I liked it and I didn't think I would because I don't like vegetables”. The opportunity to try new food was also commonly discussed

Table 2 Description of data collection methods.

Observation logs	Completed by research team after each cooking session Included comments on the number of students attending, foods prepared, school staff attendance, injuries, student reactions to foods prepared, difficulties in student engagement, and other notable events (e.g., fighting among students)
Student focus group	Conducted by research team with students Discussion points included the following: What do you think went well with the cooking sessions? And what not so well? What kind of things have you learned from the cooking sessions? What new foods have you tried? What other foods would you like to cook? How could the sessions be improved?
Staff interview	Conducted by member of research team with lead staff member Discussion points included the following: How did the sessions go and how could they be improved? How well did the sessions fit within the school setting? Were there any unexpected benefits for the students or school? How could the sessions be improved?

as a positive effect of the cooking sessions by the students in the focus group. Some students commented that they had never tasted asparagus, black beans, or corn bread before the cooking program.

Social indicators

It was interesting that when talking with the students about aspects of the cooking sessions that went well, themes of social engagement and relationship building apparently emerged. Students commented on the “teamwork” developed through the sessions. One student mentioned that “everybody working together, no complaining...” was a bonus of the sessions. Other students commented on the opportunity to contribute (“Oh, being helpful... like when she told me to do the dishes I just do it straight away instead of stalling”). Another student appreciated the opportunity for “meeting people” (“We enjoy that you guys come to our course and teach us new things”).

The improved social relationships of students were concordant with the teacher’s comments of the impact that the cooking had on the school environment. When talking about how positively the cooking sessions were implemented within the school, the teacher commented, “It [cooking] changed the *ahua* (feeling) of the place”. This idea was supported by one of the students who noted that on the cooking days he would “go back home and say I had a good day”. The teacher made comments that the cooking sessions provided opportunities to integrate learning in other school subjects and important life skills (“The kids learn measurements... they learn quantities... even budgeting”). Of note, the teacher also commented on the opportunity that the cooking sessions provided opportunities for cultural education as well (“I want every single person in that class to know how to bless food”). In the observations of the sessions, it was noted that each week, a student blessed the meal before it was consumed, and these blessings were often expressed in Maori, Tongan, or English languages.

Issues of feasibility

We identified three main threats to the feasibility of the program, namely, safety, meeting student expectations, and measuring impact in a consistent and meaningful way. The safety issues mainly arose in the observation logs, and regarded food safety practices and injuries resulting from food preparation. Students needed reminders and

education in relation to hand washing, food storage, dish-washing, and safe ways for tasting food (e.g., not licking fingers). Likewise, at the start of the term, there were multiple cuts resulting from chopping ingredients, though none were serious and the frequency of cuts reduced over the term.

Perhaps a more common issue that arose in implementing the program was in meeting student expectations for the types and quality of foods prepared. This was most obvious in the observation data, and was demonstrated by the students’ initial reluctance to try the meals they had prepared. Student comments in the focus group also reflected their unmet expectations. For example, students commented that there were too many vegetables in the meals (“There should be more meat than veggies”) and that the method of preparation was not as they expected (“Like we make nice foods like spaghetti Bolognese and then you killed it [with vegetables]” and “Yeah, just put bacon and egg in the quiche, Miss”).

Finally, the major challenge in evaluating cooking interventions with alternative education students appears to be in measuring the impact of these interventions in robust and consistent ways. In the current feasibility study, we chose to collect information through weekly observations, a focus group with students at the end, and an interview with a staff member. Limitations arose with each method. The weekly observations were limited by the biases of the research team who recorded them. The teacher interview was valuable, but the overall tone was positive and appreciative, and the interviewer felt that these findings were somewhat unbalanced. To collect student information, we conducted a focus group to minimize student burden and to address any issues of poor literacy that may arise in answering the questionnaire. However, participation in the focus group was lower than expected due to poor attendance at school that day and the high turnover of students in the school (some students had only attended one or two cooking sessions and did not want to participate further).

Conclusion and implications

Our experience in implementing this feasibility study shows that cooking programs are well liked by students and appreciated in alternative education settings. We found that cooking sessions provide students with opportunities to learn multiple life skills and to try new foods. Moreover, we did find it of great interest that the students and teacher commented on the impact of the cooking

sessions on the social, cultural, and personal wellbeing of students. This suggests that future attempts to implement and evaluate youth cooking programs may emphasize these aspects of cooking in the recruitment of young people and their schools and families. Robust evaluations of youth cooking programs are needed, and may expand the field with the inclusion of a broader range of measures of impact beyond good nutrition.

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