Assessing the impact of hands-on food safety practices in shared-use commercial kitchens across Florida: An outcome-based evaluation

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Introduction, purpose and objectives

'Enhancing Food Safety Practices and Introducing FSMA Regulations Through Hands-On Activities in Shared-Use Commercial Kitchens Across Florida' was a USDA-NIFA funded project that was implemented in Florida from 2019 to 2023. The long-term goal of this project was to prepare food entrepreneurs for future business growth and to help them meet buyers' requirements by educating them on regulatory practices and food safety. To meet this goal, the project conducted hands-on workshops, meetings, and demonstrations for new food entrepreneurs in shared-use commercial kitchens. These activities focused on educating participants on government regulations for running food businesses, and in raising awareness of Current Good Manufacturing Practices (cGMPs).

The purpose of this evaluation was to assess the effectiveness of the workshops. The specific objectives of the evaluation were:

1. To assess the achievement of short-term outcomes of the project
    - Increase in knowledge and skills of food entrepreneurs about food safety in shared-use commercial kitchens
2. To assess the achievement of mid-term outcomes of the project
    - Implementation of proper food safety practices into food operations by food entrepreneurs

Conceptual framework

Outcome evaluation, a summative evaluation approach guided the evaluation process in this study focusing on assessing how well the program achieved its specified long-term goals (Giancola, 2020). These goals included changes in knowledge, attitudes, and behavior among the participants. In addition, process evaluation, a formative evaluation approach, was used to understand how the project's implementation had impacted the outcomes (Owen, 2006).

Methods

The evaluation used a mixed methods approach. Quantitative data collection methods included post-training and follow-up surveys conducted with the food entrepreneurs. Qualitative data collection methods involved follow-up interviews after the training. Following the workshops, all participating food entrepreneurs ($n = 72$) completed a post-training survey that included reflexive control to assess change in knowledge. The follow-up survey was sent out to the workshop participants in July 2023, via email, using the tailored design method (Dillman et al., 2009). Consistent with the design, three reminder emails were sent to the participants. The response rate to the follow up survey was 23.52%. To enrich the evaluation findings, follow-up interviews were conducted. The response to the interview invitations was modest, resulting in only four participants enrolling for the interviews. Collected data were analyzed using descriptive and inferential statistics and thematic analysis.

Results/Findings

Post training

Findings show that after the workshop, there was a significant change in knowledge ($Z = 7.307$, $p < 0.001$) among the participants. Regarding competence of food safety practices, food entrepreneurs reported a mean competence of 3.69 ± 0.437, indicating competence reaching the level of 'a lot' after training (Response scales were: *None* (1), *A little* (2), *Some* (3), *and A lot* (4)).

Follow up survey and interviews

Most of the participants reported that understanding the food safety regulations and applying them is important (4.38 ± 1.188) and easy (4.13 ± 0.991 to 4.75 ± 0.707) for them

(Responses were collected on a 5-point scale ranging from 1 (*not easy/ not important*) to 5 (*easy/ important*)). These findings align with the results of the interviews conducted with the participants, where they discussed the importance of implementing food safety practices such as sanitation, preventing cross-contamination, and temperature control. Similarly, the findings from the interviews and surveys were consistent in terms of changes in knowledge with participants reporting improved knowledge. The mean index was 3.95 ± 0.754, indicating a 'significant improvement' in knowledge (Response scales: *None at all* (1), *A little* (2), *A moderate amount* (3), *A lot* (4), and *A great deal* (5)). Moreover, the data obtained from both the interviews and the survey were consistent regarding the competency of food safety practices, with participants reporting improved competency and compliance with food safety measures. The mean index was 3.37 ± 0.70 indicating 'some' competency (Response scales: *None* (1), *A little* (2), *Some* (3), *and A lot* (4)). However, for change in behavior the survey findings contrasted with those of the interviews. In survey, participants reported that, as a result of the training, they have improved their cleaning and sanitation practices, conducted hazard analyses, and developed food safety plans for their businesses. Similarly, participants reported that their participation in the food safety training resulted in an 87.44% increase in the sales volume of their food business (n=4). In contrast, during the interview, participants reported that the training provided some guidance on where to find information about hazard analysis plan, but it lacked depth in providing knowledge for effectively implementing the hazard analysis process. Similarly, regarding food safety plan, participants mentioned that they already had a food safety plan in place before the training, while others stated that they did not require a food safety plan due to their small size. Also, participants shared that they did not experience any increase in sales or growth of business as a result of participating in this training.

Conclusions and recommendations

The project successfully achieved its intended short-term outcome of increasing the knowledge and skills of food entrepreneurs. The increased knowledge and skills sustained one and a half years after the training. The low participation of food entrepreneurs in the follow-up survey and interviews resulted in two contrasting pieces of evidence regarding the achievement of the mid-term goal. During the interview, participants shared the need for a comprehensive training program to have a better understanding of food safety practices and regulations, as well as access to resources on these topics. It is recommended to take these needs into account when designing future food safety programs. Moreover, to increase the relevance of the training for the participants, it is recommended to perform audience segmentation when designing the training according to the type and stage of the food business. It is also recommended that the project team work closely with the director of food hubs to coordinate future training programs and follow up data collection processes to increase the response rate of participants. This helps to increase the accuracy of assessing program's objectives.

References

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