Article

PARTICIPATORY COOKING DEMONSTRATION TO ENHANCE CAPACITY OF COMMUNITY NUTRITION WORKERS IN PROMOTING OPTIMAL COMPLEMENTARY FEEDING PRACTICES

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Abstract: Undernutrition remains as a public health concern among children under-five in the Philippines. Participatory cooking demonstration is an approach used to promote positive behavior change and improve nutrition outcomes. A participatory action research was done in Aklan and Capiz, Philippines, with 106 community nutrition workers as participants. It aimed to explore readiness to use participatory cooking demonstration in conducting nutrition education on optimal complementary feeding. Training pre- and post-test scores were collected; actual performance was evaluated based on food preparation techniques, attitude, and knowledge on complementary feeding; while acceptability of recipes and feedback from caregivers were documented. There was an improvement in knowledge acquisition based on the pre- and post-tests. Based on a three-point scale, mean scores post-training implied readiness, 2.66 (Capiz) and 2.48 (Aklan). After the actual implementation in the community, based on a five-point scale, readiness mean scores were 3.64 (Aklan) and 4.25 (Capiz). Participants also expressed that their confidence improved. Monitoring results showed that principles and techniques were followed and majority (65.2% in Capiz, 75.0% in Aklan) completed the series of sessions. While it was found to be useful and easy-to-learn, sustainability relies on continued capacity building, financial support, availability of facilities, and accessibility of ingredients.

Keywords: participatory cooking demonstration, complementary feeding, nutrition education, nutrition action research

INTRODUCTION

In 2015, a high prevalence of underweight children was recorded at 21.5% while stunting was 33.4%, equivalent to 4.6 million stunted Filipino children under five years old (DOST-FNRI, 2016). In this age group, infants and young children at 6-24 months are the most vulnerable to undernutrition and infection causing higher risk of morbidity and mortality. Furthermore, the major decline in height-for-age of children, reflective of chronic malnutrition, is reported to take place during the period of gestation to approximately 24 months post-delivery, which is referred to as a "window of opportunity" for implementing appropriate interventions to arrest further deterioration of their nutritional status (UNICEF, 2015).

Based on the Philippine Plan of Action for Nutrition (PPAN) 2017-2022 (NNC, 2018), undernutrition is caused by a myriad of factors, primarily due to lack of adequate food, frequent illness, poor care practices, lack of access to

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health and social services, and poverty. Mothers discontinuing breastfeeding their babies before six months and inappropriate complementary feeding practices contribute to the increase in prevalence of undernutrition among infants and young children. On the average, the duration of exclusive breastfeeding in the Philippines was recorded at 4.1 months (FNRI, 2013). In addition, about 35% of children were not introduced to solid, semi-solid and soft foods at 6 months and only about 4.6% of infants 6-11 months, 16.9% of 12-17 months, and 25.2% of 18-23 months met the minimum dietary diversity score (DDS). Hence, focusing on the first 1000 days to prevent undernutrition, particularly stunting, among children and increasing the DDS for young children through the promotion of optimal feeding are part of the strategic thrusts of the PPAN 2017-2022 (NNC, 2018).

Home food preparation is composed of heterogenous practices, experiences, and perceptions defined by personal motivations, social norms, shifting priorities, and circumstances such as time, money, and facilities (Mills et al, 2017). Women, specifically mothers, are believed to be responsible primarily for the procurement, preparation, and serving of food at home (Moisio et al, 2004, Zahari & Salehuddin, 2014). However, in the Philippines, the mothers' or caregivers' strong adherence to food beliefs, preoccupation with work, and insufficient knowledge and skills remain to be hindering factors in nutritious complementary food preparations (Talavera et al., 2014). Garcia et al., (2016) further posits that not knowing how to cook is a barrier to healthful food preparation and that delivery of community cooking skill programmes may serve as a vehicle to improve and promote confidence, well-being, and enhance meal quality and preparation practices.

One of the nutrition-specific programs highlighted in the PPAN is the Infant and Young Child Feeding (IYCF) program. In the communities, community nutrition workers (CNWs) serve as the prime movers in the promotion of infant and young child feeding practices. Typically, messages on IYCF is conveyed to primary caregivers through the conduct of mother's class, counselling, organizing peer counsellors and other information dissemination methods. To have a more interesting approach to promoting optimal complementary feeding practice, FAO Philippines initiated and explored the implementation of recipe trials and participatory cooking demonstration. The National Nutrition Council initiated recipe trials in several provinces in the Philippines based on a recipe trial handbook developed by Talavera et al. in 2013. Despite the lack of systematic evaluation, anecdotal evidence showed that the steps need to be further simplified and additional funding is needed to make the program sustainable.

Participatory cooking demonstrations were implemented in countries such as Zambia and Afghanistan to develop and test nutritious recipes of complementary food as well as to promote positive behavior change for better diet quality and tangible nutrition outcomes (FAO, n.d.). In 2017, this method was carried out in selected provinces in the Philippines as a practical way of showing caregivers how to prepare improved dishes for young children, using readily available local ingredients. Based on the key lessons of successful large-scale, community-based, child growth promotion programs, well-trained female community workers were found to be the best people to deliver services as they are less expensive than skilled workers, on the spot, and can better communicate with mothers (The World Bank, 2006). As such, this study aimed to explore the readiness of the CNWs to use participatory cooking demonstration as a method to promote optimal complementary feeding practices among caregivers and improve their food preparation skills.

METHODOLOGY

Study Design

Participatory action research (PAR) is the "systematic collection and analysis of data for the purpose of taking action and making change" by generating practical knowledge (Gillis & Jackson as cited in MacDonald, 2012, p. 35). In this study, participatory action research was used to assess the readiness of CNWs to use participatory cooking demonstration as a method to promote optimal complementary feeding. This approach highlights the contribution of stakeholders in finding sustainable and transformative solutions anchored on positive behavior change. Complementary feeding, in the context of child care, is dependent on the caregiver's knowledge, beliefs, and skills. Pre- and post- tests were conducted to determine the initial and post training IYCF knowledge acquired by the CNWs. The participants' performance was observed and rated using a checklist, which outlines the three-step process in conducting participatory cooking demonstrations among caregivers in their respective communities (Figure 1). The three steps of participatory cooking demonstration were adapted from FAO (2017). The first step was the preparatory stage. Activities were to identify the issues on complementary feeding of caregivers in the community and arrange the venue, ingredients, and utensils to be used. The second step was to do the actual participatory cooking demonstrations. Activities include cooking demonstrations while delivering key messages on complementary feeding or clarifying misperceptions of caregivers, food tasting, and scheduling of succeeding sessions. Finally, the CNWs were to conduct follow through activities such continuing cooking demonstrations in other target communities and sustained information dissemination through the promotion of key messages on optimal feeding practic-

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es. After implementation, the participants were interviewed and asked to evaluate their performance throughout the process. The sustainability of participatory cooking demonstrations was also assessed to further explore their readiness to adopt the intervention.

Figure 1.

Steps in participatory cooking sessions

Participant Recruitment Selection

The study was conducted in two provinces, namely, Aklan and Capiz. Increasing prevalence of underweight and stunting among preschool children were found in these two provinces from 2014 to 2015 according to the Nutrition Situation Update Report of NNC Region VI (2016). Five municipalities were purposively selected from each province based on two criteria, namely, the presence of CNWs and the peace and order situation. Two CNWs, composed of Barangay Nutrition Scholars, Barangay Health Workers, Peer Counsellors, Mother-Leaders, and Municipal Nutrition Action Officers, were selected from each of the five (5) barangays/communities comprising each municipality, which makes a total of 106 participants.

Data Collection

Training for the Participatory Cooking Demonstration

Seven (7) batches of training was conducted with 10-20 participants in each batch. Before the training, a guide on how to conduct participatory cooking demonstrations was developed based on FAO's Briefing Note on Participatory Cooking Demonstration in Nutrition Education available online (n.d.). This was used by the participants during the training and when they conducted the participatory cooking demonstration in their respective areas. The guide contained eight (8) sessions, which explains the importance of complementary feeding; steps in participatory cooking demonstrations; complementary feeding guide for young children 6-9 months, 9-12 months, and 12-24 months; food taboos; procedures for return demonstrations; and the steps in reentry planning (FAO, 2017).

Before the training, coordination with the local government officials was done to seek approval and support for the subsequent participatory cooking demonstrations of CNWs. Logistical arrangements were made as well as the assembly of participants' kits containing a set of kitchen utensils such as knife, chopping board, sauce pan, frying pan and money for purchasing ingredients. During the training, the participants attended eight (8) sessions which focused on enhancing their knowledge and skills on how to conduct participatory cooking demonstration (Figure 1). The participants' skills were further honed by conducting return demonstrations. The performance of the participants was evaluated by the researchers using the rating scale of 1 to 3 (1-needs improvement, 2-acceptable but can still be improved, 3-very good). The criteria included mastery of the recipe, safe food handling practices, time management skills, knowledge on complementary feeding, confidence in conducting the demonstration, ability to motivate caregivers to participate, communication skills, and food preparation skills. The CNWs were likewise asked to rate their overall experience after the series of participatory cooking demonstrations using a 5-point scale, 5 being the highest. After the training, the participants conducted at least two (2) participatory cooking demonstrations in their respective communities using the participatory cooking demonstration kits and funds to purchase ingredients. It served as a "starter kit" for the CNWs to ensure that they will practice their learnings immediately after the training.

Actual Conduct of Participatory Cooking Demonstration in the Community

The trained CNWs organized and conducted participatory cooking demonstration in their respective areas. The researchers monitored the implementation of actual cooking demonstrations. They were assessed based on their preparatory activities, how the activity was conducted, and observed level of confidence during the process. After the completion of the activity, the trained CNWs were asked to evaluate their own performance using a scale from 1 to 5, in which 5 is the highest score, based on the following criteria: 1) knowledge on the selection of ingredients, food preparation techniques, and food safety, 2) knowledge on complementary feeding, and 3) confidence during the demonstration and skills in handling the sessions. Issues and concerns of community nutrition workers related to their experience as facilitators and the caregivers as participants were also recorded.

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Data Analysis

Descriptive statistics were used to analyze the results of the study. Knowledge was measured by obtaining the number of participants who had an increase, decrease, and 'no change' in pre- and post-test scores. Performance of the participants during the training and during the actual conduct of participatory cooking demonstration in the community was assessed by computing the mean rating for each performance criterion. Comments of CNWs and caregivers were also summarized.

Ethical Considerations

The protocol in conducting participatory cooking demonstrations was designed based on rigorous literature review and in consultation with FAO, Philippines. Approval from target municipalities in Aklan and Capiz were secured prior to data collection. Informed consent was sought from CNWs and caregivers who participated in all the sessions. The objectives of the study, procedures, and duration of the study were explained to the participants as well as their option to withdraw at any point. Anonymity was also ascertained throughout the analysis. The results were used to develop a manual on participatory cooking demonstrations for use of community nutrition workers. This study was conducted for public benefit or service program.

RESULTS AND DISCUSSION

Profile of the Participants

A total of 106 CNWs completed the training on conducting participatory cooking sessions. Majority (98.1%) were females, with mean age of 46.7 years, and age range of 22 to 68 years. The mean length of serving as community nutrition worker is 10 years, though a few are quite new in the job. In terms of educational attainment, majority (47.2%) are high school graduate, while some (39.6%) have reached college level, and only few (3.8) were elementary graduate (Table 1).

Table 1

Profile of Participants

Characteristics	Number (n=106)	%
Gender		
Male	2	1.9
Female	104	98.1
Age		
20-29	4	3.8
30-39	24	22.6
40-49	38	35.8
50-59	25	23.6
>60	15	14.2
Age: Range, in years	22-68	
Mean, in years	46.7	
Length of Service: Range, in years	<1-34	
Mean, in years	10.3	
Educational Attainment		
Elementary Graduate	4	3.8
High school Graduate	50	47.2
Vocational	7	6.6
College Undergraduate	42	39.6
College Graduate	3	2.8

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Assessment of readiness to conduct participatory cooking demonstrations

IYCF knowledge acquisition

The scores in the pre- and post-tests were used as basis for knowledge acquisition of the participants. The scores of most of the participants (31.1%) did not change, 19.8% scored lower, while 25.5% were not able to do both pre - and post-tests. However, it is worth noting that 23.6% of the participants had higher scores after the training.

There are a number of factors contributing to the extent of knowledge transfer in trainings such as trainee characteristics, which includes motivation to learn, training design, and the work environment (Colquitt et al., 2000, Blume et al., 2009). Because participatory cooking demonstrations focus largely on building food preparation skills, which is only one component of IYCF, the knowledge gap may be addressed by other training methods such as lectures, coaching and mentoring, and technology-based learning. Those with improved post test scores, however, implies that there are still opportunities for knowledge transfer given the design of participatory cooking demonstration. More so, this method can be complemented by other techniques if there is a need to strengthen knowledge on IYCF.

Participatory cooking demonstrations skills

Results showed that the CNWs can conduct participatory cooking demonstrations based on the mean rating of 2.66 and 2.48 in Capiz and Aklan, respectively, which is acceptable. Overall, the basic preparatory steps in conducting participatory cooking sessions were done as taught, with a mean score of 2.73 and 2.75, for Capiz and Aklan, respectively. The skills applied during the actual demonstrations which include knowing the recipe, choosing the ingredients, cooking the food, and serving the food, were also commendable with mean score of 2.64 in Capiz and 2.51 in Aklan. The confidence of community workers toward the experience were also found acceptable but was higher in Capiz compared to Aklan (2.66 and 2.22, respectively). These included handling the activities, coordinating i.e., setting the venue, encouraging the caregivers and children to taste and eat the prepared food.

Table 2

Participatory cooking demonstration skills of CNWs

Elements	Mean Rating	
	Capiz	Aklan
Preparations	2.73	2.75
1. Choose foods readily available in the homes.	2.84	2.80
2. Select recipes for the cooking session.	2.88	2.96
3. Inform and invite target mothers and caregivers of the date, time and venue for the cooking session.	2.70	2.92
4. Explain the purpose of the cooking demonstration. Ask the mothers a caregivers about the current practices on infant and young child feeding. Give one or two messages on optimal complementary feeding practices.	2.48	2.32
Recipe Preparation	2.64	2.51
1. Know the recipe.		
A. Choose a recipe that conform to the local eating patterns and make improvements when necessary.	2.76	2.48
B. Review the basic rule of complementary food – staple/starchy food + protein-rich food + vegetable or fruit + a little oil.	2.70	2.28
C. Identify the ingredients and amount needed, utensils needed, steps in cooking, and cooking time.	2.39	2.64
2. Choose the ingredients.		
A. Make a list of the ingredients and utensils to use.	2.52	2.64
B. Choose ingredients that are available in home gardens or in the local market.	2.80	2.84
3. Cook the food.		
A. Ensure that every member of the audience can clearly see the demonstration.	2.70	2.24
B. Explain the purpose of the demonstration, recipes, and complementary feeding message/s.	2.66	2.12
C. Actively involve the mothers/caregivers in the process by asking them to assist in preparing the ingredients like cutting of vegetables and encouraging them to ask questions and offer suggestions.	2.64	1.72

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D. Conserve nutrients. Do not overcook. Do not use seasonings.	2.56	2.76
E. Use utensils and cooking facilities and processing equipment that are found in most homes.	2.72	2.92
F. Follow kitchen safety and sanitation practices which include proper hygiene and washing of hands; cleaning of work surfaces and washing of utensils; and washing of food before to cooking.	2.58	2.60
4. Serve and taste the cooked food.		
A. Serve the right amount of food according to the age of the child.	2.66	2.64
B. Ask the mothers/caregivers to taste the cooked food using own clean eating utensils.	2.68	2.84
Evaluation of Activity Conducted	2.65	2.52
1. Have the mothers and caregivers, as well as their children, taste the cooked food and find out which recipes children like the most. Ask for comments and suggestions.	2.78	2.56
2. Discuss and record which new dishes mothers have agreed to try and record the attendance.	2.51	2.48
Attitude of Community Nutrition	2.66	2.22
1. Shows confidence in conducting participatory cooking demonstrations.	2.78	2.20
2. Actively encourages mothers to properly prepare and give foods according to age.	2.66	2.28
3. Able to finish tasks on time.	2.66	2.16
4. Able to answer questions confidently and correctly.	2.52	2.24
TOTAL SCORE	2.66	2.48

There are good practices and areas for improvement noted based on participant observations. During the preparatory stage, participants were able to select a suitable venue for the nature of the activity. Facilities such as waste disposal areas, water supply, tables, chairs, and cooking areas were provided. A sufficient number of caregivers including key persons such as officials and other health workers were invited and were able to attend the activity. In terms of the actual demonstration, locally available ingredients were used, caregivers were able to bring ingredients from their own backyards, well-written recipes were prepared, and visual aids to enhance learning were produced by the trained CNWs. Confidence in relaying key IYCF messages were also observed. The trained CNWs were able to enjoin caregivers in the process of preparing and cooking while they were delivering IYCF concepts. They were also keen in keeping time and attention of the caregivers. However, the trained CNWs can still improve on their preparation of market lists, utensils, product evaluation forms, and mastery of cooking methods and IYCF principles, specifically amounts and consistency of food for specific age groups.

Based on these observations, it was realized that indeed there is a need to strengthen the IYCF knowledge of CNWs along with honing food preparation skills. The process of relaying key messages while doing the actual food preparation calls for mastery of IYCF concepts and basic cooking methods. Capacity building of CNWs needs to be focused on to achieve the intended outcomes of participatory cooking demonstrations.

Self-rating of participatory cooking demonstration experience by the CNWs

When the CNWs were asked to rate themselves based on their overall experience, using a scale of 1 to 5, 5 being the highest, CNWs from Aklan gave themselves a satisfactory mean rating of 3.64 while those from Capiz gave themselves an above average mean rating of 4.25. Reasons for giving a higher rating of 4 to 5 included: 1) feeling accomplished for having conducted series of cooking sessions despite problems and challenges encountered, 2) being able to teach a relatively big crowd of audience and receiving positive response from them, 3) increase in their confidence level and skills since the conduct of cooking sessions, and 4) supported and commended by their supervisors and community leader. On the other hand, reasons that led CNWs to give a lower rating of 2 to 3 included: 1) target caregivers either declined their invitation (e.g., mothers who committed to attend but did not come or came in late, 2) community nutrition workers felt they were not good enough and came in unprepared during the sessions, 3) they were not supported by community officials, and 4) logistics and other preparations were not enough.

The CNWs expressed that conducting the participatory cooking demonstrations helped them build their confidence by: 1) being able to teach in a bigger crowd of caregivers new concepts on proper food preparation and optimal feeding for children and addressing common food taboos in complementary feeding, 2) receiving positive feedback from caregivers and that they too expressed confidence to do the same preparation in their homes, and 3) seeing the children appreciate the food on the plate by tasting and finishing it. This finding is consistent with that of Garcia et al., (2016) which showed that cooking programmes have positive effect on food literacy, in-

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creased confidence in cooking skills and consumption of fruits and vegetables. In a meta-analysis study done by Reicks et al. (2014), 16 out of 28 studies evaluating the impact of cooking interventions on dietary intake resulted to increased consumption of fruits, vegetables, and grains and improved consumption of dietary sources of fat, fiber, sugar, and sodium. Meanwhile, in a qualitative study done to assess the impact of community-based practical food skills intervention, increased confidence, enthusiasm, and adventurousness around food preparation and trying new food were reported post intervention (Wrieden et al., 2002).

The CNWs also expressed their positive experiences in conducting the participatory cooking demonstration sessions. Common to the two areas, these experiences were: 1) presence and support of community leaders and officials during the participatory cooking sessions; 2) involvement of community health workers who took care of the children brought by the caregivers and acted as support group; 3) evident positive outcomes of CNWs' encouragement for caregivers to participate; and 4) active participation and cooperation of the caregivers by accepting the invitation and arriving on time and listening attentively to discussions. Furthermore, support from community leaders and officials are highly regarded as implementation of activities is perceived to be better when approved by them. The cooperation and expression of support of midwives affirm their good work. In addition, the acknowledgement of their efforts and the commendation they received for their ability to teach new and proper ways of preparing food was highly regarded as positive experience.

The CNWs employed different strategies to facilitate the conduct of the participatory cooking demonstrations in their communities such as 1) asking support from co-workers, 2) exercising team work and delegation of tasks 3) use of visual aids and cue cards to help in the discussions, 4) pre-preparation activities prior to the scheduled session, as cleaning of utensils and pots to use, advanced team in the venue to set-up early, and handling of ingredients which require longer preparation, 5) borrowing and/or bringing additional equipment and utensils for the sessions, and 6) inviting caregiver-participants ahead of time and reminding them from time to time through phone calls and/or home visits.

Assessing the sustainability of participatory cooking demonstrations

After one to two weeks of having attended the training, some of the trained CNWs (n=47) were interviewed using a Monitoring Checklist which focused on the 1) implementation of the activities as contained in the re-entry plan, 2) adherence to the guide in conducting participatory cooking sessions, and 3) strategies to sustain the implementation of participatory cooking demonstrations. Majority of the CNWs (65.2% in Capiz and 75.0% in Aklan) were able to complete the number of sessions according to the schedule indicated in their reentry plans. Reasons for not meeting the target number of sessions were due to time constraints and bad weather conditions. Although they were taught during the training that the ideal number of participants per cooking session is 8-10 participants, most CNWs targeted more than the recommended (52.2% in Capiz; 50.0% in Aklan) in order to 1) maximize the allotted funds and to 2) to maximize attendance of caregivers during health center-based immunization periods and prenatal check-ups. Getting signed attendance sheets per session was the most common form of documentation in both provinces. Majority of the barangays used the monetary provisions for other purposes namely, snacks, transportation expense, and charcoal and/or wood for fuel. Some purchased additional utensils such as spoons and bowls which they thought were needed for the sessions.

In terms of adherence to the guide in conducting participatory cooking sessions, CNWs followed the steps which included explaining the purpose of the demonstrations and complementary feeding messages; following kitchen safety and sanitation practices; letting caregivers taste the food prepared; and letting children eat the prepared complementary food. Soliciting from caregivers was one of the strategies implemented to sustain the cooking demonstrations. However, only 39.1% and 54.2% of CNWs in in Capiz and Aklan, respectively, asked caregivers to bring vegetables/fruits available in their homes (Table 4). It was raised by some of the participants in Capiz that asking for materials and fresh produce from backyard gardens elicits a negative impression. Thus, CNWs were hesitant to ask for ingredients from their own homes.

Majority of CNWs claimed that they have become more confident in conducting participatory cooking demonstrations. Some mentioned that their confidence improved as they conducted more sessions. Also, the positive response from the caregivers and support from their co-workers also helped build their self-esteem. They also expressed desire and willingness to do the sessions on a regular basis, together with other nutrition programs in the community as long as there is financial support. Likewise, they were able to share lessons gained from the participatory demonstrations to fellow CNWs. Their colleagues were invited in the first participatory cooking demonstration they conducted.

There was no formal monitoring procedure reported by the CNWs as to whether the caregivers were able to apply

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their learnings from the participatory cooking demonstrations. Although there was a mention of alternative strategies that enabled them to check such as: 1) following up on caregivers living near their house, 2) simultaneous monitoring of complementary feeding practices with household visits for other projects, while 3) others rely on barangay activities where they will get the chance to see the caregivers. While structured monitoring procedures remain a challenge in both provinces, cooking interventions call for follow through to effect a change in behavior. Findings of Wrieden et al. (2007) suggests that cooking skills classes do make a small, measurable change in dietary habits, but was not maintained when the encouragement to cook and to consume was withdrawn. Furthermore, Kennedy (2001) states that teaching skills among low income households, who are coping within their restricted circumstances, need the support of a wider multiagency framework geared towards capacity building to ensure sustainability. Aside from IYCF knowledge and food preparation skills, commitment of CNWs, active support of community leaders, and funding are essential in sustaining participatory cooking demonstrations as well as in translating it to dietary outcomes. The plans mentioned by the CNWs to commit to their role in conducting participatory cooking demonstrations, to aim for intersectoral partnerships, to hold advocacy meetings, and to seek help from caregivers in providing supply of ingredients are indeed necessary to ensure sustainability.

Table 3

Assessment criteria for sustainability of participatory cooking demonstrations

Criteria	**Percent**	
	Capiz	**Aklan**
Compliance to re-entry plans		
1. Number of sessions participatory cooking demonstrations conducted		
•As targeted	65.2	75.0
•Below target	4.3	20.8
•Above target	30.4	4.2
2. Number of participants per session		
•8-10 participants per session	30.4	12.5
•Less than 8-10 participants per session	17.4	37.5
•More than 8-10 participants per session	52.2	50.0
Adherence to the guide in conducting participatory cooking sessions	**YES**	**NO**
1. Explained the:		
A. purpose of the demonstration/s	95.7	4.3
B. complementary feeding message/s	95.7	4.3
2. Chose new recipes that use local foods	73.9	26.1
3. Adjusted recipes according to the formula of complementary food (Starchy food + protein-rich + vegetable/fruit + a little oil)	78.3	21.7
4. Identified the following components in a recipe (Ingredients and amount needed, utensils and equipment, procedure, cooking time	65.2	34.8
5. Followed kitchen safety and sanitation practices	95.7	4.3
6. Used vegetables/fruits from home gardens	65.2	34.8
7. Asked mothers to bring vegetables/fruits available in their homes	39.1	60.9
8. Allowed mothers/caregivers to cook or assist in preparing the ingredients like cutting of vegetables	65.2	34.8
9. Encouraged mothers/caregivers to ask questions	78.3	21.7
10. Mothers/caregivers tasted the food prepared	100.0	0.0
11. Children ate the prepared complementary food	100.0	0.0
Sustainability	**YES**	**NO**
1. Confidence in conducting participatory cooking demonstrations	95.7	4.3
2. Willingness to do the sessions on a regular basis	91.3	8.7
3. Shared lessons gained from the participatory demonstrations to co-workers	95.7	4.3
4. Scheduled monitoring activities to mothers/caregivers	60.9	39.1
5. Support gained from barangay captain/midwife/local health workers in conducting participatory cooking demonstrations	82.6	17.4

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Facilitating and hindering factors in conducting participatory cooking demonstrations

The facilitating factors identified by the CNWs were 1) availability of funds and participatory cooking demonstration kit, 2) support from the community leaders and officials through the provision of suitable venue and facilities as table, chairs and sound system; 3) conducting sessions in households where a backyard garden is present; 4) provision of transportation allowance to some caregivers living in areas which are far from the venue. On the other hand, the hindering factors were 1) inviting caregivers, 2) budget and financial constraints for buying food and fuel for the cooking sessions, 3) lack of support from the local government unit, 4) inadequate logistics such as venue, facilities and utensils and equipment, 5) difficulty in feeding the child, and 6) work load of CNWs. Inviting and encouraging caregivers to attend the sessions is a major issue because they have a number of reasons not to attend the sessions such as housewives having activities the whole day. In the morning, caregivers attend to their children going to school; by midmorning, they prepare and cook for lunch; in the afternoon, they attend to a number of household chores; by late afternoon they need to fetch their children from school and prepare for supper. There were also some mothers working in the farm during harvest seasons. Other caregivers do not want to participate for fear of being asked about what they feed their children, are living far from the venue, and were not interested.

All CNWs expressed willingness to continue conducting participatory cooking sessions in their respective communities. The CNWs described the sessions as very informative and well- structured, given that a number of cooking activities were included in the program. The topics discussed and the hands-on activities were interactive and sufficient to explain and demonstrate the complementary feeding concepts. Furthermore, it was appreciated because of the involvement of the community throughout the process. Most of them acknowledged that this activity is a good platform to share and encourage caregivers to practice optimal complementary feeding. Also, they appreciated the methods used in the cooking sessions which, according them, are different from other activities they do in the community. The identified plans to sustain participatory cooking sessions include: 1) doing their roles as CNWs on conducting participatory cooking demonstrations, 2) target partnership with other offices or agency which already have funding, 3) hold advocacy meetings with their barangay council and captain to support the conduct of sessions; and 4) seek help from caregivers by asking contribution especially on the food ingredients such as vegetables and fruits.

However, one of the concerns of the CNWs was the perception that conducting participatory cooking demonstration activities is an addition to their workload. This might be true to some extent but they are tasked by law to deliver nutrition services and other related activities such as nutrition education, community health, backyard food production, environmental sanitation, culture, supplemental feeding and family planning to the community (PD 1569). Thus, to streamline their workload, their supervisors have to monitor their activities related to participatory cooking sessions as part of sustainability.

In order to sustain the sessions, common to all study sites, there is a need for additional financial support for the foods/non-food items, transportation in going to far-flung areas of the community, training of other CNWs to increase the coverage of the sessions and to continue in the succeeding years, and more sessions and/or opportunities for learning to further enhance knowledge and skill and help build confidence. Support from their peers who are also knowledgeable on how to conduct cooking sessions is also essential. To facilitate better cooking sessions, visuals aids and recipe books are needed as reference for cooking demonstrations and basic information, i.e., cooking methods, cooking time, type and amount of ingredients, serving size and modification per age group. Additional equipment and utensils as eating utensils such as bowls, saucers and spoons, cooking utensils such as iron pots and stove or gas range in order to facilitate cooking and preparation activities during the sessions are needed.

CONCLUSION

From the results of this study, we can conclude that with training, technical assistance, and funding, CNWs can implement participatory cooking demonstrations in the community. The participants found the participatory cooking demonstration useful and the steps easy to follow based on their feedback and observed adherence to the steps and guidelines in conducting participatory cooking demonstrations. There was knowledge acquisition, based on the increase in post test scores, but it was not as profound as the improvement in food preparation skills and confidence observed and reported. Furthermore, their self-assessment ratings ranging from satisfactory to above average imply that they are ready to adopt the steps in conducting participatory cooking demonstrations. The sustainability of participatory cooking demonstrations, on the other hand, depends on the availability of enabling factors such as technical and funding support from community leaders, fellow health and nutrition workers, and the willingness of caregivers to improve their skills in the preparation of complementary food.

Participatory cooking demonstrations may be used in complementation with other traditional methods of nutrition

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education such as IYCF counselling and mothers' classes to ensure that skills are grounded on sufficient IYCF knowledge. Moreover, it can also be combined with routine tasks of information dissemination among health and nutrition workers to stir interest and encourage active participation of caregivers. In addition to the limited indigenous recipes available for demonstration, standardized recipes developed and published in Zambia (National Food and Nutrition Commission, Government of the Republic of Zambia, & FAO, 2007), Cambodia (FAO, 2011), and the Philippines (FAO, 2016) may be modified and adopted to suit the community setting. Modified recipes can be tested while conducting participatory cooking demonstrations. Quantitative and mixed research designs may be used with the inclusion of a control group. Younger populations may also be targeted to address the pervading problem on deskilling of domestic cooks (Lavelle et al., 2016), which contributes to the extent of knowledge and skills transfer to the next generations.

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