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Hutchinson, J, Watt, JF, Strachan, EK et al. (1 more author) (2016) Evaluation of the effectiveness of the Ministry of Food cooking programme on self-reported food consumption and confidence with cooking. Public Health Nutrition, 19 (18). pp. 3417-3427. ISSN 1368-9800

https://doi.org/10.1017/S1368980016001476

Evaluation of the effectiveness of the Ministry of Food programme on self-reported food consumption and confidence with cooking

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Key words: Cooking confidence, Fruit and vegetables, Healthy eating

Short title: Ministry of Food cooking program evaluation

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Acknowledgements
Thanks to Zest Health for Life (the provider of Ministry of Food Leeds) for sharing the quantitative performance data from the Ministry of Food Service. Thanks to the team at Ministry of Food Leeds in supporting the researchers to access attendees of the service to conduct the qualitative research.

Funding
Ministry of Food has been commissioned by Public Health England since June 2010 to engage vulnerable adults, those at risk of ill health as a result of poor diet and those who are less able or motivated to prepare healthy food at home. It delivers a high quality cooking skills programme tailored to meet their needs. The Ministry of Food project is a high profile project for the city and serves to promote Leeds Kirkgate market and shows the commitment within the city to tackling the growing national obesity issue and to provide a range of adult learning opportunities.

Conflicts of Interest
There were no conflicts of interest.

Authorship
ES & JC designed the study, JW carried out the interviews and qualitative analysis, JW and JH undertook the quantitative analyses, all authors were involved with writing the article.

Ethics
This project was covered under part of a block ethics approval MEEC 10-040 for the MSc student project module. The MoF evaluation form included a section for participants to consent to their details being stored for monitoring purposes and to consent to University of Leeds to contact them.

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Abstract

Objective: To evaluate the effectiveness of the Ministry of Food (MoF) cooking programme on self-reported food consumption and confidence within cooking.

Design: A quantitative and qualitative evaluation of the MoF 8 week cooking course, using a pre-test/post-test study. Pre, post and 6 month follow-up quantitative outcomes were measured using self-administered questionnaires to record number of portions of fruit and vegetables (F&V) consumed per day, number of snacks consumed per day, and participants' cooking confidence levels (highest score of 5). Qualitative evaluations were undertaken using structured telephone interviews.

Setting: Leeds Kirkgate market, Ministry of Food Centre.

Subjects: 795 adults (43% male) on MoF courses from 2010-2014. 462 completed questionnaires at all three time points.

Findings: Six months after the course self-reported F&V intake had significantly increased from the start by 1.5 (95%CI 1.3, 1.6, $p<0.001$) portions per day to 4.1 (95%CI 4.0, 4.3). The number of snacks reported significantly decreased over the same period by -0.9 (CI: -1.0, -0.8, $p<0.001$) snacks per day. Cooking confidence increased over the same period by 1.7 (95%CI 1.6, 1.9, $p<0.001$) to 4.4 (CI 4.4 - 4.5). Age and disability, but not deprivation or ethnicity were associated with changes in self-reported F&V intake and cooking confidence scores at six months; and gender with the latter outcome. Qualitative results supported quantitative findings and revealed specific beneficial gains in cooking skill/preparation, nutritional awareness, food purchasing and other social benefits.

Conclusions: MoF community based cooking interventions can have significant positive effects on dietary behaviour, food choice and cooking confidence.

Introduction

Over recent years, a number of campaigns have been developed in the UK aimed at improving the national diet by encouraging behavioural changes in society [1]. Among these strategies are the "Choosing a better diet" framework [2], "Food matters" policy [3] and the "Public Health Responsibility Deal" [4]. Despite these campaigns, average fruit and vegetable intake (F&V), a marker of a healthy diet, remains below recommended levels [5], with only 26% of adults report eating five or more portions per day in 2013 compared to 28% in 2005 [6]. Moreover, the percentage of overweight and obese adults remains high, and has increased between 2005 and 2013 from 60.5 % to 62.1% [6].

In the UK there has been a decline in cooking culture since the 1950s: home-made meals have been replaced with ready meals and convenience foods resulting in a decrease in cooking skills [7; 8; 9]. Lack of cooking skills have been associated with poor diet, and increased consumption of highly processed and energy dense convenience food of reduced nutritional quality [10; 11; 12]. Furthermore, high consumption of ready meals is associated with being overweight [10]. Cooking skills are considered to be major predictors of healthier food choices and the ability to cook in the home [7; 12].

Previous UK government policy has primarily focused on increasing consumer knowledge about healthy eating; however individuals are likely to require practical skills to utilize this knowledge. Within public health nutrition, 'culinary nutrition', is a newly established approach which combines aspects of nutritional principles with cooking and culinary knowledge in the form of cooking interventions [13]. These programs typically involve small groups of participants attending weekly practical sessions over a 4-10 week period with main objectives to increase awareness of healthy nutrition and to increase cooking skills and confidence levels. These practical interventions provide 'hands on experience' that can lead to improved dietary intake, and increased food literacy [14].

Socio-demographic status and household income can influence food purchasing decisions and dietary intake; households of lower-income often have poor diets and are at greater risks of diet-related disease [15; 16]. In the UK, low-income populations consume diets lower in fruit and vegetables, oily fish and micro-nutrients such as vitamin C, folate, iron and calcium than those in the highest income quintile [5]. Those from the lowest socio-economic levels are least likely to be confident with cooking [17]. By increasing food literacy, teaching better budgeting techniques, efficient food shopping strategies and providing accessible information and skills to prepare healthy meals at a low-cost, cooking interventions may help overcome economic barriers that presently prevent healthy eating [18; 19; 20].

In 2008, Jamie Oliver, a celebrity chef, introduced a network of local food centres in the UK providing 8 – 10 week cooking courses aimed to educate lower socio-economic groups individuals on cooking skills, whilst incorporating simple nutritional messages. Named "the Ministry of Food", the campaign aims to eliminate common misconceptions and economic barriers, where the classes teach individuals how to prepare quick, healthy and low cost home cooked family meals, using fresh ingredients. The main objective of this study is to evaluate the impact of the Jamie Oliver Ministry of Food cooking course in individuals who attended the Leeds Kirkgate Market centre from 2010 to 2014, in relation to changes in fruit and vegetables and snacks consumed, and confidence in cooking.

Methods

Ministry of Food Cooking Course

In 2010 the Ministry of Food (MoF) centre was established in Leeds, UK. The MoF centre is a fully fitted domestic kitchen fitted within a stall in Leeds Kirkgate Market. The food centre offers cooking courses which are open to all, but have the aim of teaching those with no or limited cooking skills how to prepare tasty, healthy meals on a budget. Service users attended the centre once a week, over

eight weeks for 90 minutes per session, to learn a range of cooking skills and a variety of recipes which will teach them progressive cooking skills that they can then use to cook a range of meals for themselves and their families. Participants pay between £4.50 - £7.50 per session, based on their individual circumstances. The reduced rate applies to participants who are students or on means tested benefits. Each cooking session promotes a key healthy eating message to educate service users on a wide range of healthy eating messages from understanding food labels to reducing salt, fat and sugar. Specific attention is given within the course to highlight the importance of the "eat well plate", developed by the DOH, stressing the importance of staple food items and portion control to achieve dietary balance. The course included the relevance of government dietary guidelines and differences of dietary requirements within different age groups of the public and vulnerable populations. The basis of the MoF was developed around outcomes from several nutritional studies including the Healthy Weight, Healthy Lives consumer insight report [21].

Study Participants

The MoF cooking course was advertised in a number of ways to attract participants: directly in Leeds Kirkgate Market; on Jamie Oliver's website; by Zest Health for Life publicity; within third sector organisations; through media coverage, and also via information leaflets distributed by Leeds City Council. The MoF received a substantial number of referrals from other organisations including support organisations for those with financial and social deprivation, weight management problems, addictions, physical impairment, learning difficulties and mental health problems. From July 2010 to March 2014, 1,210 adults over 16 years old enrolled in the MoF cooking intervention and were asked to self-complete quantitative questionnaires. These participants were also asked to complete questionnaires directly after the eight week course and then six months after the course. Individuals who gave consent to be contacted up to one year after the course to participate in experience focused interviews were later contacted by telephone for interview.

Design

In this study the impact of the MoF courses, run from 2010 to 2014, on short and long term dietary behaviour was investigated using a pre-post test design. Due to the absence of a control group, the effectiveness of the MoF cooking intervention was measured using mixed methods including both quantitative and qualitative evaluations. The evaluations were based on self-reported data.

Quantitative Evaluation

The effectiveness of the MoF course was evaluated by assessing the change in self-reported number of portions of fruit and vegetables consumed per day (0, 1, 2, 3, 4, 5, 6 and 7+); the change in the self-reported number of snacks consumed per day (0 to 7+); and the change in participants' self-reported confidence in cooking a healthy meal (0 to 5; 0 being not confident at all, and 5 very confident). This was determined by comparing responses to the self-completed questionnaires before the course with those immediately after the course and also with responses six months after the course. The questionnaires included examples for a portion of fruit and vegetables ('Example one handful = one portion') and for snacks ('Examples include: cake, biscuits, crisps etc.')

As part of the MoF evaluation all participants were asked to complete a general background questionnaire, issued before the beginning of the course. This included self-reported postal code (used to measure deprivation), age group, ethnicity, gender and whether the participant considered they have a limiting disability, a long term illness, or condition that limits; categorised by Learning Disabilities, Physical Impairment, Mental Health Problems.

Qualitative Evaluation

A structured interview consisting of ten questions (Appendix 1) was prepared based on specific aims of the MoF and a discussion with a health improvement specialist working within public health.

Establishing contact with the participant was tried three times on three different non-consecutive days to maximise response. Each telephone interview was initiated with a brief introduction by the interviewer (JW) and an explanation of the purpose and procedure of the phone call. Each telephone interview lasted for 15 to 30 minutes and included questions asking about cooking skills learned; healthy eating knowledge learned; if members felt they had improved portion control; confidence in cooking; whether they enjoyed working as a group and meeting new people; changes in eating habits since the course; and what members thought was best about this course and what could be improved. Open-ended questions were asked, and responses were recorded in order to obtain detail of the participant's experiences at the MoF.

Statistical Analysis

All questionnaire data were analysed using Stata version 13 (Stata Corp LP, College Station, TX, USA). Student's paired t-tests were used to determine whether there were statistically significant changes between before and immediately after the MoF course (and also between before and six months after the course for those who completed this follow-up questionnaire) in the mean number of self-reported portions of fruit and vegetables consumed per day; the mean number of self-reported snacks consumed per day; and the mean change in participants' self-reported cooking confidence levels. In the analyses the '7+' responses were counted as '7'; this avoided exaggerated responses becoming outliers. Only 1-3% of participants reported they ate 7 or more portions of fruit and vegetables and only 1% of participants ate 7 or more snacks. A significance level of less than 0.05 was taken to represent statistical significance for all analysis.

For MoF participants who completed the questionnaires at all three data collection time points, multivariate regression analyses were undertaken to determine whether changes in self-reported fruit and vegetable intake, snack intake and cooking confidence scores between before and six months after the course were independently associated with the socio-demographic factors. All the five socio-demographic variables were included in the multivariate regression for each outcome, meaning results were adjusted for all variables. These were age group (16-19, 20-64, 64+), ethnicity (White, Black, Asian, mixed race, other), gender and presence of a disability (no difficulties, learning disabilities, mental health problems, physical impairment, multiple disabilities, other disabilities) and deprivation (deprived Leeds residents; non-deprived Leeds residents; living outside of Leeds or had non-mappable postcodes (Note: 7% of participants had non-mappable postcodes for the purpose of classifying deprivation; 4% appeared to be Leeds postal districts & 3% outside of Leeds). Individuals were categorised as deprived if they lived at postcodes in Leeds that were classified in the top 10th of deprivation in England using the Index of Multiple Deprivation (2015). 'All small areas in England (of about 1000-3000 people) are mapped to post codes which can be ranked according to their Index of Multiple Deprivation score, a relative level of overall deprivation based on deprivation scores for income, employment, health, education, crime, access to services and living environment.

Qualitative Analysis

Demographic information, including disability, gender, age, and ethnicity were obtained within each individual interview to provide a background for the interviews. The answers to each question of the interview were recorded and manually typed as the interviews occurred, in order to document and analyse exact individual responses. The data was analysed in a deductive fashion using constant comparative narrative analysis, previously adopted by Symon and Wrieden [(22)].

Data from transcripts were reviewed alongside demographic information and occurring themes among participants were identified. This method was then used to establish a coding framework for each individual question (See Appendix 1 for questions and framework used).

Specific steps of qualitative data analysis included:

- A review of interview data and the arrangement of data into different categories, incorporating demographic background information.

- The classification of clear emerging common trends using quotations to support general findings.

- And the comparison of data and themes among different demographics.

Qualitative data analysis and management was carried out using Microsoft Excel and Word; dedicated qualitative analysis software was not used in the current study.

Results

Quantitative Analyses

Of 1,210 who attended the MoF course between 2010 and 2014, 795 individuals completed both the baseline questionnaire and the questionnaire issued immediately after the course (a response rate of 66%). Of these participants, 85% were white, 57% were female, 24% came from a deprived area in Leeds (which were in the top 10% deprived areas in England, i.e. 2.4 times more deprived individuals than the national average were recruited onto the course), 81% were aged 20-64, 9% over 65 and 9% under 20 age and 63% of participants did not report a disability, 7% had multiple disabilities, 15% had learning difficulties, 8% had mental health problems, and 5% had physical disabilities only (table 1).

Of the total participants, 462 completed the 6 month follow up questionnaire, (a follow-up response rate of 58%). As observed in table 1, their characteristics were similar to the full set of participants, except that there was a greater proportion who reported no disabilities (69%).

The results of the t-tests in table 2 show there were significant increases in daily F&V consumption and cooking confidence levels and a significant decrease in the frequency of snacks consumed ($P<0.001$) between before the course and immediately after the course. Larger increase for these outcomes occurred from before the course to six months after the course for the subset who completed the follow-on questionnaires, and these results were all statistically significant ($P<0.001$). The increase in self-reported intake of fruit and vegetables portions doubled from 0.7 (95%CI: 0.6, 0.8) immediately after the course to 1.5 (95%CI: 1.3, 1.6) six months after the course. Similarly the decrease in self-reported intake of snacks doubled from -0.4 (95%CI: -0.2, -0.5) after the course to -0.9 (95%CI: -0.8, -1.0) at 6 months follow up. A large increase was observed with participant's cooking confidence levels (a self-reported score between 0 to 5, five being very confident): this increased immediately after the course by a score of 1.4, (95%CI: 1.3 to1.6), and the total increase after six months was a little higher at 1.7 (95%CI: 1.6, 1.9). The differences between immediately after the course and six months later were all statistically significant ($P<0.001$).

The multivariate regression analyses in table 3 shows changes between before the start to six months after the course by socio-demographic factors; as observed there were no associations between changes in any of the three nutrition outcomes and deprivation or ethnicity. There were also no associations between change in self-reported snack intake and any socio-demographic variables. The increase in self-reported fruit and vegetable intake was associated with age and disability: younger adults had a significantly smaller increase than the 20-64 age group (-0.60 portions (95%CI: -1.00, -1.02)), and those with physical impairments had a smaller change than those with no disabilities (-0.69 portions (95%CI: -1.32, -0.07)). Males reported a greater increase in confidence scores six months after the course than females (0.29 increase (95%CI: 0.04, 0.55)), and those aged between

16-19 or above 65 years of age had smaller increases than 20-64 year olds (-0.57 (95%CI: -1.02, -0.13)) and -0.46 (95%CI: -0.89, -0.04) respectively). Compared to participants with no disabilities, those with learning disabilities reported significantly smaller increases in cooking confidence scores six months after the course (-0.62 (95%CI: -1.02, -0.22).

Qualitative Analyses

Forty individuals were successfully contacted and completed the telephone interview. The characteristics of this group were different from those participating in the quantitative research: 73% (29) were white, 63% (25) were female, 75% (30) were aged under 60 years of age, 53% (21) came from a deprived area in Leeds, and 68% (27) did not report a disability.

Acquisition of Cooking Skills

Results showed that across the range of participants they finished the MoF program with various cooking and preparation skills, including skills using knives, preparing vegetables, seasoning food and aspects within food hygiene:

"It's taught us both how to improve the quality of food using seasoning".

"I can now make simple meals with less ingredients and* know how to stop cross *contamination".

The most valuable aspect of the course for participants from deprived areas of Leeds appeared to be learning new recipes and ways to cook from scratch, i.e. from basic ingredients.

Increased Nutrition Knowledge

A large proportion of participants claimed to have improved knowledge on healthy eating, being more aware of F&V nutritional value and the health consequences of saturated fat. Most participants from deprived areas in Leeds learned healthier ways to cook including using less oil and fat, with just under half of individuals gaining knowledge about the value of fresh ingredients. Those from non-deprived areas tended to learn more about nutritional value of healthy food and substitutions for unhealthy foods such as sauces. Discovering healthy alternatives for high fat foods also appeared to be particularly present among those aged over 65. Within the 15 males interviewed, most claimed to gain nutritional knowledge, learn the value of healthy food, healthier ways to cook, and how to read labelling of food unhealthy ingredients.

"They teach you how to check food labelling and how to avoid excess salt and fat".

"More awareness of nutritional value and I learned more about the 5-a-day campaign".

"I add very little fat and oil now, whereas previously I thought fat made food delicious".

Interviews also revealed many participants made several changes within eating and cooking habits. For example, all but one participant living in deprived areas of Leeds claimed to have made changes, with most changes being eating more healthily, cooking from scratch and using less fat and oil. Within non-deprived areas 25% claimed to have not changed eating and cooking habits, due to factors such as age and experience, and already eating healthily prior to the course. Among all participants, only one male participant reported maintaining the same eating habits, with the remaining participants claiming to eat and cook more healthily. A specific finding was that attending the MoF demonstrations appeared to reduce the self-reported intake of frozen, processed, takeaway and foods high in fat:

"Yes definitely, we don't eat ready meals anymore and myself and my dad don't get takeaways now, we made our own pizzas because they showed us how".

Within portion control participant feedback was varied. Among those over 65+ the majority ofparticipants claimed the MoF course helped portion control, including learning how to cook batch portions, reduce wastage and how to correctly portion macronutrient groups. It was also suggested that portion knowledge helped older individuals cope with changes in household numbers, for instance when children grow up and leave home:

"Yeah portion control definitely. I've got three children but they've all left home, so now I know* how to cook for myself and not to make too much, which is helping with *my weight".

"Yeah I learned what should be on your plate, so I learned how much should be carbohydrate, protein and fat, and the right plate size".

Additionally, the cooking course appeared to help parents distinguish between portion sizes within the family, for example the difference and correct portion sizes for children and adults. Many participants who attended the course mentioned the "Eatwell plate" (now replaced by the Eatwell Guide), however, portion control was not found to be improved for everyone with some individuals claiming to still "struggle" with portion size.

There was also an increase in awareness of shopping costs, budgeting and a greater awareness of healthy food access within Leeds market. Many participants claimed to visit the market more, having an increased awareness of the healthy food available to them:

"Yes I do because they gave us a tour and told us about a fish stall, so I now get my fish there* and organic eggs*, vegetables and fresh spices".

Confidence and Social Aspects

The majority of the interviewees claimed to have improved confidence in cooking, with just 15% stating no improvements due to being previously confident. In particular through an increase in confidence, some members attending the MoF were found to cope better with illness and disability, for example:

"Yes, it really did because that was one of the big things I couldn't cope with before. Because I'm disabled, preparing food was something I've always struggled with and never really done* before. So starting off on *the cooker at the hob was really useful and means I'm more confident at home".

In addition to confidence, most individuals declared other social benefits, for example, participants suffering from disabilities and living in deprivation saw a clear decrease in social isolation:

"Yes before the ministry of food I wouldn't really start conversations with people because I'm really shy. But by going there I learnt how to speak for myself and now I socialise more".
Male aged 20- 64, deprived Leeds, learning difficulties and mental health problems.

"It got me out of the flat. I'm disabled so that was always a fear and I'd just stay in before".
Woman aged 20-64, deprived Leeds, physical impairment and mental health problems.

Within the MoF structure all but 4 participants claimed to enjoy working as a group and meeting new people:

"Of course one of the participants hardly spoke to anyone, but after a few lessons he started* talking and chatting so it has a social value to break an isolation barrier, talking about cooking and enhancing social aspects and the teachers were so energetic and social, they presented a *feeling of relaxation and they made you want to talk".
African Male, aged 20-64, deprived Leeds.

"Yes I do because I had only recently moved to Leeds and* I got the email from the MoF, and it *was really beneficial because it got me out and about and meant I met loads of new people".
White female, aged over 65, non-deprived Leeds.

Suggested Course Improvements

All 40 interviewees spoke positively about their MoF experience. Suggestions to improve the course were mainly clustered within wanting more recipes, advanced sessions, longer and flexible timings. In participants from deprived areas of Leeds, 50% stated no improvements are needed and others suggested more recipes, dessert options and longer sessions. Amongst those from non-deprived areas, many people would have liked a more advanced class and found the course "too basic" however 25% of those from non-deprived Leeds suggested no changes.

Discussion

Despite the focus on recruiting deprived groups for this intervention, the baseline response was 66% to the questionnaire. This is a good response for such a relatively hard-to-reach group [23].

Dietary changes, Nutrition Knowledge and Cooking Skills

Results from this study present the effectiveness of the Ministry of Food community based cooking program for facilitating medium-term changes in dietary behaviour. Quantitative analysis revealed that after the MoF course there was a significant increase in self-reported portions of 5-a-day F&V consumed and a decrease in snacks consumed. These positive changes emerged immediately following the course and had increased further by six months after the course. This suggests that the MoF program may encourage short-term changes in dietary behaviour which can be maintained and improve over longer periods of time. The course did not produce inequalities in dietary changes by deprivation; however participants under 20 showed smaller increases in self-reported F&V intake. Many interviewed in the current study said they now cook more from scratch and consume less frozen food, ready meals and takeaways. The results from the current study appear to be consistent with the Australian Ministry of Food intervention which had a similarly large sample [24], and a recent Scottish cooking programme by the NHS [20]. In these two studies cooking from basic ingredients and cooking confidence increased, the number of take-away or ready meals reduced and the intake of F&V increased after the intervention [20; 24]. There was also significant differences between the intervention group and the wait-list control group in the Australian study for all but fruit and ready meal intake [24]. Some differences in the intervention group remained at the further follow-up, however, there was little change in self-reported vegetable intake between post-intervention and follow-up [20; 24]. The increases in outcome between post-intervention and six month follow-up in our study may reflect the MoF ethos from Jamie Oliver about passing on skills learnt or it could be a result of response bias. Our qualitative and quantitative results combined, suggest learning "hands-on" cooking skills, whilst being educated about diet and health in an informal group atmosphere may reduce barriers that prevent dietary change.

Both participants from deprived areas and those from non-deprived areas stated in the interviews that the MoF taught them new aspects about nutrition. The qualitative results of the study also suggest

that the cooking education provided could increase the ability to control and differentiate between healthy and unhealthy ingredients and portion sizes of food. This outcome may offer advantages within health and weight management, and may support individuals who are managing long-term conditions like obesity or diabetes [25].

The cost of healthy foods has been perceived to be a barrier to the consumption of a healthful diet among individuals with low-income [26; 27]. In the UK, access to supermarkets remains extremely high [28], and supermarkets have successfully used a variety of marketing strategies promoting the purchase of energy dense, extra value convenience foods, which may be partly responsible for the UK's current health and social inequality gap [29]. Results from the current study, also the MoF intervention evaluated in Australia [30], and other cooking interventions [31; 32] suggest new knowledge and practical skills acquired can substantially influence food purchasing decisions, helping to overcome detrimental perceptions and influences that are current barriers to heathy eating. Through the convenient location of the UK MoF, and the market tours that are provided by partner organisations, the MoF increased the awareness and accessibility of affordable healthy ingredients.

Confidence and Social Benefits

The confidence to cook has been shown to be a major predictor of dietary intake, where a lack of confidence can make an individual less likely to purchase F&V's [32]. Our evaluation did not measure changes in purchasing patterns, and whether this was linked to cooking confidence. However, the quantitative results show that cooking confidence dramatically increased following the 8 week MoF course, and was maintained six months after the course, providing both short and medium-term benefits. Whilst only one question was used in our study, four to five questions assessing cooking confidence were used in the Australia MoF and Scottish studies, and significant increases were observed for all questions after the intervention, but these did not increase further at the follow-up[24].

The results of the interviews in our study also provide evidence of increases in cooking confidence and also general confidence. Confidence gains were particularly valued among those from deprived areas, those suffering from disabilities and individuals aged over 65. Although some with disabilities reported benefiting from reduced social isolation, the quantitative results showed that participants specifically with learning difficulties reported smaller increases in cooking confidence than others. Nevertheless from the interviews, it appeared that staff interaction and group atmosphere enhanced learning ability and confidence levels of participants with few prior skills and low literacy levels who may struggle to follow formal instructions. General increases in confidence following the MoF may be due to both the acquisition of culinary skills and knowledge, and the numerous social benefits offered within the course resulting from a relaxed, enthusiastic group atmosphere. Collectively, the community interaction and skill acquisition of the MoF may provide a mechanism to increase self-value. This important finding is supported by Foley et al.,[33] where group dynamics were seen to encourage community discussions, whilst increasing the trust and confidence to share advice and life experiences .

Cooking interventions have tended to primarily target females, rather than males in the household; in a systematic review of UK cooking interventions over half of the studies (7/13) focused on all or a very high proportion of women [34]. In comparison, the proportion of males attracted to the current study was relatively high; it is possible that this may be due to the Jamie Oliver branding. Despite the majority of women sharing working responsibilities within couples, a considerably higher proportion of women than men are still responsible for food preparation in the UK [17; 35]. Not surprisingly, men report being less confident at cooking than women [17]. Within the quantitative results of the current study, the male participants reported significantly greater increases in cooking confidence, whilst interviews revealed an increase in nutritional awareness, homemade cooking, enjoyment in cooking and confidence in males. The recent nationally representative UK nutrition survey also found that young people (19-34) have less confidence with cooking than other age groups in the UK [17];

therefore they have more scope for improvement. However in our study, younger people (16-19) improved in confidence less than 20-64 year olds. Additionally their fruit and vegetable intake improved less than 20-64 year olds. This indicates that interventions targeting age specific groups may be more appropriate.

Limitations

This study adopted a pre-post test design, focusing on a single treatment group with no control group, unlike the Australian MoF intervention which had a non-randomised waiting list control group [24; 36]. Leeds council wanted to ensure public health targets were met by maximising numbers on the intervention and did not want a waiting list control; it was not intend to be a trial. However, lack of randomisation to a control group means measured differences between the pre- and post-questionnaires responses cannot be causally related to the intervention. The self-selecting nature of the participants in our study is also a limitation; these individuals may be more health conscious than those who did not apply to the course or follow-up a referral from other organisations. Similarly, recent systematic reviews concluded that the evidence on the effectiveness of cooking courses for adults is limited because of limitations of the study designs [14; 34]. Only five out of the 13 UK studies reviewed used a control group, and only one of these randomised participants [34]. This was a study of individuals aged 65 or older in sheltered housing in socially deprived areas [37], these results therefore may not be relevant to other groups. The findings of a recent pilot study to determine the feasibility of evaluating the MoF in the UK using RCT methodology to recruit those most-in-need of cooking skills, suggest it is feasible using community recruitment [38].

Another limitation of this and many other studies in the reviews is that dietary intake and cooking confidence was self-reported and is therefore prone to reporting bias. Within the qualitative analysis interviewees may have failed to remember important aspects of the MoF course they attended up to a year before. Furthermore, we assumed reported snacks were unhealthy, and did not provide guidelines on the questionnaires about whether fruits or other health foods should be included as snacks, although unhealthy ones were given as examples of snack food. Additionally, qualitative results may have been limited by a sample size of 40, and it may have been difficult to contact individuals suffering from severe disabilities due to poor communication skills. Nevertheless, quantitative findings in this study are supported by the qualitative results and are consistent with previous literature; however, in order to increase and imply causality, a further study incorporating a control group would be necessary.

As suggested by participants, the course might be improved by including more recipes, and longer and flexible course timings. Although the latter may make the course accessible by more people, it may not be feasible. Whilst some individuals, especially from non-deprived areas, wanted advanced classes, it is important to offer the basic course as provided for the majority with lower confidence in cooking. As previously suggested a booster class could be offered later to help sustain the intervention effects [20; 24], and teaching more advanced skills and recipes could be part of this.

Future Implications

Cooking interventions are designed to increase the ability to cook, and increase the consumption of healthy home prepared meals and nutritional knowledge of those who attend. In this study, the MoF has demonstrated the ability of cooking programs to increase cooking confidence, culinary skill, positive dietary changes, whilst also offering a wider range of social outcomes, including an increase in self-efficacy, personal control, and general confidence in adults. This suggests that the incorporation of community based cooking interventions such as the MoF's as part of government strategy may present an effective mechanism to facilitate positive dietary changes, without widening socio-economic inequalities. However to confirm this further, studies incorporating a control group and participant randomisation are required.

Table 1: Characteristics of those taking part in the Leeds Ministry of Food course in 2010 to 2014

Characteristics	All participants N=795 n (%)	Participants who completed questionnaires at 3 time points* N=462 n (%)
Gender:		
Male	339 (43%)	195 (42%)
Female	454 (57%)	265 (57%)
Missing	2 (0%)	2 (1%)
Age:		
16-19	75 (9%)	42 (9%)
20-64	646 (81%)	373 (81%)
65+	69 (9%)	44 (10%)
Missing	5 (1%)	3 (1%)
Ethnicity:		
White	673 (85%)	400 (86%)
African or other black	37 (5%)	16 (3%)
Asian	32 (4%)	16 (3%)
Mixed Race	16 (2%)	11 (2%)
Other	29 (4%)	14 (3%)
Missing	8 (1%)	5 (1%)
Deprivation:		
Deprived Leeds residents	191 (24%)	105 (23%)
Non deprived Leeds residents	474 (60%)	273 (59%)
Outside of Leeds / not mappable	122 (15%)	79 (17%)
Missing postcodes	8 (1%)	5 (1%)
Disabilities:		
No disabilities	505 (63%)	321 (69%)
Learning Difficulties	119 (15%)	56 (12%)
Mental Health Problems	65 (8%)	34 (7%)
Physical Impairment	40 (5%)	24 (5%)
Multiple disabilities	54 (7%)	19 (4%)
Other	6 (1%)	4 (1%)
Missing	6 (1%)	4 (1%)

*completed questionnaires before, immediately after and 6 months after course

Table 2: Mean self-reported intake and cooking confidence scores and changes in these between before the Ministry of Food course, immediately afterwards and 6 months after the course

		Before Mean (95% CI)	After Mean (95% CI)	Difference between before & immediately after course	6 months after Mean (95% CI)	Difference between before & 6 months after course	Difference between immediately after & 6 months after course
Portions of Fruit & Vegetables/ day*	N=795‡	2.7 (2.6, 2.8)	3.4 (3.3, 3.5)	0.6 (0.6, 0.7)***	-	-	
	N=462§	2.7 (2.5, 2.8)	3.4 (3.3, 3.5)	0.7 (0.6, 0.8)***	4.1 (4.0, 4.3)	1.5 (1.3, 1.6)***	0.7 (0.6, 0.8)***
Frequency of Snacks/ day*	N=795‡	2.0 (1.9, 2.1)	1.7 (1.6, 1.8)	-0.4 (-0.3, -0.4)***	-	-	
	N=462§	2.0 (1.9, 2.1)	1.6 (1.5, 1.8)	-0.4 (-0.2, -0.5)***	1.1 (1.0, 1.2)	-0.9 (-0.8, -1.0)***	-0.5 (-0.4, -0.6)***
Cooking confidence Score†	N=795‡	2.7 (2.6, 2.8)	4.1 (4.0, 4.2)	1.4 (1.3, 1.5)***	-	-	
	N=462§	2.7 (2.6, 2.8)	4.1 (4.1, 4.2)	1.4 (1.3, 1.6)***	4.4 (4.4, 4.5)	1.7 (1.6, 1.9)***	0.3 (0.2, 0.4)***

*Where portions of fruit and vegetables and number of snacks consumed were greater than seven these were counted as seven in the analyses

†Participants were asked to score their confidence in cooking between 0 to 5

‡For all 795 MoF participants who completed the course and the questionnaires before and immediately after the course

§For 462 MoF participants who completed questionnaires at 3 times points

*** P<0.001

Table 3: Multivariate regression showing changes in self-reported food intake and cooking confidence scores between start and 6 months after the Ministry of Food course by socio-demographic factors

		Difference in mean self-reported intake / scores between start and 6 months after the course					
	N=462	change in mean portions of fruit and vegetables	p value	Change in mean snacks	p value	Change in cooking confidence	p value
Deprived Leeds resident	105	ref		ref		ref	
Non-deprived Leeds	273	-0.15 (-0.19, 0.50)	0.4	0.01 (-0.31, 0.30)	1.0	-0.12 (-0.19, 0.42)	0.4
Outside of Leeds /non-mappable	79	-0.03 (-0.48, 0.41)	0.9	-0.11 (-0.51, 0.28)	0.6	-0.13 (-0.53, 0.26)	0.5
Female	265	ref		ref		ref	
Male	195	-0.07 (-0.36, 0.21)	0.6	0.01 (-0.25, 0.27)	1.0	0.29 (0.04, 0.55)	0.03
16-19 years old	42	-0.60 (-1.10, -0.10)	0.02	-0.01 (-0.45, 0.43)	1.0	-0.57 (-1.02, -0.13)	0.01
20-64	373	ref		ref		ref	
65+	44	-0.15 (-0.63, 0.33)	0.5	-0.02 (-0.40, 0.45)	0.9	-0.46 (-0.89, 0.04)	0.03
No disabilities	321	ref		ref		ref	
Learning Difficulties	56	-0.41 (-0.86, 0.04)	0.07	-0.08 (-0.48, 0.32)	0.7	-0.62 (-1.02, -0.22)	0.002
Mental Health Problems	34	0.18 (-0.36, 0.71)	0.5	-0.04 (-0.51, 0.44)	0.9	0.02 (-0.49, 0.46)	0.9
Physical Impairment	24	-0.69 (-1.32, -0.07)	0.03	-0.04 (-0.60, 0.51)	0.9	-0.18 (-0.74, 0.37)	0.5
Multiple disabilities	19	0.03 (-0.67, 0.73)	0.9	0.13 (-0.49, 0.75)	0.7	0.45 (-0.17, 1.07)	0.2
Other disabilities	4	1.57 (0.10, 3.04)	0.04	-0.13 (1.44, 1.18)	0.8	0.06 (-1.24, 1.37)	0.9
White	400	ref		ref		ref	
African or other black	16	-0.27 (-1.02, 0.49)	0.5	0.33 (-0.34,1.00)	0.3	-0.55 (-1.22, 0.12)	0.1
Asian	16	-0.44 (-1.19, 0.31)	0.3	-0.17 (-0.83, 0.50)	0.6	0.22 (-0.45, 0.88)	0.5
Mixed Race	11	0.16 (-0.74, 1.06)	0.7	-0.39 (-1.19, 0.41)	0.3	-0.65 (-1.45, 0.15)	0.1
Other	14	0.00 (-0.79, 0.80)	0.9	0.67 (-0.04, 1.38)	0.07	-0.05 (-0.76, 0.66)	0.9
Constant		1.55 (1.21, 1.88)	<0.001	-0.86 (-1.18, -0.65)	<0.001	1.74 (1.44, 2.03)	<0.001

Only includes participants who completed questionnaires at 3 times points

References

1. Caraher M, Crawley H, Lloyd S (2009) Nutrition policy across the UK: Briefing Paper. London: The Caroline Walker Trust. http://openaccess.city.ac.uk/498/2/Publichealthpolicyreportfinal.pdf (Accessed 28 October 2015).
2. Department of Health (2005) Choosing a Better Diet: A Food and Health Action Plan. London: The Stationary Office. Available at: http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_4105709.pdf (Accessed 28 October 2015).
3. Cabinate Office (2008) Food Matters: Towards a Strategy for the 21st Century. London: The Cabinate Office. Available at: http://webarchive.nationalarchives.gov.uk/+/http:/www.cabinetoffice.gov.uk/media/cabinetoffice/strategy/assets/food/food_matters_es.pdf (Accessed 28 October 2015).
4. Department of Health (2011) The Public Health Rersponsibility Deal. Department of Health. Available at: http://webarchive.nationalarchives.gov.uk/20130107105354/https://www.wp.dh.gov.uk/responsibilitydeal/files/2012/03/The-Public-Health-Responsibility-Deal-March-20111.pdf (Accessed 28 October 2015)
5. Bates, Bates B, Lennox A et al. (2014) National Diet and Nutrition Survey: Results from Years 1, 2, 3 and 4 combined of the Rolling Program (2008/9 – 2011/12). Public Health England. Available at: https://www.gov.uk/government/statistics/national-diet-and-nutrition-survey-results-from-years-1-to-4-combined-of-the-rolling-programme-for-2008-and-2009-to-2011-and-2012 (Accessed 28 October 2015).
6. Health Survey for England (2013) Health Survey for England, Trend Tables: Adult trend tables.
7. Caraher M, Dixon P, Lang T et al. (1999) The state of cooking in England: the relationship of cooking skills to food choice. Brit Food J **101**, 590-609.
8. Lang T, Caraher M (2001) Is there a culinary skills transition? Data and debate from the UK about changes in cooking culture. J Home Economics Inst Austalia **8**, 2-14.
9. Caraher M, Lang T (1999) Can't cook, won't cook: a review of cooking skills and their relevance to health promotion. Int J Health Promot Educ **37**, 89-100.
10. van der Horst K, Brunner TA, Siegrist M (2011) Ready-meal consumption: associations with weight status and cooking skills. Public Health Nutr **14**, 239-245.
11. Brunner TA, van der Horst K, Siegrist M (2010) Convenience food products. Drivers for consumption. Appetite **55**, 498-506.
12. Hartmann C, Dohle S, Siegrist M (2013) Importance of cooking skills for balanced food choices. Appetite **65**, 125-131.
13. Means WCN (2010) How culinary nutrition can save the health of a nation. J Extension **48**, 2COM1.
14. Reicks M, Trofholz AC, Stang JS et al. (2014) Impact of Cooking and Home Food Preparation Interventions Among Adults: Outcomes and Implications for Future Programs. J Nutr Educ Behav **46**, 259-276.
15. James WP, Nelson M, Ralph A et al. (1997) Socioeconomic determinants of health. The contribution of nutrition to inequalities in health. BMJ **314**, 1545.
16. Darmon N, Drewnowski A (2015) Contribution of food prices and diet cost to socioeconomic disparities in diet quality and health: a systematic review and analysis. Nutr Rev **73**, 643-660.

17. Adams J, Goffe L, Adamson AJ et al. (2015) Prevalence and socio-demographic correlates of cooking skills in UK adults: cross-sectional analysis of data from the UK National Diet and Nutrition Survey. Int J Behav Nutr Phy Act **12**, 99.
18. Cullerton K, Vidgen HA, Gallegos D (2012) A review of food literacy interventions targeting disadvantaged young people. Brisbane: Queensland Univeristy of Technology, School of Public Health.
19. Wrieden WL, Anderson AS, Longbottom PJ et al. (2007) The impact of a community-based food skills intervention on cooking confidence, food preparation methods and dietary choices - An exploratory trial. Public Health Nutr **10**, 203-211.
20. Garcia AL, Vargas E, Lam PS et al. (2014) Evaluation of a cooking skills programme in parents of young children – a longitudinal study. Public Health Nutr **17**, 1013-1021.
21. HM Government (2008) Healthy Weight, Healthy Lives: Consumer Insight Report. UK: Central Office of Information. Available at http://www.nhs.uk/change4life/supporter-resources/downloads/consumer_insight.pdf (accessed 28 October 2015).
22. Symon AG, Wrieden WL (2003) A qualitative study of pregnant teenagers' perceptions of the acceptability of a nutritional education intervention. Midwifery **19**, 140-147.
23. Pearson T, Russell J, Campbell MJ et al. (2005) Do 'food deserts' influence fruit and vegetable consumption?--A cross-sectional study. Appetite **45**, 195-197.
24. Flego A, Herbert J, Waters E et al. (2014) Jamie's Ministry of Food: Quasi-Experimental Evaluation of Immediate and Sustained Impacts of a Cooking Skills Program in Australia. PLoS ONE **9**, e114673.
25. Evert AB, Boucher JL, Cypress M et al. (2014) Nutrition Therapy Recommendations for the Management of Adults With Diabetes. Diabetes Care **37**, S120-S143.
26. Ploeg Mv, Breneman V, Farrigan T et al. (2009) Access to affordable and nutritious food: measuring and understanding food deserts and their consequences. Report to Congress. USDA Economic Research Service.
27. Cox DN, Anderson AS, Lean ME et al. (1998) UK consumer attitudes, beliefs and barriers to increasing fruit and vegetable consumption. Public Health Nutr **1**, 61-68.
28. Dibsdall L, Lambert N, Bobbin R et al. (2003) Low-income consumers' attitudes and behaviour towards access, availability and motivation to eat fruit and vegetables. Public Health Nutr **6**, 159-168.
29. Lawrence W, Skinner C, Haslam C et al. (2009) Why women of lower educational attainment struggle to make healthier food choices: the importance of psychological and social factors. Psychol Health **24**, 1003-1020.
30. Herbert J, Flego A, Gibbs L et al. (2014) Wider impacts of a 10-week community cooking skills program - Jamie's Ministry of Food, Australia. BMC Public Health **14**, 1161.
31. Foley RM, Pollard CM (1998) Food Cent$— implementing and evaluating a nutrition education project focusing on value for money. Aust NZ J Publ Health **22**, 494-501.
32. Winkler E, Turrell G (2010) Confidence to cook vegetables and the buying habits of Australian households. J Am Diet Assoc **110**, S52-S61.
33. Foley W, Spurr S, Lenoy L et al. (2011) Cooking skills are important competencies for promoting healthy eating in an urban Indigenous health service. Nutr Diet **68**, 291-296.

34. Rees R, Hinds K, Dickson K et al. (2012) Communities that cook: a systematic review of the effectiveness and appropriateness of interventions to introduce adults to home cooking. London: EPPI-Centre, Social Science Research Unit, Institute of Education, University of London.
35. Lake AA, Hyland RM, Mathers JC et al. (2006) Food shopping and preparation among the 30-somethings: Whose job is it? (The ASH30 study). Brit Food J **108**, 475-486.
36. Flego A, Herbert J, Gibbs L et al. (2013) Methods for the evaluation of the Jamie Oliver Ministry of Food program, Australia. BMC Public Health **13**, 1-8.
37. Moynihan P, Moynihan P, Zohoori V et al. (2006) Design and evaluation of peer-led community based food clubs: a means to improve the diets of older people from socially deprived backgrounds: final report to the Food Standards Agency. Newcastle: University of Newcastle.
38. Halligan J, O'Brien N, Purves et al. (2015) Research to support the evaluation and implementation of adult cooking skills interventions in the UK: pilot RCT with process and economic evaluations. London: Public Health Research Consortium.

Appendix 1

Qualitative framework for interview questions one to ten.

Question 1: If you enjoyed the ministry of food what was the best thing about it?		
Code Name	**Description**	**Example**
Learning Benefits	Learning about healthy eating, how to cook, new recipes, labelling, new skills and methods, where to buy ingredients.	"the best thing was learning how to cook healthy meals for the family" "" I really enjoyed it I got some good tips about cooking I didn't know before" "learning new methods and how to cut vegetables"
Social benefits	Participating with friends, enjoying company, working as a group, meeting new people, the communication, working with the staff.	"I joined with a group of friends so it meant I could spend more time with them and meet new people" "I enjoyed the company of the instructors"
Course structure and atmosphere	Good course structure, good course content, friendliness and teaching by the staff, made easy to understand, Friendly, welcoming, informal, fun.	"yes we loved it! The best thing was it was a really friendly and nice atmosphere". "the young people running it knew exactly what to do". "the best thing was the trainers, they were fantastic I looked forward to going every Saturday, you didn't feel like you were learning because it was so fun".
Food and Life management	Coping with a disability, affordability, learning how to budget and about food costs, confidence to cook, cooking independently.	"I'm disabled so learning how to cope with that and prepare food despite that was the best thing" "getting a new outlook on how to cook for myself instead of my family".
Location benefits	Easy to get to, positioned	

	perfectly.	"It's one of the best things that has happened and the position is perfectly handy to get to".

Question 2: How has the MoF helped you with cooking skills?		
Code Name	**Description**	**Example**
Skills within prepartation	Using knifes, cutting, chopping, preparing vegetables, seasoning and sauces.	"it's taught me a lot about knife skills, I now know how to look after knifes and use them correctly for different things". "It's taught us both how to improve the quality of food using seasoning".
Skills within cooking	Cooking without oil, using lower temperatures, new cooking alternative recipe methods.	"It's taught me how to cook things at a lower temperature and not to use oils". "I learned how to make basic salad dressings, poached eggs and how to cook meat properly".
Food Hygiene, Health and safety.	Health and safety in the kitchen, with family, cross contamination.	"I can now make simple meals with less ingredients and how to stop cross contamination". "I've also learned some things about food hygiene".

Question 3: How has the Ministry of Food helped you with healthy eating knowledge?		
Code Name	**Description**	**Example**
Learning healthier ways to cook	Using different things for fat, boiling and steaming instead of frying, how to cook healthier meals.	"I learned how to cook new recipes and cooking with healthy ways and using different things for fat". "yes it taught me more about cooking healthy and using less fat"

To eat less processed and high fat, sugar, salt foods.	To eat less fried foods, eat less fat, to make sauces from jars from scratch, substituting unhealthy foods for healthier foods.	"There was a lot of leaflets and stuff that we could take and it taught me not to eat processed food, yes there was a lot of health aspects I learned". "I'm more aware of how to replace certain foods for ones that contain less fat".
How to check food labelling	How to check food labelling for used by date, added fat, salt and sugar.	" I didn't know the difference between a sell by date and best before date, so I learned things about the labelling of food" "They teach you how to check food labelling and how to avoid excess salt and fat".
Learning about nutritional value	Learning about nutritional value of fruit and vegetables, processing losses, healthy foods and meats.	"taught me the value of fruit and vegetables". "more awareness of nutritional value and I learned more about the 5 a day campaign" "I learned more about healthy eating and what's bad for you"
It Has not Helped	Already health conscious, already eat healthy.	"I already knew a lot about healthy eating and food before I went". "Basically the same. I was already health conscious".

Question 4: Has the MoF helped you with portion control?		
Code Name	**Description**	**Example**
Yes	Helped to cut down on portion sizes, reduce wastage, plan batch meals, the correct individual and family eating portions, Learned about the eat well plate and correct portions of food groups.	"It helped me to plan double, so I could cook batches and freeze things to be more economical". "yeah I learned what should be on your plate, so I learned how much should be carbohydrate, protein and fat, and the right plate size".
No	Was already aware of portion control, already eat suitable	"not a lot, I think my portions were fine before the course to

	portions, still find it hard, previously learnt somewhere else.	be honest". "No I still find that hard."

Question 5: Has attending the MoF improved your confidence in cooking?		
Code Name	**Description**	**Example**
Yes	Now have increased confidence preparing food, trying new things, applying for jobs, now cook more at home and from scratch.	"yes definitely. Knowing what to do and how to do it, like with knives means I'm much more confident to cook now". "yes I cook more at home now than I did before because I'm more confident".
No	Already confident	 "Not really, I was pretty confident before".

Question 6: Do you think the MOF course has changed your cooking and eating habits at home and with friends / family? What changes have you made?			
Response	**Code Name**	**Description**	**Example**
Yes	Eat more healthily	Eat more healthily, more balanced meals, fresh ingredients, fruit and vegetables, and less fat, ready meals, takeaways, processed and fried food.	"Yes definitely don't eat ready meals anymore and ,e and my dad don't get takeaways now, we made our own pizzas because they showed us how".
	Cook and prepare more healthily	Use healthier oils, no longer use fat or oil, cook more from scratch, no longer add sugar and salt, use lower heat.	"I add very little fat and oil now, whereas previously I thought fat made food delicious" "yes I am cooking more from scratch rather than ready meals".
	Greater awareness	Check food labelling and packaging. Now eat breakfast.	"yes we don't eat a lot of fat now and I look at packaging and teach my children to look at

			packaging for saturated fat".
No	Age and experience	Older age less likely to change and find recipes to basic so have not provoked change	"I'm 64 so not really". "Not really because the recipes were basic and I'm quite advanced".
	Prior knowledge	Already ate healthily or cooked from scratch.	"We haven't changed because we already eat healthy and we already cook everything from scratch".

Question 7: Apart from food and nutrition were there any other benefits to attending the MoF course?			
Response	**Code Name**	**Description**	**Example**
Yes	Social Aspects	Meeting new people, getting to know others, socialising with other members and staff, working as a group, having a hobby.	"Meeting others and getting to know other peoples diets and problems, helped me understand". "socialising and meeting new people from different walks of life".
	Food Access and Mobility.	Access to Leeds market and the city centre, getting out of the house.	"Getting out the house, sometimes you tend to stay at home but the MoF got me out of the house. It's also near the market, so it meant I would do my shopping there after and spend more time out and about".
	Confidence	Confidence in health and safety, more confident to learn and cook.	"My confidence has improved a lot and now I'm really excited about cooking meals from scratch".
No	No other benefits	Just cooking, food and nutritional benefits.	"No, mainly just cooking".

			"for me in particular no but I did enjoy the course".

Question 8: Did you enjoy working in a group and meeting new people?			
Response	**Code Name**	**Description**	**Example**
Yes	Easier to learn	Was easier to learn in a group, more fun, could help others and copy others.	" it was easier to work in a group" "Yes that was a really good bit because you could help people who were struggling beside you".
	Socialising	Meeting new different people, socialising and chatting with members and staff.	"yeah before I was really shy so working with people meant I had to start conversations". "yes it was lovely, everyone was lovely and we met every Saturday morning".
No	Age Barrier	Age groups of participants were too skewed.	"Not really they were a lot older than me".
	Social Barrier	Different levels of mental and physical abilities.	"Out of all the people there on average there was only myself and one other person who I could understand"

Question 9: Has attending a MOF course changed your attitude to shopping in Leeds Market – will you visit the market the same, less or more than before attending the course?			
Response	**Code Name**	**Description**	**Example**
Yes	Sourcing ingredients	Can buy ingredients, food shopping.	"Yes I do because they gave us a tour and told us about a fish stall, so I now get my fish there and organic eggs, vegetables and fresh spices".

No	Distance	Live too far away	"I don't go very much because I live far away".
	Negative Opinions	Don't like the market, the stalls, people.	"No I don't like Leeds market there are a lot of rough people around there and I do my shopping on my own so it's intimidating".
	The same	Always shopped there.	"I still use it the same". "I have always shopped in the market so just the same".

Question 10: What could the MoF do better or Change?		
Code Name	**Description**	**Example**
More Menus/recipes	More different methods and recipes, seasonal recipes, cultural recipes, vegetarian options, deserts and sweet options.	"More varied menus, it was all savoury so more puddings because I've got a sweet tooth so healthy sweets. But it was just fantastic 100/10". "I think some people would like more specialist courses like Italian food, Mexican food and a good idea would be more vegetarian options too".
Be more advanced/ follow on courses	Too basic, wanted more advanced classes and more follow on coursed	"the course was too basic for me. There were people there who had never cooked before". "I wanted to do a follow on course that was a bit more experienced".
Nothing	No changes needed at all.	"I think it was really amazing and to such a high standard, so it would just be to maintain that standard". "I don't think you can improve on perfection, I really can speak more highly of it".
Time period	Longer courses, more flexible timetables.	"not really sure to be honest maybe if it was a bit longer".

		"I don't know, maybe more classes and different time tables, times and flexible options".
To learn more	To learn about things around cooking, storage, seasoning	"I would of liked more advice about cooking on a budget". "an addition class on storage, what can be put in the fridge etc. Everyone was pretty keen".
Advertisement	To be better advertised, to be contacted more after for updates.	"the MoF had all my email and contact numbers but it was up to me to keep checking if there was any changes and new recipes" "The MoF also need to improve publicity because I'm trying to get people to go but not many people know about it. There are only a few leaflets in the market".