A review of practical cooking skills activities which focus on promoting an affordable healthy balanced diet for adults, young people and their families within low-income communities in Scotland

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Abbreviations

CFHS	Community Food and Health (Scotland)
CLD	Community Learning and Development
CMOs	Context Mechanism Outcome Configuration
NICE	National Institute for Health and Care Excellence (formerly known as National Institute for Clinical Excellence)
NHSHS	NHS Health Scotland

Glossary

Agents	Individuals such as course leaders, support workers, youth leaders etc. who might deliver or reinforce cooking skills and behaviours.
Assets Based Approach	Service planning and delivery approaches, which build upon the existing assets of individuals, groups and communities and their environments http://www.healthscotland.com/documents/5535.aspx Similar to strength based approaches.
Behaviour Change Theory	Behavioural change theories are attempts to explain why behaviour change occurs using learning from academic fields such as sociology or psychology.
Behaviour Change Model	Visual or narrative models used to illustrate behaviour change theories.
Behaviour Change Concepts	This is used in the review to refer to sub elements of behaviour change theories that are used to explain the factors and approaches that support or mediate behaviour change (such as self efficacy and social norms or goal orientation).
Community Development Approach and Community Learning and Development	Community Development approaches aim to build the capacity of communities to meet their own needs, engage with and influence decision makers; Community Learning and Development aims to empower people individually and collectively through learning; http://www.scotland.gov.uk/Publications/2012/06/2208/0
Context	Contexts include factors such as the settings courses are delivered in, the various content and activities that make up the cooking skills course, the target groups or aspects of the external environment that may impact on an intervention.
Cooking Skills Activity	This is used to refer to the wide range of things that are undertaken to encourage cooking skills (including drop ins, events, classes and cooking courses).
Cooking Skills Course	A planned and structured programme of cooking skills classes aimed at increasing cooking knowledge and skills.
Empirical (data or evidence)	Learning or information based on, concerned with, or verifiable by observation or experience rather than simply theory or logic.
Grey Literature	In general literature which is unpublished and/or not peer reviewed such as reports, plans, lesson plans, etc.
Intervention	An activity, project, programme or policy that purposefully aims to change something (e.g. a health related behaviour).

Intervention fidelity	Consistently implementing an intervention in line with the agreed plan and/or evidence.
Intervention Theory	Used in this review to describe the explanation that practitioners put forward to explain how and why their cooking courses (the intervention) works.
Personalisation agenda	An aspect of public service reform that includes a strategic shift towards early intervention and prevention, with the aim that every person who receives support, whether provided by statutory services or funded by themselves, will have choice and control over the shape of that support in all care settings.
Primary Outcome Data	Data produced from the evaluations of the cooking courses included in this review.
Realist Synthesis/review	Realist synthesis is a review process that tries to reduce complexity and focus on and identify the theories that underlie social interventions. Realist review findings therefore do not decree that any intervention works or does not work. Instead these reviews are exploratory and attempt to uncover which elements of interventions work (or do not work) for particular sub-groups of the target audience in particular contexts, and why. Realist reviews also try to identify theories and learning that can be applied across groups of similar programmes or target audiences (called mid-range theories). Realist approaches therefore generate the types of insights that are useful in helping to inform decisions on how to design and improve future programmes and to target and tailor interventions to achieve particular outcomes for specific groups in key contexts. Realist review uses the terminology of contexts, mechanisms and outcomes.
Realist Theory /middle range theory	Theories are the underlying ideas held by commissioners, practitioners and participants and represented in the literature about the activities involved in an intervention and how, why, and in what contexts and for whom it is believed to work. Middle range theory is a theory that might apply across a range of similar programmes.
Reinforcement	Reinforcement activity is when practitioners provide rewards or encouragement (often via significant others) to embed or sustain a positive behaviour or outcome. The reviewers are using reinforcement in this review also to include contexts that allow on-going

	opportunities to embed behaviour change by exposing participants to multiple strategies and opportunities for support from peers or significant others beyond the immediate cooking skills course.
Robust data	By robust – the reviewers mean outcome data gathered consistently using validated tools and analysed taking account of response rates and possible selection bias that could be easily combined or subjected to meta-analysis.
Scottish Index of Multiple Deprivation (SIMD)	The Scottish Index of Multiple Deprivation identifies small area concentrations of multiple deprivation across all of Scotland in a consistent way. It allows effective targeting of policies and funding where the aim is to wholly or partly tackle or take account of area concentrations of multiple deprivation. The SIMD ranks small areas (called datazones) from most deprived (ranked 1) to least deprived (ranked 6,505). People using the SIMD will often focus on the datazones below a certain rank, for example, the 5%, 10%, 15% or 20% most deprived datazones in Scotland.
Specificity	Used in the review to refer to precise and clear detail of Contexts Mechanisms and Outcomes of the cooking skills courses and activities.
Strategies	Planned activities used by cooking skills practitioners to achieve specific outcomes amongst the cooking skills participants (e.g. a strategy such as eating together at the end of the class may be used to boost self esteem and confidence through positive feedback from the group)
Strengths-based Approach	Service planning and delivery approaches, which build upon the existing strengths of individuals, groups and communities and their environments. http://www.iriss.org.uk/resources/strengths-based-approaches-working-individuals. Similar to assets based approaches.
Supported setting	This term is used in the review to refer to cooking skills contexts where there are (relatively) longer-term relationships between practitioners and participants. For example where the participants have been referred by a health or social worker or community worker who may have a prior and/or on-going relationships or in residential or on-going wider community projects.
Tailoring	Tailoring relates to adapting a course or intervention to reach an individual based on characteristics that are

	unique to that person.
Targeting	Targeting involves the development of an intervention for a defined population subgroup that takes into account the characteristics shared by the members of that sub group for example, translating recipes into a different language for non-English speakers.
Theories of Change	A theory based evaluation approach that uses intervention theory to drive the choice of evaluation methods. Logic models are often used to represent the stakeholders' theories and assumptions and to prioritise key evaluation questions for subsequent testing.
Typology	A grouping of projects similar in terms of target group, context or content.

Executive summary

Background

Community Food and Health (Scotland) (CFHS) is part of NHS Health Scotland (NHSHS) and aims to ensure that everyone in Scotland has the opportunity, ability and confidence to access a healthy and acceptable diet for themselves, their families and their communities.

To achieve this, CFHS support work that improves access, availability, affordability to, and uptake of, a healthy diet within low-income communities. Their work includes the promotion of cooking skills and addressing food culture.

Cooking activities are a popular activity run by community groups and agencies such as local authorities and NHS teams within low-income communities. They deliver cooking activities in the form of cooking courses, drop in sessions, and as part of activities such as independent living skills programmes or when supporting people on a one-to-one basis. CFHS has provided development funding for 100s of cookery courses and activities since 1997. In recent years, CFHS has focused on improving practice, supporting the development of self-evaluation and developing the evidence base around cooking skills activities.

Many of the local agencies delivering front line cooking activities lack the funds and skills to conduct rigorous evaluations of their programmes. As a result there is limited robust knowledge of the effectiveness of cooking skills courses and crucially of what sorts of activities work or don't work, for whom, how and why.

In September 2014 CFHS commissioned a review of Scottish community cookery skills activities aimed at low-income communities using a realist synthesis approach. This is the Executive Summary of that review. It is intended that the review findings will be used to inform or support improvements in practice in Scotland. Thus the key audiences for the learning contained in this report are community food initiatives, and agencies and managers embarking on, or involved in, funding, planning or delivering cooking skills courses.

Aims and objectives

The aim of the research was to analyse grey literature, using a realist synthesis approach, to find out what contexts and mechanisms within community cookery skills activities helped achieve or improved the outcomes for the participants from low-income communities. The outcomes of interest included the development of skills, knowledge and confidence around preparing and cooking healthy and affordable meals, intentions to change behaviour, and non-nutritional outcomes.

CFHS commissioned the review team to analyse existing grey literature gathered from cooking skills activities in Scotland.

The review was undertaken to understand how the contexts and mechanisms within community cookery skills activities help achieve or improve the outcomes for participants from low-income communities.

The review used a realist approach to learn from the range and complexity of activities used to teach cooking skills across Scotland and the many ways in which practitioners adapt their activities to address community, target group and participants' needs.

The objectives were to:

- Explore the mechanisms of cooking activities that improve or achieve outcomes for participants.
- Explore the contexts of cooking activities that improve or achieve outcomes for participants.
- Explore what is learned from working with different participant groups and mixed groups.
- Explore any impact beyond participants to their families and communities.
- Ensure that an equalities perspective runs through the review process.

In other words the purpose of the review was to learn about what types of cooking courses or activities work or don't work for different target groups in varied settings and to gain understanding about how and why they do or don't work.

Methods

Realist synthesis

Realist synthesis is a review process that tries to reduce complexity and focus on and identify the theories that underlie social interventions. Theories are the underlying ideas held by commissioners, practitioners and participants and represented in the literature about the activities involved in an intervention and how, why, and in what contexts and for whom it is believed to work.

Realist review findings therefore do not decree that any intervention works or does not work. Instead these reviews are exploratory and attempt to uncover which elements of interventions work (or do not work) for particular sub-groups of the target audience in particular contexts, and why. Realist reviews also try to identify theories and learning that can be applied across groups of similar programmes or target audiences (called mid-range theories). Realist approaches therefore generate the types of insights that are useful in helping to inform decisions on how to design and improve future programmes and to target and tailor interventions to achieve particular outcomes for specific groups in key contexts.

Realist review uses the terminology of contexts, mechanisms and outcomes. Contexts include factors such as the settings courses are delivered in, the various content and activities that make up the cooking skills course, the target groups and so on. Mechanisms are the responses of the participants to the various cooking skills

activities including issues such as their levels of engagement and their motivations and early reactions that result in them learning and changing their cooking behaviour. Outcomes are the changes that are anticipated as a result of the intervention such as increased knowledge, confidence, skills, intentions to change and actual behaviour change. The theories developed in realist approaches are often described in terms of contexts, mechanism and outcomes configurations (CMOs). These configurations propose that certain contexts result in mechanisms in specific target groups leading to particular outcomes. For example, a CMO might be that in family contexts, cooking with children (rather than only adults) reduces their fussiness (a mechanism) over food and so is more likely to lead to the transfer of cooking skills into the home.

The review process

The review used a realist approach to learn from the range and complexity of activities used to teach cooking skills across Scotland and the many ways in which practitioners adapt their courses to address community, target group and participants' needs. The methods were based on the key steps highlighted in Table 1.

Table 1: Key steps in the Realist Review Process.

Steps	**Sub steps**	**Relationship with CFHS realist review stages**
Define the scope of the review	With the commissioners identify and refine the key question of the review	Stage one: Identification, quality sifting of grey literature by CFHS, transfer of this to reviewers for data extraction, evidence building and theory development and refinement
	With the commissioners clarify the purpose(s) of the review	
	Find and articulate the programme theories	
Search for and appraise the evidence	Focusing the search for the evidence	
	Appraise the evidence	
Extract and synthesise the findings	Extract the results	
	Synthesise the findings	
Draw conclusions and make recommendations	Concluding the theories development from the realist review	Stages two and three: Sharing and further refinement of proposed theories and learning from stage one through engagement with practitioners and participants.

		Report writing and dissemination

Most realist reviews involve searching published databases and extracting papers that will inform the review questions. They may also include searching grey literature. This review differed in that it focused solely on a selection of unpublished grey literature.

The grey literature
The literature was, in the main, funding applications, and implementation and evaluation reports from cooking skills courses and activities carried out in Scotland between 2010 and 2014. One hundred and fifty of the total 169 sets of reports read by CFHS related to projects funded in part or wholly by CFHS and 19 were funded through other sources and were therefore external to CFHS. Some of this documentation was submitted to CFHS from May to September 2014 in response to a request sent out to practitioners, community food projects, NHS Boards and third sector organisations earlier in 2014.

CFHS forwarded 81 sets of documentation onto the reviewers from the 169 that they read and reflected upon. The sub set of literature passed onto reviewers was from 74 different organisations. The grey literature selected for inclusion in the review by CFHS were those reports which CFHS felt provided sufficient detail about the cooking skills interventions, contexts, and associated evaluations to inform the outline review questions. The focus on preselected grey literature necessitated some adaptations to a standard realist review process and tools.

Identifying and refining the review purpose
The reviewers initial reading of the 81 sets of documentation passed on by CFHS highlighted a wide range of contexts, mechanisms and outcomes of possible interest and numerous and varied groups targeted.

The reviewers conducted a second reading of the literature and simultaneously coded information about the cooking skills courses and activities, using a coding framework developed by the review team and refined and approved by CFHS and the advisory group. In total the reviewers coded circa 195 variables to show whether or not information was available and to give some indication of what was reported in the grey literature. The coding covered issues about contexts (e.g. setting, target groups, course content, methods and strategies used), mechanisms (e.g. take up, adherence, early responses) and outcomes (e.g. increased confidence, cooking at home etc.). The variables were all things that might influence the effectiveness of cooking skills activities.

The reviewers met with CFHS to reflect on what had been uncovered from the above process and the apparent similarities and variations in the courses and activities and the contexts in which they were delivered. This reflection allowed CFHS to highlight the gaps in knowledge and prioritise the types of theory testing and key questions

that were of most interest to CFHS and practitioners from the wide range contained in the grey literature.

A key issue that influenced the prioritisation process was substantial limitations in the quality and robustness of the outcome data within the grey literature. CFHS, the advisory group and the reviewers were aware of these potential limitations prior to commissioning the review. All parties discussed the potential implications of these but agreed that even with these the review could produce valuable learning.

The limitations meant that theories uncovered in the grey literature could not be validated by reference to the primary data collected by the cooking skills projects. As such any testing or validation of the theories that was feasible as part of this review had to be done with reference to the existing published data on what works for behaviour change programmes in general. Within the field of health improvement there is a substantial amount of published research presenting and testing the efficacy of various social and psychological theories (represented as behaviour change models and associated psychological or social concepts or constructs). The reviewers have used the recommendations associated with research into these models and concepts to help validate the theories in this review.

Following discussion CFHS prioritised theories that concerned variations in the amount of targeting, tailoring and reinforcement that appeared to exist in different settings. It was felt that learning about strategies used for tailoring, targeting and reinforcement would be relevant to most deliverers and commissioners of cooking skills activities and would deliver what Pawson et al., 2004 describes as middle range theory. This focus also satisfied the range of objectives identified in the tender.

The refined review, purpose and key questions and their relationship to the initial review objectives are shown in Table 2.

Table 2: Prioritised review purpose and key questions linked to CFHS objectives

CFHS Objective	Type of theory testing	Key related review questions
Explore mechanisms that improve or achieve outcomes	Review official expectation against actual practice	What strategies do practitioners use for targeting, tailoring and reinforcement (and why)? Are the strategies informed by 'evidence based' recommendations?
Explore the contexts that improve or achieve outcomes	Same theories in comparative contexts	Are strategies applied to the same extent and for the same reasons in different contexts?
What can be learnt from	Adjudicating between	Do some strategies seem

working with different groups and mixed groups	theories	to achieve particular responses from particular participants?
Explore impact beyond participants to their families	Adjudicating between theories	Do particular contexts or strategies aid the transfer of cooking skills into the home?
Ensure an equalities perspective runs through the review process	Review official expectation against actual practice	Are courses reaching low income or vulnerable communities?

Finding and articulating the programme theories
The reviewers used their initial reading of the literature and the coding framework to identify and articulate the initial strategies and underlying theories that related to targeting, tailoring and reinforcement. The reviewers used the following definitions for these terms.

Targeting involves the development of an intervention for a defined population subgroup that takes into account the characteristics shared by the members of that sub group for example, translating recipes into a different language for non-English speakers.

Tailoring relates to adapting a course or intervention to reach an individual based on characteristics that are unique to that person.

Reinforcement activity is when practitioners provide rewards or encouragement (often via significant others) to embed or sustain a positive behaviour or outcome. The reviewers are using reinforcement in this review also to include contexts that allow on-going opportunities to embed behaviour change by exposing participants to multiple reinforcement strategies and opportunities from peers or significant others beyond the immediate cooking skills activities.

Table 3 illustrates the range and diversity of strategies used for targeting, tailoring and reinforcement and begins to differentiate these in terms of which were most commonly or less frequently reported as being used within the data. It should be noted that some strategies may overlap and some may be used for targeting, tailoring and reinforcement rather than for one of these exclusively.

Table 3: Range of strategies used for targeting, tailoring and reinforcement

Strategies more often found in the data	Strategies less often found in the data
Allowing participants to choose or influence the selection or order of recipes	Formal self-assessment of diet
Adjusting the focus of sessions to concentrate on specific issues or conditions e.g. mood and health/ diabetes etc.	One-to-one support in addition to class
Using food tasting sessions to widen palate	Food shopping trips
Emphasising the financial benefits of cooking from scratch (relative to buying produced or fast foods)	Volunteering to cook for others
Designing or varying the class length or frequency to address needs	Attending gardening projects and using food for cooking class
Eating together at the end of the class	Attending lunch or breakfast clubs associated with class
Cooking for others -class event and or families at last session	Reinforcement from staff or carers
Taking meals home to family to eat	Follow up from referrers
In house certificates given at the end of class	Formal input on labelling
Recipes to take home	Accreditation or qualifications (e.g. Royal Environmental Health Institute of Scotland Health & Hygiene certificate)
Using informal measures rather than scales	Cook with kids
Simplified or visual recipes	Rewards or incentives or ‘giveaways’
	Focus on freezing or bulk buying or low-costs
	Formal goal setting
	Meeting or sharing with others post course

Focusing the search for evidence

A data extraction framework was developed by the reviewers and was informed by decisions about the review purpose and prioritised questions and theories.

Had the primary outcome data in the grey literature been more robust this framework would have used it to evidence which strategies had or had not led to successful outcomes in the various contexts thereby testing theories about which strategies worked for whom, when and why.

In the absence of primary outcome data that are scientifically robust the framework sought to refine and test the theories (the strategies and how, who and for whom they are thought to work) against theoretical concepts taken from behavioural models. There are a wide variety of psychological theories in the form of behaviour models that have been used to explain and predict behaviour change such as Social-cognitive theory, the Theory of planned behaviour, and the Transtheoretical model etc. Whilst some of the individual models have limitations, various sources suggest that a number of concepts drawn from them are helpful when planning individually focused behaviour change programmes. They include the following concepts:

- Outcome expectancies (i.e. helping people to develop accurate knowledge about the health consequences of their behaviours).
- Personal relevance (emphasising the personal salience of health behaviours).
- Positive attitude (promoting positive feelings towards the outcomes of behaviour change).
- Self-efficacy (enhancing people's belief in their ability to change).
- Descriptive norms (promoting the visibility of positive health behaviours in people's reference groups – that is, the groups they compare themselves to, or aspire to).
- Subjective norms (enhancing social approval for positive health behaviours in significant others and reference groups).
- Personal and moral norms (promoting personal and moral commitments to behaviour change).
- Intention formation and concrete plans (helping people to form plans and goals for changing behaviours, over time and in specific contexts).
- Behavioural contracts (asking people to share their plans and goals with others).
- Relapse prevention (helping people develop skills to cope with difficult situations and conflicting goals).

Such concepts could be used alongside, and to inform, the targeting and tailoring of interventions to suit the needs of target groups and the delivery contexts and to reinforce behaviour change.

The data extraction process to a lesser extent was also used to assess the alignment of cooking skills strategies to value based approaches to health improvement (e.g. strength based and community development approaches).

Appraising and extracting the data

The reviewers re-read the grey literature, this time extracting examples of the various strategies that had been applied to specific contexts, how and why and coded these against the recommended behaviour change concepts. The reviewers extracted data from all of the grey literature forwarded from CFHS. This involved reading and re-reading circa 81 sets of documents.

The data extraction framework provided evidence of whether or not the range of strategies applied by practitioners in cooking skills courses aligned with, and were

informed by, recommended behaviour change model concepts. It also allowed an assessment of the frequency with which they were used and in which contexts they were used. In addition, this analytical process also highlighted some of the more detailed underlying theories and assumptions that underpinned the way the practitioners seemed to use the strategies.

Synthesising the findings and concluding the theory development
The learning and theories from the realist review were, in addition, to be informed and refined by the views of practitioners and participants as part of focus group discussions. These groups were purposively selected to further inform the refinement of and conclusions about the programme theories.

The reviewers conducted one focus group with ten practitioners whose work included working with very vulnerable groups (i.e. residents in supported accommodation units, those with mental health issues, offenders, or the homeless etc.). A second focus group was conducted with nine practitioners whose work included providing cooking skills for parents or carers of nursery or school children. Both focus groups lasted one hour.

The learning from these practitioner focus groups further informed our thinking about the prioritised theories and the learning from them was used to inform further testing of theories with participants in two cooking skills interventions; one run with residents (n=4) in temporary accommodation unit and one run with parents (n=5) of nursery aged children in a socially deprived locality. These focus groups sought participants' views on the extent to which the different strategies and approaches were effective in helping them learn to cook and achieve their cooking related goals.

Data from all four focus groups were used to further refine the theories that had been developed from the review of the grey literature.

Summary of main findings
The following findings are based on the overall triangulated data from:

- the grey literature entered into the coding framework
- data extracted from the grey literature and aligned with the concepts from the behaviour change models
- data from the two focus groups with practitioners
- data from the two focus groups with participants.

The majority of cooking skills courses are 'targeting' and appear to be reaching vulnerable individuals and low income communities. This is based on information about the settings, the target populations of those delivering courses, descriptive characteristic of the participants and types of targeting and tailoring being done to address their needs. The range of groups targeted include:

- those in mental health recovery or in temporary accommodation
- those homeless or at risk of homelessness
- those with physical disabilities or additional learning needs

- offenders or their families
- family settings (often targeting nursery or school parents and or children)
- those attending family centres or community centres
- youth clubs
- carers groups
- elderly groups or residents
- NHS settings
- BME groups
- women's aid groups
- those effected by alcohol or substance use.

There was evidence of consistent good practice by course practitioners (e.g. in line with recommendations or evidence for promoting health behaviour change from highly regarded sources) and strength based approaches as shown by:

- evidence of practitioners encouraging participants to influence the course content and methods
- evidence of targeting and tailoring via many varied strategies
- examples where attempts are being made to reinforce learning and positive behaviours through using multiple strategies and agents.

To enhance the outcomes of the cooking skills courses practitioners used a wide range of strategies. Some of these strategies were more commonly used than others. The strategies used align well with behaviour change model concepts recommended from health behaviour change advisory bodies such as NICE.

More general strategies commonly used such as encouraging cooking course participants to influence recipes and encouraging peers to support slower learners also align well with the principles of strength-based approaches.

The following concepts seem to be used more frequently:

- Outcome expectancy
- Personal relevance
- Positive attitudes
- Self efficacy
- Descriptive norms (mainly due to common use of eating together)
- Subjective norms.

The concepts that seem to be used less frequently are: personal and moral norms; intention formation & concrete plans; and, behavioural contracts and relapse prevention. There are practitioners that do apply these concepts but they seem to be less consistently reported or applied than those listed above.

Courses were delivered in a wide variety of settings. Different contexts may facilitate or hinder the use of certain strategies. For example, commissioning organisations

such as NHS Boards may restrict the extent to which practitioners tailor and personalise their cooking skills courses through attempts to standardise and improve course delivery and evaluation.

Practitioners had varied theories and assumptions about how strategies work. Similar strategies were often intended to achieve different outcomes or to trigger different mechanism (responses in participants).

There was a lack of clarity and specificity in many of the plans, implementation reports and evaluations of cooking skills courses.

There were limitations in the outcome data reported which necessitated a revision of the review questions and meant that not all of the review objectives could be addressed.

Conclusions

The majority of cooking skills activities included in the review appear to target and reach vulnerable individuals and low-income communities. Despite it not being possible to verify this targeting and the resultant reach of the cooking skills activities through analysis of postcode data the reports, practitioners' descriptions, the target groups of the community food initiatives delivering cooking skills and partners used for co-delivery of activities for larger agencies such as NHS Boards all suggest that vulnerable groups are being reached.

There was evidence of consistent evidence based practice by course practitioners. Many of the strategies used to target, tailor and reinforce activities are consistent with behaviour change model concepts recommended by behaviour change academics and authoritative organisations such as NICE.

Cooking skills courses and activities seem to be informed to a degree by thinking in terms of value-based approaches currently favoured by the Scottish Government e.g. person-centred, strengths or assets based approaches, and community development practice.

The cooking skills courses and activities included in the review (most of which were funded via CFHS) appear from course feedback to have been engaging and enjoyable experiences for those who have participated. Notwithstanding the limitations in the outcome data, participants who have completed course feedback and evaluation forms consistently self-report short–term improvements in confidence, knowledge, intentions to change and in some instances behaviour change.

Many of the strategies were aimed primarily at 'non cooking outcomes' or mediators of future cooking outcomes such as self-efficacy or food's role in social interaction etc. The causal linkages between these mediators and cooking outcomes require further testing.

The practitioners (n=19) who engaged in the focus groups were hugely enthusiastic and reflected deeply about the content and design of their activities.

There is some good evaluation and reporting practice. However there was a lack of clarity and specificity in many of the plans and implementation reports. There are some examples of good evaluation practice although the evaluation practice across the board is not scientifically robust or consistent enough to allow meta-analysis and or to prove the impact of cooking skills activities in Scotland. These issues have limited the review's ability to address all of the original study objectives set by CFHS and the advisory group.

There is scope to significantly improve learning about cooking skills activities through more targeted commissioning and evaluation practice that places understanding and refining theory at the heart of commissioners, funders and practitioners' decision making.

Recommendations

Key learning for policy makers and commissioners

By policy makers and commissioners the authors mean both national and local government and statutory agencies such as CFHS and NHS Boards.

Via training and mentoring and more creative funding arrangements policy makers and commissioners should where feasible support practitioners and agencies providing cooking skills activities to:

- Use evaluation tools and measures that are appropriate to, and feasible for, their vulnerable target groups but that are also consistent (at least within if not across contexts e.g. child and family, vulnerable client groups etc.)
- Report denominators and completion rates for their own individual and accumulated courses.
- Identify and test more innovative means of following up participants (e.g. via support staff or referrers or via social media).
- Conduct longer-term follow up.
- Exploit possible learning about the strategies applied from natural experiments and case studies for example:
    - purposefully varying specific strategies but keeping practitioners and target groups similar and assessing the impact on specific outcomes
    - verifying the assumed causal relationship between mediators such as self efficacy, reduced isolation and cooking related outcomes
    - pretesting assumptions with intended target groups (e.g. whether taking meals home is actually an incentive to participation for families)
- Test the feasibility of the less frequently used concepts and strategies (e.g. associated with goal setting or checking participants' motivations for involvement) to provide better baselines.

- Increase the duration and sustainability of their cooking skill courses to facilitate the above changes.

A possible means of supporting the above improvements might be to develop local or regional evaluation champions. Such champions might support the analysis and interpretation of data provided by local projects as well as the other changes described above.

Implementation, outcome and evaluation reporting could be improved through the development and use of a standardised planning and reporting framework informed from learning from the coding framework used in this review.

Key recommendations for practitioners

Practitioners should strive to enhance their funding applications, planning and reporting by providing consistent and specific information about their target groups, content, methods, strategies used (including how these are anticipated to achieve change in their participants and in what outcomes).

Practitioners should strive to enhance their monitoring and evaluation by using appropriate but consistent and where feasible validated measures and tools. If funding allows they should strive to increase course durations (where these are very short), seek to improve baseline information and lengthen follow up through the means and strategies described above.

There are areas where even more reflective practice might lead to activities and courses having a greater impact on participants and may enhance within- and across- course learning. Reflective questions are proposed as part of the report which could be considered by practitioners at different stages of a cooking activity cycle: i.e. seeking funding, planning, recruitment, delivery, evaluation etc.

Practitioners may benefit from making it explicit to funders that the many varied strategies they use for targeting, tailoring and reinforcement have a strong theoretical basis and employ key health behaviour change concepts recommended by authoritative organisations such as NICE.

Practitioners should ensure funders are aware of the reach of their programmes in terms of engaging vulnerable groups. They should where feasible provide explicit evidence for this.

The above recommendations if implemented would begin to enhance both the clarity of practitioners' delivery and theories, and improve to some extent the robustness of outcomes. This in turn might allow more accumulated learning within and across cooking courses and an enhanced evidence base for cooking skills activities in Scotland and elsewhere.

Whilst there is much to be positive about in terms of the delivery of cooking skills activities within Scotland there are still many challenges to be faced and improvements sought.

1 Introduction

1.1 Background

Community Food and Health (Scotland) (CFHS) is part of NHS Health Scotland (NHSHS) and aims to ensure that everyone in Scotland has the opportunity, ability and confidence to access a healthy and acceptable diet for themselves, their families and their communities.

To achieve this, CFHS support work that improves access, availability, affordability to, and uptake of, a healthy diet within low-income communities. Their work includes the promotion of cooking skills and addressing food culture. CFHS supports communities to identify the barriers to healthy eating, develop tailored local responses to addressing these and highlight where wider action is needed.

Cooking activities are a popular activity run by community groups and agencies such as local authorities and NHS teams within low-income communities. They deliver cooking activities in the form of cooking courses, drop in sessions, and as part of activities such as independent living skills programmes or when supporting people on a one-to-one basis. CFHS has provided development funding for 100s of cookery courses and activities since 1997. In recent years, CFHS has focused on improving practice, supporting the development of self-evaluation and developing the evidence base around cooking skills activities.

Despite the above activity, the evidence base for the effectiveness of cooking activities is still sparse due, in part, to challenges and limitations in evaluation and review processes. Many of the local agencies delivering front line activities lack the funds and skills to conduct rigorous evaluations of their programmes[1]. As a result there is limited robust knowledge of the effectiveness of cooking skills activities and crucially of what sorts of activities work or don't work, for whom, how and why.

In September 2014 CFHS commissioned a review of Scottish community cookery skills activities aimed at low-income communities using a realist synthesis approach. This is the report of that review.

This review was commissioned, to contribute to research about the impact of cookery skills activities in Scotland, particularly those delivered by community groups and agencies using a community development approach. The review was commissioned to use a realist approach to learn from the range and complexity of activities used to teach cooking skills across Scotland and the many ways in which practitioners adapt their courses to address community, target group and participants' needs.

The review aimed to find out how the contexts and mechanisms of community cookery skills activities help achieve or improve the outcomes for participants from low-income communities. It is intended that the findings will be used to inform or support improvements in practice in Scotland. Thus the key audiences for the

learning contained in this report are community food initiatives, and agencies and managers embarking on, or involved in, funding, planning or delivering cooking skills activities.

1.2 Policy context

Poor diet and obesity are linked to numerous chronic non-communicable diseases[2] and are associated with substantial premature morbidity and mortality in Scotland[3] (and elsewhere).

Scotland's National Performance Framework has an indicator on increasing the proportion of children with a healthy weight [4] and many national agencies and partnerships through their Single Outcome Agreements are contributing towards improving the diet of the population. Scotland also has a national strategy for preventing overweight and obesity and an associated action plan (route-map)[3]. The provision of opportunities to develop cookery skills was identified as a mechanism to help prevent obesity in the Foresight[2] report on obesity and in Scotland's Maternal and Infant Nutrition Framework[5].

There are numerous national and local agencies engaged in funding or delivering cooking courses throughout Scotland. Given this, and the importance of cooking skills, diet and nutrition to improving health and wellbeing in Scotland it is key that the evidence base for this work is enhanced.

1.3 Aims and objectives

The aim of the research was to analyse grey literature, using a realist synthesis approach, to find out what contexts and mechanisms within community cookery skills activities helped achieve or improved the outcomes for the participants from low-income communities. The outcomes of interest included the development of skills, knowledge and confidence around preparing and cooking healthy and affordable meals, intentions to change behaviour, and non-nutritional outcomes.

The objectives were to:

- Explore the mechanisms of cooking activities that improve or achieve outcomes for participants.
- Explore the contexts of cooking activities that improve or achieve outcomes for participants.
- Explore what is learned from working with different participant groups and mixed groups.
- Explore any impact beyond participants to their families and communities.
- Ensure that an equalities perspective runs through the review process.

In other words the purpose of the review was to learn about what types of cooking courses or activities work or don't work for different target groups in varied settings and to gain understanding about how and why they do or don't work.

1.4 Report structure

The report is structured in a similar fashion to a standard research report and so contains the following sections: introduction; methods; findings; discussion; and, conclusions and recommendations.

It is slightly unusual in terms of the methods section. Given the complexity and likely lack of familiarity with the realist review process the methods are somewhat longer than usual. The methods section integrates the review methods with details of the key outputs of the review such as the refined review purpose, questions and priority theories. It was necessary to describe these along with the methods to ease understanding and to illustrate where adaptations to the methods and the review questions were necessary. This helped set the scene for the findings.

By its nature a realist review is an iterative process. The findings therefore detail the theories that have been uncovered from the review and how these are perceived and understood by the practitioners. The findings also present the results from testing the prioritised theories against the available outcome data and existing evidence base. As Pawson et al.,[6] indicate:

> 'The results of the review and synthesis combine both theoretical thinking and empirical evidence, and are focused on explaining how the interventions being studied work in ways that enable decision makers to use this understanding and apply it to their own particular contexts' (Pawson et al., 2004 page v).

As such the findings are narrative explanations of the theories and detail the actions and perceptions of the cooking skills practitioners and the responses of the cooking skills participants to the activities in which they take part.

The limitations of the review methods are briefly mentioned in the methods but are detailed more fully in the discussion as they are pertinent to an understanding of the methods and should inform the readers' interpretations of the findings, and recommendations. The remainder of the discussion reflects upon the implications of the key findings for future practice and evaluation.

In terms of the conclusions and recommendations, the latter have been tailored to provide learning for practitioners and policy makers and commissioners.

2 Methods

2.1 Realist synthesis

Realist synthesis is a review process that tries to reduce complexity and focus on and identify the theories that underlie social interventions. Theories are the underlying ideas held by commissioners, practitioners and participants and

represented in the literature about the activities involved in an intervention and how, why, and in what contexts and for whom it is believed to work.

Realist review (or synthesis) according to Pawson et al.,[6]

> '…is about building up a picture of how various combinations of such contexts and circumstances can amplify or mute the fidelity of the intervention theory' (Pawson et al., 2004 page iii)

Realist review findings therefore do not decree that any intervention works or does not work. Instead these reviews are exploratory and attempt to uncover which elements of interventions work (or do not work) for particular sub-groups of the target audience in particular contexts, and why. Realist reviews also try to identify theories and learning that can be applied across groups of similar programmes or target audiences (called mid-range theories). Realist approaches therefore generate the types of insights that are useful in helping to inform decisions on how to design and improve future programmes and to target and tailor interventions to achieve particular outcomes for specific groups in key contexts.

Realist review uses the terminology of contexts, mechanisms and outcomes. Contexts include factors such as the settings courses are delivered in, the various content and activities that make up the cooking skills course, the target groups and so on. Mechanisms are the responses of the participants to the various cooking skills activities including issues such as their levels of engagement and their motivations and early reactions that result in them learning and changing their cooking behaviour. Outcomes are the changes that are anticipated as a result of the intervention such as increased knowledge, confidence, skills, intentions to change and actual behaviour change. The theories developed in realist approaches are often described in terms of contexts, mechanism and outcomes configurations (CMOs). These configurations propose that certain contexts result in responses in specific target groups that subsequently lead to particular outcomes. For example, a CMO might be that in family contexts, cooking with children (rather than only adults) reduces their fussiness (a mechanism) over food and so is more likely to lead to the transfer of cooking skills into the home.

The methods were based on the key steps highlighted in Table 1.

Table 1: Key steps in the Realist Review Process[6].

Steps	**Sub steps**	**Relationship with CFHS realist review stages**
Define the scope of the review	With the commissioners identify	Stage one: Identification, quality sifting of grey

	and refine the key question of the review	literature by CFHS, transfer of this to reviewers for data extraction, evidence building and theory development and refinement
	With the commissioners clarify the purpose(s) of the review	
	Find and articulate the programme theories	
Search for and appraise the evidence	Focusing the search for the evidence	
	Appraise the evidence	
Extract and synthesise the findings	Extract the results	
	Synthesise the findings	
Draw conclusions and make recommendations	Concluding the theories development from the realist review	Stages two and three: Sharing and further refinement of proposed theories and learning from stage one through engagement with practitioners and participants. Report writing and dissemination

Most realist reviews involve searching published databases and extracting papers that will inform the review questions. They may also include searching grey literature. This review differed in that it focused solely on a selection of unpublished grey literature. The literature was, in the main, funding applications, and implementation and evaluation reports from cooking skills courses and activities carried out in Scotland between 2010 and 2014. Some of this documentation was submitted to CFHS from May to September 2014 in response to a request sent out to practitioners, community food projects, NHS Boards and third sector organisations earlier in 2014. One hundred and fifty of the 169 sets of reports related to projects funded in part or wholly by CFHS and 19 were funded through other sources and were therefore external to CFHS.

The grey literature selected for inclusion in the review by CFHS were those reports which CFHS felt provided sufficient detail about the cooking course interventions, contexts, and associated evaluations to inform the outline review questions (see section 1.3). The literature passed onto reviewers was from 74 different organisations.

The review was to focus on short-term outcomes related to cooking skills and was to be informed by an equalities perspective.

The focus on preselected grey literature necessitated some adaptations to a standard realist review process and tools. These adaptations and the outputs from the above processes are detailed in the following methods sections. The learning and theories from the realist review were, in addition, to be informed and refined by the views of practitioners and participants as part of focus group discussions. These groups were purposively selected to further inform the refinement of and conclusions about the programme theories.

2.2 Identify and refine the review questions and purpose

CFHS forwarded 81 sets of documentation onto the reviewers from the 169 that they read and reflected upon.

The reviewers initial reading of the 81 sets of documentation that made up the grey literature identified by CFHS highlighted a wide range of contexts, mechanisms and outcomes of possible interest and numerous and varied groups targeted. Some of these are illustrated in Appendix 1.

The reviewers conducted a second reading of the literature and simultaneously coded information about the cooking skills courses and activities, using a coding framework developed by the review team and refined and approved by CFHS and the advisory group[a] In total the reviewers coded circa 195 variables to show whether or not information was available and to give some indication of what was reported in the grey literature. The coding covered issues about contexts (e.g. setting, target groups, course content, methods and strategies used), mechanisms (e.g. take up, adherence, early responses) and outcomes (e.g. increased confidence, cooking at home etc.). The variables were all things that might influence the effectiveness of cooking skills activities - see Appendix 2. An extract from the completed coding framework is in Appendix 3.

The reviewers met with CFHS to reflect on what had been uncovered from the above process and the apparent similarities and variations in the activities and the contexts in which they were delivered. This reflection allowed CFHS to highlight the gaps in knowledge and prioritise the types of theory testing and key questions that were of most interest to CFHS and practitioners.

[a] One primary researcher did the reviewing but a second researcher crosschecked the coding for 10% of the sets of reports. Any discrepancies between the two coding processes were discussed and the likely reasons for this identified. The literature was then re-read and coding rechecked with that learning in mind as part of the next stage of the process.

Pawson et al.,[7] highlight that realist review can address several types of theory testing. These are detailed in Table 2.

Table 2: Possible types of theory testing in realist reviews

Possible types of theory testing	Explanation	Whether or not this type of theory testing was included CFHS review?
Reviewing for programme integrity	This is similar to a theory of change approach where key activities and mechanisms are identified and aligned to the anticipated outcomes then evidence sought to verify the linkages to these outcomes or to test where blockages or failure in their implementation have been	No
Reviewing the same theory in comparative settings	Checking the evidence that the same programme (or mechanism) achieves similar outcomes across different contexts	Yes - however the review considered whether the same strategies (rather than mechanisms) were anticipated to lead to similar outcomes in different contexts
Reviewing to adjudicate between theories	Identifying which of several competing theories actually operates in achieving an outcome	Yes – looking at similar strategies across varied target groups and contexts
Reviewing official expectation against actual practice	Seeking evidence that the core or essential ingredients of programme theory are consistent within and across programmes	Yes – checking that strategies were based on evidence & courses were reaching low income and vulnerable groups

This overall prioritisation process took account of what was feasible given the available resources, the extent of and quality of the grey literature, and timescales. Pawson[7] indicates there is no easy fix to the process of prioritisation:

> ‘No review can be completely comprehensive and unless the reviewer has a year or two - or more - to spare it is quite impossible to probe in depth into all of these issues … Prioritisation has to be the rule but there is no golden rule for selecting

> the key explanatory issues. These may be settled pragmatically on the basis of the prior interest of the commissioner, reviewer or practitioner. Somewhat more strategically, a particular characteristic trait, a feature of palpable novelty, a point of potential fragility or an area of dispute within a programme may be singled out as the burning issue for review' (Pawson, 2006 page 80).

Having identified the review purpose, the high level questions and the particular set of theories that were of most interest, these were then further refined. Such prioritisation and iteration is a feature of realist reviews.

A key issue that influenced the prioritisation process was substantial limitations in the quality and robustness[b] of the outcome data within the grey literature. CFHS and the advisory group were aware of these limitations prior to commissioning the review and the reviewers in their proposal to win the work also highlighted them. All parties discussed the potential implications of these limitations but agreed that even with these the review could produce valuable learning. The anticipated limitations were confirmed during the initial coding process. More details of these limitations and issues concerning a lack of variability in the outcome data are provided in section 4.

These limitations meant that theories uncovered in the grey literature could not be validated by reference to the primary data collected by the cooking skills projects. As such any testing or validation of the theories that was feasible as part of this review had to be done with reference to the existing published data on what works for behaviour change programmes in general.

Within the field of health improvement there is a substantial amount of published research presenting and testing the efficacy of various social and psychological theories (represented as behaviour change models and associated psychological or social concepts or constructs)[8,9]. The reviewers have used the recommendations[8] associated with research into these models and concepts to help validate the theories in this review. These behaviour change models and concepts are described in more detail within section 2.4.1.

CFHS and the reviewers discussed many possible theories contained in the grey literature. For example:

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[b] By robust – the reviewers mean that the outcome data had not been gathered consistently across courses using validated tools nor analysed taking account of response rates and possible selection bias. As such the data is not robust in an empirical scientific sense. Many practitioners had however evaluated their courses using tools that were appropriate to their client groups' needs - however these were not necessarily validated scientifically, nor could data be easily combined or subjected to any meta-analysis.

- Whether certification or accreditation leads to greater participation and completion levels for courses and or are more likely to lead to specific outcomes such as volunteering or employability in certain target groups (e.g. young mothers).
- Whether training community group volunteers or organisation staff alongside targeted participants delivered better outcomes for either group or increased future behavioural reinforcement from staff.
- Whether achieving outcomes such as general increased confidence leads onto or is a mediator for self-efficacy (confidence related to specific cooking skills) or future intentions or actual behaviour change in terms of cooking.

Whilst numerous theories were of interest some were felt less likely to have generalisable results across the majority of contexts and target groups or be more difficult to address within the current review. Following discussion CFHS prioritised theories that concerned variations in the amount of targeting, tailoring and reinforcement that appeared to exist in different settings. There were several reasons for this choice:

- The coding framework suggested that whilst virtually all projects claimed to target and tailor their offer, there was substantial variation in what was meant by this, and in particular the number, range and type of actions and strategies used to adapt interventions to the needs of subgroups and individuals and to reinforce knowledge and behaviour change.
- The variations found in the coding framework suggested that some delivery contexts, target groups and factors such as course length and frequency might influence the selection and use of these strategies.
- The course contexts seemed to influence the opportunities available for on-going reinforcement of mechanisms or early outcomes achieved (e.g. behavioural mediators such as pride, confidence, knowledge and skills).
- There was available evidence on behaviour change theories and associated models in the published literature that could be used to support these practitioners' theories (in the absence of robust primary data)[c].

It was felt that learning about strategies used for tailoring, targeting and reinforcement would be relevant to most deliverers and commissioners of cooking skills courses and would deliver what Pawson[6,7] describes as middle range theory. This focus also satisfied the range of objectives identified in the tender (see Table 3).

[c] As detailed previously (see section 2.2) all parties knew in advance/at the start of the process that the grey literature was unlikely to provide sufficient clarity on implementation and robust outcome data to address all the initial review objectives.

The refined review, purpose and key questions and their relationship to the initial review objectives are shown in Table 3. More detailed version of the theories uncovered in the review used for targeting, tailoring and reinforcement are provided in the findings (section 3).

Table 3: Prioritised review purpose and key questions linked to CFHS objectives

CFHS Objective	Type of theory testing	Key related review questions
Explore mechanisms that improve or achieve outcomes	Review official expectation against actual practice	What strategies do practitioners use for targeting, tailoring and reinforcement (and why)? Are the strategies informed by 'evidence based' recommendations?
Explore the contexts that improve or achieve outcomes	Same theories in comparative contexts	Are strategies applied to the same extent and for the same reasons in different contexts?
What can be learnt from working with different groups and mixed groups	Adjudicating between theories	Do some strategies seem to achieve particular responses from particular participants?
Explore impact beyond participants to their families	Adjudicating between theories	Do particular contexts or strategies aid the transfer of cooking skills into the home?
Ensure an equalities perspective runs through the review process	Review official expectation against actual practice	Are courses reaching low income or vulnerable communities?

2.3 Find and articulate the programme theories

The reviewers used their initial reading of the literature and the coding framework described previously to identify and articulate the initial strategies and underlying theories that related to targeting, tailoring and reinforcement. The reviewers used the following definitions for these terms.

Targeting involves the development of an intervention for a defined population subgroup that takes into account the characteristics shared by the members of that sub group [10] for example, translating recipes into a different language for non-English speakers.

Tailoring relates to adapting a course or intervention to reach an individual based on characteristics that are unique to that person[11].

Reinforcement activity is when practitioners provide rewards or encouragement (often via significant others) to embed or sustain a positive behaviour or outcome[12]. The reviewers are using reinforcement in this review also to include contexts that allow on-going opportunities to embed behaviour change by exposing participants to multiple reinforcement strategies and opportunities from peers or significant others beyond the immediate cooking skills course.

Table 4 illustrates the range and diversity of strategies used for targeting, tailoring and reinforcement and begins to differentiate these in terms of which were most commonly or less frequently reported as being used within the data. It should be noted that some strategies may overlap and some may be used for targeting, tailoring and reinforcement rather than for one of these exclusively.

Table 4: Range of strategies used for targeting, tailoring and reinforcement

Strategies more often found in the data	Strategies less often found in the data
Allowing participants to choose or influence the selection or order of recipes	Formal self-assessment of diet
Adjusting the focus of sessions to concentrate on specific issues or conditions e.g. mood and health/ diabetes etc.	One-to-one support in addition to class
Using food tasting sessions to widen palate	Food shopping trips
Emphasising the financial benefits of cooking from scratch (relative to buying produced or fast foods)	Volunteering to cook for others
Designing or varying the class length or frequency to address needs	Attending gardening projects and using food for cooking class
Eating together at the end of the class	Attending lunch or breakfast clubs associated with class
Cooking for others -class event and or for families at last session	Reinforcement from staff or carers
Taking meals home to family to eat	Follow up from referrers
In house certificates given at the end of class	Formal input on labelling
Recipes to take home	Accreditation or qualifications (e.g. Royal Environmental Health Institute for Scotland Health & Hygiene certificate)
Using informal measures rather than scales	Cook with kids
Simplified or visual recipes	Rewards or incentives or ‘giveaways’
	Focus on freezing or bulk buying or low-costs
	Formal goal setting
	Meeting or sharing with others post course

2.4 Focusing the search for the evidence

A data extraction framework was developed by the reviewers and informed by decisions about the review purpose and prioritised questions and theories.

Had the primary outcome data in the grey literature been more robust this framework would have used it to evidence which strategies had or had not led to successful outcomes in the various contexts thereby testing theories about which strategies worked for whom, when and why.

In the absence of outcome data that are scientifically robust the framework sought to refine and test the theories (the strategies and how, who and for whom they are thought to work) against theoretical concepts taken from behavioural models. Appendix 4 shows the blank data extraction framework listing the concepts detailed below.

2.4.1 What are academic behavioural change models and concepts?

There are a wide variety of psychological theories in the form of behaviour models that have been used to explain and predict behaviour change such as Social-cognitive theory, the Theory of planned behaviour, and the Transtheoretical model etc. [8,9,13]. Whilst some of the individual models have limitations, various sources [8,9,13] suggest that a number of concepts drawn from them are helpful when planning individually focused behaviour change programmes. They include the following concepts:

- Outcome expectancies (i.e. helping people to develop accurate knowledge about the health consequences of their behaviours).
- Personal relevance (emphasising the personal salience of health behaviours).
- Positive attitude (promoting positive feelings towards the outcomes of behaviour change).
- Self-efficacy (enhancing people's belief in their ability to change).
- Descriptive norms (promoting the visibility of positive health behaviours in people's reference groups – that is, the groups they compare themselves to, or aspire to).
- Subjective norms (enhancing social approval for positive health behaviours in significant others and reference groups).
- Personal and moral norms (promoting personal and moral commitments to behaviour change).
- Intention formation and concrete plans (helping people to form plans and goals for changing behaviours, over time and in specific contexts).
- Behavioural contracts (asking people to share their plans and goals with others).
- Relapse prevention (helping people develop skills to cope with difficult situations and conflicting goals).

Such concepts could be used alongside, and to inform, the targeting and tailoring of interventions to suit the needs of target groups and the delivery contexts[8] and to reinforce behaviour change. In addition the National Institute for Health and Care Excellence [8] (NICE) in their public health behaviour change guidelines suggest that participants views should influence design and delivery:

> 'Effective interventions target specific groups and are tailored to meet their needs. This is particularly important where health equity is one of the goals. Service user views may be helpful when planning interventions.' http://www.nice.org.uk/guidance/ph6/chapter/2-considerations - planning-and-design

Empowering and engaging individuals and communities are also seen as key in the Scottish Governments Guidance for Community Planning partnerships: Community Learning and Development[14]
http://www.scotland.gov.uk/Publications/2012/06/2208/0.

NHS Health Scotland[15] and the Scottish Government[14] also support the use of approaches, which build upon the existing assets of individuals, groups and communities and their environments when providing services. http://www.healthscotland.com/documents/5535.aspx. Such approaches support focusing on strengths and opportunities rather than on problems and deficits and are particularly encouraged in terms of working with low incomes communities and addressing inequalities.

Evidence (beyond that from case studies) of links between such approaches and improved outcomes remain limited.[15] From a value based rather than simply an evidence-based perspective however using tools such a community engagement, co-production and community development methods (associated with strength or assets based approaches) have much validity[14,15].

Rapp, Saleebey and Sullivan (2008)[16] proffer six standards for judging what constitutes a strengths-based approach:

- Practice that is goal oriented and allows people themselves to set goals they would like to achieve in their lives.
- Helping the individual to identify their strengths and the inherent resources they have which they can use to counteract any difficulty or condition.
- Practitioners' that enable links to resources - individuals, associations, groups and institutions who provide support and that may be useful.
- Practitioners use explicit methods (relevant for their field) for identifying client and environmental strengths for goal attainment.
- A strengths-based approach aims to increase the hopefulness of the client.
- A collaborative approach where people are experts in their own lives and the practitioner's role is to increase and explain choices and encourage people to make their own decisions and informed choices.

In addition to referring to evidence from behaviour change models, to verify implementation strategies and theories within these data this review will also make some general commentary on alignment with these principles where feasible. Theories about and linkages between these strength-based approaches and the strategies used in cooking skills activities were discussed during the early stages of the review but were not prioritised by CFHS at that point as the linkages to the more strongly evidenced behaviour change models were though more pertinent. At the latter stages of the review the linkages to the strength-based approaches were again discussed, as there were some overlaps between the behaviour concepts and some of the principles of these approaches. The reviewers were asked to make such links explicit where feasible and where data and existing analysis allowed. The links to strength-based approaches have therefore not been coded and analysed in the

same way as the links to behavioural models and concepts have. The reviewers therefore only illustrate where there appears to be consistency between the strategies used and these value based approaches and cannot conclude anything beyond that.

2.5 Appraising and extracting the evidence

The reviewers re-read the grey literature, this time extracting examples of the various strategies that had been applied to specific contexts, how and why and coded these against the recommended behaviour change concepts. One example of an excerpt from the data extraction framework is shown in Appendix 4.

The reviewers extracted data from all of the grey literature forwarded from CFHS. This involved reading and re-reading circa 81 sets of documents. Some sets of documents related to a single cooking skills course some of the documents related to one off courses and drop-ins. However, many also reported on multiple courses delivered by their organisations. Where reports related to more than one course or activity notes were taken to indicate this on the coding framework and data extraction form and the most common or pertinent delivery methods and outcomes were coded and extracted in such instances.

As detailed above the initial coding framework was used to assess what settings, approaches and strategies were being used by the practitioners. It was also used to guide the reviewers in terms of where to look for information about the more detailed strategies and associated mechanisms, the contexts in which they were used and any outcomes – all issues that would inform the prioritised theories.

The data extraction framework provided evidence of whether or not the range of strategies applied by practitioners in cooking skills activities aligned with, and were informed by, recommended behaviour change model concepts. It also allowed an assessment of the frequency with which they were used and in which contexts they were used. In addition, this analytical process also highlighted some of the more detailed underlying theories and assumptions that underpinned the way the practitioners seemed to use the strategies. Further details of the practitioners' theories are provided in section 3.6.

This more detailed assessment process also allowed consideration of the validity and rigour of the associated outcomes reported in the grey literature (e.g. do the methods and processes used to evaluate the outcomes justify and support the conclusions from cooking course feedback).

2.6 Synthesise the findings and conclude the theory development

The learning from reviewing the literature, coding it and extracting the data and aligning it against the behavioural concepts was used to inform topic guides for focus groups with both practitioners and participants.

Issues and questions informed by the developing theories were presented to the practitioners as part of two focus groups that took place at a CFHS Learning Exchange for community cooking skills practitioners in November 2014. The theories were presented as questions concerning which strategies they applied in various contexts, why and whether they were successful or not.

The reviewers conducted a focus group (Focus Group 1) with ten practitioners whose work included working with very vulnerable groups (i.e. residents in supported accommodation units, those with mental health issues, offenders, or the homeless etc.).

Focus Group 2 was conducted with nine practitioners whose work included providing cooking skills for parents or carers of nursery or school children. Both practitioner focus groups lasted one hour.

The learning from these practitioner focus groups further informed the reviewers thinking about the prioritised theories and the learning from them was used to inform further testing of theories with participants in two cooking skills initiatives; one run with residents (n=4) in temporary accommodation unit (Focus group 3) and one run with parents (n=5) of nursery aged children in a socially deprived locality (Focus group 4). Both participant focus groups lasted 30 minutes.

Focus groups 3 and 4 sought participants' views on the extent to which the different strategies and approaches were effective in helping them learn to cook and achieve their cooking related goals.

Data from all four focus groups were used to further refine the theories that had been developed from the review of the grey literature. The topic guides used for all focus groups are in Appendix 6.

2.6.1 Recruitment and informed consent procedures

Practitioners were recruited by CFHS from those wishing to attend a CFHS one day Learning Exchange event for community cooking skills practitioners in November 2014. The event booking form was used to identify potential attendees' roles and responsibilities, the settings they ran activities in and the groups they targeted as well as the length of their experience in delivering cooking skills courses and activities. This information was used to purposively recruit practitioners for the focus groups based on the prioritised theories and contexts (e.g. vulnerable clients and family settings). The learning from the literature had suggested potential differences in the strategies used between these contexts. Practitioners were therefore selected based on the extent of their experience and the likelihood that they could inform prioritised theories and aid reviewers in further understanding which, how and why strategies were used in these different contexts.

Twenty-two practitioners were recruited (19 attended on the day). Of those recruited twelve had cooking course delivery and or management experience of more than

five years, eight had between one and five years experience and two had less than one year of experience.

Cooking skills activity participants were purposively recruited by CFHS via a community based food initiative that could provide access to both cooking activities being run with very vulnerable clients in a temporary accommodation unit and one targeting nursery parents in a low-income area. The cooking skills activity practitioners employed a number of the strategies for targeting, tailoring and reinforcement that the reviewers wished to learn more about. Again these settings and groups were chosen to inform the prioritised theories. The initiative received a small donation to cover their expenses in terms of recruitment.

All focus group attendees were given information sheets (Appendix 7) about the review and provided written informed consent (Appendix 8). All focus groups were audio recorded and data anonymised, and stored and transferred securely in accordance with data protection guidelines.

2.7 Draw conclusions and make recommendations

2.7.1 Analysis and triangulation of data

Focus group data were transcribed and these data along with the data from the grey literature - data from both the coding framework and the data extraction framework - were analysed in a comprehensive and systematic manner according to key themes relevant to the developing theories. Data from all sources were triangulated where relevant to the key themes, and consistencies and contradictions highlighted.

2.7.2 Validation of findings with stakeholders

The key learning from the various sources was presented to CFHS and the commissioning group as part of the review debrief. CFHS and the advisory group contributed to the formulation of the recommendations for various target audiences (practitioners, policy makers and commissioners).

2.8 Ethics approval

Review by an NHS Research Ethics Committee was not sought for this work on the advice of CFHS and NHS Health Scotland. Given the vulnerability of the cooking skills activity participants, the nature of some of the questions about their success at achieving skills and changing their behaviour and the relatively small group numbers, the focus groups were conducted in the presence of the tutors.

Cooking skills activity participants were given £30 shopping vouchers as a thank you for their participation.

3 Findings

3.1 Findings from triangulated data

The following findings are based on the overall triangulated data from:

- the grey literature entered into the coding framework
- data extracted from the grey literature and aligned with the concepts from the behaviour change models (see examples in Appendices 5, 10 and 11)
- data from the two focus groups with practitioners
- data from the two focus groups with participants.

In total 81 sets of documents were reviewed. These were sent to reviewers by CFHS and had been selected by CFHS out of 169 sets they had received. Some of these documents covered a single course, some reflected on the delivery of multiple courses and activities and annual reports from community groups who deliver multiple courses each year. In some instances the multiple courses were of a similar design in others they varied. There was some overlap in the courses and activities that were covered in the various documents and so the exact number of courses reviewed has not been established. This is due to a lack of clarity in some of the more general reports about exactly which of the many courses they are reflecting on and the fact that courses from similar agencies and in similar settings often went under multiple names. It is likely that information on substantially more than 81 courses have been included in the documents reviewed. The potential overlaps are highlighted in the coding framework submitted as a separate file to CFHS.

3.2 Are courses reaching low income and vulnerable communities?

The reviewers did not have access to participant post-code data or activity locations that would allow any form of geographical or area-based deprivation analysis. However the grey literature indicated that the vast majority of cooking skills activities were targeted and appeared to be reaching participants from low-income communities. This targeting was frequently reported as a result of delivering to groups within particular geographical localities known to be low income e.g. based on Scottish Index of Multiple Deprivation (SIMD) categories and or as a result of activities targeting specific sub groups of vulnerable participants. Reports from larger commissioners, such as a NHS Board and Local Authorities were less likely to contain details of the reach of their programmes in terms of vulnerability. This may have been because they delivered more courses that reached more participants across a wider range of groups than courses run by individual community programmes that support specific target groups. With such larger commissioners, however targeting was apparent through the partnerships they used to deliver their courses e.g. housing associations, addictions teams and early years centres as the quote below illustrates.

> ‘ … its about working with each of the representatives from each of the Community Health and Care Partnership (CHCP) areas…they work on the recruitment side because they tend to already have the relationship built up’ (Practitioner Focus Group 1).

Appendix 9 provides an illustrative breakdown of the circa 81 courses in terms of types and range of settings or groups. The courses or sets of literature are identified via their number code rather than name in order to preserve anonymity. It should be noted that some of the reports related to multiple courses (i.e. those in blue font in Appendix 9) and so the most prominent focus of these courses was used for coding. In addition the categories bulleted below that we have used to illustrate reach are not exclusive as there may, for example, be someone attending a course in a family setting who may also have been deaf or have additional learning needs. Whilst the detail may be imperfect, Appendix 9 illustrates that a large proportion of courses and activities are clearly targeting those from vulnerable groups and the coding framework suggests many are using the SIMD as a means of targeting those living in areas of deprivation. The range of groups targeted include:

- those in mental health recovery or in temporary accommodation
- those homeless or at risk of homelessness
- those with physical disabilities or additional learning needs
- offenders or their families
- family settings (often targeting nursery or school parents and or children)
- those attending family centres or community centres
- youth clubs
- carers groups
- elderly groups or residents
- NHS settings
- BME groups
- women's aid groups
- those effected by alcohol or substance use.

The conclusion that courses and activities are working with vulnerable groups was reinforced from the focus group data. Practitioners in both focus groups spoke in great detail about the groups they targeted, the nature of their targeting and working through intermediaries to ensure they reached participants from vulnerable groups and or low-income areas.

> 'One of my target groups was based in X (name of inner city locality) and it was highlighted through consultation, so using community events to look at what gaps in services and what needs there were, …there was a number of migrant women living in the local area that were quite isolated, maybe English was their second language, were scared, didn't socialise with other people, weren't really accessing services and we found that cooking was a way of engaging people to bring them together …' (Practitioner Focus Group 1).

> '…so there's different pathways that people can come to us and one is through referrals from other statutory or third sector organisations and child and family centres' (Practitioner Focus Group 1).

Even though only one of the cooking skills activity participant focus groups was selected particularly because the participants were vulnerable, both contained participants who were experiencing substantial exclusion and challenges in relation to cooking and healthy eating.

> 'I lost my mother to cancer… I was a drug user…' (Participant Focus Group 3).

> ' X (child's name) doesn't really eat, she eats like sandwiches and pasta, but I am trying to get her to eat more in a day...I feel like she's starving because she's not really eating, and I've went to the doctor's and everything about it because I'm scared that she's not going to put on any weight and all that … ' (Participant Focus Group 4).

3.3 What strategies are used for targeting, tailoring and reinforcement and how commonly are they used?

Table 4, in section 2.3, illustrated the range and diversity of strategies used and began to differentiate them in terms of which were more and less frequently reported as used in the data.

There was evidence from the grey literature and all four focus groups that decisions on targeting (rather than more individualised tailoring) such as venue, timings, course frequency and duration, types of meals more generally (e.g. snacks or meals, cook well[d] recipes etc.) were made based on perceived needs of the general target group prior to their first attendance at the course. For example school kitchens or venues near schools were chosen for parents of school or nursery children and timings influenced by childcare commitments etc.

The triangulated data however also illustrated that the vast majority of courses were also further targeted for sub groups or tailored for individuals in some fashion, most commonly in terms of: encouraging participants to influence the choice of recipes during the first and or subsequent weeks of the course; covering topics in greater or less depth depending on needs of one or more individuals in the group e.g. covering health issues such as food and asthma, diabetes, weaning; using store cupboard ingredients to keep down recipe costs; ensuring recipe ingredients could be accessed in local shops; and, providing recipes to take home post class or course.

[d] CookWell was a Food Standards Agency Scotland funded cooking skills intervention project that took place between 2000 -2001. Outputs from the CookWell project included recipes and evaluation tools. Several of the courses included in this realist review used these materials as part of there courses. These are available at http://www.fhascot.org.uk/Resource/cookwell-tutors-manual-2nd-edition (last accessed 04/03/15).

3.4 Are the strategies informed by and or consistent with behaviour change models and concepts?

Table 5 illustrates the reviewers' interpretation of how the strategies used by practitioners might align with the behaviour change model concepts (e.g. outcome expectancies, self efficacy etc.) drawn from behavioural change models as recommended by NICE[8] and other sources [11,12]. Those strategies (rather than concepts) used less frequently are highlighted in italics.

More general strategies commonly used such as encouraging cooking course participants to influence recipes and encouraging peers to support slower learners also align well with the principles of strength-based approaches. There were also links to such approaches evident in projects that provided food vouchers or set up links to local lunch clubs or food cooperatives and similar community resources. More commentary on this is provided in section 4.

Appendix 10 and 11 highlight further excerpts from the data extraction framework showing how the reviewers have aligned practitioners' own descriptions of their use of these strategies (or, where provided, their theories of why they are using the strategies) to the nine behavioural concepts.

A concept may be used regularly even if it has few strategies associated with it. On the other hand a concept with several strategies may not be used frequently as the individual strategies are not commonly used.

The following concepts seem to be used more frequently:

- Outcome expectancy
- Personal relevance
- Positive attitudes
- Self efficacy
- Descriptive norms (mainly due to common use of eating together)
- Subjective norms.

Table 5: Strategies aligned to concepts from behavioural models

Concept-Outcome expectancies	Personal relevance	Positive attitudes	Self efficacy	Descriptive norms	Subjective norms	Personal & moral norms	Intention formation & concrete plans	Behavioural contracts/ *Relapse prevention*
Helping people develop accurate knowledge about the health consequences of their behaviour	**Emphasising the personal salience of health behaviours**	**Promoting positive feelings towards the outcomes of behaviour change**	**Enhancing people's belief in their ability to change**	**Promoting the visibility of positive health behaviours in people's reference groups they compare themselves or aspire to**	**Enhancing social approval for positive health behaviours in significant others & reference groups**	**Promoting personal & moral commitments to behaviour change**	**Help to form plans & goals for changing behaviours, over time & in specific contexts**	**Share plans and goals with others** **Helping people develop skills to cope with difficult situations and conflicting goals**
Formal nutrition input on salt or fat or sugar	Impact of food on behaviour or mood	Fun relaxed courses	Using simple recipes based on locally available food.	*Using or encouraging Volunteering from/in previous/subsequent courses*	Cooking for others at home, in course	*Future volunteering -lunch clubs, gardening programmes*	Taking recipes home	*Explicit goal setting for cooking; eating; shopping;* *Budgets*
Disease related issues	Impact on food on children's health or behaviour	Tasting sessions challenging and extending food choices	Visual or written recipes or measures based on literacy levels	*Links to gardening projects or food coops used by others in similar positions*	Certificates *or accreditation*	*Linking food and environment issues*	*Providing store cupboard food bags /spices etc.*	*Encouraging groups to meet beyond class or posting on face book*
	Formal assessment of own diet or cooking or buying	Financial benefits of cooking from scratch	Cooking for (and eating with) other who provide positive feedback	*Attending breakfast or lunch clubs in setting*	*Kids involvement in cooking within sessions*	*Linking weight management goals to cooking*	*Equipment giveaways – blenders, measuring spoons*	*Rewards – tied to achievement goals*
	Pros and cons of	Using children's'	Quick recipes and strategies		Events – come dine with me	*Accreditation towards*	*Strategies for bulk buying or freezing*	*Follow up to reassess goals*

	behaviour change sheets	health as motivation	to adapt these based on available foods/make healthier		or families attending last session for meals	*future employment*		
	Stressing social relevance of food or family bonding etc.		Greater exposure - no classes or recipes		Taking meals home		*Shopping trips*	Home made 'take aways' for kids
			Fun Certificates		*On-going input from staff or carers*		*Shopping strategies*	
			One to one support	Eating meals together post class				

Note: Strategies might align with one or more concepts depending on the practitioners' theories on their use. Italics indicates strategies found less frequently in the data.

The concepts that seem to be used less frequently are: personal and moral norms; intention formation & concrete plans; and, behavioural contracts and relapse prevention. These are described in Table 5. There are practitioners that do apply these concepts but they seem to be less consistently reported or applied than those listed above.

There was some evidence that some practitioners created opportunities for ensuring that personal goals could influence aspect of the cooking course once participants had started classes:

> 'We very much start with a group plan. Each individual would put something into that plan. So each individual would have their own outcomes …so it might be family mealtimes, it could be budgeting, it could be cooking for one if they've only got a microwave, so we would know that at the start …' (Practitioner Focus Group 2).

Examples of explicit or formal goal setting were not however that common in the grey literature or the focus groups. The examples were more about issues such as recipe choice or perhaps focusing content rather than specifying or writing individual goals. Individualised goal setting is one of the principles of strengths based approach as well as being supported as a specific behavioural change model concept.

Another behavioural model concept (not listed in Table 5) for which there was few explicit examples was contemplation and preparation for change[13]. This concept comes from the Trans-theoretical model[13] (related to the stage of change model) and is a means to identify whether a participant is 'ready to change'. This model suggests those motivated and or ready to change the specific behaviour of interest are more likely to engage with or adhere to, and benefit from, participation than someone judged not to be ready (e.g. in the pre-contemplation stage). There are limitations in the evidence base for this approach, however it has been quite widely applied in health behaviour change programmes, mainly through motivational interviewing.

In order to use the Trans-theoretical model[13] and gauge participants' stage of behaviour change practitioners would need to know potential participants levels of readiness or motivations to change their cooking skills behaviour specifically. It is likely that to gain such knowledge participants would need to meet with or use a tool to assess readiness to change prior to an individual being given a place on the course.

When questioned about how much they know about individual participants' motivations, practitioners stated they sometimes did and sometimes did not know much in advance of the course:

> 'Usually not too much' (Practitioner Focus Group 1).

> 'It's a mixture' (Practitioner Focus Group 2).

Some practitioners do have access to knowledge about individuals (and so possibly know more about their motivations to change) prior to participation e.g. those in more supported settings or those who take direct referrals from health and care professionals.

> '…we get single shared assessments and that says whether folks need help with cooking' (Practitioner Focus Group 1).

> 'it really depends on the support worker … sometimes the support worker will give lots of information…Other times the person will have very little clue why they are there…' (Practitioner Focus Group 1).

A few projects host one-off cooking or tasting or similar planning events to meet and recruit individuals.

Only two focus group practitioners suggested they had ever declined a participant a place on a course prior to or at the start of a class. There was only one explicit example in the literature or focus groups of the purposive use of meeting individual participants prior to the course to formally assess their suitability in terms of motivation and readiness. This was from a project working with very vulnerable individuals.

> 'once we get a referral in and there is a gap in a cooking course, I have a chat with them, with their support worker…we do a risk assessment…We want to see what their level is and that they are committed to come along and stay for an eight week programme…it's got to be buy in from the individual that this is what they want to do' (Practitioner Focus Group 1).

The above suggests that some contexts may more easily support certain strategies such as assessing readiness, formal goal setting and reinforcement due to the roles of referrers and on-going support workers. The use of strategies that assess motivation and goals prior to engagement may have implications for cooking course recruitment processes.

Tailoring and personalisation (rather than targeting) of support through the use of the behavioural concepts above may be more difficult in the absence of specific information about participants' motivations and personal goals.

3.5 Are the strategies and concepts used to the same extent in different contexts?

A wider range of strategies is used in contexts with more vulnerable clients and in more supported settings (e.g. supported accommodation units, mental health recovery settings and third sector community food organisations dealing with vulnerable groups). Given the vulnerability of the participants targeted in such contexts, this is perhaps no surprise. Similarly many of these settings have longer-

term relationships with participants (and they tend to run longer courses or on-going drop-ins). They may, for example, be more likely to have participants who have on-going relationships with support workers or carers. The person providing specialist cooking input may also be more consistent or known to participants. Settings involving such continuity seem to lend themselves better to reinforcement and the use of multiple strategies or on-going follow up by significant others such as carers and support workers. This is likely to make the application of concepts such as those relating to norms, follow-up and goal setting easier.

Practitioners in the focus groups illustrated the types of strategies that can be more readily delivered in these settings. They gave examples such as one to one support and more flexible offerings beyond the classroom such as links with community gardens and food co-ops or shopping trips:

> '..I can start up a cooking group…and do it with lots of people or I can do it one to one in their home, so its very much client centred…' (Practitioner, Focus Group 1)

> 'I find the growing side of things helps a lot, because we own an allotment, and for them to actually visit the allotment and pick their own vegetables, actually they'll try things that they won't normally try. Because its so different in the garden, its an opportunity for them' (Practitioner, Focus Group 1).

However, some participants in the practitioner focus groups suggested that larger organisations might not tailor and personalise their courses to the same extent as implied above:

> 'I work with NHS [health board name], so we don't do an awful lot of contact directly with community members. We support other organisations to do that…its quite difficult for us to work with all these organisations and help them to plan their sessions when they are all so different' (Practitioner Focus Group 1).

> '…what we have done is almost come up with a universal programme. There will be some flexibility within that, but we have to kind of keep it quite structured …we've tried to get around it a little bit - bolt on sessions have been added on for specific target audiences' (Practitioner Focus Group 1).

3.6 Are strategies applied for the same reasons and do they get similar responses in different contexts?

Given the range of possible strategies that were uncovered there is only room to discuss a few examples within this report to illustrate the findings. The reviewers have therefore selected five theories to illustrate different issues about how context (e.g. target group, settings and size or type of delivery organisation) influences the how and why of strategies use. These strategies also highlight learning about varied participant responses (mechanisms) to the same strategy and what might influence

these. This relates to the third review question in Table 3 - Do some strategies seem to achieve particular responses from particular participants?

The examples of theories and issues covered are:

- An example about eating together to illustrate how similar strategies can be used to achieve different outcomes via diverse participant responses (mechanisms).
- An example reflecting on varying lengths of classes or courses highlighting how these decision can be influenced by context which in turn may further influence content and the extent to which tailoring and personalisation is feasible.
- An example of cooking with children that illustrates how one contextual issue may mask or lead to other differences in course delivery - in this instance how cooking with children may lead to different outcomes due to issues such as the use of simpler recipes or improved family relationships.
- An example of using give-aways to illustrate how strategies are used differently (as an incentive, reward or to address a perceived need). It also illustrates how a giveaway may be intended as an incentive but not delivered in practice in a way that would actually incentivise behaviour.
- The final example of taking food home illustrates how assumptions about a strategy may be invalidated in certain contexts or insufficient to overcome more entrenched or competing behaviours.

The examples also show that strategies are often aligned with one or more behavioural concepts.

3.6.1 Eating together

Eating together at the end of the cooking class seems to be a relatively common strategy. Only 32 of the 81 sets of documents provided details on whether participants did or did not eat the cooked meal together as part of the class. Twenty-five from that 32 indicated that this strategy was used each week or at least sometime in the course. Seven sets of documents indicated participants took food home to eat. The strategy of eating together was most commonly used with more vulnerable contexts (e.g. supported accommodation) or with third sector community based projects targeting issues such as mental health recovery or homelessness. It was used or reported less in NHS and family settings (e.g. with school or nursery parents). This finding was reinforced in the practitioner focus groups.

Evidence from the grey literature and the focus groups suggest that there are several practitioner theories underpinning the strategy of eating together. The most pervasive is that it facilitates feedback which enhances pride and self-esteem:

> ‘It boosts their confidence as well, if you’re trying it and everybody is having a little taste’ (Practitioner Focus Group 1).

> ‘I do a lot of men’s work and there’s the esteem and pride -“ I made this and someone else is eating what I made and they like it” so it’s a sense of pride’ (Practitioner Focus Group 1).

> '…when they all sit down together with these other people they get instant feedback "oh this is absolutely amazing!" and "I go well actually X made that" and I really love that' (Practitioner Focus Group 1).

In some instances this feedback is from their peers whilst in others, the feedback is from staff and or support workers:

> '…they are sitting down and initially it is sort of with their peers and they're trying it and then when all the other sort of people from the organisations come in and start trying it the sense of pride that they get of it "so who did what then"? …A lot of them have never had that before' (Practitioner Focus Group 1).

In the example below a staff member in the supported accommodation unit tasted the participants cooking and borrowed the recipe – which was seen as a sign of approval.

> '[supported accommodation staff member] stole my (cooking group participant) chicken Balti recipe' (Participant Focus Group 3).

These examples illustrate the strategy of eating together linking to the concept of self-esteem and or subjective norms (see Table 5 section 3.4).

In other instances, eating together at the end of the course is used as an opportunity to introduce or reinforce the nutrition and hygiene aspects of the course. This might therefore relate to the concept of outcomes expectancies (rather than self-esteem).

A further theory from the triangulated data relates to increasing perceptions of the importance of food and the role it can play in individuals' or families' lives.

> 'Sitting around a table is going back to a need and back to basics, because my experience is people will eat in front of the TV, they'll have things blaring, there's the internet now, adverts and all that stuff. Actually getting people sitting down in neutral space and actually talking about real issues that affect people…' (Practitioner Focus Group 1).

Again there was an assumption that eating together in class may transfer to eating together more at home or it will impact on participants behaviour in the longer term:

> 'We need people to encourage people to sit down and eat, and I think when you are doing that in a group setting, there's chances of it going home … and I encourage people even if it's just one meal a week to sit down and eat…' (Practitioner Focus Group 1).

> 'They go on and do that (eat at the table) with their own family, especially with ours being 15 -25 year olds, the chances are they are going to go on to have their

> own family and those values are going to be…instilled in them in the future' (Practitioner Focus Group 1).

A practitioner and a participant in the focus groups highlighted however that for some, eating together is a challenge and individual participants may respond differently:

> 'I think it depends on the background they've come from. If they have come from a background where they've got very low self-esteem and they are very self-conscious they won't want to eat in front of people at all'. (Practitioner Focus Group 1)

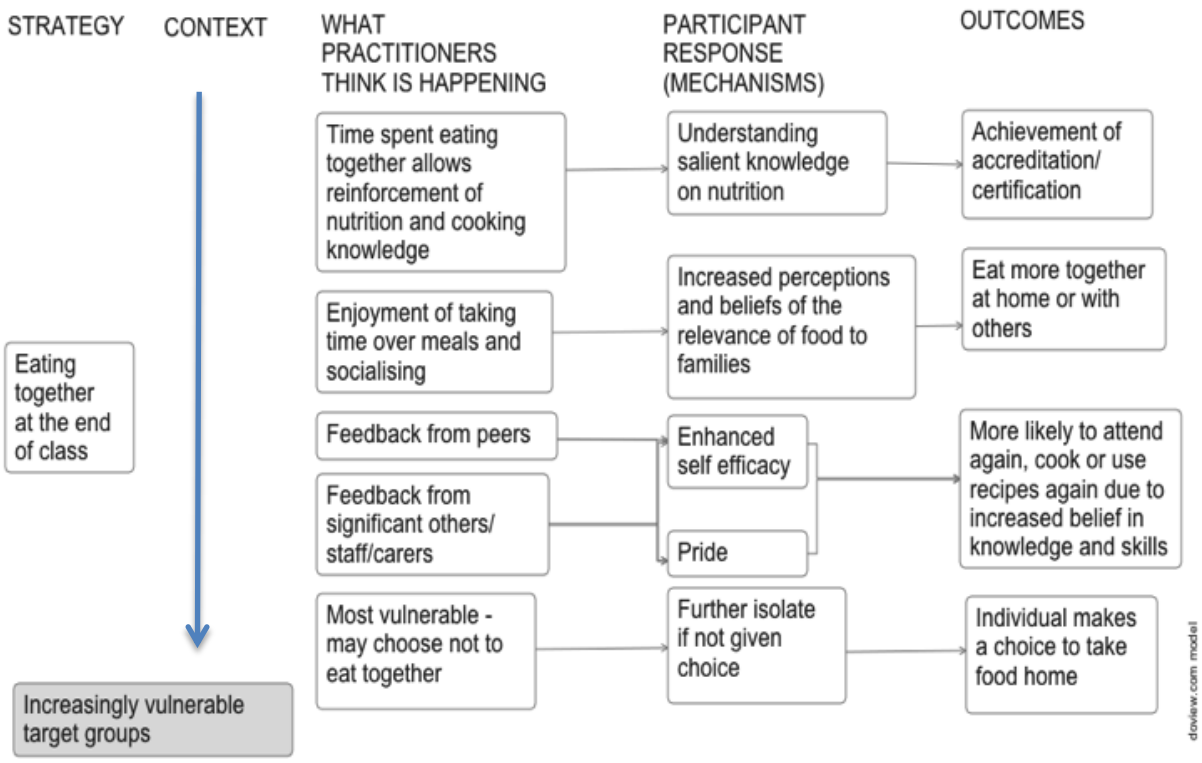
> 'I don't like to eat in front of a lot of people anyway because I've no teeth! I like to eat up there. I'm a slow eater, so I can sit up there (in own room) and take my time' (Participant Focus Group 3).

Within the focus group the restrictions faced by some practitioners over the use of this strategy in certain contexts was discussed:

> 'I work with the NHS, so we don't have people sitting down at the end. There are several reasons for that. …when we cook we base it on a family of four so they are cooking for more than one person so the idea is about taking it home. …the other is the NHS are very risk averse, so I can't vouch for somebody else's cooking….unless someone has been through food hygiene as far as we are concerned we can't cook as a group of six people and say "you have a bit of that" it's just not going to happen' (Practitioner Focus Group 1).

Figure 1 illustrates what practitioners think is happening for the strategy of eating together. It shows the multiple possible contexts, mechanisms and outcomes theorised for this strategy in the review data and the possible participant responses (mechanisms).

Figure 1: What practitioners think is happening when applying the strategy of eating together and how participants may respond.



The above theories (or CMO configurations) of eating together illustrates how any single strategy may be used by practitioners as a means of generating different mechanisms to achieve varied outcomes. It also highlights how the same strategy may operate differently when applied to different target groups.

3.6.2 Practitioners' theories with regard to course frequency and duration

The reporting of course frequency (no of classes per week) and duration (length of class and or course) within the grey literature lacked clarity and specificity. However from the information that was provided, there is little consistency in the frequency and duration of courses across or even sometimes within contexts. The inconsistency may however in some instances reflect purposeful tailoring.

Several practitioners run cooking sessions as on-going drop-ins rather than courses. Amongst those who run courses for time limited durations there is huge variety with some practitioners running courses for three weeks and others for ten weeks and with classes lasting for between one to four hours. Most typically, classes seem to last around two to two and a half hours.

In terms of differences across contexts, courses run in family or community settings (e.g. often targeting nursery or school parents) seem to be of shorter duration, typically four or five weeks. Contrastingly those in mental health recovery or temporary accommodation settings are more often (but not always) around eight weeks. Those run by community based third sector organisations vary with some as low as three to four weeks and others around six to eight weeks.

In the practitioner focus groups, some of these differences between contexts were highlighted. In some contexts (e.g. residential settings) food specialists are contracted on an on-going basis to work for a set period of hours. In other contexts (such as NHS commissioned courses) short time-limited courses are delivered by sessional or community based peripatetic staff.

> 'Mine's quite different, I was initially contracted 8 hours a week, and I've got very slowly up to 17 hours a week…' (Practitioner Focus Group 1).

> It's just so varied it's unreal. It (course duration) can be six weeks, nine weeks, whatever.' (Practitioner Focus Group 1).

In larger organisations such as the NHS the focus in their commissioned cooking skills classes has been on delivering a consistent programme for the perceived needs of 'most' groups drawing on the limited available evidence. The theory behind this is it aids fidelity to key content and strategies (assumed to be evidence based) and should aid the evaluation of these centrally commissioned programmes. This may however limit scope for tailoring to individuals.

> '…there is specific organisations working on a specific group and a smaller number of people, whereas a board covering X (Board area) are not doing it on the needs of that group …we've come up with a six week programme, two hours… there's some flexibility within that but we have to keep it quite structured …its based around the evidence base on what we are trying to achieve.' (Practitioner Focus Group 1).

As the practitioner focus group discussion below highlights the duration of classes as well as courses can influence the amount of content covered and the degree of tailoring and personalisation that is feasible. In some instances practitioners support participants to cook different individual recipes. In other courses the shorter amount of class time available meant that the participants all followed the same recipe. In other instances the priority was on gaining a set of very specific skills in the time available rather than personalising recipe selection:

> 'They would all chose their own recipes to cook though, so it isn't like a home economics class where everybody would make the same thing. Everybody is making something different… I would always let them have a choice. I might be doing three or four different recipes' (Practitioner Focus Group 2).

> ‘I wonder how you can do so many different recipes in a group, because with us we have to demonstrate safe chopping and peeling, you know?’ (Practitioner Focus Group 2).
>
> ‘We do four hours (per class)’ (Practitioner Focus Group 2).
>
> ‘Ours are two hours and there’s an educational bit then we’ll play a game thing about showing how much sugar there is, and then there’s the eating bit. So maybe less than an hour cooking’ (Practitioner Focus Group 2).

The limitations in the primary outcome data within the grey literature made it impossible to assess the ideal length of a course in general teams or for specific target groups and contexts. The reviewers also could not therefore evidence that longer exposure leads to enhanced outcomes. However it makes theoretical sense that more knowledge and skills are likely to be gained in longer relative to shorter classes and courses (provided length does not increase drop out). In both focus groups and within many of the feedback sheets returned in the grey literature participants expressed a desire for longer or more frequent classes and or courses:

> ‘We did actually say to her (the practitioner) that it would be better if it would run longer, even if we’ve to pay a couple of pounds towards like getting stuff for it, because it was good, really good’ (Participant Focus Group 4).

Funding from commissioners and logistical issues such as venue availability appear to influence the frequency and duration of cooking skills courses and so in many instances the course frequency and duration may not be a purposive or conscious planning strategy or decision.

The exploration of the above theory highlights how class and course duration and indeed frequency can influence the participants’ exposure to certain strategies and the extent of personalisation and reinforcement that might be feasible. It also highlights how different commissioners or practitioners may prioritise consistent application of certain strategies over tailoring and personalisation.

3.6.3 Cooking with children

The following findings in terms of the theories about cooking with children may help to unpack or further refine existing theories postulated through previously CFHS funded research[14].

Research by Buttrick and Parkinson[17] (2013) suggested that potentially different outcomes were associated with cooking courses targeted at adults alone and those targeting adults and children together. This research concluded that whilst the adult targeted courses seemed to achieve longer-term changes in confidence and potentially greater increases in knowledge and skills the courses which involved

children and adults cooking together seemed to enhance the transfer of cooking into the home.

Within the focus groups there were mixed views from practitioners in terms of cooking with children and adults.

> 'We run a cooking course for just ten year olds and actually the children I think behaved and performed better without the parent there' (Practitioner Focus Group 2).

> '…with the family session for us, it's more about empowering the children, or enthusing the children and showing them that they are capable of doing it, and actually showing the parents how they can work with the children to achieve it so it becomes an enjoyable family activity. I suppose it's less about the tuition to the parents and more about the family unit, how can you enjoy the whole concept of food together …' (Practitioner Focus Group 2).

> 'I work a lot in village halls and they're not conducive to having children around. There's not enough space' (Practitioner Focus Group 2).

Children were not in attendance at the cooking course attended by the participants in the focus group with nursery parents (Focus Group 4). However several of the participants had either previously attended or signed up for a future short course which taught children and adults simple snack or cold cooking recipes together. The course leader highlighted that these joint parent and child courses are very popular:

> 'It is a real success and we've never had a programme like that where so many parents and families are wanting to take part in it … We could put out flyers and all sorts of things and maybe a couple will come back but with (name of specific child and parent course) it's like 100% of families will come' (Course Leader from Practitioner Focus group 4).

From the grey literature there was evidence of some contextual differences between courses with adults alone and those targeting parents and children together. Some of the key contextual differences were that:

In cooking skills courses where children were involved in cooking the:

- course and class duration tended to be shorter
- recipes selected tended to be simpler and involved more snacks than meals and or fewer recipes over the same time frame.

Several courses also involved children in food related activities (e.g. drawing lunch invitations, setting tables, tasting sessions, learning about foods) but not actually in cooking.

These variations in context between when children are present and either cooking or not were further emphasised in the practitioner focus groups. When practitioners were asked about adaptations to content and methods when kids were present they stated:

> 'I try and get recipes that kids can join in with, because that just helps the whole thing. Simpler snackier things…' (Practitioner Focus group 2).

> 'You have to half what you intended to do' (Practitioner Focus group 2).

This specific example shows that it may not be (or not only be) the absence or presence of children that led to the difference in outcome in the Consilium research.[17] The longer duration of courses for parents alone (relative to short courses with their children) may have been the main reason that skills and confidence were greater in the parent group. Similarly the: quicker easier recipes; tasting sessions reducing fussiness in the children; or, improved family relationships may have aided transfer home rather than cooking with the children.

Appendix 12 highlights via a flow chart some of the many ways in which the presence of absence of children might impact on other strategies used and ultimately the outcomes achieved.

Unpacking this strategy more generally illustrates how contexts can impact on other strategies such as class duration or recipe choice. This suggests that understanding the impact of strategies must take into account their interdependence.

3.6.4 Providing ingredients, equipment and or meals to take home after the class

There was a group of strategies apparent in the grey literature that involved encouraging participants to cook from scratch more at home by providing left over ingredients or store cupboard ingredients or various types of equipment such as measuring spoons, blenders, freezing bags etc. The explanation for some of these approaches in the grey literature implied that they would somehow act as an incentive or a reward. In one or two courses they seemed to be used as a reward for adhering to the course; in others they were supplied to align with particular recipes (e.g. soups and smoothies); in others they were linked to end of course celebrations along with certificates.

The idea of using incentives was also aired by a few individuals in the practitioner focus groups. One suggested that allowing parents to take meals home rather than eat them in the class (if advertised before participants signed up) would increase engagement in the course. The incentive being that parents would therefore not have to prepare their usual meal which would save time, effort and money.

> 'We do give food home, and in some ways that's an incentive for them to come, our low income families… '(Practitioner Focus Group 2).

'…we started an incentive scheme, …there's five boxes of equipment and they choose one thing out of each box, and if the come for the ten weeks they get a bag with this equipment in it. It's things they don't have. (Practitioner Focus Group 2)

Several practitioners in the focus group however suggested that these strategies were more about providing equipment or ingredients when needed rather than purposively using these 'give-aways' as rewards or incentives:

'We've done it (given away equipment) and it worked in some cases, maybe people coming from Women's Aid…we found that giving it to everyone wasn't necessary…we provide equipment that backs up the recipes as a minimum starter kit but that's only if there is a real need' (Practitioner Focus Group 2).

'They'll get it (equipment) at the end. They won't know (in advance –so not an incentive)' (Practitioner Focus Group 1).

'We'll try and get some funding so we could give them, say a hand blender or a pot, but again they don't know that's coming' (Practitioner Focus Group 1).

The above example in terms of how giveaways are used illustrates that practitioners use this strategy for different reasons (based on need, as an incentive or as a reward). It also illustrates that the achievement of intended outcomes (e.g. encourage on-going attendance, to boost a sense of achievement or to address a need for equipment) requires the practitioner to think carefully about the timing and implementation of the strategy.

3.6.5 Taking food home to eat after the class

This final example of one of the many strategies in use considers the practitioners theories about giving cooking participants their food home with them to eat. Taking food home was more prevalent in parent, family or school and nursery linked classes and less so in more vulnerable settings. This might be due to more vulnerable individuals living alone or being estranged from their families:

'Some people don't want to eat it there (in class) and don't want to take it away because they've got nobody to take it home to, so there is nobody to care about what they've made' (Practitioner Focus Group 1).

However in the focus group with residents in the temporary accommodation unit participants tasted some in class but also froze individual portions for their own meals later in the week.

The findings in relation to the theories about 'give-aways' highlighted that one possible theory for taking food home is that it can act as an incentive to encourage participation in the course, as the participant does not subsequently have to go home and prepare an evening meal. The more pervasive theories about taking food home

however were that it encouraged other members of the family to taste it and try new foods (particularly children) and ideally encouraged the family to praise and reinforce the cooking skills participant for their efforts and success:

> 'We are offering them to come and cook and take away a meal, and that's very important, because as well as them tasting food, we want to know next week, how did their family respond …' (Practitioner Focus Group 2).

The participants in the nursery parents' focus group however did not validate this theory about food going home being tasted, eaten and well received. When asked about the reaction to the food they had taken home from the class and whether it had been eaten by their families and children they stated:

> 'No mine weren't fussy (meaning their child didn't like the food)' (Participant Focus Group 4)

> 'She (daughter) wouldn't even taste it, so I ended up giving some to my mum each week' (Participant Focus Group 4)

> 'My dad ate mine (rather than them or their child)' (Participant Focus Group 4).

> I'm a bit fussy so I tried them but the best thing I liked was the chicken nuggets. I tried the meals but it wasn't…I'm just a fussy eater. (Participant Focus Group 4).

Only two out of five participants said they or their child ate the food they had taken home. However the food seemed to be eaten by other family members (namely the participants parents) rather than being thrown out. One practitioner in the focus groups suggested that encouraging participants to taste and eat some of their food in class was a better way of ensuring that it was tasted and that they got feedback about how it tasted:

> '…the ones where they take it away, you go "did you try that'?, and they go "ach yeah that was ok" … whereas when they are sitting down in front of you and try that and they go "that was easy, I will definitely do that at home". I find actually that there's a bigger chance of them taking the recipe away and doing that at home (if they have tasted it in class)' (Practitioner Focus Group 2).

One of the nursery parents however felt that the children might be more likely to taste food in private:

> 'I think its better taking it home, because then nobody's watching you type thing. Let the kids just try it. I think they won't because there's other people there' (Participant Focus Group 4).

Despite the strategy of taking food home appearing to be more common in family settings this strategy alone may not be sufficient to overcome existing barriers such as fussiness in children.

In summary, even this small exploration within this section of individual practitioners' explanations associated with the five strategies above (eating a meal together in class, varying class length or time, cooking with children, using incentives and taking food home) illustrates multiple sub theories within each strategy. It also highlights that varying contexts (target groups, commissioning role etc.) may enhance or restrict the use and impact of the strategies. This was further evidenced from the triangulated data in terms of the many other strategies that are not discussed here but highlighted in Table 5.

3.7 Summary of findings and theory revision process

The high level learning from the review was that:

- The majority of courses and activities are 'targeting' and appear to be reaching vulnerable individuals and low income communities. This is based on information about the settings, the target populations of those delivering activities, descriptive characteristic of the participants and types of targeting and tailoring being done to address their needs.
- There was evidence of consistent good practice by practitioners (e.g. in line with recommendations or evidence for promoting health behaviour change from highly regarded sources)[8] and strength based approaches[16] as shown by:
    - evidence of practitioners encouraging participants to influence the course content and methods
    - evidence of targeting and tailoring via many varied strategies
    - examples where attempts are being made to reinforce learning and positive behaviours through using multiple strategies and agents.
- To enhance the outcomes of the cooking skills activities practitioners used a wide range of strategies. Some of these strategies were more commonly used than others.
- The strategies used align well with behaviour change model concepts recommended from health behaviour change advisory bodies such as NICE.
- Courses and activities were delivered in a wide variety of settings.
- Different contexts may facilitate or hinder the use of certain strategies.
- Similar strategies were often intended to achieve different outcomes or to lead to different mechanism (responses in participants).
- Practitioners had varied theories and assumptions about how strategies work.

The evidence for findings listed below has been mentioned in some instances in the methods and findings but is more fully detailed in the discussion section:

- There was a lack of clarity and specificity in many of the plans, implementation reports and evaluations of cooking skills courses and activities.
- There were limitations in the outcome data reported which necessitated a revision of the review questions and meant that not all of the review objectives could be addressed.

- Many of the strategies were aimed primarily at ‘non cooking outcomes’ or mediators of future cooking outcomes such as self-efficacy or food’s role in social interaction etc.
- Participants who have submitted feedback forms or completed evaluation tools consistently report that they enjoyed the courses and self report that they have achieved some of the core course outcomes (e.g. increased their confidence, knowledge and some skills).
- There are some examples of good evaluation practice although the evaluation practice across the board is not robust or consistent enough to allow meta-analysis and or to scientifically prove the impact of cooking activities in Scotland.

4 Discussion

4.1 Review Limitations

4.1.1 The review was limited to grey literature

There are some positive findings in relation to individual studies of cooking skills courses in Scotland and elsewhere[18]. One evaluation of a Scottish NHS funded progamme[18] resulted in significantly increased confidence in four aspects of the cooking course post intervention and this was retained at one year for following recipes and preparing and cooking new food. Improved food patterns (reduced use of ready meals, increased vegetable and fruit consumption) were also retained one year beyond the intervention. However a previous (non-realist) systematic review of published articles on cooking skills programmes highlighted an absence of evidence of effectiveness[19].

Partly in response to this lack of evidence in the published literature and to make use of the wider range of reports and feedback from community practitioners CFHS limited the current review to grey literature. This decision whilst laudable as it aimed to make use of learning from practitioners and participants from a wide range of activities in Scotland brought with it a number of limitations for the review. These are described below.

4.1.2 Limitations in the robustness of outcome data reported

All the cooking skills activities included in the review had undertaken some form of participant feedback or evaluation. Whilst the feedback from these evaluations was consistent and informative and useful for judging participants views on the cooking skills activities and their self-reported changes, the resulting outcome data were not scientifically robust. As detailed in section 2.2, CFHS and the reviewers discussed this risk prior to commissioning the review and concluded that despite these limitations the review could produce useful learning.

The lack of scientific robustness relates to issues such as a lack of: comparison groups; use of validated, objective pre and post measures; and, a failure to report denominators, course completion and response rates to evaluation measures. These issues meant that it was not possible to account for key scientific issues such as the counterfactual (i.e. would people have changed anyway if they had not attended a course), intention to treat and selection bias (i.e. only reporting from those who completed and were positive about the course and failing to report the numbers and experiences of drop outs who did not change).

This absence of scientifically robust evidence in both the grey literature and the published literature [1,18,19] in part lies in difficulties that practitioners experience in evaluating their courses due to:

- limited or insecure funding
- limited skills and time (in terms of duration for impact or to conduct evaluation)

- the vulnerability of their client groups (making use of validated measures and follow up difficult)
- evaluation consuming a disproportionate amount of time within short courses so detracting from delivery
- a reliance on non validated, inconsistent and self-report measures
- a wide range of potential mediators and outcomes
- variation in interventions, client groups and outcome measures making cumulative learning difficult.

It is also conceivable that in a context of competitive funding practitioners may feel anxious about sharing findings that suggest that the activities have not been wholly successful for all.

In realist synthesis, reviewers focus on the quality of, and variation in, outcome data (the degree to which outcomes are or are not achieved). If outcome data are scientifically robust these variations can be used as a means to differentiate the contexts (settings, target groups, strategies) and mechanisms (participants' reactions and responses) that lead to the successes and failures for different target groups.

The reviewers were unable to follow this procedure due to the above limitations in these outcomes data and additionally because:

- the numbers of attendees in each cooking course or activity were small (which is often intentional to ensure sufficient support and tailoring)
- the evaluation feedback was predominantly either summary reports and or post course feedback sheets which were in a raw format or had no or limited analysis
- these outcome data could not easily be analysed across different courses or in a cumulative or meta sense due to the inconsistent measures and outcomes, lack of denominators and baseline resulting in and inability to account for selection bias.

These combined limitations have restricted the scope of learning within this review. It has meant that the review has had to assess practitioner theories against wider behavioural evidence rather than primary data and evidence.

4.1.3 Lack of variability in the outcome data reported

The second reason that reviewers could not use these outcome data to drive the selection of and validate the theories was that evaluation data that was reported lacked any variability.

Notwithstanding the above limitations in robustness, where evaluation forms were available, virtually all of the feedback was hugely positive. The participants who had provided feedback almost unanimously indicated they had enjoyed the courses and achieved some of the core course outcomes (e.g. increased their confidence, knowledge and skills). Course completion rates or response rates for evaluation feedback were not always provided nor denominators that would allow the calculation of these. However it is worth noting that class number were small and

drop out rates did not appear to be high, and it appeared that feedback was often from a substantial proportion of those attending the course.

Whilst this consistency in feedback from participants is a positive finding for the cooking skills courses, the lack of variation in outcomes was problematic for a realist informed review. With no variation in outcomes it was difficult to establish or test full theories e.g. C, M and O configurations.

4.1.4 Further concerns over reporting in relation to contexts and mechanisms (rather than outcomes)

The grey literature passed onto the reviewers was judged by CHFS to provide the most detail on contexts, mechanisms and outcomes relative to the wider number of reports that were submitted. However CFHS and the reviewers had identified at the point of commissioning the review that even this more detailed subset of grey literature might lack clarity and consistency of reporting on contexts and mechanisms. This was indeed the case. The key limitations (in addition to those issues highlighted above in terms of outcomes) were that the grey literature often contained:

- inconsistent or insufficient detail of the contexts, target groups or strategies used
- there were differences (sometimes explicit and sometimes not) between course intentions and the reality of what practitioners managed to deliver -some of this was inevitable given the complex contexts and that tailoring for individuals and targeting for sub groups is encouraged
- limited or no information on participants motivations for engagement in courses, their explicit goals or their immediate *responses to strategies* (e.g. mechanisms).

A final concern was that in reviewing and coding the grey literature onto the coding framework and data extraction framework there was no guarantee that because practitioners had not *reported* using a key strategy that they *had not used it* or vice versa.

4.1.5 Reasons for continuing with the review despite the above limitations

The reviewers discussed the risk of these limitations existing in the grey literature with commissioners prior to undertaking the review. CFHS and the advisory group felt that despite these risks there would still be substantial learning that could be uncovered from the grey literature.

CFHS was keen therefore to use a realist approach and to focus on the grey literature that is often discarded by traditional systematic reviews. Even if incomplete, it was felt that such learning would allow practitioners' and commissioners' tacit knowledge, assumptions, beliefs and theories to be articulated and checked against existing evidence and (in a minor way) with participants' views. The triangulated learning could then be added to existing published research and used to promote better practice in terms of delivering cooking activities and evaluation.

4.1.6 Adjustments to methods to mitigate the impact of the above limitations

In response to the lack of robust outcomes and the lack of variability in outcomes, theories were developed predominantly using data about contexts and mechanisms, and practitioners anticipated outcomes from these, rather than being informed by actual measured outcomes.

This has influenced the theories prioritised and the review purpose. In the absence of primary outcome data, the reviewers therefore relied on core elements from well-established social and psychological behaviour change models and their associated concepts to verify and validate the theories uncovered from the grey literature.

In reviewing and coding the grey literature reviewers strived to read the full set of reports for each project prior to completing the coding so that a judgment could be made on what was delivered in reality (e.g. based on the implementation and evaluation reports) rather than what was stated as intentions in project plans.

Where changes in course content or delivery were implied rather than formally stated, these have been used to inform the coding. For example if a strategy was not mentioned in the plan but could be reasonably inferred from participant evaluation forms, teaching plans or examples of recipes, it was coded as having been used. It was not possible to overcome the problem that a strategy may have been used but not reported nor inferred from the additional reports or materials. This possible limitation can only be highlighted.

4.2 Has the review provided addressed the key questions it was set?

CFHS commissioned this review in an attempt to learn from practitioners' information and theories contained in the grey literature as well as from practitioners' (and perhaps to a lesser extent from participants') theories reported in the focus groups. The review overall intended to learn as much as possible about these theories (CMOs) and how, why, for whom and in what contexts cooking activities work. It ideally also hoped to be informed by any available evidence provided about the impact of these activities.

The many limitations in the clarity of reporting and particularly in the scientific robustness of outcome data have (as was anticipated by CFHS, the advisory group and the reviewers at the start) limited the reviewers' ability to achieve this. As such this review has been unable to address all of the initial study objectives as detailed below. This is because these data do not allow confident commentary on the impact and differential impacts of the strategies and associated mechanisms on participant outcomes. The five original study objectives are detailed below:

1. Explore the mechanisms of cooking activities that improve or achieve outcomes for participants.
2. Explore the contexts of cooking activities that improve or achieve outcomes for participants.

3. Explore what is learned from working with different participant groups and mixed groups.
4. Explore any impact beyond participants to their families and communities.
5. Ensure that an equalities perspective runs through the review process.

The reviewers could not fully address Objective 1 due to the above limitations. Reviewers did however identify the strategies used in cooking activities and why they were used. Participant's responses to these (mechanisms) and the subsequent impact of these on cooking and non-cooking outcomes could only be postulated as theories and not tested or verified.

Similarly the reviewers could not answer Objective 2 - the impact of contexts on participant outcomes. It did highlight what strategies (and associated behaviour change concepts) were more or less commonly applied in different contexts and how contexts might restrict of facilitates their use.

The review could not establish the efficacy of cooking skills activities that targeted different groups (Objective 3). It did however explore how course content and strategies were used for tailoring or targeting with different groups and theorised (but could not verify) how this might influence outcomes.

The focus on short-term outcomes and lack of robust outcome data and longer-term follow-up made it impossible to assess impact beyond the participant (Objective 4). The review did however uncover the theories that practitioners hold about the likely strategies and mechanisms that might impact on their families (e.g. using food as a tool for family bonding, reducing fussiness etc.).

The review has commentated on the reach of programmes in terms of inequalities (Objective 5) based on the reported settings, target groups and focus group discussions on tailoring and targeting that was undertaken for such groups.

In summary therefore the review has provided learning about:

- whether courses and activities are reaching vulnerable low income communities
- what strategies practitioners use for targeting, tailoring and reinforcement and which are reported as used most frequently
- whether such strategies are based on validated behaviour change models and associated concepts (and to a lesser extent their alignment with strength based approaches)
- whether strategies are applied to the same extent and for the same reasons in different contexts and the possible reasons for this
- practitioners theories about if, why and for whom these strategies are expected to work and in what contexts.

The review has sought to provide sufficient learning from triangulation of the grey literature, the evidence on behaviour change models and both sets of focus group data to highlight how some of the reported limitations may be minimised in future.

Perhaps most usefully, through supplementing these limited outcome data, with available current knowledge on behaviour change models and concepts thought to enhance effectiveness in behaviour change programmes, it has attempted to shed light on whether or not the strategies used have a sound theoretical grounding. The review has where feasible also commented on where such strategies are aligned with various value-based approaches being promoted by the Scottish Government.

A limitation the review has not overcome is a lack of knowledge about the motivations and responses of participants (mechanisms) to the different strategies. As agreed with CFHS and the advisory group only a limited amount of focus groups with cooking activity participants (two focus groups with nine participants in total) were conducted. The views expressed by participants whilst of interest in relation to the postulated theories cannot be seen to provide generalisable learning beyond highlighting the many and significant barriers that vulnerable and low income communities face in terms of cooking and healthy eating and achieving and sustaining wellbeing for them and their families.

Focus groups with 19 practitioners achieved slightly more reach and were very informative in uncovering more details of how and why certain strategies are thought to work. However, it is likely that these were some of the most experienced, motivated and informed practitioners working in Scotland. As such, care must be taken not to overgeneralise from the focus group findings. Both sets of focus group data should therefore be seen not so much as confirming and validating learning from the review of the grey literature but as layering more detail into the theory building process.

The fact that the review was focused on pre-selected grey literature with limitations in quality has also meant that tools used for identifying, extracting and coding evidence from reports have been adapted from those recommended for use in a more typical realist review focusing on a wider range of both published and unpublished papers.

4.3 Discussion of key findings

4.3.1 Targeting, tailoring and reinforcement

Targeting and reach

The findings illustrate that practitioners do target their cooking skills activities at vulnerable and low-income groups. Despite it not being possible to verify this targeting and the resultant reach of the cooking skills courses and activities through analysis of postcode data the reports, practitioners' descriptions, the target groups of the community food initiatives delivering cooking skills and partners used for co-delivery of courses for larger agencies such as NHS Boards all suggest that vulnerable groups are being reached. The practitioner and participants focus groups also provided convincing evidence (via description of their activities, tailoring and

participant feedback) that programmes are reaching those who are vulnerable or face barriers to cooking and eating more healthily. This was further verified through types of feedback given with the evaluation forms within the grey literature.

Targeting and tailoring appears, at a minimum, to be informed by professional perceptions of clients' needs (based on previous experience) but is often reported to be informed by more detailed information from those working with or referring participants or via more formal needs assessments as part of community learning and development programmes.

Given that many behaviour change programmes fail to reach those most in need this is a positive finding. Whilst many practitioners did provide detail of their target groups and attempted to evidence their reach others could have provided greater clarity and specificity on this issue. This could be done for example by providing details of how participants are recruited and whether or not they are referred or by ensuring clarity on the proportion of participants attending who come from the locality or setting in which a course is sited e.g. a low income nursery setting. Further clarity such as this could increase the likelihood of future funding and enhance future analysis of actual reach (rather than targeting) within and across courses provided by different funders.

Targeting and tailoring
As detailed above the cooking courses and activities included in the review do seem to target, tailor and attempt to reinforce learning and early behaviour change. Discussions that took place as part of the theory identification and refinement process for the review brought to light however that the definitions and language around these issues is not consistent nor necessarily in line with academic literature.

As detailed in the glossary, in academic published literature targeting is used to describe decisions and refinements of interventions made to suit a specific population subgroup. Tailoring relates to adaptations made for an individual rather than a population sub group. Tailoring aligns therefore with personalisation of care agendas and to some extent assets or strength based approaches where an individualised assessment of a participant's needs and assets is encouraged. Targeting and tailoring are perhaps therefore best seen on a continuum and might be best understood in this way.

Feedback from CFHS and the advisory group suggested that among cooking skills practitioners that the terminology of targeting and tailoring were used more interchangeably and that tailoring was used to describe adaptations for more than one individual.

This lack of clarity on terminology made analysis and report writing for the review more difficult in terms of assessing whether specific strategies were used as a means of targeting (e.g. a decision based on group characteristics and that could feasibly be made prior to meeting the group such as where geographically to host the course) or tailoring (e.g. a decision made on an individuals characteristic or

needs and perhaps more likely to be made after meeting the individual –or at least made only with specific information about an individual). For example, the reviewers suggested that decisions over venue, class and course duration and frequency and types of recipe and some aspects of methods seemed to be based on information on the group (e.g. targeting) as they were made at the planning stage. In terms of decision made once the group had met then reviewers could not differentiate whether these strategies were informed by the needs or assets of the group or individual (e.g. were about targeting or tailoring).

By way of an example a practitioner may have decided to use the strategy of providing specific nutrition advice targeted at the group (i.e. using the behaviour concept –personal relevance) and so included a specific session on high sugar drinks because the target group was young men. However the same strategy may have been used or adapted not for the group but because one specific individual in the group was consuming large amounts of high sugar or caffeine drinks or was diabetic. Participants may respond differently to the strategy depending on whether it has been personalised for them or is an assumed characteristic of their group.

Reinforcement
Social cognitive behavioural theory defines reinforcement as:

> 'The responses to a person's behaviour that increase or decrease the likelihood of reoccurrence (of that behaviour)' [12]:
> http://www.med.uottawa.ca/sim/data/assets/documents/TheoryataGlance.pdf

Positive reinforcement is a reward such as praise or encouragement that follows (ideally closely in terms of time) after the person has demonstrated the desired behaviour. Positive reinforcement (rewards or praise) is thought to work better than negative reinforcement (e.g. chastisement or punishment)[12]:
http://psychology.about.com/od/behavioralpsychology/a/introopcond.htm

Reinforcement activity is when practitioners provide rewards (e.g. certificates or giveaways) or encouragement (often via significant others) to embed or sustain a positive behaviour or outcome[12]. The reviewers are using reinforcement in this review also to include contexts that allow on-going opportunities to embed behaviour change by exposing participants to multiple reinforcement strategies and opportunities from peers or significant others beyond the immediate cooking skills activity (i.e. using the behaviour change model concepts relating to self efficacy, or norms).

The review data suggests that most cooking skills practitioners appear to use positive reinforcement regularly to enhance self esteem and reward behaviour change (via strategies such praise from course leaders or peers, eating together or cooking for other etc.). Some appear to use rewards (e.g. giveaways or certificates). It seems however that certain contexts facilitate the opportunities to embed behaviour change through further exposure to the intervention or increased exposure in an on-going way to maximise reinforcement (e.g. where participants have an on-

going relationship with cooking skills practitioners or where significant others such as support workers, community worker or even peers can provide on-going reinforcement for behaviour change). The opportunities for using all forms of reinforcement seems to increase in contexts where clients are more vulnerable or have longer term relationships with those who have referred, delivered or commissioned the cooking skills course.

Using the academic definitions of these terms all of the courses and activities described in 81 sets of data in the review would have been coded as targeting but fewer described as tailoring their activities. Targeting is believed to enhance, and tailoring thought to further enhance, the effectiveness of interventions[10,11,20,21]. As such it would have been valuable to be able to distinguish and more clearly establish which courses simply targeted their activities and which tailored them and which strategies were used exclusively for targeting, tailoring, reinforcement or all of these approaches. If the terminology around targeting and tailoring is used more consistently such differentiation may be feasible in future and can be used to evaluate effectiveness of tailoring over targeting and the value in personalising aspects of cooking course delivery.

If there is improved clarity about, and practitioner reflection on, targeting, tailoring and reinforcement there may be scope to apply and evaluate less utilised strategies and behaviour change concepts. For example, contexts that facilitate greater degrees of reinforcement could be used to apply underused concepts such as behavioural contracts and relapse prevention to further embed behaviour change. Individuals such as support worker, referral agencies etc. in such contexts might also be able to support longer-term evaluation of the impact of courses and the application of and purposeful testing of specific strategies.

4.3.2 Strengthening the extent to which strategies are informed by behavioural change model concepts and other relevant approaches

Encouragingly, and in the absence of more robust primary data, the strategies used for targeting, tailoring and reinforcement aligned with the core concepts from numerous well-accepted social and psychological behavioural change models. The use of these core concepts for designing behaviour change programmes has been strongly encouraged by advisory bodies such as NICE[8].

There are some of the behaviour change model concepts such as goal setting, relapse prevention and intention formation and associated strategies that could be further exploited. Interestingly one of these is assessing an individuals ‘readiness to change’ – a concept form the Trans-theoretical model of behaviour change that is used extensively within health improvement as part of motivational interviewing. Greater use of this approach and explicit goals setting techniques at the start of courses and use of behavioural contracts at the end of courses might also encourage greater focus on individual assets and strengths and goal achievement. These concepts might also aid baselines assessment and longer term follow up for

course evaluation. The lack of the use of some of these strategies might be due to context specific barriers. This point is picked up below in section 4.3.5.

Although practitioners applied many of the strategies and associated behaviour change model concepts in the hope of them supporting positive changes in knowledge and ideally behaviour there is of course no guarantee that the cooking skills activities or various strategies delivered such intended outcomes. Given the many barriers and challenges faced by participants the exposure to the activities; or individual or combined strategies may, despite being evidence based, still not have been enough to influence and sustain behaviour change. For example providing accurate information about the best way and time frame to wean a child (e.g. using the strategy of outcome expectancies) may not have resulted in a parent following that information. The parent may have had more pressing challenges such as low income or being at risk of homelessness that made the application of that advice unlikely. Strategies may well be more likely to work when they are part of a course which provides sufficient or maximum exposure (in terms of frequency and duration of classes and courses) and when they are combined with other strategies or projects that tackle not just barriers to cooking skills but challenges to wellbeing more generally.

CFHS were predominantly interested in how strategies aligned to the more evidence based behaviour change models relative to the strengths based approaches. The evidence base for the latter is not as well developed. However as there appeared to be some overlap between some of the behaviour change model concepts and the principles of strengths based and community development approaches the reviewers were asked - where data allowed and where feasible - to make some commentary in the write up of the report on the alignment between the application of cooking skills strategies and these value based approaches. It should be noted therefore that commentary and reflection on this issue are based only on high-level reflections and not on coded and extracted data (which was used for the behaviour change model concepts). As such the reflections below should be treated tentatively.

The general approach of encouraging participants to influence content and recipes used by most practitioners seems to align with the concepts of participant involvement related to community learning and development practice[14]. There was evidence that practitioners build on both local communities' and participants' existing assets and skills to aid self-development (e.g. strategies such as providing certification and encouraging volunteering). Further examples of this included encouraging peer support within the groups and reciprocal referral processes with other agencies (e.g. food coops and other community initiatives).

A few of the strategies used by cooking skills practitioners appear similar to some of the principles of assets or strength based approaches. Table 6 illustrates these overlaps and where there is perhaps less alignment.

Table 6: Principles of strength based approaches [16]

Six principles	Alignment with strategies used in cooking skills courses
Allows people to set personal goals	Cooking course participants are encouraged to influence recipes and there were some examples of participants being encouraged to express their goals in the early stages of courses to influence content. The use of formalised goal setting tools and behavioural contracts were not commonly reported
Identify inherent strengths and resources	There was not strong evidence that personal motivations were identified or strengths assessed however there were many examples of using group members to help support other participants
Enable links to helpful resources and associations or groups	There were many examples of linkages to food coops, community gardening projects, low cost supermarkets etc. There were also some examples of referral into and onto other services and community opportunities
Explicit methods used to identify client strengths for goal attainment	Explicit methods were not used
Increase hopefulness of clients	There was evidence of close and supportive relationships between practitioners and participants and of many strategies aimed at increasing self-efficacy via social approval and reinforcement
Collaborative approaches – people are experts in own lives	Cooking course participants were encouraged to influence recipe selection and methods in most courses. Teaching methods were generally informal and flexible and there was evidence of class discussion and peer learning

Greater alignment might be achieved between cooking skills practice and assets based approaches if there is greater clarity over the degree of tailoring and personalisation rather than targeting. Similarly if there is greater specificity around recruitment processes and opportunities for the assessment of client needs, motivations and personal goals prior to attendance at courses and achievement of these post course.

4.3.3 The focus on non cooking outcomes and associated assumptions

Courses in the main appear to target very vulnerable individuals facing multiple challenges to their wellbeing, not simply barriers to cooking from scratch and eating healthily. Possibly as a result of this many courses appear to prioritise outcomes which are mediators of future behaviour change such as self-confidence or self-

efficacy or social isolation with more formal cooking (and longer term nutritional) outcomes assumed to be achievable in parallel or after further exposure.

Limitations in outcome data and length of follow up need to be addressed to validate or strengthen this theory and assumption.

4.3.4 Understanding the effectiveness of the wide range of key strategies and their interdependencies

The five examples of strategies and associated behaviour change model concepts provided in the findings illustrate that there are multiple practitioner theories regarding the purpose and effectiveness of each of the strategies. These theories in addition vary across other aspects of contexts (e.g. settings, target groups and commissioner etc.).

In addition it is likely that the impact of strategies also vary according to their intended use and timing. For example giving away equipment could act as an incentive a reward or neither of these things depending on the point in the course in which it is given to participants.

The examples of practitioners' theories also illustrated that strategies can be interdependent, perhaps even contradictory and that focusing on one strategy may mask the influence of another (as in the cooking with children example).

All of the above suggests that there is much more to learn about practitioners' strategies and that further identifying these and refining them will be a long-term and complex task. This task may be made easier if practitioners and commissioners are encouraged to understand and purposively apply strategies, test them and seek to refine their use through reflective practice and evaluation. A key contribution to such learning would be practitioners providing greater specificity when reporting on their courses in terms of groups targeted, strategies used and information on the expected outcomes from such strategies.

It is not possible to validate and refine all of these theories. Given this there is a need for greater knowledge about the effectiveness of priority strategies such as those relating to the frequency and duration of classes and courses and the most commonly applied strategies such as eating together and taking food home.

4.3.5 How some contexts restrict or enhance use of strategies and concepts

In section 4.3.1 it was highlighted that certain settings (those containing more vulnerable clients, residential settings or community settings where participants have an on-going relationship with the course provider or associated community initiatives) may be more conducive to delivering on-going positive reinforcement and other opportunities to embed behaviour change.

There were other examples in the findings where contextual issues such as

the organisation size, whether it commissioned or delivered cooking skills courses directly or via partners and the number of courses delivered may have impacted on the types of strategies used and scope for personalisation. Examples included the fact that larger organisations:

- were in some instances less specific in their documentation about their targeting strategies
- in some instances sought fidelity to an agreed evidence based model for their courses and to aid evaluation across their courses
- could not use some strategies such as eating together due perceived health and safety and litigation risks.

This suggests that such contexts may struggle more to tailor and personalise courses. However attempts to identify the most evidence based activities and ensure fidelity to these (if these are accurate) may in time lead to greater impact than more flexible and personalised approaches. It may well be possible to ensure fidelity but retain scope to address individual needs.

These contextual variations in course delivery provide interesting natural experiments. There may be value in exploiting these as case studies or comparison sites in future evaluations to learn more about the added value or limitations in each situation

4.3.6 Improving the evidence base

Notwithstanding the significant limitations in the outcome data, the post course evaluations and feedback from participants are positive and consistent.
Such feedback suggests at least short-term improvements in self-confidence or self-efficacy, and some increases in knowledge and skills and in future behavioural intentions from these mainly short-term interventions. These are very encouraging findings.

Further learning about the efficacy of cooking skill courses in Scotland is likely to depend on overcoming the limitations in reporting and outcome data highlighted at the start of this discussion section. It is likely too that some of the shorter-term interventions which provide limited opportunity to apply multiple strategies and opportunities for reinforcement or to allow follow-up and evaluation may need to provide longer and more intensive exposure if participants are to succeed in achieving change in the short and longer term.

5 Conclusions and recommendations

5.1 Conclusions

The majority of cooking skills courses and activities included in the review appear to target and reach vulnerable individuals and low-income communities (based on both information about the settings, the target populations of those delivering courses and descriptive characteristic of the participants). Despite it not being possible to verify this targeting and the resultant reach of the cooking skills activities through analysis of postcode data the reports, practitioners' descriptions, the target groups of the community food initiatives delivering cooking skills and partners used for co-delivery of courses for larger agencies such as NHS Boards all suggest that vulnerable groups are being reached.

There was evidence of consistent good practice by course practitioners (e.g. in line with recommendations or evidence for promoting health behaviour change from highly regarded sources)[8] and strength based approaches[16] as shown by:

- evidence of practitioners encouraging participants to influence the course content and methods
- evidence of targeting, tailoring via many varied strategies
- examples where attempts are being made to reinforce learning and positive behaviours through using multiple strategies and agents.

To enhance the outcomes from cooking skills activities practitioners used a wide range of strategies. Some of these strategies were more commonly used than others.

Many of the strategies used to target, tailor and reinforce activities are consistent with behaviour change model concepts recommended by behaviour change academics and authoritative organisation such as NICE. Courses and activities also seem to be informed to a degree by current thinking in terms of value-based approaches favoured by the Scottish Government e.g. person-centred, strengths or assets based approaches, and community development practice.

The cooking skills activities included in the review (most of which were funded via CFHS) appear from course feedback to have been engaging and enjoyable experiences for those who have participated. Notwithstanding the limitations in the outcome data, participants who have completed course feedback and evaluation forms consistently self-report short–term improvements in confidence, knowledge, intentions to change and in some instances behaviour change.

Many of the strategies were aimed primarily at 'non cooking outcomes' or mediators of future cooking outcomes such as self-efficacy or food's role in social interaction etc. The causal linkages between these mediators and cooking outcomes require further testing.

Some strategies and associated behavioural concepts are applied more frequently and consistently than others by cooking skills practitioners.

Cooking skills activities are delivered in a wide variety of settings and contexts. Different contexts such as organisation size or target group may facilitate or hinder the use of certain strategies.

Cooking skills practitioners have varied theories and assumptions about how strategies work. Sometimes the same strategies are intended to achieve different outcomes. The practitioners (n=19) who engaged in the focus groups were hugely enthusiastic and reflected deeply about the content and design of their courses.

There is some good evaluation and reporting practice. However there was a lack of clarity and specificity in many of the plans and implementation reports. There are some examples of good evaluation practice although the evaluation practice across the board is not scientifically robust or consistent enough to allow meta-analysis and or to prove the impact of cooking courses in Scotland. These issues have limited the review's ability to address all of the original study objectives set by CFHS and the advisory group.

There is scope to significantly improve learning about cooking skills activities through more targeted commissioning and evaluation practice that places understanding and refining theory at the heart of commissioners and funders decision making.

5.2 Recommendations

5.2.1 Key learning for policy makers and commissioners

By policy makers and commissioners the authors mean both national and local government and statutory agencies such as CFHS and NHS Boards.

Via training and mentoring and more creative funding arrangements policy makers and commissioners should where feasible support practitioners and agencies providing cooking skills courses to:

- use evaluation tools and measures that are appropriate to, and feasible for, their vulnerable target groups but that are also consistent (at least within if not across contexts e.g. child and family, vulnerable client groups etc.)
- report denominators and completion rates for their own individual and accumulated courses
- identify and test more innovative means of following up participants (e.g. via support staff or referrers or via social media)
- conduct longer-term follow up
- exploit possible learning about the strategies applied from natural experiments and case studies for example
    - purposefully varying specific strategies but keeping practitioners and target groups similar and assessing the impact on specific outcomes

    - verifying the assumed causal relationship between mediators such as self efficacy, reduced isolation and cooking related outcomes
    - pretesting assumptions with intended target groups (e.g. whether taking meals home is actually an incentive to participation for families)
- test the feasibility of the less frequently used concepts and strategies (e.g. associated with goal setting or checking participants' motivations for involvement) to provide better baselines
- increase the duration and sustainability of their cooking skill courses to facilitate the above changes.

A possible means of supporting the above improvements might be to develop local or regional evaluation champions. Such champions might support the analysis and interpretation of data provided by local projects as well as the other changes described above.

Implementation, outcome and evaluation reporting could be improved through the development and use of a standardised planning and reporting framework informed from learning from the coding framework used in this review.

5.2.2 Key recommendations for practitioners

Practitioners should strive to enhance their funding applications, planning and reporting by providing consistent and specific information about their target groups, content, methods, strategies used (including how these are anticipated to achieve change in their participants and in what outcomes).

Practitioners should strive to enhance their monitoring and evaluation by using appropriate but consistent and where feasible validated measures and tools. If funding allows they should strive to increase course durations (where these are very short), seek to improve baseline information and lengthen follow up through the means and strategies described above.

There are areas where even more reflective practice might lead to courses having a greater impact on participants and may enhance within- and across- course learning. Reflective questions such as those proposed in Appendix 13 could be considered by practitioners at different stages of a cooking course cycle: i.e. seeking funding, planning, recruitment, delivery, evaluation etc.

Practitioners may benefit from making it explicit to funders that the many varied strategies they use for targeting, tailoring and reinforcement have a strong theoretical basis and employ key health behaviour change concepts recommended by authoritative organisations such as NICE[8].

Practitioners should ensure funders are aware of the reach of their programmes in terms of engaging vulnerable groups. They should where feasible provide explicit evidence for this.

The above recommendations if implemented would begin to enhance both the clarity of practitioners' delivery and theories, and improve to some extent the robustness of outcomes. This in turn might allow more accumulated learning within and across cooking courses and an enhanced evidence base for cooking skills courses and activities in Scotland and elsewhere.

Whilst there is much to be positive about in terms of the delivery of cooking skills courses and activities within Scotland there are still many challenges to be faced and improvements sought.

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Appendix 1: Possible contexts, mechanisms and outcomes of interest to commissioners

Contexts (settings, intervention types, delivery agent, target groups)				**Mechanisms/ mediators**	**Outcomes**
Settings	**Course content /strategies used to target/tailor & reinforce change**	**Agents**	**Target group**	**Response mechanisms (triggered for behaviour)**	**Mental health/well-being**
Low income settings (e.g. SIMD area/geography/community defined)	Courses (of varied frequency & duration & level of exposure)	Community workers	Children/families	Social interaction	Physical health/ well-being
Drop in /support centres for Mental health /Women's aid	Reinforcement via shopping trips, cooking events, eating together etc.	Trainers	Those with mental health issues	Motivation Self efficacy /confidence/self belief	Confidence/self efficacy
Nursery/School/ parents settings	Accredited courses /certificates	Youth Leaders	School/college attenders/pupils/ NEET groups	Re- integration	Life skills
Supported accommodation/	Integrated theory & practice	Teachers	Looked after young people	Social support to experiment/ gain exposure to food /tastes	Enhanced family relationships/parenting /bonding

Possible contexts, mechanisms and outcomes of interest to commissioners continued

Contexts (settings, intervention types, trainers. Target groups)				**Mechanisms/ mediators**	**Outcomes**
Community Kitchens	Participant influence on programmes/ Recipes	Care givers	Those with substance abuse issues	Volunteering/ providing for others	Cooking knowledge Cooking Skills
Youth clubs/Cooking bus	Peer education	Community chefs/cooks	Offenders	Reinforcement from peers/significant others /peer pressure /normative influence	Food Budgeting
	Use of incentives	Peers	Young mothers/ Dads/ Carers	Valuating of food as a core element of life/families	Cooking from scratch, healthier eating /weaning Reduced use of carry-outs/ Processed foods
Hostels	Reinforcement from carers/support staff	Health professionals	Homeless/at risk of homelessness	Self betterment/ employability	Improved Food safety & hygiene

Appendix 2: Coding framework variables

Project code No of document reviewed Type of organization Part of larger food initiative City/Town/Rural Catalyst in establishing group • Cooking skills suggested by staff • Needs assessment Driver for setting up group • Cooking skills • MH recovery • General health • Social support • Weight management • Budgeting, food poverty • Iife skills • Parenting support • Volunteer/peer training • Offenders • Other	Recruitment • Drop in • Self referral • Referral • Mix Incentives given? What Free /nominal fee Buddy /support worker Follow up of drop-outs? Participants motivations checked at start Knowledge of venue/trainer • Pre existing group • Trainer known to group • Venues known to group • New groups Info on accessibility of venue Class organisation • Class size • Time of year • Time of day • Added too after start	Age group Targeting • None • To a degree • Very specific Group targeted • Low income- define? • Men • Women • Age group • Mothers • New mothers • Family groups • Young people • Homeless/risk of • Mental health issues • Learning disabilities • BME • LAC • Widowed • Substance use • Offending	• ESOL • Literacy • Isolated • Other Targeting • Staff • Carers • Peer • Train trainers Tailoring • Structured or not • Accredited • Reinforcing inputs • Crèche • Other • Group tailoring • On content • Timing • Groups recipes • Own recipes Use of formal tools • Non tools	• Eat well /others Recipes tailored • To budgets • Local availability Food poverty strategies • Goal setting • Healthy eating • Formal nutrition input • Specific nutrition – weaning • Meal eaten at end • Meal home • Food not eaten • Wider staff eat • Recipes home • Equipment home • Healthy recipes Pedagogy • Theory /practice or mix • Demonstration only • Ind. Cooks whole meal • Paired cooking • Vouchers

Coding framework variables continued

Skill focus • Not explicit • Safety /hygiene • Food prep • Chopping • Cooking methods • Following recipe Weights or measures • Adapting recipes • Shopping T/P • Reducing waste • Budgeting • Menu-planning • Food/gardening • Shared food • Tasting • Other Trainer/leader • Project staff • Food trainer • CHEF specialist • Youth leader • Teacher • Support worker • Volunteers • Peers Health prof	Setting • Community Kitchen • School • Care setting • Pre five • Youth club • Cooking bus • Portable stove? • Eating facilities • Leisure Centre Transport provided Costs reimbursed Groups cohesion G/B Exposure • Duration • Length • Costs • Consistency of attendance • No classes actually delivered • Actual reach • Leader ratios	Variation from proposal List variations Recipes • Types of dishes Further support • By carers • Support workers • Others • Learning into new project Follow up drop outs Outputs • Adoption levels • Adherence/completion • Sustained beyond ne course Outcomes Nutrition • Knowledge • Cooking • Health • Self efficacy/confidence • Intentions to change • Actual change	Non nutrition • Food safety • Budgeting • Parenting • Bonding • Social interaction • Staff skills/capacity • Isolation reduced • Income • Employability Evaluation methods • Post course feedback • Pre and post • Other • Measure type Explicit learning reported Organisational learning

Please note some of these were simply tick boxes others were written information (see Appendix 3 for examples of coded transcript).

Appendix 3: Extract from coding frame

Project code	5	6	7	8	9	10	11
Where and how meals are consumed?							
Meal eaten by group but no more detail	x (all courses?)	Residential			x sometimes , other times cooked for others –OAP's lunch others in youth group		x and kids
Class eat same cooked meal at end	X					2 versions of meal	x and kids
Class eat diff meals at end							
Class take food home to eat				x			
Food not consumed							
Wider venue users/staff taste food					x other young people	x	
Other take home things - recipes, ingredients, equipment?	Recipes, some supplies, vouchers and certificate. Store cupboard pack			Blender if complete 60% vouchers, vitamins			
Who deliver training/skills ?							
Level of specialist food knowledge of trainer Hi/low/unknown*	x Good food		REHIS/BSL inter/literacy tutor		Chef did one session. CLD leader others	U but REHIS F&H	Hi -chef
Project staff		x food specific		x?		Sessional x	X
Food trainer							Chef

Appendix 4: Blank data extraction sheet (showing the behaviour change model concepts)

Outcome expectancies	Personal relevance	Positive attitudes	Self efficacy	Descriptive norms	Subjective norms	Personal & moral norms	Intention formation & concrete plans	Behavioural contracts/ *Relapse prevention*
Helping people develop accurate knowledge about the health consequences of their behaviour	**Emphasising the personal salience of health behaviours**	**Promoting positive feelings towards the outcomes of behaviour change**	**Enhancing people's belief in their ability to change**	**Promoting the visibility of positive health behaviours in people's reference groups they compare themselves or aspire to**	**Enhancing social approval for positive health behaviours in significant others & reference groups**	**Promoting personal & moral commitments to behaviour change**	**Help to form plans & goals for changing behaviours, over time & in specific contexts**	**Share plans and goals with others**

Appendix 5: Example one of a completed data extraction sheet

Outcome expectancies	Personal relevance (tailoring)	Positive attitudes	Self efficacy	Descriptive norms	Subjective norms	Personal & moral norms	Behavioural contracts	Relapse prevention
Help people develop accurate knowledge about the health consequences of their behaviour	**Emphasising the personal salience of health behaviours**	**Promoting positive feelings towards the outcomes of behaviour change**	**Enhancing people's belief in their ability to change**	**Promoting the visibility of positive health behaviours in people's reference groups they compare themselves or aspire to**	**Enhancing social approval for positive health behaviours in significant others & reference groups**	**Promoting personal & moral commitments to behaviour change**	**Share plans and goals with others**	Developing skills to cope with difficult situations/conflicting goals
Nutrition activities will cover such areas as the eat well plate and getting a balanced diet, sugar, salt and fat, label reading, energy balance and food and mood 10	We will increase awareness of key healthy eating messages, focussing on issues around under or over nutrition, diabetes and heart health 10		The aim of the session (shopping trip) were both to make healthier choices (using traffic lights and where possible nutrition tables) and to budget (i.e. using mental arithmetic to come as close as possible to the £10 target) The sugar, eat well plate and label reading sessions appeared to have the highest impact from a purely observational standpoint. However the more difficult label reading session (which requires a certain literacy level) also went well and although most	This course (for men) will be run by a male sessional worker One sessional worker will plan and deliver the course assisted by one volunteer (we have a volunteer in mind, a service users from a previous men's group) 10 The facilitator felt it was important for everyone to have time to sit down together	One session will involve a trip to local supermarkets where service users will gain experience looking at food labels and choosing healthier yet cheaper options 10	We will also offer service users a seven hours REHIS Food & Hygiene Course. This course is not only a very useful addition to a CV but is also invaluable around the home for cooking safely, confidently and		

			participants couldn't remember the specific maximum daily intakes for (sat) fat, salt and sugar they felt confident using the traffic light system. ' One session will involve a trip to a local supermarket where service users will gain experience looking at food labels and choosing healthier yet cheaper options After 8 weeks they graduate with a certificate, a copy of the recipes and a small bag of dried cooking ingredients	and eat as a group, discussing the food, what people liked/didn't like about it and whether they thought they might make it at home. This proved to be a popular time and there was never any food left.		hygienically 10 After this experience we hope we will be able to offer him volunteer) paid sessional work 10		

Appendix 6: Topics Guides for Focus Groups

Topic guide for Focus Group 1 – Vulnerable /More supported contexts

Facilitator and group introductions:

- Very brief opportunity for participants to say who they are, their organisation and types/frequency of groups they run?
- Ground rules
- May move quickly over areas such as self confidence and feeling good about impact of cooking as literature quite clear on these strategies.

Introduction to research and areas we would like to explore in the session:

- Refer to in **very *simple terms*** the strategies recommended by academic behaviour theory to initiate and reinforce behaviour change – already covered in presentation

We are interested in:

- Understanding what strategies you use to improve and reinforce /sustain cooking skills/healthy eating?
- **If, how and why** you think they work?
- What strategies are/ are not applied in the different contexts?
- How different contexts/ target groups lend themselves or hinder opportunities for reinforcement?

What we will ask	Prompts - if needed
How do you identify the groups you work with?	Existing groups Part of your own organisation Recruited by others
How do you go about selecting individuals from the identified target group?	You or others do it? Done by referrers? General marketing Use 'events' to recruit?
How do you find out about why individual participants wish to attend the group?	Don't before attending? Via referrers /support workers If so, why?
Are potential participants ever discouraged from participating - if so on what basis?	Does it influence drop out? Does it impact on their learning (skills/ knowledge/ speed of learning/ intentions/

Does it matter whether participants key motivations are about health/cooking or wider issues like self-confidence / fun/ family bonding?	actual behaviour change) What changes do you make to content /strategies if motivations are different? Gender?
How do you promote positive feelings about cooking/eating healthily?	• Taster sessions • Illustrating financial benefits (how)? • Eating together /social aspects of food • Fun /relaxed course • Showing eating healthy is easy /doable • Tasty but healthy options
How do you promote positive feelings about cooking/eating healthily?	• Taster sessions • Illustrating financial benefits (how)? • Eating together /social aspects of food • Fun /relaxed course • Showing eating healthy is easy /doable • Tasty but healthy options
Can you tell us **how you** enhance people's self confidence /efficacy. Their belief in their ability to change?	• Simple easy to learn /repeat recipes • Positive reinforcement from leaders/trainer • Visual / written recipes • Cooking for others and getting positive feedback • Longer/ more classes to build confidence • Shopping trips /support • One to one support (in class /in specific settings) • Follow on classes • Labelling? • Promoting independence • Building complexity of recipes
Do you encourage participants to establish concrete goals and share these? How?	• Use explicit goal settings techniques on issues such as buying/cooking/eating/ using ingredients • Do above at start or end/ • Follow-up participants beyond the class • Face book sharing • Formal /informal • Follow up with support workers/referrers • Sharing goals with others • Using incentives as rewards for specific achievements

IN your view what are the ***most important things*** you do with clients that make it more	• Take home recipes

likely that they will cook more from scratch/more healthily at home /beyond the class? Why (do you think they work evidence of impact)?	• Allow participants to choose/influence recipes • Keep recipes simple • Ensure the recipes can be done quickly • Keep recipes/ingredients cheap • Provide taster sessions for them/children • Practical shopping advice/trips • Provide food bags/store cupboard ingredients • Provide equipment (blenders/scales/ freezer bags etc.) • Encouraging class/group to continue meeting /face book • Links with food coops/community garden
What are the key strategies you use to minimise the impact of low income? Which are the most successful Why? Are there contexts in which you do/don't provide giveaways (food/equipment)?	• Recipes using cheaper ingredients • Using locally available ingredients • Practical shopping trips • Price comparison activities • Make links with food coops & community projects • Include cheaper home made snacks/ lunch box foods • Emphasise store cupboard staples • Illustrate how to make foods last for more than one meal – chicken • Re-using leftovers • Bulk cooking/ freezing Strategies for bulk cooking / freezing
What are the key strategies you use to overcome the barrier of limited time to cook at home from scratch? Which are the most successful and why?	• Snacks rather than meals • Fast recipes • Bulk cooking /freezing

What pragmatic issues or contexts restrict/enhance **the types and number** of strategies you can use?	• Duration
	• Settings/facilities
	  ○ Longer exposure/access to participants
	  ○ Referrers able to follow up
	  ○ One to one support feasible?
	  ○ Scope to attend lunch groups/ breakfast clubs -with others
	• Costs /ratios

Topic guide for Focus Group 2 - Parents and/or families groups

Facilitator and group introductions:

- Very brief opportunity to say who they are /organisation and types/frequency of groups they run?
- Ground rules

Simple introduction to research and areas we would like to explore in the session

Interested in:

- Classes targeted at parents and/or families - aiming to influence cooking for the family/at home.
- What strategies are applied in different contexts to achieve /reinforce behaviour change?
- How and why these strategies are expected to work (and do they)?
- How presence of kids and parents motivations impact on content, duration, recipe choice, skills covered and outcomes?

Questions	**Prompts if needed**
When running classes aimed at cooking/healthy eating for families what sorts of groups do you tend to recruit?	Mums Dads Carers Children Mix Run one type/different types Why? Pragmatic issues: Who is referred Who is keen Facility availability Costs (for crèche) Day time classes are more feasible for people to attend /kids at school Custom and practice If so by whom /how?
Do participants get asked why they want to attend before attending/ designing the group?	Bonding Time out Fun Parenting

What are their key reasons motivations? Do you design /run the course differently if participants are more interested in 'non food' outcomes?	Cooking /healthy eating If so how Parents need child free time/me time Families need help to come together around food issues /bond Gender impact outcomes and design - context /length Do their motivations (food /non food) influence: drop out? the learning/actual outcomes? (skills/ knowledge/ speed of learning/ intentions/ actual behaviour change)
IN your view what are the ***most important things*** you do with clients that make it more likely that they will cook more from scratch/more healthily at home? Why (do you think they work/ evidence of impact)? Are there contexts in which you do/don't provide giveaways (food/equipment)	Allow participants to choose/influence recipes Keep recipes simple Ensure the recipes can be done quickly Keep recipes/ingredients cheap Provide taster sessions for them/children Practical shopping advice/trips Provide food bags/store cupboard ingredients Provide equipment (blenders/scales/ freezer bags)
What are the key strategies you use to minimise the impact of low income? Which are the most successful Why?	Recipes using cheaper ingredients Using locally available ingredients Practical shopping trips Price comparison activities Make links with food coops and community projects Include cheaper home made snacks/ lunch box foods Emphasise store cupboard staples Illustrate how to make foods last for more than one meal – chicken Re-using leftovers

Are there contexts in which you do/don't provide giveaways (food/equipment)?	Bulk cooking/ freezing
How do you promote positive feelings about cooking/eating healthily?	• Taster sessions • Illustrating financial benefits (how)? • Eating together /social aspects of food • Fun /relaxed course • Showing eating healthy is easy /doable • Tasty but healthy options
What influences your decisions with regard to whether you: Provide tasting session (e.g. fruit & veg) Eat the meals cooked together or Take the meal home for the family to eat? (Taste and take home?)	Always do the same Vary – why- in what circumstances? Why is eating together so important? How transferable is eating together (for range of clients)?
Do you involve children /significant others in the course? If so what strategies do you use to do this? Why does this help to achieve/sustain behaviour change? Are these 'reinforcements' dependent on the extent of involvement of kids/significant others in the class?	Kids cooking Kids do related activities Events –come dine with me Festive meals Request the new recipes learnt in class? Want to cook more with their parents if involved in class? Are more likely to taste/try new foods? Reinforcement /positive feedback from others Are these things dependent on the age of kids? Whether they cook or not? Whether food is taken home or not?

How do you promote positive feelings about cooking/eating healthily?	• Taster sessions • Illustrating financial benefits (how)? • Eating together /social aspects of food • Fun /relaxed course • Showing eating healthy is easy /doable • Tasty but healthy options
What activities work best in terms of reducing use of takeaways/ reducing sugar/fat intake Do they need to be practical as well as theoretical? Why do you say that? How do you know?	Specific input about content and impact on health Food labelling Assessing own buying eating behaviours Need to cover food labelling (theory or practice) Need to go to shops (practical) Need to provide recipes that are easily adaptable (lower fat/ sugar) - but still a lot of cakes/dessert recipes? Use goal setting techniques/behavioural contracts during /at end of courses

Topic Guide for Focus Group 3 – Nursery parents

Question	Prompt
What made you decide to join in the cookery course?	Asked to come along? Formally invited? Friend or someone else recommended it? Told about it by nursery staff Encouraged by other child-care prof.
Have you managed to attend all the session or have you missed any?	Attended all four weeks Missed a few Only made a few
Why do you come?	Social reasons Confidence Eating better Learn about budgeting Learn to cook Learn about food/health Learn about issues for the kids – weaning, fussiness, special diets Weight/other health issues Other reasons
How did you get involved in shaping the course	Choose the recipes Length of course How made relevant to you Work in twos etc.?
What sorts of things do you do at the class?	Learn how to eat better/ cook more regularly Learn new cooking skills Learn about hygiene and safety Learn about food and health? Cook in groups/alone? Help each other cook? Taste foods? Take food home Cook for each other One to one support?

What difference has coming to the class made to you?	Made friends/ had company Increased confidence (generally/cooking) More involved with nursery /other opportunities Eating better? Learn about hygiene and safety? Cooking skills or methods? Learn about food and health Specific diseases? New recipes Specific issues regarding childrens' diets (weaning, snacks, packed lunches, party food, etc) Other?
What key things have you learned from attending the course? New ways of cooking /skills? New things about food types? Things about eating on a budget? Used new equipment?	New Recipes Favourites Least favourites Baking Boiling Frying Grilling Reading recipes Using scales/measures Using new equipment Knife skills Salt/ sugar /fat Reading /understanding labels Where/how to buy cheaper items/ non brand Freezing Bulk cooking Blenders Juicers Grater Things wider than cooking
Have you used any recipes from the course at home already? Which might you use? What recipes might you not use so much?	Why ? Fast /easy /cheap/tasty/ kids like them Things you can buy thing locally /price Why ? Take too long I/kids don't like taste Don't have equipment /facilities Cost

Can you buy the ingredients you want for the (class) recipes locally? What are the most useful things you have learnt?	Food available locally Planning/ eating regularly Budgeting skills Making food last /freezing Where best to shop Using own brand foods /store cupboard foods etc Some things not useful? Why? Equipment related?
Who eats the meals that you take home? Have you had any difficulties in reheating them?	No one You /kids/ partner/ wider family Why not? Which have been most popular?
Has the class changed what and/ or how you (and the kids/family) eat at home? Do you cook from scratch more now than before Do you cook different things? Has it impacted on what you buy/ how you shop Has the course helped you with cooking over Christmas? Has it been more difficult over Christmas/holidays to cook from scratch/eat healthily Have you set / been helped to set	Healthy? Use of take-aways? Use of processed/ready meals? Salt Sugar Fat Store cupboard foods Bulk buy Use different shops Home brands Entertaining Christmas meal Sweets etc as presents

any goals to help you stick to changes/ start again? Would you want that sort of help?	
As a result being on the course have you cooked more with the kids/ involved them more at meal times? Have they been more involved in the shopping / choice of recipes etc?	Eating together Eating at table? Letting them help out Cooking baking with them?
What did you like best about the class? Why Has it met your own personal needs? Are there any ways the class could be made even better? Are there ways you might change the class?	Meeting other Preparing a meal to take home Learning skills/recipes etc Improved confidence Overcome your barriers Frequency /length More time More one to one support Even more support More /different recipes Better ingredients Cook more for others Certificates Provision of equipment More flexibility within the course to do own recipes/cook with other etc
How do you promote positive feelings about cooking/eating healthily?	• Taster sessions • Illustrating financial benefits (how)? • Eating together /social aspects of food • Fun /relaxed course • Showing eating healthy is easy /doable • Tasty but healthy options
Other than learning to cook - What other support in terms of eating better/cooking more do you get from attending?	Left over ingredients to use later Extra recipes to use Food co-op vouchers Advice on eating better

	Information on • freezing food • shopping and best buys • food labels • making food /recipes last /getting more than one meal out of particular ingredients
What support do you get from others in the class/ nursery with regards to eating better/cooking more? Are there other types of support that would help you eat better/ cook more?	Do nursery staff join in the sessions? Take part in other food related activities in the nursery Help understanding labels /recipes? Kids involved in the sessions – make it easier or harder Partners learn to cook too More space/equipment at home Help from grandparents /family Shopping trips Labeling Price comparisons
Do you cook for others?	Kids Each other Friends Relatives Caring role Volunteering
Has the class changed what and/ or how you (and the kids) eat at home? Do you cook from scratch more now that before? Do you cook different things? Has it impacted on what you buy/ how you shop?	Healthy? Use of take-aways? Use of processed/ready meals? Salt Sugar Fat store cupboard foods Bulk buy Use different shops Home brands

Has the course helped then with cooking over Christmas? Has it been difficult over Christmas/holidays? Have you set / been helped to set any goals to help you stick to changes/ start again? Would that sort of help be appropriate?	Entertaining Sweets etc as presents
What factors make it difficult for you to eat better? What things make it difficult for you to cook from scratch more often? Has the class in helped you overcome any of the above?	• Time • costs • access to healthy food • kids fussiness • lack of skills • others • Cook • time • money • skill • equipment • fuel • kids fussiness • costs • access to healthy food • local shops • where living • who with
Of all the support in terms of food/cooking you have had what has been the most useful for you?	

Topic Guide Focus Group 4 - Supported Accommodation

Question	Prompt
What made you decide to join in the cookery drop in?	Noticed them in the unit? Asked to come along? Formally invited? Friend or someone else in the unit recommended it?
How often do you come to the drop in?	Every month Occasionally
Why do you come?	Social reasons Eating better Learn about budgeting Learn to cool Learn about food/health Eating together Other reasons
What sorts of things do you do at the drop in?	Learn how to eat better/ cook more regularly Learn new cooking skills Learn about hygiene and safety Learn about food and health? Cook in groups/alone? Help each other cook? Taste foods? Eat meals together? How important is eating together? Cook for each other
What difference has coming to the drop in made to you?	Eating more regularly? Eating better? Learn about hygiene and safety Cooking skills Other?
What key things have you learned from attending the drop in? New ways of cooking /skills?	New Recipes Favourites Least favourites Baking Boiling Frying Grilling Reading recipes Using scales/measures Using new equipment

New things about food types? Things about eating on a budget? Used new equipment?	Salt/ sugar /fat Reading /understanding labels Where/how to buy cheaper items/ non brand Freezing Bulk cooking Blenders Juicers Grater
What recipes are you most likely to make outside the class/in the future? Why? What recipes might you not use so much? Why? What are the most useful things you have learnt?	 Fast /easy /cheap/tasty Things you can buy thing locally /price Take too long Don't like taste Don't have equipment /facilities Cost Only cooking for self –so might not Planning/ eating regularly Shopping Budgeting skills Making food last /freezing Some not? -baking/grilling – equipment related ?
What do you like best about the drop in? Why? Are there any ways the drop in could be made even better? Ways you might change it?	 Meeting other Eating together Learning Frequency More time More one to one support Even more support More /different recipes

	Better ingredients Cook more for others
How do you promote positive feelings about cooking/eating healthily?	Taster sessions Illustrating financial benefits (how)? Eating together /social aspects of food Fun /relaxed course Showing eating healthy is easy /doable Tasty but healthy options
What other support in terms of eating better/cooking more do you get out-with the class? Can you/do buy the things you want for the (class) recipes with food co-op vouchers?	One to one support from practitioner/others Left over ingredients to use later Extra recipes to use Food co-op vouchers Advice on eating better Information on • freezing food • shopping and best buys • food labels • making food /recipes last /getting more than one meal out of particular ingredients
What support do you get from other staff in the unit with regards to eating better/cooking more? Is there other sorts of support that would help you eat better/ cook more?	Do they join in the drop in sessions? Do they support you when (the cooking trainer) isn't there? How? Help with choosing what to eat ? Help with shopping? Take part in other food related activities One to one or group support to cook Preparing food for you Eating together Help understanding labels /recipes? Do you ever cook for folks that visit the unit? Friends (inside or outside the unit)?

Do you get any support from anyone else in terms of cooking/food? Are you involved with cooking and shopping with others /families ?	Food co op staff Other volunteers Previous residents –returning Friends and family Each other Friends Relatives Kids Caring role Volunteering
Has the drop in changed what and/ or how you eat at all? Do you cook more now than before? Do you cook different things?	More or less regularly Healthy? Use of take-aways? Use of processed/ready meals? Salt Sugar Fat
What other support might help you make more changes to these things? Do you tend to eat with others/alone most days?	Context issues: What friends and family do Depends where living
What factors make it difficult for you to eat better? What things make it difficult for you to cook more often Has the drop in helped you overcome any of these things?	Costs Access to healthy food Local shops Cook • time • money • skill • equipment • fuel • costs • access to healthy food • local shops where living • who with
Of all the support in terms of food/cooking you have had what has been the most useful for you?	Support beyond class and in unit

Appendix 7: Information sheets

Information Sheet Practitioner

Community Food and Health (Scotland) review: Identifying what strategies lead to better outcomes from cooking skills courses for low-income participants in different context/settings

Information sheet (Produced on 11th November 2014)

Background
Community Food and Health (Scotland) (CFHS) is part of NHS Health Scotland (NHSHS) and aims to ensure that everyone in Scotland has the opportunity, ability and confidence to access a healthy and acceptable diet for themselves, their families and their communities. To achieve this, CFHS supports communities to improve access, availability, affordability to, and uptake of, a healthy diet within low-income communities.

CFHS has commissioned Avril Blamey and Associates to conduct a realist review to uncover *how* community cookery skills activities (funded by CFHS) help achieve or improve the outcomes for participants from low-income communities.

What is a realist review?
The basis for a realist review is that things seldom 'work' for all people under all circumstances. A realist approach involves seeking to learn more about what strategies work for what target groups in which context/circumstances, and how.

Methods of the review commissioned by CFHS
The current review involves:

- consideration of project documentation, including any available progress reports and evaluations of CFHS-funded initiatives and those contributed by community food initiatives.
- obtaining the views of those involved in the planning and/or delivery of these projects
- hearing the views of some participants in (selected) projects.

What does this have to do with me?
As you are attending the CFHS event on the 27th November 2014, you have agreed to attend a focus group that will be run as part of the programme for this day. You are being given this information sheet (and accompanying consent sheet) so that you can decide if you still wish to take part in this discussion and if yes, so that you can give written permission.

Do I have to take part?
No, you don't. It is completely up to you to decide whether or not you want to take part. However, CFHS is keen to obtain views from as many experienced cooking skills providers as possible attending the event.

If I take part, what would be involved?
There are two focus groups running on the day – one focusing on projects involving parents or families, the other focusing on behaviour strategies used to reinforce knowledge and cooking skills in different settings (including for 'vulnerable' client groups). You would be allocated to one of these group and take part in a discussion with up to ten other people, all of whom are involved in planning or delivering community food initiatives.

Discussions would be facilitated by Avril and her associate (Jacki Gordon) and centre on your experiences and insights on which particular strategies or elements of your cooking skills courses work best for different targets group, to achieve different outcomes and/or in different settings.

Each discussion group will last about one hour.

What if I don't feel I have a lot to say on this issue?
Don't worry if you feel at this stage that you might not have a lot to say. Avril and/or Jacki will ask you to think about different types of situations and it's likely that you'll have a point of view on some of these.

What will be done with the information collected from the discussion groups?
Each discussion group will be audio-recorded. This is to enable Avril and Jacki to revisit the content of the discussion groups rather than relying simply on written notes.

Recording the discussion groups will ensure that they are accurate in their reporting and that they consider the full range of comments that individuals provide on a specific issue.

Avril will arrange for the discussion to be transcribed for quality assurance purposes.

The findings from the two discussion groups will be will be included in the report to CFHS.

The consultants will use the insights from these discussion groups to refine the developing theories about what works for whom under what circumstances, and how.

Will my name be mentioned in the report?
No one who takes part in any of the discussion groups will be mentioned by name in the report. If Avril and Jacki use any quotes in the report, these will be anonymised. It will not be possible for anyone who reads the report to link any comments to the people who made them. If we intend to use anything that may be linked back to a specific project due to it having a unique target group or setting we will seek approval to use this material from you prior to publishing it.

Credentials of the consultants
The consultants - Avril Blamey and Jacki Gordon - are senior and highly-skilled researchers. Each has experience in working at a strategic level nationally and of conducting Scotland-wide research on behalf of NHS Health Scotland, and other national agencies and local agencies.

Confidentiality and data protection
The consultants are registered as data controllers on the Information Commissioner's National Register.
They observe the requirements of the Data Protection Act 1998 and the Market Research Society's Code of Conduct in relation to data protection and respondent confidentiality. These require that data will be:

- processed fairly and lawfully;
- only used for the specific purpose(s) for which they are collected;
- collected in a way which is adequate, relevant and not excessive;
- kept secure.

This needs assessment will also follow the ethical guidelines of the UK Evaluation Society. Thus:

- all information collected will be treated anonymously;
- participants' names and those of their organisations will not appear in any reports or presentations arising from this evaluation and
- findings will be presented in such a manner that the identity of individuals and/or their host organisations cannot be inferred. Any exception to this last point would only be made with permission of the relevant individual/organisation.

Only the consultants and their associates will have access to the recordings and transcribed focus group data, which will be stored securely by Avril Blamey and Associates. This data will only be held in anonymised form. Data will be kept for a period of seven years and then securely destroyed.

Use of findings
It is intended that the findings from the review as a whole will be used to inform / support improvements in practice. Thus the key audience for the report will be community food initiatives, and agencies and managers embarking on, or involved in, funding, planning or delivering cooking skills activities.

The report of the review, including findings from the discussion groups, will be available via the NHS Health Scotland and CFHS websites.

Further information

Any questions regarding the discussion group should be directed to:
Avril Blamey
Avril Blamey and Associates
25 Langside Drive
Glasgow G43 2LA
Landline: 0141 250 7025

Any questions about the commissioning of the review and its use should be directed to:
Kim Newstead
Community Food and Health (Scotland)
NHS Health Scotland
Gyle Square

Mobile: 07796 260 816
Email: avril.blamey@ntlworld.com

NHS Health Scotland
1 South Gyle Crescent
Edinburgh
EH12 9EB

Landline: 0131 314 5427

Mobile: 07770 848478

Email: Kim.newstead@nhs.net

Information Sheet Participants

Information sheet dated 04/12/14

Would you be willing to take part in a discussion about YOUR VIEWS on the cookery group that you've attended?

Introduction
Would you like to take part in a discussion group about the cookery group or course that you have attended? The whole point of the discussion is to hear the **views and opinions** of people like you.

This discussion group is part of a bigger piece of research[5] to understand what works well (and less well) in cookery groups and classes like the one that you have used.

Please take time to read the following information.

Do I have to take part?
No, you don't. It is up to you to decide whether or not you want to take part in the discussion group**.** If you decide to take part you will be given this information sheet to keep and asked for your consent.

If I take part, what would I have to do?
If you take part, you would be part of a discussion group with about four to eight other people who have also attended a cookery group within [name] nursery. In the discussion group, you'd be asked about things like:

- What did you like most about the cooking class or group you attended
- Were there any recipes that you really enjoyed
- Have you cooked any of the recipes by yourself?
- What things make it difficult (or easier?) for you to cook in your day-to-day life?
- What sort of support you got from the class teacher and others?
- What has helped most in supporting you learn to cook?
- What works for different groups (and why) in cooking skills classes?

Avril Blamey will run the discussion group. Avril is an experienced researcher. She will make sure that the discussion group feels very relaxed and friendly. The discussion will be audio-recorded. This is so that the researcher does not forget what anybody says.

If you do decide to take part you are still free to the leave the discussion group at any time without giving a reason.

Where and when will the discussion take place?
The discussion group will take place on **[date].**

Do I get anything if I take part?
All those who take part will be given a love2Shop voucher for £30, which can be used in a number of shops as a thank you for taking part.

What will be done with the information collected from the discussion group?
The information you provide during the discussion will be used to improve future cooking skills courses and support.

Avril will put the key points of what people say in the report that she writes for Community Food and Health (Scotland) / NHS Health Scotland. NHS Health Scotland is the organisation that is funding this research.

Only Avril, her research team, and NHS Health Scotland will have access to the information, which Avril will store securely during the research. Once the research is completed the information will be securely transferred to NHS Health Scotland where it will be stored securely for a minimum period of three years then securely destroyed.

Will my name be mentioned in the report?
No. No one who takes part the discussion group will be mentioned by name in the report. It will not be possible for anyone who reads the report to link any comments to the people who made them. Your name or identity won't be shared or linked to the information – in other words it will be anonymous. You can access the final report on the NHS Health Scotland website or through [name] who will be give a copy of the final report

What if I have questions I want to ask before I decide whether to take part?
If you have any questions, please contact {name] or a member of the Community Food and Health (Scotland) team on 0141 414 2890.

OK, I'm interested. What should I do?
Please let [name] know if you will be coming.
Avril is looking forward to meeting you!

This information sheet is for you to keep. Thank you for your time.

Appendix 8: Consent Sheets

Practitioner Consent Form

Discussion group on:
What works for different groups (and why) in cooking skills classes?

I have read & understand *this information sheet* (written on [date]).

I understand that the discussion will be audio-recorded and typed up so that the researcher can read and use the information.

I understand that the learning from the discussion group will be written up in a report for Community Food and Health (Scotland) / NHS Health Scotland

I understand that the learning from the group/research may also be reported in talks and journal articles.

I understand that the things I say (quotations) might be included in talks and written reports but that my name and identity will be protected.

I am willing to take part in the discussion group on the [date].

I understand that the focus group will be undertaken with ground rules (that allow everyone a chance to speak and where what is said in the group, if discussed outside the group, is not linked to a specific person, group or organisation).

I understand and agree to all of the above

Name (please print): _____

Signature: _____

Date: _____

For official use only

Witnessed by: _____ on _____
Signature of researcher Date witnesses

Participant Consent Form

Focus group on:
What works for different groups (and why) in cooking skills classes?

As part of this study, we are inviting you to take part in a discussion group.

All the information gathered will be used for purposes of this study only, be anonymised and held securely by the commissioned researcher (Avril Blamey) and NHS Health Scotland/CFHS.

Feel free to contact Community Food & Health Scotland on 0141 414 2890 or Avril Blamey on avril.blamey@ntlworld if you wish to ask any questions.

I have read & understand the information sheet (dated 04/12/ 2014) and have had the chance to ask questions.

I understand that my participation is voluntary and that I am free to withdraw at any time, without giving a reason.

I understand that the discussion will be audio-recorded and typed up so that the researcher can read and use the information for the purposes of this study.

I understand that the learning from the discussion group will be written up in a report for Community Food and Health (Scotland) / NHS Health Scotland.

I understand that the learning from the group/research may also be reported in talks and journal articles however my identity will remain anonymous.

I understand that the things I say (quotations) might be included in talks and written reports but that my name and identity will be protected.

I am willing to take part in the discussion group on the 8th of January 2015.

I understand that the focus group will be undertaken with ground rules (that allow everyone a chance to speak and where what is said in the group, if discussed outside the group, is not linked to a specific person, group or organisation).

I understand and agree to all of the above.

Name (please print):_____

Signature: _____

Date: _____

For official use only
Witnessed by: _____ on _____
Signature of researcher Date witnessed

Appendix 9: Cooking course typologies

Mental health /recovery /supported accommodation N= 14	Homelessness N=3	Disability N=6	Offenders N=3
1, 3, 4, 6, 26, 30, 30, 42, 43, 45, 46, 49, 64, 66, 75	5, 31, 40	7, 12, 24, 36, 37, 73,	8, 34, 65
3rd sector food or community group N=14	Family settings targeting nursery/school parents/carers N= 12	Family Centre /CLD N=8	Youth N=7
2, 10, 11, 19, 27, 32, 47, 52, 53, 54, 55, 56, 71, 72*	13, 15, 16, 23, 33, 41, 51, 57, 63, 69, 70, 81	21, 22, 38, 50, 59, 60, 78, 79	9, 14, 18, 20, 35, 58, 68
Carers N=2	Elderly N=1	NHS * N=3	
28, 39	62	29, 76, 77	
BME/Ethnicity N=2	Women's Aid/DV N=4	Alcohol/substance abuse N=2	
61, 74	17, 44, 67, 80	25, 48	

Red = CFHS funding to promote the new Royal Environmental Health Institute of Scotland Elementary Cooking skills course
Magenta focused specifically on women.
Blue are courses that were given a small grant to develop their evaluation approaches– usually multiple courses so mixed re classifying target group
Orange is male only focused.
The courses or sets of literature are identified via their number code rather than name in order to preserve anonymity.

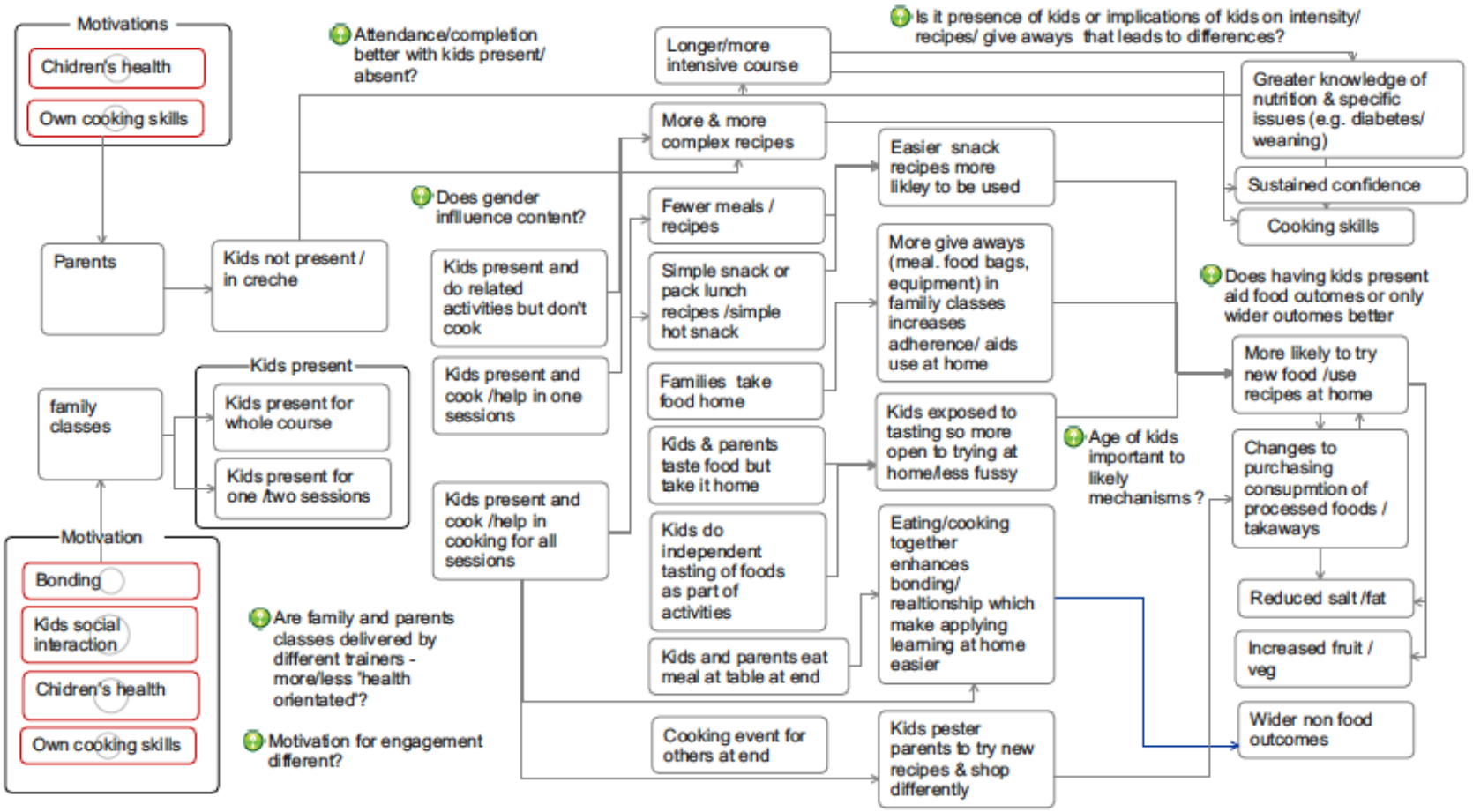
Appendix 10: Example two of a completed data extraction sheet

Outcome expectancies	Personal relevance (tailoring)	Positive attitudes	Self efficacy	Descriptive norms	Subjective norms	Personal & moral norms	Intention formation & concrete plans	Behavioural contracts	Relapse prevention
Help people develop accurate knowledge about the health consequences of their behaviour	**Emphasising the personal salience of health behaviours**	**Promoting positive feelings towards the outcomes of behaviour change**	**Enhancing people's belief in their ability to change**	**Promoting the visibility of positive health behaviours in people's reference groups they compare themselves or aspire to**	**Enhancing social approval for positive health behaviours in significant others & reference groups**	**Promoting personal & moral commitments to behaviour change**	**Help to form plans & goals for changing behaviours, over time & in specific contexts**	**Share plans and goals with others**	Developing skills to cop with difficult situations/co icting goals
		The aim was to show that it is possible to feed a family healthily for £5 or less	Separated men say they feel more confident having gained the skills required to cook healthy meals for themselves and their children 69 Men who have taken part /participates in cooking activities report how much they have enjoyed cooking with their children and gained the confidence to cook at home for the family.	At the end of each cooking session everyone will eat together reinforcing the benefits of sitting at a table eating and talking together as a family. By encouraging families to continue to cook together and use their increased knowledge of healthy eating we would expect there to be long term benefits for the whole family.		The parent who is volunteering is about to attend a food hygiene course as is a member of staff		By having a celebration event we will find out if the participants have continued to cook at home	

Appendix 11: Example three of a completed data extraction sheet

Outcome expectancies	Personal relevance (tailoring)	Positive attitudes	Self efficacy	Descriptive norms	Subjective norms	Personal & moral norms	Intention formation & concrete plans	Behavioural contracts
Help people develop accurate knowledge about the health consequences of their behaviour	Emphasising the personal salience of health behaviours	Promoting positive feelings towards the outcomes of behaviour change	Enhancing people's belief in their ability to change	Promoting the visibility of positive health behaviours in people's reference groups they compare themselves or aspire to	Enhancing social approval for positive health behaviours in significant others & reference groups	Promoting personal & moral commitments to behaviour change	Help to form plans & goals for changing behaviours, over time & in specific contexts	Share plans and goals with others
Pregnant and new mums will receive information on providing food and weaning of infants 78	Part of our project will be to produce a cookery booklet adapted to meet the needs of parents with a learning disability. This will require for example the increased use of pictures and visual aids, larger font sizes and simple vocabulary 78 Outreach support in family homes [learning disabilities] will enable staff to build on and				Staff will encourage parents and children to cook together 78 We received bags and aprons for CFHS which we were able to give to parents at their graduation ceremony 78 On the last day of the course we provided a graduation ceremony. This gave the parents and opportunity to undertake and host small dinner party; from organising place settings and making napkins, cooking a main course and desert to organising and welcoming guests. At the end		On recent visits by staff and social workers it has been noticed that there are fruit bowls in all the homes, parents have cooked or baked for visitors, have shared recipes with family members and babies are sat in high chairs at tables to join in with the rest of the family for inclusion. Social worker have deceived good feedback from the project and have visibly noticed a difference to parents on a social scale 78	

Appendix 12: Theories on the involving of children flow chart



Appendix 13: Reflective questions for Practitioners

- What is the difference between my targeting and tailoring?
- What strategies can I use to find out more about the individuals recruited to my course and their motivations for attending in advance?
- Given the wide range of strategies available to me which should I use and why?
- Have I thought enough about the underlying theories and assumptions I am making about these strategies?
- Does the current context I am working in facilitate or inhibit the use of some of my chosen strategies?
- What are my primary outcomes for these individuals, are they mainly non-cooking or cooking related outcomes?
- Is cooking the best/most appropriate activity to address non-cooking outcomes (self esteem, isolation, family bonding etc.) and how do these outcomes tie into cooking related outcomes?
- What frequency and duration of course is needed for more or less vulnerable clients?
- Can non-cooking and cooking outcomes be achieved in parallel and does this have implications for frequency and duration of class and selection of strategies?
- How can I best measure these outcomes with these individuals, and do so in a manner that is appropriate for participants?
- Have I used any available opportunities to check/assess/record confidence/self-efficacy, skills and knowledge levels at the start of the course?
- Would it be desirable, feasible and acceptable to use consistent/validated tools to measure these outcomes?
- In reporting back about my course, have I been clear, specific (and transparent/honest) about the exact strategies and content I have used?
- Where feasible have I reported on the numbers starting, dropping out, and completing the course and the number who completed it who also submitted evaluation form/feedback (i.e. have I reported denominators)?
- Can I provide any more information on the number/proportion of classes each participant attended?
- Are there any strategies I can use to follow up participants beyond my class to reinforce learning and/to assess outcomes in the longer term?
- What have I learnt from across the courses I run and how can I apply this in future?
- Can I learn about the effectiveness/test the common strategies I use by adjusting them or using them in different contexts/target groups?
- Am I sharing my learning with colleagues and funders?

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