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Food and Physical Literacy: Exploring an Obesity Prevention Approach Using Formative Research

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Abstract

Objective: The objective of this research was to explore how accessible the concept of food and physical literacy is for health and wellbeing professionals, and assess its potential effect on service delivery.

Design: Formative research and 'concept testing' with potential deliverers of food and physical literacy

Setting: Dumfries and Galloway, a rural region in South West Scotland, UK.

Method: The research was undertaken after four workshops hosted by NHS public health specialists, aiming to introduce and discuss the concept. An immediate post-event focus group and a short qualitative questionnaire were used to assess professionals' initial perspectives on the concept, whether they thought the concept was applicable to their work, and what they might require by way of support if the concept was to be taken forward.

Results: The findings illustrated the extent to which professionals feel that food and physical literacy is necessary, barriers to its implementation, as well as ideal components for advancing work within this field.

Conclusion: The concept of food and physical literacy has a sufficiently high level of resonance (proof of the concept) amongst informants to provide a foundation on which further work on its operationalisation can be based. The employment of formative research and concept testing with potential service deliverers was able to identify areas to be considered during developmental stages, increasing the likelihood that the end result will be accepted by the professionals expected to utilise it. Thus, the benefits of an inclusive approach to service development were also highlighted.

Keywords: Obesity intervention, formative research, physical activity, food literacy, Scotland

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Background

Obesity is a significant problem in many developed countries and is particularly evident in Scotland; 65% of people, including 25.3% of children by the time they start primary school, are either overweight or obese (Noakes, 2016; ISD Scotland, 2015). Despite having levelled out in recent years, the proportion of Scotland's society who remain overweight or obese remains high (Castle, 2015). In Dumfries and Galloway, a rural region in the south west of Scotland, levels of overweight/obesity and physical inactivity are particularly high: 68% of adults and 27.5% of children are overweight or obese. In fact, 18.8% of children are at a level of overweight or obesity that may warrant referral to child healthy weight services, and only 60% of adults and 20.4% of school pupils in the region met the Chief Medical Officer's recommendations for physical activity in 2015, the joint lowest proportion in Scotland (Noakes, 2016; DG Health and Wellbeing, 2018).

Obesity has therefore become a primary focus of public health actions, with physical activity and healthy eating being deemed the main routes to both preventing and tackling the problem (Van Sluijs et al, 2007). Methods to reduce obesity and improve diet and physical activity levels, are highly debated, both academically and in public discourse, receiving so much attention that some talk of there being a 'policy cacophony' concerning obesity (Lang and Rayner, 2007). While public health approaches to tackling obesity have traditionally centred on the dissemination of information, evidence strongly suggests that this alone is insufficient (The Scottish Government, 2010). Current approaches are being criticised for their overly narrow analysis of obesity which fails to consider the complexity and breadth of its drivers (The Scottish Government, 2010).

The determinants of obesity are increasingly recognised as being multiple and complex (Affenito et al, 2012). Amongst other factors, both an 'obesogenic environment' and a lack of interest in diet and physical activity have been found to have negative impacts on an individual's interaction with food and physical activity (Government Office for Science, 2007; Teixeira et al, 2012). However, it could be argued that the development of programmes and interventions has not kept up with this broader recognition and it can be suggested that there is a need for a more innovative approach which reflects the holistic and complex nature of obesity determinants.

As a contemporary and inclusive concept, the notion of food and physical literacy (hereafter FPL) implies the amalgamation of two relatively under-researched concepts: 'food literacy' (Vidgen, 2016) and 'physical literacy' (Whitehead, 2010). The merging of the concepts by Health and Wellbeing Specialists in Dumfries and Galloway recognises that both diet quality and physical activity are requirements for the pursuit of a healthy lifestyle. Combining the definition of each theory, FPL may therefore be described as having 'the motivation, confidence, knowledge, understanding and competence to value, feel empowered by and be responsible for diet quality and engagement in physical activity throughout life' (Vidgen, 2016; Whitehead, 2010).

FPL can be divided into three equally significant dimensions: the physical dimension, which includes tangible characteristics such as competence, movement skills and eating patterns; the cognitive dimension, which includes knowledge, skills and understanding of food and

physical activity, and the affective dimension, which focuses on less tangible qualities such as an individual's motivation and empowerment in relation to food and physical activity choices. The environment in which these dimensions interact is also taken into account. The links between these dimensions is of central importance as it recognises the intricate and intertwined nature of our mind and body (Whitehead, 2001).

The most overlooked dimension and one which is critical to successful behaviour-change is arguably, the affective (IPLA, 2014). This is an amalgam of, for example, motivational, engagement, empowerment and resilience-based elements (Whitehead, 2010). It appreciates that each individual's experience with physical activity and healthy eating is unique while striving for people of all ages to develop an intrinsic value towards these behaviours (Whitehead, 2010). Individuals who are food and physically literate may be more likely to want to participate in physical activity, make healthy food choices and will feel confident and able to do so.

Aim of this study

FPL is relatively new conceptually, and implies the coming together of theories which are not necessarily well understood in a practical context (Longmuir, 2016). The concept has yet to be validated by the various health and wellbeing professionals expected to use it. Such individuals can be seen as a 'secondary audience' as they can act as gatekeepers to the change group (service users) whom would be considered the primary audience (Scott and Higgins, 2012, Parvanta et al, 2011).

This paper explores the perspectives of various secondary audiences within the health and wellbeing workforce. It aims to explore how accessible such professionals think the concept of FPL is, and what its potential effect on service delivery might be, in relation to the delivery of sports coaching, primary care consultations, physical activity and healthy eating interventions, and teaching, for example. Gathering insight in terms of health and wellbeing professionals' initial opinions, whether they think the concept is applicable to their work, and what support they may require if the concept was to be taken forward, thus formed the core aims of this investigation.

Methods

The research was carried out by the University of Glasgow in partnership with two Health and Wellbeing Specialists ¹from NHS Dumfries and Galloway who had already started to develop the concept of FPL and explore its potential value and use within the region. In order to introduce the concept of FPL to the wider health and wellbeing workforce, the Health and Wellbeing Specialists organised four workshops in different areas across the

¹ The role of 'Health and Wellbeing Specialists' has emerged over the past 5 years within the UK health workforce. These individuals tend to be located either within the National Health Service (NHS) or local government and tend to work within the professional disciplinary context of 'public health'.

region and requested that the research took place directly after each workshop as a way of collating initial opinions on the concept. Thus, this required a method which would be able to capture the thoughts and feelings of the participants in a natural way which flowed from, or was integrated into, the workshop discussions. Focus groups and a questionnaire were a natural choice to enable this.

Sample

Participants were accessed and recruited by the two Health and Wellbeing Specialists that already had established networks with them. These included professionals with a background in: teaching, community development, public health, health and wellbeing, mental health, care and social support, active travel, and from a local sports club.

Sampling for the research project can therefore be seen as 'purposive', with a goal of obtaining participants so that those included are relevant to the research aims (Bryman, 2012, 418). A total of 36 professionals attended the workshops, with 34 participating in the subsequent research. This included 27 women and 7 men. The number of attendees at each focus group were as follows; Annan & Eskdale – 6, Nithsdale – 15, Stewartry – 7, Wigtownshire – 6.

The Pre-Research Workshop

NHS Dumfries and Galloway consists of four 'locality' areas. A workshop on FPL was held in each of these localities and participants were able to attend the one which was most convenient for them. Each workshop followed the same format, with the same presentation being given. In advance, participants were sent a brief overview of the concept of FPL together with their invitation to the event. The overview proposed that FPL could offer an inclusive approach to building an individuals' potential to be physically active and be responsible for their quality of their diet, and explained literacy as a social practice. It also contained a graphic of the three dimensions- physical, cognitive and affective - giving examples of qualities which might sit within each of these.

The workshop was led by the Health and Wellbeing Specialists, and consisted of a PowerPoint presentation which highlighted the need for a new approach to food and physical activity by presenting local and national statistics of inactivity and obesity. A definition of FPL was thereafter presented and explored as potentially offering a new approach to tackle the issue of obesity by improving diet and physical activity levels. The workshop also included activities concerning an individual's engagement with food and physical activity as well as provided an opportunity for reflection on why some service users' progress with this behaviour change while others do not. These activities highlighted the importance of the 'affective dimension' within a holistic approach. The lesson plan for the workshop is provided in Table 1 and gives detail on the structure of the workshop and the information presented.

[Table 1 about here]

Focus Group and Questionnaire

The dynamic of a focus group means that participants can be prompted by what others say and can feed off the discussion, allowing the elicitation of a wide variety of views (Bryman, 2012). Responses were recorded by hand by the researcher to maintain the relaxed, informal atmosphere of the session. Additionally, at two of the workshops, a co-researcher working with the two Health and Wellbeing Specialists was employed to record quotes from the group. The focus groups, which lasted 30 minutes, set the following themes: professionals' initial opinions on the concept; how applicable they felt it was to their own practice; and what the barriers and facilitators to the advancement of the concept may be. General discussions regarding how food and physical activity issues should be approached with service users were also able to be generated. The full set of themes used in the focus group can be found in table 2.

After the focus group, participants were given approximately 10 minutes to fill out a short qualitative questionnaire. This provided an opportunity to reflect individually on what they had learned and discussed in the workshop and the preceding focus group, giving participants the chance to finalise any opinions or raise any points that they either did not feel comfortable saying or did not get a chance to say in the group setting. The material generated from the questionnaire supplemented discussions from the focus group, whilst also providing a method of triangulation by allowing data collected in the focus group to be validated. The questions included the questionnaire can also be found in table 2.

[Table 2 about here]

Analysis

In a study such as this, a researcher's pre-existing ideas and theories cannot be fully separated from the research itself, having an impact both on the questions put to the participants and perceptions of their responses (Gray, 2013). In this study, it was deemed important to allow insights and themes to emerge throughout the analysis process, with no use of a 'prior hypothesis' (Silverman, 2006, p96). Thematic analysis was employed to allow the data findings to 'speak for themselves', drawing on emerging patterns that were present in the data (Grbich, 2007, p32).

Findings

Findings from the study are presented in relation to three key themes; the need for food and physical literacy, barriers to concept advancement, and the ideal prerequisites for concept advancement.

Need for Food and Physical Literacy

The majority of participants (32/34) supported the proposition that efforts needed to be extended to combat food and physical activity related problems. One participant felt that there are “so many issues about food that need addressed and supported”. Of those with a similar perspective, many (23) were overtly supportive about the direction in which a FPL approach was heading. For example, one participant wrote in the questionnaire; ‘New concepts required + glad we are now looking at things in a more holistic way’. The affective dimension in particular was heavily discussed in both the questionnaire responses and the focus groups and was recognised as being the most unique element of the approach. In the questionnaire, one participant wrote; “The 3 elements of the literacy all have importance for effective engagement and positive behaviour change, however the ‘holistic’ approach places more emphasis on the ‘affective’ element which is the area I feel more detailed participation needs to be done”.

Other participants (11) were less supportive of the concept, with a number of (5) professionals stating it did not offer fresh ideas. One participant noted in the questionnaire, “I think to some extent I am already using some of the 3 key points”, with another writing they “Already use this type of approach where we instigate change in individuals’ behaviours by starting with them at ‘their’ start point”. Others(6) felt that the concept was not current enough, with one professional framing it as “backwards”. Some(3) of these participants felt that dividing the concept into dimensions and giving disproportionate weight to any one of these domains without being sensitive to the needs of each individual was inappropriate. Rather, a more holistic and needs led approach was favoured, with comments referring to the dimensions of the concept as being similar to the division between mental health and physical health, one participant stated in a focus group this was “something that already happened and wanted to move away from”. Another participant in the focus group added, “we don’t look at things in silos anymore”.

Barriers

Several possible barriers to the advancement of FPL were cited. When participants were asked to give their initial opinions on the concept, a number of those raised pointed towards issues with the naming of the concept.

Many (14) participants felt that the title was unnecessarily complicated, with one professional stating during their focus group that they thought it was a, “...poncey title for what it is”.² Extending this notion, some participants felt the concept might not be accessible to a lay audience; “if professionals are having to think about what it is, then is it transferable?” Specifically, the use of the word ‘literacy’ appeared to be problematic, with one participant saying during a focus group that the use of the word “undermines illiterate people and makes them seem less valuable” which was followed by the statement “terminology can leave people behind”.

² Poncey is a colloquial English language term for something which could be considered pretentious.

Many (7) who supported the concept in principle felt that its scope was too narrow, and called for an approach which included more health issues and topics. Several comments were made in the questionnaire returns along these lines: "I think the approach could be adopted for a generic approach"; "I believe a wider approach to 'health literacy' is worth exploration"; "Extension of this concept in a broader sense to consider other aspects of health and wellbeing"

Another barrier identified was the perceived intangibility of the concept as a substantial number (12) of participants struggled to see the practical application of the concept. Several participants stated that if they were to consider taking the approach forward they would need more concrete examples of its application, with requests to see how this would work in their specific geographical context. For example, one participant stated in the questionnaire that they needed "clarification of how this fits with [Dumfries and Galloway]".

Ideal prerequisites for the advancement of the concept

Participants recognised certain factors as facilitators for the advancement of FPL. The subject of partnerships emerged at numerous intervals in the discussion of how the concept of FPL may work practically. One participant felt that disciplines "need to be singing from the same hymn sheet so that one doesn't undo the work of another". Partnerships were predicted to be particularly beneficial for a FPL approach due to its potential to enable "access to other agencies to share skills and resources".

Participants also felt that having professionals from a wide range of backgrounds involved in the discussion of food and physical activity related problems "enabled a different type of conversation", with one participant claiming "it opened up my way of thinking". When asked what might allow them to take this approach forward, a number of (7) participants felt that multidisciplinary working and the opportunity to have discussions with those working in other disciplines would be beneficial, one participant wrote; "opportunities to discuss concept and possible increase my knowledge and skills regarding health literacy."

Additionally, several participants (4) simply noted the need for "resources" or "tools" in response to being asked what they might need to take the concept forward. Service specific resources, such as those needed for cooking classes, were suggested, for example; "resources for better cooking again in small groups". Some (5) participants felt that a resource which enabled communication between different professionals would be of use, furthering the findings of their desire for a partnership approach. This included suggestions for "a networking app", "a forum" and a "new group".

Other ways of advancing the concept included calls for changes to the way in which health promotion initiatives are often funded. One participant stated in their questionnaire return that the concept required "people at the top - senior managers and politicians - to look at the long term and less at short term targets". Thus participants felt that the demand to evidence short term achievements is not always suitable when working with long term behaviour change. It was felt that recognition of this in funding requirements may be required to implement FPL successfully. Time and staff were also commonly recognised as important facilitators for taking the concept of FPL forward.

Discussion

In this study, formative research was used as a tool to gauge the initial opinions and potential needs of a target audience concerning the concept of FPL. Through the use of focus groups and questionnaire evidence, this study has managed to identify opinions as to whether the concept of FPL has utility, possible barriers to its use, and prerequisites which would be advantageous were the approach to be implemented.

A primary condition for professionals implementing what has been learned is the desire for change and the need for new ideas (Harwell, 2003). The concept of FPL was put forward in the workshops as perhaps having the potential to alter the way in which local professionals approach food and physical activity with their service users, in the hope of making a bigger impact than of present. The participants' reactions to the concept were mixed, with a number (11) showing a degree of opposition to the new approach, aligning with literature that identifies resistance to change as a key feature in professional learning (Gardner, 2006; Schein, 1996). This resistance was expressed in two ways: first, the concept was not unique enough; and second, the characteristics of the concept were outdated.

That said, and despite these concerns, a substantial number (23) of participants suggested that they were open to new concepts, and favoured the inclusive nature of FPL, with 12 participants indicating this as one of their key learning outcomes of the session. This suggests that the workshop was important in terms of highlighting the value of more inclusive concepts, supporting studies which have also identified the dissemination of information as a key period of influence (Yelon et al, 2004). However, a lack of consensus between the participants as to whether the concept was required suggests more needs to be done to persuade the local workforce that the implementation of FPL is both necessary and beneficial.

Our study highlighted three main areas of concern which may pose barriers to the advancement of the concept. First, the terminology, and in particular the use of the word 'literacy' was found to be a likely barrier to many health and wellbeing professionals. Some participants felt that the term was too esoteric, concurring with other research which has found some public health terminology to be problematic (Whitelaw et al, 2006). Professionals also wanted to ensure that the concept could be understood by service users as a 'public facing' message.

Secondly, participants were concerned that introducing a concept which focussed solely on food and physical activity issues was not inclusive enough. There were numerous calls, across the different focus groups, for the characteristics of FPL should be expanded towards a broader notions of health literacy. The 'affective' dimensions of the concept were felt to offer the most potential, and formed the centre of many of the discussion points. Nevertheless, participants felt that solely applying the concept to food and physical activity was not fully reflective of a holistic approach.

A third possible barrier was the perceived lack of tangibility. Studies show that learners are more likely to adopt ideas if the content seems transferable to their workplace and has

practical application (Garet et al, 2001; Harwell, 2003; Yelon et al, 2004). Participants in this study felt that if exploration of the concept was to progress further, they would need concrete examples of how the concept could be translated into practice locally. This, for example, might include consideration of how it might apply in contexts such as 1-1 behaviour change interactions, group based work and broad population level campaigns.

Despite these concerns, participants were open to further discussion and identified some potential facilitators of progress. These included the importance of common goals and a shared vision between disciplines. The benefits of partnership working were often mentioned as a means of reducing duplication and assisting with cost (Joffres et al, 2004; Kuper et al, 2008). Partnerships also give professionals the confidence to engage in work which is outside their usual remit, by knowing that there is a wider support network. Participants evidenced their desire for collaboration by highlighting the value of cross-disciplinary conversation. Personal contact can be a powerful influence on successful integrated working (Lucidarme et al, 2014) as can be opportunities for professionals to come together across disciplines to develop shared meanings (Liberati et al, 2016; Stein and Rieder, 2009).

Resources which can improve 'delivery channels' have been identified by professionals as being a facilitator to implementing new programmes in health promotion and were seen as central to advancing the concept of FPL (Scott and Higgins, 2012). Further research may look to draw out in more depth the specifics of the resources required, paying particular attention to those which may facilitate collaborative working.

Consistent with the findings of Whitelaw et al's (2017) research, participants in this study highlighted how the way in which public health initiatives are funded may have consequences for the effectiveness of services. Participants felt that the pressure to meet funding targets can distract services from trying to make more substantial changes with service users and consequently may affect the implementation of FPL. However, apart from additional time to embed the approach and make the initial contact it was felt that an immense amount of change would not be required, rather FPL would contribute to and enhance existing efforts and shape the direction of those of the future.

Overall, study findings provide useful information for the future, concurring with the wider literature which suggests that professionals are 'application-minded' (Yelon et al, 2004). Key principles to consider in future work include the importance of a holistic approach, integrated working, personalised care, and the need to work harder to understand the complexities of individual human behaviour. The affective domain, and its ability to work alongside these principles increased the appeal of the concept of FPL. Principles such as these are currently being advanced at a wider policy level both in Scotland and throughout the UK, suggesting that they may be at the forefront of professionals' thinking. Notably, an increasing number of policy developments as reflected in a recent Scottish Government document, '*Public Health Priorities for Scotland*' (The Scottish Government, 2018a) are adopting a more holistic approach to tackling the issue of obesity with increased recognition of its multifaceted nature. There are also early indications of the concept of physical Literacy itself becoming part of these developments, with mention being made of

this idea within the recent publication *A More Active Scotland: Scotland's Physical Activity Delivery Plan* (The Scottish Government, 2018b).

Conclusion

The issue of obesity continues to be a major health issue with associated concerns over the efficacy and sensitivity of approaches devised to address it. In this context, the notion of food and physical literacy is being proposed as providing a novel and sensitive resource for thought and for future action. This research marks the beginning of an exploration of the potential acceptability and utility of the approach. It recognises the importance of working with a wide range of professionals from the earliest stage possible and looking to adapt concept development to their needs. Using such an approach, this study was able to identify key areas which should be addressed if the concept is to be taken forward, providing a clearer vision for concept development. Research findings evidence how the concept has a sufficiently high level of resonance (proof of the concept) amongst study participants locally that provides a foundation on which further work can be based.

References

- Affenito SG, Franko DL, Striegel-Moore RH, Thompson D (2012) Behavioral Determinants of Obesity: Research Findings and Policy Implications. *Journal of Obesity* 2012: 1-4
- Bryman A (2012) *Social research methods*. 4th Ed. Oxford: Oxford University Press.
- Castle A (2015) The Scottish Parliament: SPICe Briefing: Obesity in Scotland. Available at: https://www.parliament.scot/ResearchBriefingsAndFactSheets/S4/SB_15-01_Obesity_in_Scotland.pdf (accessed 17th July 2018)
- DG Health and Wellbeing (2018) "Dumfries & Galloway School Physical Activity and Wellbeing Survey 2017", NHS Dumfries and Galloway/Dumfries and Galloway Council.
- Gardner H (2006) *Changing Minds: The Art and Science of Changing Our Own and Other People's Minds*. Boston: Harvard Business School Press.
- Garet MS, Porter AC, Desimone L, Birman BF and Yoon KS (2001) What Makes Professional Development Effective? Results From a National Sample of Teachers. *American Educational Research Journal* 38 (4): 915-945.
- Gray DE, (2013) *Doing Research in the Real World*. 3rd Ed. London: SAGE Publications
- Government Office for Science (2007) Foresight: Tackling Obesities: Future Choices- Obesogenic Environments-Evidence Review. Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/295681/07-735-obesogenic-environments-review.pdf (accessed 18th March 2017)
- Grbich, C. 2007. *Qualitative data analysis: an introduction*. London: SAGE Publications
- Harwell SH (2003) Teacher Professional Development: It's Not an Event, It's a Process. Available at: <http://www.northernnc.on.ca/leid/docs/teacher%20professional%20development.pdf> (accessed 6 February 2019)
- IPLA (2014) Frequently Asked Questions. Available at: <https://www.physical-literacy.org.uk/about/frequently-asked-questions/> (accessed 2nd August 2018)
- ISD Scotland (2015) Primary 1 Body Mass Index (BMI) Statistics. Available at: <http://www.isdscotland.org/Health-Topics/Child-Health/Publications/2015-02-17/2015-02-17-P1-BMI-Report.pdf> (accessed 18th July 2018)
- Joffres C, Heath S, Farquharson J, Barkhouse K, Hood R, Latter C and Maclean DR (2004). Defining and operationalizing capacity for heart health promotion in Nova Scotia, Canada. *Health Promotion International* 19(1): 39-49.
- Kuper A, Reves S and Levinson W (2008) An introduction to reading and appraising qualitative research. *BMJ* 337 (288)
- Lang T and Rayner G (2007) Overcoming policy cacophony on obesity: an ecological public health framework for policymakers. *Obesity Reviews* 8(1):165-181.
- Liberati EG, Gorli M and Scaratti G. (2016) Invisible walls within multidisciplinary teams: Disciplinary boundaries and their effects on integrated care. *Social Science and Medicine* 150: 31-39.
- Longmuir PE. (2016) Top 10 Research Questions Related to Physical Literacy. *Research Quarterly for Exercise and Sport*. 87 (1): 28-35
- Lucidarme S, Marlier M, Cardon G, De Bourdeaudhuij I, and Willem, A. (2014). Critical success factors for physical activity promotion through community partnerships. *International Journal of Public Health* 59: 51-60.

- Noakes, G. (2016) *Scottish Health Survey: 2015 Health Board Results*. Available at: <http://www.dg-change.org.uk/wp-content/uploads/2017/01/20161026-Briefing-Note-SHeS-2016.pdf> (accessed 23rd October 2018)
- Parvanta C, Nelson DE, Parvanta SA and Harner RN (2011) *Essentials of Public Health Communication*. Sudbury: Jones & Bartlett Learning.
- Schein EH (1996) Kurt Lewin's Change Theory in the Field and in the Classroom: Notes Toward a Model of Managed Learning. *Systems Practice* 9 (1): 27-47.
- Scott JE and Higgins JW (2012) Upstream Social Marketing: Exploring the Experiences of Recreation Professionals in Delivering Physical Activity to Low-Income Citizens. *Social Marketing Quarterly* 18(2): 112 -123.
- Silverman D (2006) *Interpreting Qualitative Data*. 3rd Edition. London: SAGE Publications.
- Stein VK and Rieder A. (2009) Integrated care at the crossroads—defining the way forward. *International Journal of Integrated Care* 9: 1-7.
- Teixeira PJ, Carraca EV, Markland D, Silva MN and Ryan RM. (2012). Exercise, physical activity, and self-determination theory: A systematic review. *The International Journal of Behavioral Nutrition and Physical Activity* 9(78)
- The Scottish Government (2010) Preventing Overweight and Obesity In Scotland: A Route Map Towards Healthy Weight. Available at: <http://www.gov.scot/Resource/Doc/302783/0094795.pdf> (accessed 17th July 2018)
- The Scottish Government (2018a) “A More Active Scotland: Scotland’s Physical Activity Delivery Plan”. Available at: <https://beta.gov.scot/binaries/content/documents/govscot/publications/publication/2018/07/active-scotland-delivery-plan/documents/00537494-pdf/00537494-pdf/govscot:document/> (accessed 23rd October 2018)
- The Scottish Government (2018b) “Public Health Priorities for Scotland”. Available at: <https://www.gov.scot/Resource/0053/00536757.pdf> (accessed 23rd October 2018)
- Van Sluijs EMF, McMinn AM and Griffen SJ (2007) Effectiveness of interventions to promote physical activity in children and adolescents: systematic review of controlled trials. *BMJ* 335(7622): 703.
- Vidgen H (2016) *Food Literacy: Key Concepts for health and education*. New York: Routledge
- Whitehead M (2001) The Concept of Physical Literacy. *European Journal of Physical Education* 6(2): 127-138.
- Whitehead M (2010) *Physical Literacy: Throughout the lifecourse*. London and New York: Routledge.
- Whitelaw S, Martin C, Kerr A, Wimbush E (2006) An evaluation of the Health Promoting Health Service Framework: the implementation of a settings based approach within the NHS in Scotland. *Health Promotion International* 21(2): 136-144
- Whitelaw S, Topping C, McCoy M and Turpie L (2017) Promoting integration within the public health domain of physical activity promotion: Insights from a UK case study. *Journal of Integrated Care* 25(3): 174-185.
- Yelon S, Sheppard L and Sleight D (2004) Intention to transfer: How do Autonomous Professionals Become Motivated to Use New Ideas. *Performance Improvement Quarterly* 17(2): 82-103.

Table 1 Lesson Plan for Pre-Research Workshop

Time	Objective	Action
5 -10 minutes	Remind participants about research element and gain consent.	<ul style="list-style-type: none"> • Discuss research. • Hand out plain language statement for the research and consent form. • Collect consent forms.
5 minutes	Inform participants of statistics surrounding physical activity and obesity, highlighting that current interventions are not effective.	<ul style="list-style-type: none"> • Start PowerPoint presentation. • Discuss physical activity and obesity statistics and put forward argument that a new holistic approach is needed.
5 minutes	Make participants aware of session outcomes	<p>Discuss anticipated outcomes.</p> <p>Outcomes:</p> <ol style="list-style-type: none"> 1. To develop an awareness and understanding of food and physical literacy 2. To reflect on what we already do in relation to food and physical literacy and why. 3. To consider what else may be done to develop our own and others food and physical literacy
5-10 minutes	Get participants to think about significant instances/other people that have affected their involvement in physical activity or eating well.	Activity 1. Plot key events and factors on own timeline to represent your personal engagement with physical activity and eating.
5 - 10 minutes	Get participants to reflect on the multifaceted reasons as to why people participate/do not participate in physical activity or eating well.	<ul style="list-style-type: none"> • Activity 2: In pairs, discuss why some people participate in eating well and physical activity, and others do not. • Feedback to group.
10 – 15 minutes	Introduce participants to the concept of 'FPL'.	<p>Go through PowerPoint slides which discuss:</p> <ul style="list-style-type: none"> - What is literacy? - The definition of FPL. - The different dimensions involved in the concept - The importance of an individual's engagement with food and physical literacy
10 – 15 minutes	Highlight to participants that considering an individual's 'affective' dimension is currently absent in many interventions/approaches but can be an effective way to initiate behaviour change.	<ul style="list-style-type: none"> • Use a local example of the barriers found to stop girls from participating in physical activity to show the importance of the affective dimension. • Use a national example of an intervention which taps into elements of an individual's affective dimension and has been a successful approach to behaviour change.
10 minutes	To get participants to make the connection between their experiences, either professionally or personally, and the concept of Food and Physical Literacy.	<p>Activity 3:</p> <ul style="list-style-type: none"> • Ask participants what, in their experience, are the reasons that people make progress/do not make progress towards eating healthier and being more active. • Ask participants what they think about what they have heard so far.

10 minutes	<i>Break</i>	<i>Break</i>
5 minutes	Use 'Like a girl' campaign to show the importance of the affective dimension in participation levels	Show the YouTube clip of the 'Like a Girl' TV advertorial by the commercial brand 'always' which highlights a more holistic approach to girls participation in physical activity.
5 -10 minutes	Show participants where the concept of 'physical literacy' has been applied.	Use New Zealand's Physical Literacy model to show how their approach to physical activity covers each dimension of the concept.
30 minutes	Focus Group: Get participants to reflect on what they have learned, their opinions and its application	Focus group questions.
10 minutes	Questionnaire: Get participants to reflect on what they have learned, their opinions and its application	<ul style="list-style-type: none"> • Hand out post-event individual questionnaires. • Collect questionnaires back in once completed.

Table 2 Focus group and questionnaire questions

Focus Group Questions

1. What is your initial response to the 'concept' of Food and Physical Literacy and why?
2. Do you agree with the concept?
3. Can this be translated into your work?
4. If so, how would you do this?

Questionnaire Questions

1. What are the key learning points you will be taking away from this session?
2. What else do you need to know?
3. Can you use a Food and Physical Literacy approach? If so, what would this look like?
4. What might you need to take this approach forward?