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**BSc (Hons) Human Nutrition and Dietetics**

**Dissertation Academic Paper**

**Title:** Do home-delivered 'food boxes' have the potential to inspire healthier eating habits, raise nutritional awareness and increase cooking confidence

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**Student Declaration In Respect of Individual Work**

I declare that the whole of this work is the result of my individual effort and that all quotations from other authors have been acknowledged.

Dissertation submitted in partial fulfillment of the requirements of Cardiff Metropolitan University for the Degree of Bachelor of Science with Honours

**Signed** [REDACTED] *[Signature]* .....

**Date** ..... 10<sup>th</sup> May 2018.....

## Do home delivered 'food boxes' have the potential to inspire healthier eating habits, raise nutritional awareness and increase cooking confidence

### Abstract

**Background** – Rising obesity levels in the UK are cause for concern. The availability of convenience foods, limited individual cooking skills and lack of education about healthy meal preparation have been proposed as contributing factors. Home food delivery boxes can deliver healthy ingredients direct to the home along with step-by-step instructions on how to prepare a meal.

**Methods** – Students in the third year of BSc (Hons) Human Nutrition & Dietetic degree were selected, using purposeful sampling, to contribute to a focus group session. A cross-sectional study considered participant views on whether home food delivery boxes had the potential to inspire healthier eating habits and if there was potential to increase individual cooking confidence through using the box. The data was analysed to find common themes and these were compared with previous research.

**Results** – Six participants were involved in the study. In general, views were that home delivery meal boxes offered a healthier meal compared to typical convenience foods and additionally promoted awareness of aspects of the nutritional contents of an evening meal. Participant responses revealed that the boxes encouraged experimentation with cooking different styles of meals, which may not have previously been considered and suggested that a food delivery box could increase confidence in cooking through the inclusion of step-by-step instructions. All participants agreed that the meals took an appropriate amount of time to prepare. The focus group raised concerns over the cost of this service and the security of ensuring safe delivery of the food box.

**Conclusions** – This research established that home food delivery boxes do have the potential to deliver healthy meals to the home, can aid with an increase in nutritional awareness and raise individual cooking confidence. Key barriers to regular use of this service include the cost and security aspects concerning delivery. Participants felt the service would appeal to young professionals with an interest in healthy living. The time taken to prepare a meal using this service was lower than expected, suggesting that avoidance of cooking from scratch due to time pressures, could be challenged.

**Keywords** – home food delivery boxes, healthy eating, cooking confidence

## **Introduction**

A current public health concern in the UK focuses on rising obesity levels with recent data indicating that 63% of adults are in the overweight and obese category (Public Health England, 2017). Furthermore, research indicates that a third of those aged two to fifteen are following the same pattern, with younger children now reaching obese levels at a younger age and remaining obese for longer (Public Health England, 2017). Obesity in childhood has been linked with a five fold increased risk of remaining obese in adulthood (Simmonds et al, 2015). The burden of obesity has been linked to comorbidities including type 2 diabetes, cancer and heart conditions, which have in turn have been linked to decreased life expectancy (Calle, 1999). These trends place pressure on the NHS, with treatment costs directly linked to obesity averaging at over £6 billion in the year 2014-2015. Additionally, costs to the wider economy, were estimated at £27 billion (Public Health England, 2017). There are obvious health, social and financial implications associated with obesity and diet in the UK.

## **Benefits of healthy eating**

It is widely recognised that a balanced diet, following the principles of the Eatwell Guide, including wholegrain carbohydrates and five portions of fruit and vegetables daily (Public Health England, 2016), can reduce risks of developing obesity and related health conditions such as type 2 diabetes and cardiovascular diseases (CVD) (Khaodhiar et al, 1999). The World Health Organisation (WHO) advises that following the recommendations can lead to reductions of up to 80% in type 2 diabetes and 30% of all cancers (WHO, 2005). Additionally, diets high in saturated fat, sugar and salt have been linked to comorbidities and a reduction in life expectancy of nine years (Calle et al, 1999). As a preventative measure, in September 2015 WHO published recommendations on preventing childhood obesity. It was stated that prevention should be centred on three broad strategies; the reduction of obesogenic environments, education and guidance around healthy living and access to treatment (Swinburn & Vandevijvere, 2016).

## **The evening meal**

Research indicates that home-cooked family evening meals can lead to improved nutritional intake (Larson et al, 2013), and are more likely to meet the Eatwell guide principles (Public Health England, 2016). Findings suggest adolescents who regularly eat with their families are able to maintain healthier weight levels compared to those eating independently (Videon &

Manning, 2003). A more recent study established obesity was reduced by 12% in children and adolescents who participated in shared mealtime with their families (Hammons & Fiese, 2011). A subsequent study on fruit and vegetable intake amongst children, concluded that parental influence and meal planning had a direct impact on the number of portions consumed each day. Furthermore, it was found that consumption of these food groups increased during the evening meal if there was a selection of fresh produce available in the home (Trofholz et al, 2016). This evidence suggests that home cooked food is of an overall healthier quality compared to convenience food, with one study reporting an average reduction of 130 calories per meal when cooking from scratch (Reicks et al, 2014; Woflson & Bleich, 2014). Whereas, convenience foods, such as ready meals, have been shown to be high in fat, sugar and energy and lack key nutrients. A recent nutritional analysis of 32 European ready meals confirmed that the majority contained higher fat and lower carbohydrate levels when compared to recommendations (Kanzler et al, 2015).

A home-cooked evening meal is still considered by many Europeans to be the appropriate dinner (Murcott, 1995), yet formal family meals have been increasingly substituted with informal eating habits and snacking in the UK (Lean, 2006). This could be explained partly by changes in living habits; with reports stating that single person households have increased from 17% in 1971 to 28% in 2016 (Office for National Statistics, 2016). Single living households are reported to have a higher reliance on convenience foods compared to couples and family based households (Daniels & Glorieux, 2015), with time pressures noted as a significant contributing factor in the avoidance of cooking from scratch and the reliance of convenience options in the evening meal (Lavelle et al, 2016). Socio-economic factors also need to be considered towards the choices made. Reports suggest that low-income groups face barriers of cost, knowledge and accessibility to healthy food (Dibsdall et al, 2003). There is some suggestion that greater exposure to convenient food options will lead to 'fast food' items becoming the preferred evening meal option (Burgoine et al, 2016). The health belief model suggests that the environment we live in influences our perceived risks of ill health and consequently affects our barriers to change (Glanz et al, 2008). It may be that an individual feels unable to make healthy food choices, believing it easier, quicker and more appropriate to their surroundings to settle for convenience options. The increased availability of convenience options in economically deprived areas, along with a lack of perceived individual control could suggest that exposure to healthy options alongside reduced availability of 'junk' food choices, could increase healthy eating habits.

## **Cooking skills**

Limited cooking skills have been suggested as one of the reasons for the general population not meeting dietary guidelines (Wrieden et al, 2006). One possible explanation includes lack of education, both in meal preparation and towards nutritional awareness. Limited skills have been linked to a lack of confidence in the kitchen and a reliance on ready-meal consumption (Van Der Horst et al, 2011). Lack of cooking confidence has been associated with lack of education, whether through family input or through formal school education systems (Winkler & Turrell, 2010). Cooking is part of the national curriculum from the beginning of primary education up to the end of key stage 3, approximately aged 14. After this it becomes optional. Department for Education guidelines (2013) advise, by the end of year 9 students should be able to cook a range of dishes that demonstrate their ability to understand the components of a healthy balanced diet, including an appreciation of macro and micronutrients (British Nutrition Foundation, 2017). In reality, a 2010 OFSTED report found that not all schools could accommodate pupils in appropriate kitchen space and it was discovered instead that practical sessions were limited to a few instances each term (OFSTED, 2010). These guidelines have had devastating impacts on cooking confidence, with lack of practical education linked to a lack of confidence in meal preparation and experimentation in the kitchen (Winkler & Turrell, 2010).

Over the past decade, cooking shows and celebrity chefs have become more accessible through the television and social media. A randomized control trial with a small group of university students found this exposure does not always equate to home cooking practices, with results suggesting 'TV-chefs' may increase an individual's dietary knowledge but may not impact on dietary behavior (Clifford et al, 2009). Conversely, feedback from an 8-week cooking course run in the north of England, found that nutritional knowledge and cooking confidence significantly improved when participants were guided through preparation techniques to concoct quick, low-cost and healthy meals (Hutchinson et al, 2016). Similar results were revealed in a 6-week healthy eating programme with socioeconomic deprived individuals. Participants felt their confidence had increased after attending the sessions and they had reduced their ready-meal consumption and developed healthier eating patterns four months after the course had finished (Garcia et al, 2017). A study examining UK cooking skills found that 10% of people admitted to poor skills and cited this as a factor in limiting their food choices, with additional research showing that cooking confidence was most reduced in low socioeconomic groups (European Food Information Council, 1999). This research

demonstrates the benefits of general and focused education around meal preparation alongside the opportunity of 'hands-on' practice.

### **Home food delivery**

Home food delivery services have increased considerably in recent years (Pan et al, 2017). There are several schemes including meals-on-wheels, therapeutic meal delivery services, home delivery grocery shopping and self-cook food boxes. One suggested benefit of using home delivery services is a reduction in access to high fat, sugar and salt items, typically chosen as impulse purchases (Gorin et al, 2007). The study suggests by using home delivery services, intake can be more controlled compared to visiting food outlets. When customised meals and snacks were delivered to overweight and obese adolescents at risk of CVD for a period of eight weeks, participant total cholesterol measurements showed clinical improvements. These amendments reversed when deliveries stopped (De Ferranti et al, 2015). Furthermore vulnerable elderly adults have been shown to have nutritional risks decreased when receiving ready prepared meals direct to the home (Keller, 2006). This demonstrates that dietary recommendations can be improved when food is supplied direct to individuals.

Home food delivery boxes such as those supplied by 'Hello Fresh', provide a service which supplies ready measured ingredients to the home along with step-by-step instructions on how to prepare the dish. Customers can browse a selection of recipes on a website and choose those that appeal to their tastes.

### **Methods**

The aim of this research was to investigate whether home delivery food boxes have the potential to inspire healthy eating, raise nutritional awareness and increase cooking confidence.

### **Ethical Approval**

Ethical review was provided by Cardiff Metropolitan University Healthcare & Food Ethics Panel (Appendix 1).

## **Study Design**

This cross-sectional study, generating qualitative data, was intended to gain further understanding on group perceptions on the potential health and educational benefits to food delivery boxes. The study consisted of a practical cooking session followed directly by a focus group, where participants gave feedback on their experiences, which were digitally recorded. A focus group method was chosen for this study as this setting allows natural group dynamics to generate qualitative data (Gill et al, 2007). This process of data collection allows for a measurable way of discovering participant thoughts and feelings, and to gather opinions on a specific subject (Kruegar & Casey, 2014). Additionally, the focus group scenario allows for group interaction, with significance placed on the collective view rather than one individual's perceptions (Denscombe, 1998). A strict number of participants will ensure that the data collection period will be limited to one hour, giving every participant the opportunity to contribute to the discussion. A benefit of instigating the focus group directly after the practical is that the experience is fresh in the mind of the participants and they will have clearer recall.

This method of research only provides a snapshot of participant feelings at the current time (Ritchie & Lewis, 2003) and it would be advantageous to repeat the research exercise to analyse changing opinions. Unfortunately due to resource limitations, this research was carried out on a singular occasion. However, this approach to data collection does provide time benefits to both researcher and participant, by ensuring a one-time commitment to data collection.

There is a risk that people may be hesitant to give information in front of others (Denscombe, 1998) and it is the responsibility of the researcher to ensure all participants feel at ease and are able to discuss their beliefs without judgment from others. It has been proposed that focus groups are more effective when the participants are informed of the topic discussion beforehand (Rothwell et al, 2015), therefore three weeks before the planned investigation date, participants were sent information on the trial, along with the option to withdraw from the study (Appendix 2).

Other methods of data collection could be used in this investigation including individual interviews or questionnaires such as those used in the community cooking study measuring changes in practice (Herbert et al, 2014), but this method is more suited to a longer term

study, such as in this particular research which lasted 10 weeks and included a six month follow up. The focus group, cross-sectional method was found to be more suitable overall for study into the potential benefits of home food delivery boxes, for both participants and researcher.

### **Participants**

A methodological study of focus group participant size, found an average of eight contributors per study (Carlsen & Glenton, 2011). For this study six participants will be involved, as this will ensure costs are kept to a minimum when ordering food boxes from 'Hello Fresh' alongside meeting the realistic constraints of an undergraduate project.

All six students are in the final year of the BSc (Hons) Human Nutrition & Dietetics degree. The benefit of using student dietitians is that all have awareness of health related food matters and associated issues such as environmental factors. They will therefore have an understanding of the nutritional content of a meal and can compare this to dietary recommendations, communicating their feedback during the data collection period (Krueger & Casey, 2014). By using purposive sampling, included participants will be able to contribute knowledgeably to this research question when compared to participants with limited knowledge (Robinson, 2014). A pre-existing group of volunteers were chosen for the study with all participants agreeing to discuss dietary issues openly within the group, thus aiding facilitation for the researcher. It would be additionally advantageous to carry out this research using participants with limited nutritional knowledge and low confidence and to compare results between the two groups. It would potentially then be possible to measure changes in individual confidence and knowledge through a series of before and after research investigations. Due to time constraints, it was decided to select participants from the degree course rather than members of the general public.

### **Data Collection**

Due to the proposed research method of using a focus group, this study was based on qualitative methodology. A topic guide was developed around the related aspects of this research to ensure that all relevant issues were covered (Ritchie & Lewis, 2003). The guide was established after reviewing the current evidence and was used as a tool to explore the key objectives of this research using a semi-structured approach (Ritchie & Lewis, 2003). By taking an interventionist role, supplementary questions linked to the topic guide could be added, such as "can you tell me more about that?" and "how did that make you feel?"



(Kitzinger, 1995), this can encourage further debate to the initial questions. Eight questions have been proposed as a starting point with the aim of covering all the objectives of the study (Appendix 3). To minimize maleficence, the data collection questions have been considered to avoid potentially sensitive subjects that may cause harm to participants. The questions asked are 'open style', as this has been demonstrated as the most effective method of obtaining large volumes of information and encouraging group debate (Kitzinger, 1995). The questions asked to participants concentrate around their experience of cooking using a 'Hello Fresh' box and their perceptions on whether this could lead to long-term healthier habits (Appendix 3).

No incentives were offered to participants for involvement in the study. Informed consent was obtained from participants before any research was undertaken (Appendix 2). This aims to ensure participant understanding of the process, the method of data collection and how the data will be used (Sudheesh et al, 2016). It will not be possible for any individual to be identified in the final transcript. A copy of the coded transcript was made available for the participants to view within a week of the focus group taking place, which ensured participant protection, demonstrating the confidentiality of collected data.

A pilot study of the data collection was asked with two people who have experience of using 'Hello Fresh'. The benefit of a pilot study is to allow any adaptations to the questions and will allow the option of suggestions for improvements to the style of questioning (Offredy & Vickers, 2013). A pilot study also demonstrated that the correct questions were asked to support satisfying the research question.

### **Statistical analysis**

The methodical analysis of qualitative data, including a detailed breakdown of the transcript, allows data to be coded and grouped. The data will be analysed using constant comparison assumption methods. Open coding was initially used to form common links and themes from participant feedback of relevant data to be included in this research. (Denscombe, 1998). This allows for similar and differing themes to emerge from the data collected and for connections between these to be developed (Offredy & Vickers, 2013). By counting the number of times certain themes emerge from the data, it will be possible to make associations from the evidence provided (Appendix 3). Common themes from the transcript will be compared to current research and recommendations will be made for future studies.

## **Results**

Six students took part in the practical activity and worked in pairs to cook three main meals. The meals were presented to and shared by all participants. A focus group session was undertaken after the tasting session and a full transcript of the discussion was created (Appendix 3). Relevant themes from the discussion are displayed below.

### **Healthy eating**

The majority of the participants agreed that the meals provided a healthy dish and contained a variety of nutrients. When asked on opinions on how healthy they thought the meals were the following responses were given.

*“Really healthy. It was well balanced. Ours was the veggie option ... it says on here that it’s three and a half portions of your five-a-day ... all it used was coconut milk and peanut butter so there was no fat apart from that” (ID A)*

*“I thought ours was really healthy, like the meat was lean, there wasn’t fat on the steak like there is with some steaks you get in the supermarket and lots of vegetables” (ID E)*

Participants also suggested that the ‘Hello Fresh’ method of cooking produced a healthier meal than typical ready-meals or take-away convenience foods.

*“It’s definitely a lot healthier than a lot of convenience meals out there” (ID E)*

*“And there’s no extra additives and preservatives... so that was good” (ID A)*

It was suggested that using a system such as ‘Hello Fresh’ placed higher awareness on what produce is actually consumed as part of an evening meal.

*“More of like a mindful way of eating” (ID E)*

*“... it prevents you from overeating ... a ready meal portion is quite small and sometimes says ‘this serves two people’ and you’d actually have it all to yourself, ... whereas with this you’ve actually spent time cooking ... want to sit down and enjoy it for the food it is and not just*

*something to fill you up quickly” (ID A)*

*“You’re bonding with the food cooking it” (ID E)*

### **Cooking Confidence**

Participants stated that using the box method of cooking could be beneficial in raising individual cooking confidence, particularly around meals that are not normally prepared in the home. Each meal comes with a detailed recipe card, with step-by-step instructions, and a detailed nutritional breakdown of each meal, including the portions of fruit & vegetable content.

*“different ethnicities of food ... seem a bit daunting but this encourages you ... to experiment with spices and things, it’s not too technical” (ID A)*

*“It was a really simple process...it just makes you able to do it all really quickly and easily” (ID A)*

*“It means you don’t have to have two or three pans going at the same time for someone who’s not that confident” (ID C)*

*“... if you had low confidence in your cooking ... thinking ‘I don’t even know if I know how to do this’ and ‘I’ve never even heard of this before and I’m not really sure that I’ll like it when I finish it’...” (ID F)*

### **Waste**

Each dish provided in the box was packaged in a brown paper bag. Individual ingredients such as pre-weighed spices were supplied in small plastic containers. ‘Hello Fresh’ state that this packaging is recyclable on their website and they are committed to reducing food waste (Hello Fresh, 2018).

*“They reduced the waste ... with certain ingredients, ... if you were just doing a recipe for yourself, ... if you were this sort of educated professional who’s cooking just for one ... you’ve got to buy a whole bag of carrots to use one. It does cut down on the waste that way and packaging ... it’s quite good” (ID A)*

## **Time**

Participants suggested that the box would suit those who are short on time for meal planning and preparation and that healthy food does not always lead to longer time spent cooking meals

*"It saves time with going to the supermarket and doing a shop as well ..."* (ID A)

*"... people who are busy ... young professionals who maybe don't have time to ... go shopping" (ID D)*

Four out of six participants agreed that the meals took less than thirty minutes to cook, which they believed to be an appropriate amount of time to be spent on meal preparation after a busy day...

*"Ours took about twenty minutes" (ID A)*

*"Ours did take about half an hour, if not just slightly less ... we were washing up in between" (ID E)*

*"I'd see it as something to look forwards to, if I was having a busy day at work ... I'd be like 'Ooh yeah, I'm going to experiment with this tonight'. ... treat it more as an activity as opposed to a means to an end of eating food" (ID A)*

*"... there is the misconception that healthy food takes a lot longer to cook" (ID A)*

Four participants agreed that the large portions in the food box could also lead to reduced meal preparation time for the next day making it an attractive option for busy people.

*"For someone who is a professional as well and is quite busy, it would be good because you could take it for lunch the next day or have it for dinner the next day if you're lacking time" (ID E)*

## **Barriers**

Costs of the box were universally stated as the main barrier to using this method of meal preparation regularly

*"If it was £10, then I'd maybe do it a little bit often. So maybe once every couple of months as a treat" (ID E)*

*"I think that I would use it as a treat ... but I don't think I'd do it, if I had the money, all the time" (ID B)*

*"I think I would use it if the price was right but it isn't the kind of thing I'd do every week" (ID E)*

*"But I guess it depends on your salary. If you're ... a professional it depends on how much you'd usually spend on food. This might actually be the cheaper option..." (ID A)*

Two participants also mentioned receiving the box at home as a potential concern. 'Hello Fresh' require details of an alternative safe place when delivering the box, in case the customer is not home.

*"... it's having the box delivered, if you're a busy person who's never really home then ... (ID C)*

*"I wouldn't trust it being left outside, I'd think someone would take it" (ID E)*

Participants were also asked to complete a sliding scale question asking how they found the overall experience of cooking using the 'Hello Fresh' box (Appendix 3). All six participants agreed they found using the box a positive experience.

## **Discussion**

The aim of this research was to investigate whether home delivery food boxes offer a potential way to inspire healthier eating habits, raise nutritional awareness and increase cooking confidence. The evidence presented from the focus group suggests that home food delivery boxes do have the potential to meet this aim. Key barriers were described as the cost of the service and the security of the delivery.

This small-scale study gave some noteworthy data on participant feelings towards food box deliveries however the cross-sectional nature of this research has limitations. An observational study allows for descriptive research to be gathered, but does not allude to the cause. Within this study the potential benefits of the food box were debated but the issue of

why the general public opt for convenience options were not discussed in depth. This method of research only provides evidence of the current views at the current time, which may not reflect changing opinions (Ritchie & Lewis, 2003). A longitudinal based study could be carried out using repetition of this research, over a longer period of time. This would allow for enhanced evidence to be collected regarding participant feelings regarding progression in cooking confidence and allow for future investigation to any overall changes to everyday eating habits. Additionally, in order to better meet the objectives of this study, a practical session and focus group could be held with participants who have limited cooking skills and are unaware of healthy eating recommendations. This would potentially identify if nutritional education can be achieved through the use of a food box and the accompanying recipe cards in regards to people with limited nutritional knowledge. The generalisation of results found in this research could then be compared to results found in those with limited nutritional knowledge and cooking confidence. Due to time constraints this method was not followed but could be used as an aim of future research.

An additional limitation of the study was the small number of participants, and it may be of benefit to replicate the study in future with a greater number of participants. It was further apparent from the transcription that some members of the focus group were not as vocal as others and therefore the data recorded may not show the collective view, and instead may be limited (Ritchie & Lewis, 2003). Participants were prompted during the session to engage, and it may have been beneficial to question participants more around their desire to participate before research is undertaken (Ritchie & Lewis, 2003).

Key results from this research indicated that the meals provided by the 'Hello Fresh' service, were healthy, had potential to increase nutritional knowledge, took an adequate amount of time to prepare and reduced waste through recyclable materials.

Participant opinions that the meals provided were healthy correlates with previous research suggesting home delivered food is healthier compared to convenience produce (De Ferranti et al, 2015, Reicks et al, 2014, Keller, 2006). However, there are differences in the processes as one of these studies provided all of the day's meals, compared to the 'Hello Fresh' system, which supplies only the evening meal (De Ferrari et al, 2015). Participants in the cardiovascular study additionally received nutritional education around healthy eating, although this benefit was discussed and compared to the inclusion of recipe cards in the 'Hello

Fresh' method, it was not possible to compare identical methods.

Hands on cooking skills have been shown to increase knowledge and confidence (Hutchinson et al, 2016, Garcia et al, 2017). The practical element of preparing food has been shown to be more beneficial in behaviour change and education compared to a workbook exercise or observation alone (Herbert et al, 2014), suggesting that participation in a practical activity has greater potential to raise individual cooking confidence. It was not possible to demonstrate this aspect through this investigation as the participants all had high confidence in preparing meals. Greater evidence could be provided if the participants had low skills and confidence to begin with and this could be explored for future research. Participants agreed that the recipe cards and ready-measured ingredients in the food box, have the potential to increase knowledge and raise cooking confidence.

Participants generally agreed that the meals took an appropriate length of time to prepare and this is a key concern for those opting to cook from scratch (Lavelle et al, 2016). Participants agreed that the ready weighed ingredients and step-by-step instructions made the process of meal preparation easier and allowed them to concoct dishes they had previously untried. This evidence suggests that the use of a home food delivery box could potentially be of benefit by those with little free time to cook, yet with an interest in healthy eating.

Issues of food waste were discussed during the focus group session and participants generally agreed that the recyclable packaging and pre-measured ingredients could potentially reduce overall waste. This aspect of research was not explored in this research but the longer term benefits of using a home box delivery service in regards to waste reduction could be explored more fully in a future study.

The cost of the box was cited as the main barrier. It has been demonstrated that socio economic conditions impact on food choice (Burgoine et al, 2016) and it has also been shown that people from low socio economic backgrounds have the lowest cooking confidence and would perhaps benefit most from the educational aspect of the box (European Food Information Council, 1999). This would limit the potential of these boxes to change habits for those at higher risk of future ill health. Further research could be undertaken around the ability to make a more cost effective version of the box, including reduced cost ingredients

such as beans and pulses alongside cheaper cuts of meat. Although the box appealed to all participants, it was surprising that all stated that they would not use this service regularly as it would take away the enjoyment of browsing the supermarket and creating their own dishes. This result may be particular to nutrition students, with a keen interest in food and health, and it may be useful to repeat this study with those with no personal interest in nutrition to compare results.

To conclude, the 'Hello Fresh' food box was shown to be a helpful way to concoct new meals that may not have previously been considered. The recipes were found to be convenient to prepare and benefits of having ready measured ingredients have been identified as a way that may increase cooking confidence in those that are wary of creating new dishes. It was not possible to see whether long-term healthier eating habits would result from a home food delivery system without further study, but the benefits identified by participants suggested that the box had the potential to inspire healthier eating habits, raise nutritional awareness and increase cooking confidence.



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**Appendices** (see attached documents)

- 1 Ethical approval letter
- 2 Participant Information Sheet & Consent Form
- 3 Research Tool, Transcript & Sliding Scale Question
- 4 Poster