EXPLORING THE DEVELOPMENT OF AN ASSET-BASED INTERVENTION TO PROMOTE THE MAINTENANCE OF POSITIVE HEALTH BEHAVIOURS DURING TIMES OF STRESS AND CHALLENGE USING THE BEHAVIOUR CHANGE WHEEL

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Thesis submitted for the degree of Doctor of Philosophy

University of Stirling

February 2020

ABSTRACT

Political interest in asset-based health interventions has increased in the wake of the Christie Report (2011) on the future delivery of public services. The development of these type of interventions, however, has been slow and there has been little evaluation of those developed against health outcomes.

This thesis set out to redress that balance by choosing to explore the development of an asset-based intervention focussing on positive health behaviours. It used a systematised behaviour change intervention development tool (the Behaviour Change Wheel) to develop an intervention to help maintain breastfeeding despite difficulties.

Three studies were carried out for this thesis:

Study 1- A longitudinal study of over 200 people, found resilience to be predictive of the maintenance of a desired health behaviour.

Study 2 - A qualitative synthesis of 11 papers identified assets that conferred resilience in breastfeeding.

Study 3 – An in-depth focus group study of 47 women was used to test acceptability of the intervention. This study pointed to the use of targeted recruitment to ensure the intervention was going to be effective at narrowing health inequalities rather than widening them.

The thesis showed that the Behaviour Change Wheel (BCW) was an easy to use comprehensive intervention development tool. Assets were able to be mapped onto the COM-B framework. The overarching behaviour system (COM-B) at the centre of the wheel ensures behaviour is the focus of the intervention. Having health behaviour central to an asset intervention ensures a health outcome evaluation can be adopted easily. For the current intervention further testing is needed to determine effectiveness. Using a health behaviour to develop assets for maintenance is likely to also develop resilience for other future adversities.

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Chapter 1: **INTRODUCTION**

Over the last decade there has been increasing recognition that changes are needed to the way public services are delivered in Scotland. The Christie Report published in 2011 highlighted that the increasing demand upon public services was unsustainable and more investment into preventative up-stream programmes would be needed to relieve down-stream costs.

Around the same time, Sir Harry Burns, the chief medical officer for Scotland between 2005 and 2014, was championing the use of asset-based approaches for public health. Using this approach, he theorised a more preventative health service could be developed. In his 2009 and 2010 annual reports he challenged the healthcare services to develop more asset-based methods of delivery.

The problem is that few asset-based interventions have been developed. Additionally, those that have been developed have tended to be about community empowerment/co-production – rather than any health outcome.

This thesis sets out to redress the balance. It will carry out an intervention development study to explore how an asset-based intervention could be developed with a focus on health as the outcome. More specifically the thesis will focus on the maintenance of a positive health behaviour. It will look at what helps people to maintain a positive health behaviour and whether tools used within health behaviour, specifically the Behaviour Change Wheel, are appropriate for the development of an asset-based intervention.

Amendment: It should be noted that since this thesis was written a feasibility study for an asset-based intervention with breastfeeding as the health outcome has been published (Clarke et al., 2020). It is also known that a research group at Glasgow Caledonian University is working on developing an asset-based intervention for male sexual health using the Behaviour Change Wheel. This greater focus on health outcomes is welcome and necessary to address the lack of evidence around the effectiveness of asset-based interventions as identified in several systematic reviews (see Bortel et al., 2019; Morgan & Hernán, 2013; Rippon & South, 2017; Voorberg et al., 2015).

1.1 Why focus on positive health behaviours?

Health behaviours are patterns of behaviour that affect health (Conner & Norman, 2017). Health behaviours can either increase risk factors for ill health and disease or decrease them. For example, the risk factors for cardiovascular disease, the number one cause of all global deaths include raised blood pressure, high blood cholesterol, high blood glucose and being overweight/obese (World Health Organisation, 2017). Health behaviours such as eating a diet with reduced salt and fat, eating more fruit and vegetables and participating in regular physical activity reduce these risk factors (World Health Organisation, 2017). Behaviours like these that decrease risk factors can be described as positive health behaviours or 'healthy behaviours' since they have a positive outcome on health. The term 'positive health behaviour' and 'healthy behaviour' is used interchangeably and as such both terms will be used throughout this thesis to reflect behaviours known or theorised to reduce risks to health.

Health behaviours impact upon life expectancy. A paper published in 2004 in the Journal of the American Medical Association (JAMA) found that half of all deaths in the United States in the year 2000 could be attributed to behaviour (Mokdad

et al., 2004). Four behaviours, smoking, poor diet, physical activity and alcohol consumption accounted for just over one third (38.2%) of all the deaths. This now classic paper highlighted the importance of health behaviours. These same four behaviours were also highlighted as having a significant impact on longevity in a UK population (Khaw et al., 2008). The Khaw et al. (2008) study examined data from 20,244 men and women aged 45 to 79 living in Norfolk over a ten year period. None of the men or women in the sample had any known cancer or cardiovascular disease at baseline. This prospective population study found the four behaviours (smoking, fruit and veg intake, alcohol intake and physical activity) predicted a four-fold difference in mortality. From the results Khaw et al. (2008) predicted that people who did not smoke, who consumed at least five portions of fruit and veg a day, who drank one but less than fourteen units of alcohol each week, and were active at least 30 mins per day would live fourteen years longer. However, it is not just longevity that is important. Living a healthy life free of illness and disease is equally if not more important than the number of years lived.

Health behaviours impact not just longevity but also morbidity. Rises in the prevalence of cancer, diabetes and chronic obstructive pulmonary disease (COPD) can be attributed mostly to health behaviour (Brown et al, 2018). Cancer incidence has increased by 7% over the last decade (Brown et al., 2018) despite age-adjusted cancer mortality decreasing by 10% (ISD Scotland, 2018). Brown et al. (2018) attribute this increase in cancer incidence primarily to increased exposure to risk due to behaviour. They calculated that over four in ten cancer cases in Scotland in 2015 could have been prevented by changing health behaviours. The two highest risks identified were smoking and overweight/obesity, which were attributed to 18.2% and 6.8% respectively of all new cancer cases in Scotland in 2015 (Brown et al., 2018). Other notable risks include UV exposure (contributing 3.7% of new cases), insufficient fibre in diet (3.5%), alcohol (3.5%) and not breastfeeding (1.5% in women). These risks are all modifiable by adopting positive health behaviours such as not smoking; eating a

healthy diet; using sunscreen; drinking less alcohol; and (for women) breastfeeding.

Morbidity costs a country hugely in terms of productivity, medical costs and quality of life. On average a woman living in Scotland will live 62.6 years in good health and 18.4 years with poor health (Scottish Public Health Observatory, 2019b). A man lives slightly less years with ill health (14.7 years), but has lower life expectancy, 77 years compared to 81.1 years for women. Rayner and Scarborough (2005) estimated unhealthy diets alone cost £6 billion annually to the NHS and contribute to 10% of the morbidity and mortality in the UK.

The Scottish Government recognises these costs and the positive impact healthy behaviours could make: two of its six public health priorities specifically target the adoption of positive health behaviours (Scottish Government, 2018). The first to stop deaths, illness and admissions to hospital from smoking and alcohol consumption. The second, to reduce overweight/obesity with the subsequent health risks, by encouraging individuals to eat a healthy diet and be more physically active. Encouraging positive health behaviours is a public health priority not just in Scotland but across the world. The World Health Organisation states education and encouragement to adopt healthy lifestyles is an essential element to the prevention of non-communicable disease (World Health Organisation, 2020).

However, encouraging people to adopt and then maintain positive health behaviours is challenging and complex (see Section 1.6). Additionally, the burden of disease is not evenly spread through society and there are stark inequalities reflected by area and socioeconomic group. Examination of data shows those people living in areas with greater deprivation have the greatest burden of disease (Scottish Public Health Observatory, 2018a). A man living in the most affluent area of Scotland will experience 23.8 more years in good health than a man living in the least affluent area (NHS Scotland, 2015). People living in more deprived areas develop chronic illness earlier and die earlier. The Scottish Index

of Mulitple Deprivation (SIMD), which organises the whole of Scotland into small areas (known as datazones) then ranks these according to indicators of deprivation, shows that the 10% most deprived datazones carry over 50% of the burden of disease. Estimates suggest burden of disease across the whole of Scotland would be reduced by one third if all areas of Scotland attained the health experienced in the most affluent areas (The Scottish Public Health Observatory, 2018b). Asset-based approaches have been proposed as one way to tackle these inequalities. The next sections will discuss these in more detail.

1.2 Why develop asset-based interventions?

There is currently a political climate in Scotland which is wanting more asset-based interventions. The population in Scotland and across the UK is aging. From 1983 to 2018 there has been a 5% increase in the proportion of over 65's, growing from 14% to 19% of the total Scottish population (National Records of Scotland, 2019). Projected figures predict that there will be a 27% increase in the number of people over 75 between 2016 and 2026 and a 79% increase on the 2016 figures by 2041 (National Records of Scotland Web, 2017). This rapid acceleration in the proportion of elderly people will result in increasingly expensive healthcare costs. In 2011 The Christie Report, a report on the Commission of Public Services in Scotland was published. It estimated a rise in the cost of social care from £4.5 billion in 2010 to £8 billion in 2031 (Christie, 2011). This increase would be due to the number of elderly people. Elderly people unfortunately cost more. According to the Office for Budget Responsibility, a 75-year-old is three times more expensive and an 80-year-old is five times more expensive to treat than a 30-year-old (OBR, 2017).

These statistics highlight the need for re-thinking how constrained public finances are going to cope with this increased expenditure. In his report, Christie (2011) called for a radical change in the way services were delivered. Around the same time, Sir Harry Burns, was also emphasising the need to change the way

public health was delivered. He started championing the increase in the use of assets-based approaches (Garven et al., 2016).

Traditionally public services, including health, have employed a pathogenic or deficit model to deliver services. These models look at what is wrong or missing and try to 'fix' the problem. An asset approach takes a preventative approach to ill health, promoting positive health and well-being (Rippon and Hopkins, 2015). This thesis in not questioning the economic, political or social justice arguments for the asset-approach but sets them out briefly in this section to show the context in which this thesis is placed.

Asset approaches may help reduce growing public expenditure by reducing demand for services. It has been proposed that deficit models increase demand by engendering dependency (Staite, 2013). Recent academic studies reporting the level of 'inappropriate attendance' at emergency departments (McHale et al., 2013) alongside NHS England reports stating increased demand on services is partly due to public expectations (NHS England, 2017) support this view. An asset approach, on the other hand, encourages individuals and communities to have a greater focus on the conditions that promote health and to be more active in their own pursuit of health (Brooks & Kendall, 2013). This, in theory, should result in less dependency on health and welfare services and free up services for those most in need.

Despite needing an initial injection of money to develop asset approaches the investment in asset approaches will give a better return than deficit approaches according to Foot & Hopkins (2010). Asset approaches are upstream, preventative approaches which are known to be more cost-effective than reactive approaches (Owen et al., 2012). Christie (2011) suggests 'failure demand', where a service is reacting to needs which could have been addressed at an earlier timepoint, costs over forty percent more than a preventative intervention. These are all good economic arguments for developing an asset-

based approach, but it is not just economics that is driving the interest in asset-based approaches, improved well-being is also on the political agenda.

Well-being is a concept that has become enshrined in international policy documents (UK Government, 2014; Clifton, 2009; Bache & Scott, 2017). Policy documents such as the World Health Organisation's "Health 2020" document (WHO, 2013), Scottish Government documents (Scottish Government, 2011) and UK Government documents (South, 2015) are increasingly contextualising well-being in the context of an asset-based approach (García-Moya & Morgan, 2016). This is due to improved well-being being at the heart of asset approaches. Sir Harry Burns, recognised the importance of individuals feeling in control of their lives, how this impacted on their well-being which in turn affected their health (Burns, 2013). Asset approaches help individuals and communities to feel in control of their lives and their social environment (Garven et al., 2016).

Health inequalities are a major concern for governments in developed countries. In Scotland the Scottish Government have listed reducing inequalities in health as one of its major policies (Scottish Government, 2019). An asset-approach to health, with a focus on well-being, is seen as a way forward in helping to reduce health inequities (Morgan, 2014). To this end, Sir Harry Burns, challenged healthcare services to develop more asset-based methods of delivery (National Health Service in Scotland & Scottish Government, 2010; Scottish Government, 2011). This thesis is rooted in the current political climate and the call from Sir Harry Burns to develop asset-based healthcare services.

1.3 The Asset Approach

An asset approach is the idea that people and communities will be enabled to discover and use the strengths or assets they have within and around them in order to improve their individual and collective outcomes. The approach takes a positive view, looking at what a person or community has rather than what it does not have. Central to the approach is the individual or community being in

control of their life by discovering and developing their capacity and capability (Morgan et al., 2010).

The asset approach has its theoretical underpinnings within salutogenesis, an idea put forward by Antonovsky (1996). Salutogenesis looks at what makes people well, taking a positive approach to health rather than focussing on illness and the risk factors for disease. Antonovsky developed his theory of salutogenesis after observing how people coped with life in and after the concentration camps of Nazi Germany during the Second World War. He uses visual imagery describing life as a river to argue that health is a continuum rather than a health/ill-health dichotomy Antonovsky (1996):

> "we are all, always, in the dangerous river of life. The twin question is: How dangerous is *our* river? How well can we swim?"
>
> (Antonovsky, 1996, p14)

Antonovsky says we possess 'generalized resistance resources' (GRRs) which help us to cope with the stressors in life. The asset-approach to health takes this further by seeing health not simply a result of individual assets (or GRRs) but part of a wider community (Garven et al., 2016). Assets within the community can help buoy up individuals when an individual's reserves are low. Sticking with the imagery above, assets act as lifebuoys keeping 'heads above water'.

1.4 What is an asset?

In the section above, I gave a brief description of what the asset approach is but what exactly is an asset? According to the Cambridge English Dictionary (2019) an asset is a "useful or valuable quality, skill or person". In relation to health, an asset is defined as:

> *"any factor (or resource), which enhances the ability of individuals, groups, communities, populations, social systems and /or*

> *institutions to maintain and sustain health and wellbeing and to help to reduce health inequities."*
>
> *(Morgan and Ziglio, 2007, p.18)*

This definition is wide-reaching and as Morgan and Ziglio allude to, assets can be identified at different levels. This reflects the complex influences on health itself. The Dahlgren and Whitehead model of health (1991), shown in Figure 1-1, put forward the idea that the health of an individual is not just a product of the individual person but is also influenced by the physical and social surroundings. Assets are varied to reflect this complex interaction. They can be social, financial, physical and environmental but also can be opportunities, people and skills.

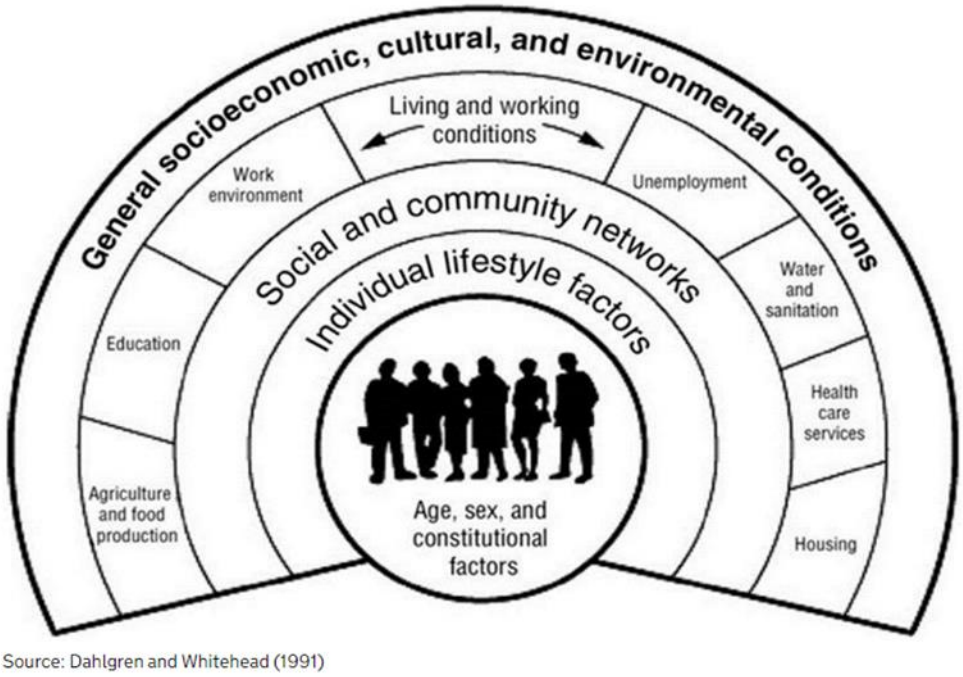


Figure 1-1 Dahlgren and Whitehead model of health

A young mother may take part in an exercise class, for instance, if she lives within a reasonable distance of the venue, has someone available who can look after her children (possibly a friend or partner) and has the motivation to attend. We can see from this example that there are physical (venue), social (babysitter) and psychological (motivation) assets that work together to enable her to attend an

exercise class. This simple example starts to scratch at the breadth and dynamic nature of health assets.

Table 1-1 below gives examples of the variety of assets organised by different levels.

Table 1-1 Examples of assets

Individual assets	**Community assets**	**Organisational or agency level assets**
Resilience	Supportive family and friendship networks	Environmental resources for promoting physical, mental and social health
Commitment to learning	Social capital	Employment opportunities and security
Self-esteem	Community cohesion	Opportunities for volunteering
Positive values	Harmony	Safe housing
Sense of contribution	Affinity groups	Political democracy
Sense of purpose		Social justice

[categories based on Garven et al., 2016]

1.5 Are there any problems to taking an asset-approach?

There has been little outright criticism of asset-based approaches. There is, however, recognition that the approach has some challenges that need to be addressed. Friedli (2013) challenges the ideology of those who promote the asset-based approach for public services, saying that by vehemently promoting the approach the eye has been taken off the real issues behind health

inequalities. Which is (she says) the balance of power between public services, communities and corporate interests (Friedli, 2013). She has cautioned that by promoting the use of asset-based approaches there is a danger that statutory services will be withdrawn. This has been acknowledged as a risk by those promoting asset-based approaches (Morgan, 2014). However, Morgan (2014) also points out that at a strategy level there is a commitment to support and commission asset-based ways of working.

There is, however, a lack of evidence for asset-based approaches in terms of health outcomes and economic savings. Despite the current political commitment to developing asset-based ways of working, Morgan (2014) warns without evaluation, political commitment will wane. One of the reasons for the lack of evidence may be that asset-based interventions developed so far have not had clear health outcomes. Co-production and co-creation are the dominant methods to date for the creation of asset-based interventions (Garven et al., 2016). There is nothing inherently wrong with co-production/co-creation as a concept. It is used as a way to include citizens/participants in shaping public service and interventions within their locality and is at the heart of community development (Garven et al., 2016). Co-production is one of the tenets of the asset approach and its use is thought to empower participants. However, a systematic review of 122 articles on co-production/ co-creation projects found that only 24 studies to clearly define any outcome (Voorberg et al., 2015) and the outcome for six of those projects was simply to increase citizen involvement. There were, however, 14 articles that did measure effectiveness, but this limited number led Voorberg et al. (2015) to state that they were unable to conclude whether the asset approach was beneficial or not. Similarly, Bortel et al. (2019), Morgan & Hernán, (2013), and Rippon & South, (2017) have all carried out reviews of asset-based interventions and point out the overall lack of evidence around the effectiveness of asset-based interventions. This concludes me to infer that intervention development methods need to be adapted to ensure asset-based interventions can be evaluated.

I propose that the lack of evidence from co-production/co-creation studies, so far, is due to a lack of systematisation. There is no standardised way of carrying out co-production (Voorberg et al., 2015), this can result in vague goals, poorly defined health outcomes (Bortel et al., 2019) and inconsistent description of the intervention itself (Pattoni, 2012).

This thesis aims to directly address the lack of systemisation of co-production and the resulting vague outcomes. I will do this by carrying out an intervention development study (Hoddinott, 2015). I will use methodology and tools that have been developed within health psychology and behaviour change implementation. I will use these to systematically develop an asset-based intervention. By using systemisation, I will show that this can be an aide to asset-based interventions ensuring greater consistent description and clearly focussed health outcomes. Thus, enabling greater replication and evaluation evidence to be accumulated.

1.6 The challenge of adopting and maintaining positive health behaviours

The intervention being developed in this thesis will focus on using an asset-approach to help maintain positive health behaviours. In section 1.1 above, I laid out the reasoning for the need to promote and encourage positive health behaviours. This section will look why this is a challenge.

Although information is a necessary first step, simply providing information is not enough to change people's behaviour. For example, the Health Education Population Survey for Scotland found that the percentage of people who knew that eating five portions of fruit and vegetables per day was recommended for health rose from 19% in 1996 to 59% in 2003 (Bassett et al., 2008). This 40% increase was credited to the consistent and simple message of '5-a-day' promoted by government, supermarkets and third sector health (Robertson, 2008). However, despite this large improvement in knowledge, only an 11%

increase in self-reported consumption of five portions of fruit and vegetables per day was reported over the same period: rising from 18% in 1996 to 29% in 2003 (Bassett et al., 2008). Similarly, a cross-sectional study in Australia, found that only 2 out of 10,561 women managed to adhere to all 13 commonly promoted dietary recommendations (Ball et al., 2004). These figures indicate that it's not just information that is needed to change behaviour for most people.

The way a message is delivered, can have an impact on people's thinking and intentions to change (see Robertson, 2008 for review), but the gap between intention to change and actual behaviour change remains wide. A meta-analysis carried out by Rhodes & Bruijn (2013) estimated 46% of people who intended to adopt public health guidance on physical activity did not manage to even initiate the behaviour, let alone continue with the behaviour. In a further meta-analysis that didn't restrict the type of health behaviour being considered, Webb & Sheeran (2006) found that a medium to large change in intention (d=0.66) only translated into a small to medium behaviour change (d=0.36).

Developing theory and interventions to bridge the intention-behaviour gap has become a challenging contemporary research problem. Instead of intentions directly feeding into observable behaviour, Schwarzer (2008) proposes there are post-intentional factors that determine the likelihood of a behaviour occurring. These include self-efficacy beliefs about being able to carry out the behaviour, beliefs that barriers can be overcome in order to maintain a behaviour, and the belief that recovery from a lapse is possible (Schwarzer, 2008). He proposes that action and coping planning should be included in health behaviour change theories to bridge the 'gap' (Schwarzer, 2008). He called this theory the Health Action Process Approach (HAPA). Schwarzer's HAPA theory holds a lot of weight. In a study examining physical exercise adherence in cardiac rehabilitation patients, planning mediated between intentions and behaviour (Sniehotta et al., 2005; Schwarzer, 2008).

Simply developing interventions to get people to change their thinking about a behaviour is not enough to initiate a behaviour. A review by de Ridder et al. (2017) on interventions targeting a healthy diet found that education interventions had a limited effect on actual behaviour, whereas interventions that targeted the environment and habits were more successful.

Once a behaviour is initiated, encouraging people to sustain that healthy behaviour is key to improving population health. Our understanding of how people maintain healthy behaviours is still underdeveloped and our evidence on behaviour sustainability in response to an intervention is weak (Kwasnicka et al., 2016). Current thinking is that for a health behaviour to become established long-term then it needs to become habitual: an action triggered by situational cues (Verplanken & Wood, 2006). Resources (both psychological and physical), environmental and social influences, as well as motivation and self-regulation are hypothesised to be key to the maintenance of behaviour (Kwasnicka et al., 2016). I propose these elements align with an asset approach and that developing an asset-approach to the maintenance of healthy behaviour makes sense.

1.7 Outline of thesis

The primary aim of this thesis is to explore the development of an asset-based intervention using the behaviour change wheel. A secondary aim nestled within that primary aim is to identify assets that enable people to maintain a health behaviour despite difficulties, thereby adding to the knowledge about what helps people maintain positive health behaviours as well as exploring the methodology for developing an outcome-focussed asset-based intervention.

Table 1-2 Thesis Outline

Chapter	Content
1	INTRODUCTION Rationale for thesis
2	STUDY 1: RESILIENCE AND HEALTH BEHAVIOURS The connection between the asset 'resilience' and health behaviour maintenance
3	RESILIENCE AND BREASTFEEDING The rationale for choosing breastfeeding behaviour as the positive health behaviour of interest for the thesis
4	APPROACHES TO INTERVENTION DEVELOPMENT This chapter discusses the choice of the Behaviour Change Wheel for the development of the intervention
5	STUDY 2: QUALITATIVE SYNTHESIS This chapter reports on the systematic search and subsequent qualitative synthesis of literature about what assets are used to maintain breastfeeding
6	INTERVENTION This chapter outlines the proposed intervention
7	STUDY 3: ACCEPTABILITY TESTING OF THE INTERVENTION This chapter describes how focus groups were carried out to explore the acceptability of using the proposed face to face group-based intervention
8	CONCLUSION

Chapter 2: **IS RESILIENCE AN ASSET FOR BEHAVIOUR MAINTENANCE? (STUDY 1)**

In chapter 1, I outlined the rationale for the thesis. The next step was to look at what assets could be targeted for an asset-based intervention. I decided to look at the relationship between resilience and behaviour maintenance and explore if this was a possible target for the intervention. The choice to focus on resilience, similar to the rationale behind developing an asset-based intervention, was political rhetoric. There has been much talk about developing resilience in people and communities and I was curious how this could be done and if it was relevant to the maintenance of healthy behaviours.

2.1 Background

One of the aims of public health is to help and encourage people to remain healthy for as long as possible. Encouraging people to adopt positive health behaviours is therefore essential. Finding the antecedents to adopting and continuing with a positive desired behaviour is fundamental if we hope to improve health and target resources appropriately.

Resilience could be one such antecedent. Resilience is the ability to bounce back from stress or adversity (Smith et al., 2010). The term resilience is used so widely, from transport systems, ecology, disaster response to child development that actually conceptualising resilience and operationalising it is a challenge. Within the fields of medicine, psychology, mental health and sociology, resilience can be viewed as an individual trait, a process or outcome (Southwick et al., 2014). Resilience is often thought of in binary terms as being present or not. Resilience

may and can be all of these things but from a public health point of view resilience is most usefully conceptualised as an asset that can be drawn upon in times of need, it is most likely a continuum rather than present or not and researchers within the health field tend to view resilience as a dynamic process (Windle, 2011). It fits well with the salutogenesis approach to health, where the asset-approach has its roots. The salutogenesis approach looks at how people manage stress and keep well. Anotonvsky, the founder of salutogenesis, theorised, that people possess general resilience resources (GRR). The GRRs help people cope with the challenges of life, enabling them to remain healthy.

Resilience can be thought of as a higher-order health asset within an individual, made up of several other assets that feed into it. Davydov et al. (2010) propose resilience is made up of both innate and acquired resources/assets, as well as external resources/assets from the social and physical environment. Optimism, a personality trait, is an innate asset since it is associated with higher resilience (Smith et al., 2013). But research into which combination of assets confer resilience is not definitive (see Reich, Zautra & Hall, 2010). Research does indicate, however, that resilience is enhanced by higher self-efficacy, social support, psychological skills such as emotional regulation and interpersonal skills, as well as physical resources (Zautra et al., 2008). The contribution of each is unclear but an abundance in one area could help balance out deficits in other areas. According to Davydov et al. (2010) resilience is likely to be the result of complex biopsychosocial pathways. Developing resilience could help people to bounce back from set-backs and adversity, helping them remain healthy.

Research examining the relationship between resilience and health is sparse but there does appear to be a connection. Elliott, Burton and Hannaford (2014), for instance, found individuals who were 'resilient' to high-intensity chronic pain were 25% less likely to die within the next 10 years compared to individuals in a comparison 'non-resilient' category. Arrebola-Moreno et al. (2014) also concluded resilience to be protective: in 134 patients with acute coronary syndrome (ACS) including resilience in a regression model gave greater prediction

of the biochemical markers inflammatory response. Resilience tempered the inflammatory response and thereby decreased the extent of myocardial infarction.

As well as resilience having a possible impact on morbidity and mortality there also appear to be connections between resilience and health behaviours. Statistically significant associations have been found between resilience and positive health behaviours such as owning a toothbrush, visiting the dentist (Jamieson et al., 2011; Dumitrescu et al., 2009) eating fruit and vegetables, taking exercise (Perna et al., 2011) and general health promoting behaviour within a family (Monteith and Ford-Gilboe, 2002). Qualitative studies also appear to suggest resilience is an important component in the continuation of behaviours like breastfeeding (Symon et al., 2013; Hegney et al., 2008) and smoking cessation (Lin & Ward, 2008).

It may even be that it is the maintenance of positive health behaviours that are the protective element in the morbidity/mortality resilience link. Indeed, we know that behaviours such as healthy eating, exercising and not smoking are significant causal pathways that protect against morbidity (Parkin et al., 2011; Sprange et al., 2013). So, from a public health perspective, understanding more about how we make and maintain behavioural changes to improve our health habits is vital. If resilience is a contributor in developing healthy habits, then developing interventions to improve resilience is a possible way to improve the health of individuals and the population.

My study therefore wanted to find out if making a conscious change to our behaviour was linked with having higher resilience. The above studies associating resilience with a health behaviour were all cross-sectional with resilience being measured at the same point as the behaviour and so we cannot know whether resilience enabled the behaviour or whether having more positive health behaviour resulted in greater resilience. To address this problem, I therefore

used a prospective design for the current study measuring resilience at the start of the study and separating it from the subsequent measurement of behaviour.

There is no consensus to the measuring of resilience. The studies mentioned above typify this lack of consensus by using a variety of methods and measures: Elliot et al. (2014) used an outcome to classify participants as resilient or not to pain; the qualitative studies of Hegney et al. (2008), Lin & Ward (2008) and Symon et al. (2012) identified resilience factors such as persistence, determination and practical problem-solving activities through qualitative interviewing methods. Other studies attempt to quantify resilience by using scales. Several scales measuring resilience have been developed, but there is no single scale that is widely adopted or preferred (Windle, 2011). Perna et al. (2011) and Monteith and Ford-Gilboe (2002) mentioned above, for example, both used the Wagnild & Young (1993) Resilience Scale whereas Jamieson et al. (2011) used a tool called 'strong souls' developed by Thomas et al. (2010) for screening social and emotional well-being among Indigenous young adults in the Northern Territory .

Due to the lack of consensus around resilience measures and scales, the current study has chosen to use the findings from a methodological review of resilience scales carried out by Windle et al. (2011). In that review Windle et al. (2011) recommend the choice of scale should be based on the purpose of the measurement, the definition of resilience employed, and the psychometric properties of the scale. The review found fifteen scales that claimed to measure resilience. No single scale was found to be outstanding but three scales came out top: The Resilience Scale for Adults (RSA), the Connor-Davidson Resilience Scale (CD-RISC) and the Brief Resilience Scale. These three scales all had reasonable psychometric properties, excellent construct validity and internal consistency, as well as good interpretability and test-retest reliability (Windle et al., 2011). The RSA and the CD-RISC contain 37 and 25 items respectively and are tailored towards a clinical population making them both slightly cumbersome to administer and less appropriate for a general population questionnaire. The Brief Resilience Scale (Smith, 2008), therefore, was chosen for the current study

because of its brevity and the specific focus on measuring self-perceived ability to 'bounce back' from stress making it an appropriate scale to use for a large general sample.

In order to achieve greater ecological validity, I decided to use naturally occurring behaviour change rather than impose a researcher-led behaviour change upon participants. I therefore recruited participants who had made New Year Resolutions. New Year is a traditional time, in western culture, to make resolutions to improve some aspect of life. It is estimated that over 1 in 5 adults in the UK made New Year resolutions (Opinium, 2014). New Year resolutions frequently involve adopting better and more positive health behaviours and so allowed me to tap into a naturally occurring positive behaviour change (Norcross et al., 2002).

Since optimism is a characteristic that is frequently associated with resilience and my study involved self-report, I predicted that people who scored more highly on resilience were also more likely to be optimistic about how well they had maintained their New Year resolution so I measured optimism as a potential confounder in the statistical analyses. Similarly, self-efficacy was also measured since it is widely known to be important for behaviour change (eg. Bauman et al., 2012; Parschau et al., 2013; Renner et al., 2012) although its effect on behaviour maintenance is less certain (French, 2013). My experimental hypothesis was that resilience would predict the maintenance of New Year resolutions. My secondary hypothesis was that resilience would be related to both optimism and self-efficacy, but that it would remain predictive of behaviour maintenance after controlling for both these related constructs.

2.2 Method

2.2.1 Design and procedure

Ideally, an experimental design which controls and isolates the independent, dependent and confounding variables would be the best design to find out if resilience caused health behaviour maintenance. However, both practical and ethical issues would make this extremely difficult. The alternatives are to use a retrospective, case-controlled study or a prospective cohort study. A retrospective design is subject to recall bias and does not give us a measure of resilience at the start, making it impossible to know the direction of relationship. A prospective design, however, can give us more certainty about direction of the relationship and is less likely to be subject to recall bias.

A prospective design was therefore used to test the predictive relationships between resilience, self-efficacy and optimism and the initiation and continuation of an intended behaviour. The study had two stages: The first stage was a baseline questionnaire conducted during January and February, 2014, measuring resilience to stress, generalized self-efficacy, and dispositional optimism. Demographic data including, age, gender, education and health status as well as New Year resolution(s) for the current year, i.e. 2014, was also collected. The second stage involved participants responding to three follow-up emails sent at one, three and six months after baseline questionnaire completion. The three questionnaires were used to aid retention in the study, but it is only the six month data that have been used to analyse maintenance of behaviour. Each email gave a reminder to participants about their individual resolution(s) and directed them to a short online questionnaire asking if they had kept their resolution(s) or not. The six month follow-up questionnaire also included the resilience measure to allow calculation of test-retest reliability.

2.2.2 **Participants**

Participants who had made or wanted to make a New Year resolution were recruited through a Scottish University website, the researcher's e-mail contacts and the Psychology Department online experiment portal within the same university. A prize draw to win six £10 Amazon vouchers was included to aid recruitment. Psychology undergraduates were awarded tokens which went towards their course requirement for their participation in each stage. After giving informed consent, participants completed an online survey. Participation was voluntary and all survey questions were optional. Ethical approval was granted by the Psychology Department Ethics Committee before commencement of data collection.

2.2.3 **Measures**

Brief Resilience Scale.

The self-report Brief Resilience Scale (BRS) was developed by Smith et al. (2008) specifically to assess the ability to 'bounce back' from stress and consists of six items (presented in Table 2-1).

Table 2-1 Brief Resilience Scale (Smith et al., 2008)

Items
1. I tend to bounce back quickly after hard times (R)
2. I have a hard time making it through stressful events
3. It does not take me long to recover from a stressful event (R)
4. It is hard for me to snap back when something bad happens
5. I usually come through difficult times with little trouble (R)
6. I tend to take a long time to get over set-backs in my life

Participants were presented with an equal number of positively and negatively worded items to reduce the effects of acquiescence bias and asked to rate the

extent to which they agreed with each item using a 5 point Likert-type scale ranging from 1='strongly agree', to 5= 'strongly disagree'. Positively worded items were reverse scored and the mean of the six items was calculated so that higher scores indicated higher resilience (possible range = 1 to 5). Published data show the BRS to have good internal reliability with Cronbach's alpha reported as >.7 and <.95 across twelve different samples (Smith et al., 2008; Smith et al., 2010; Smith et al., 2013). Test-retest reliability is reported as .69 (one month) and .62 (three months) using the intra-class correlation (ICC). Cronbach's alpha for the current study was .88 suggesting excellent internal consistency and is comparable to published estimates. The current study showed an ICC of .74 at six months (n=122).

Generalized Self-Efficacy Scale.

The Generalized Self-Efficacy Scale (GSES) is a 10-item scale to assess the strength of an individual's belief in his or her own ability to respond to new or difficult situations and deal with obstacles or setbacks (Schwarzer, 1993). Participants were asked to rate how true each item was for them. There was a choice of four responses from 'Not at all true' which scored 1 to 'Exactly true' which scored 4. All items were positively worded and summed to give a total score, so higher scores indicated greater perceived sense of generalised self-efficacy (possible range = 10 to 40). Cronbach's alpha for the current study was .84.

The Revised Life Orientation Test.

The Revised Life Orientation Scale (LOT-R) was devised by Carver (2013) to give a measure of optimism. LOT-R consists of 10 items; four are filler questions which are not included in scores, the other six items consist of three items to assess optimism and three to measure pessimism. Participants are asked to rate items on a 5-point Likert scale from 'I agree a lot' to 'I Disagree a lot'. Items are coded so that high values imply optimism, to give a total score using all six active items

(possible range = 6 to 30). Internal consistency (Cronbach's alpha) for LOT-R in this study was .84.

Demographics and health variables.

Data on age, sex, highest education qualification and health was also collected. Education was coded from 1 to 9 with 1 equal to no educational qualifications, 5 equivalent to advanced school qualifications like A-levels, and 9 equivalent to doctorate level. Two measures of health were included. These were 'life satisfaction' and 'self-assessed general health'. These latter two measures were collected for descriptive purposes, allowing comparison with other populations. Life satisfaction was assessed using the same question as in the 2010 Scottish Health Survey (Bromley and Given, 2011). Participants were asked to choose any number between 0 and 10, where 0 is 'extremely dissatisfied' and 10 is 'extremely satisfied'. Health status was assessed using the 'Self-assessed general health' question used in the Scottish Health Survey (Bromley & Given, 2011). This gives a good indication of health status of the participant at the time of the survey, as it is strongly related to the presence of chronic and acute disease (Idler and Benyamini, 1997). All participants were asked to rate their general health as 'very good', 'good', 'fair', 'bad' or 'very bad'.

New Year resolutions.

The baseline questionnaire had space for participants to record up to five resolutions they had made for the current year. Participants were reminded of these individual resolutions in the emails inviting them to complete each follow-up questionnaire.

Follow-up questionnaire.

At follow-up participants were asked to tick if they had 'kept' their resolution 'stopped' and the date stopped or 'not started' it. They were also able to rate how satisfied they were with the keeping of their resolution on a scale from 1= 'extremely dis-satisfied' to 7='extremely satisfied', and also make any comments about their progress in a free-text box. Only the 'kept' v 'stopped' and 'not started' categories have been analysed for this paper.

2.2.4 **Data Analysis.**

Ten participants had one value missing on the generalised self-efficacy scale (GSES). The total GSES score for these participants was calculated from the mean of the remaining nine items. Three participants each had one item missing on BRS scale, mean BRS for these participants was calculated from the remaining five items. One participant did not have any BRS score and so was eliminated from any analyses involving BRS. One participant had one item missing from LOT-R. The mean of the other five items was used to impute this missing item. Four participants did not state the resolutions they had made and were eliminated from follow-up and all baseline analyses. Six participants had data missing for age, sex or life satisfaction. The median for sample was imputed for these six missing items. The BRS, GSES and LOT-R results were all checked for normality. All measures were recoded so that higher number indicated high quality.

Participants were coded at each follow-up into four groups according to whether they had kept at least one resolution; had stopped all resolutions; had not started any resolution; or did not respond to follow-up. Frequency data is shown for all four groups but for analytic purposes the groups 'had stopped all resolutions' and 'had not started any resolutions' were collapsed into one group called 'no resolution kept', this was because the number in the 'had not started' group was so low.

Demographic, frequency data and means are reported for all follow-ups but only the six-month data was used in analyses. A one-way ANOVA was carried out to check for differences in resilience between response groups. A logistic regression was performed on the kept v not kept groups at 6 months to test if resilience independently predicted maintenance, when controlling for optimism and self-efficacy.

2.3 Results

2.3.1 **Response rate.**

There were 224 people who completed the baseline questionnaire, four were excluded from analyses as there was no information on number, or type of resolution. One hundred and thirty (59%) of these participants responded to the first email request to complete the one-month follow-up questionnaire, and a further thirty-three (15%) participants completed the first follow-up after a reminder email was sent 7 days later. At the three-month follow-up request one hundred and five (48%) participants who had completed the baseline questionnaire responded to the first email and an extra thirty seven (17%) participants responded after a reminder email, giving a total of 142 (65%) people completing the three-month follow-up. A total of 122 (55.5%) participants responded to the third follow-up at six months, 90 (41%) at the first email and an extra 32 (14.5%) with a second email prompt. In total 189 participants (85.8%) completed at least one follow-up, of which 41 (18.6%) completed two follow-ups and 98 (44.5%) completed all three follow-ups. Thirty-one participants (14.1%) did not respond to any follow-up questionnaire or reminder.

2.3.2 **Sample Characteristics.**

A total of 220 eligible participants (Mean age = 25.41, SD = 10.28, range 18-61 years) completed the baseline survey of which 183 (82%) were female. 21% of

the sample had a bachelor's degree or higher. Over 95% had achieved educational qualifications equivalent of Scottish Highers/English A-levels or above suggesting the majority of the sample had remained or returned to education beyond compulsory education. Table 2 gives baseline characteristics for the all participants. Of the 220 participants who took part in this study 71.4% rated their health as 'good' or 'very good'. Seventeen participants (7.8 %) in the current study rated their health as 'bad' or 'very bad'. The most common score (mode) on the life satisfaction scale was 8 (range 1-10) which was chosen by 30%. This is comparable to results from the 2010 Scottish Health Survey, which found 31% of people choosing 8 for life satisfaction.

Table 2: Baseline characteristics for all participants

	All participants N=220	Non-respondents N=31	Respondents N=189	t-statistic (sig)
% female	82	71	84	4.81[a] p=.028
Age in years	25.42 (10.28)	22.19 (5.81)	25.95 (10.76)	3.05 p=.003
Education	5.90 (1.54)	5.42 (1.39)	5.98 (1.55)	2.84 p=.005
Life satisfaction	6.96 (1.58)	6.13 (1.80)	7.10 (1.50)	1.46 p=.145
Health	3.83 (0.88)	3.45 (1.00)	3.89 (0.84)	2.11 p=.035
Resilience	3.09 (0.82)	2.67 (0.82)	3.16 (0.80)	3.14 p=.002
Self-efficacy	29.04 (4.29)	26.70 (4.14)	29.42 (4.20)	3.35 p=.001
Optimism	19.40 (5.26)	16.58 (5.04)	19.86 (5.16)	2.29 p=.001

Mean (SD) reported for all, [a] Chi -Square test

There were significant differences between the group of participants that responded to follow-ups and the group of participants that failed to complete any follow-up. Respondents had significantly ($p<.05$) higher mean age, education level and health status and life satisfaction than non-respondents. Table 2-2

shows numbers of respondents and their baseline characteristics at each of the follow-ups.

Table 2-2 Sample Characteristics

Variable (range)	Total		One month follow-up		Three month follow-up		Six month follow-up	
			Respondent	**Non-Respondent**	**Respondent**	**Non-Respondent**	**Respondent**	**Non-Respondent**
	N=220		**N=163**	**N=57**	**N=141**	**N=79**	**N=122**	**N=98**
Female (%)	82		86	72 $^{\Delta}$	86	76	88	76 $^{\Delta}$
	Mean (SD)	*Mode (%)*	*Mean (SD)*	*Mean (SD)*	*Mean (SD)*	*Mean (SD)*	*Mean (SD)*	*Mean (SD)*
Age (18-61)	25.42 (10.28)	-	26.56 (11.12)	22.16 ‡ (6.39)	26.83 (10.99)	22.91 ‡ (8.34)	27.22 (11.36)	23.18 ‡ (8.26)
Life satisfaction (1-10)	6.96 (1.58)	8 (30)	7.12 (1.48)	6.51‡ (1.78)	7.13 (1.40)	6.66‡ (1.83)	7.10 (1.40)	6.79 (1.77)
Health status[a] (1-5)	3.83 (0.88)	4 (51)	3.93 (0.83)	3.54 ‡ (0.95)	3.94 (0.81)	3.65‡ (0.96)	3.94 (0.85)	3.69‡ (0.90)
Education level (1-9)	5.90 (1.54)	5 (56)	6.03 (1.60)	5.53‡ (1.27)	6.06 (1.58)	5.61‡ (0.16)	6.16 (1.61)	5.58 ‡ (1.39)

[a]*For ease of comparison, health status was coded from 1='very bad' to 5='very good'.*

‡Significantly different from respondents (t test): P<.05. ‡ Significantly different from respondents (t test):*P*<.01. $^{\Delta}$ Significantly different from respondents (χ^2 test): P<.05.

Does resilience affect response to follow-up?

I noticed there was a pattern of response at each follow-up point, with those who responded appearing to have higher resilience than those who did not respond. Figure 2-1 shows that participants who did not respond to any follow-up had significantly lower resilience (M=2.67, CI_{95} 2.37 to 2.97) than participants who responded to one (M= 3.13, CI_{95} 2.89 to 3.37), two (M= 3.21, CI_{95} 2.99 to 3.31) or three (M= 3.09, CI_{95} 3.00 to 3.31), follow-up questionnaires, t (215) = 3.13, p= .002. There were, however, no significant differences between the resilience scores of people who responded to one, two or three follow-ups (t (215) =.307, p=.712).

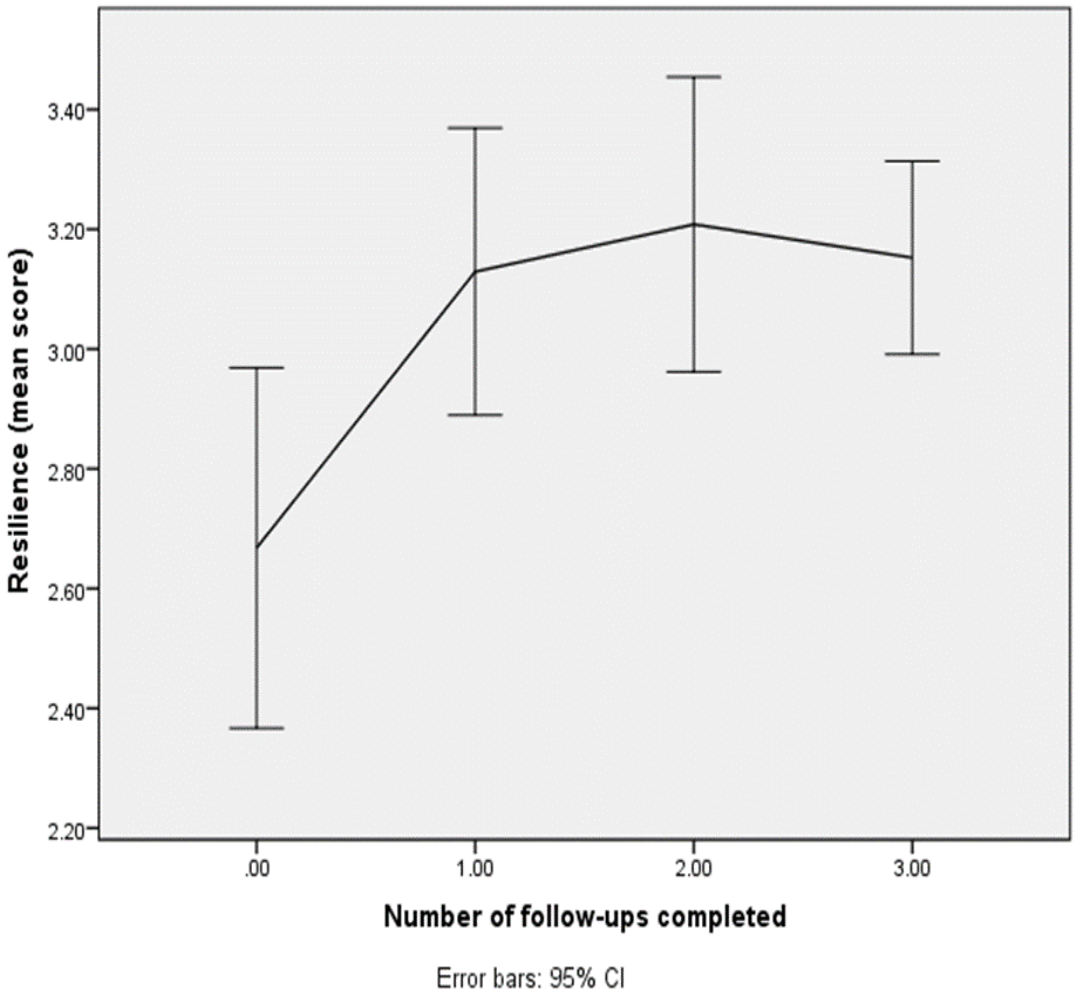


Figure 2-1 Mean Resilience Score of participants according to number of responses made by participants

(9.5%) resolved to save more money; thirteen (6%) resolved to improve their *Resolutions.*

2.3.3 **Resolutions**

In the baseline questionnaire participants could name up to five resolutions. The majority of participants made one (n=88, 40%), two (n=49, 22%), or three (n=58, 26%) resolutions, 15 participants (7%) made 4 resolutions, and 10 participants (4.5%) made 5 resolutions. Most resolutions were to improve health: increasing the frequency of exercise (n=141, 64%) was the most common resolution. Some of these resolutions were specific and measurable such as 'Go running at least once a week' but others were more general such as 'Exercise more'. Forty participants (18%) made resolutions about their weight: most wanted to lose weight, some to maintain weight already lost and one person wanted to increase their weight. Thirty one (14%) made specific resolutions to increase the amount of fruit they ate; fourteen (6.4%) to stop smoking; thirteen (6%) to reduce alcohol consumption. In addition to health resolutions there were a smaller number of resolutions made about other aspects of life: twenty one (9.5%) resolved to save more money; thirteen (6%) resolved to improve their study routines; six people (2.7%) mentioned a specific skill they wanted to learn i.e. yoga, driving or a language.

The number of resolutions recorded had no significant effect on the percentage of participants who kept a resolution (see Figure 2-2), $F(218) = 0.011$, $p = .916$.

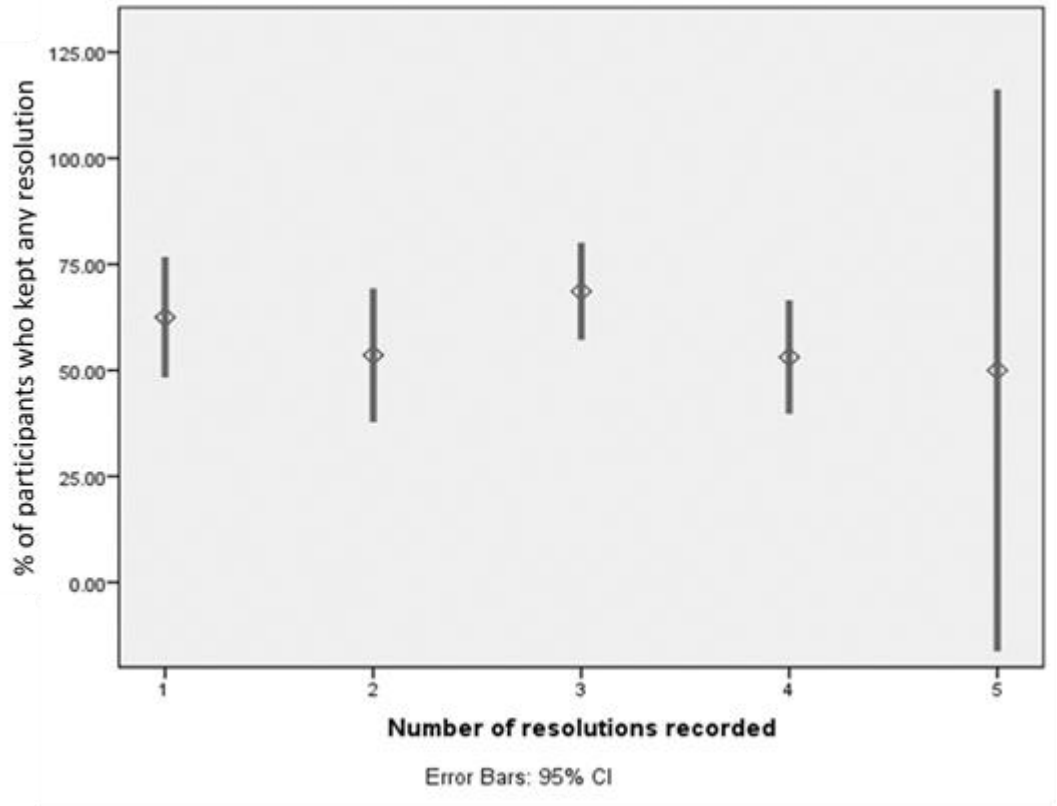


Figure 2-2 Number of resolutions recorded plotted against percentage of participants keeping resolutions

Does resilience predict the maintenance of resolutions?

Ninety two participants reported they had kept at least one resolution at the six month follow-up. These participants had significantly greater resilience scores at baseline (M= 3.30, SD 0.73) than the thirty participants who reported they had not kept any resolution (M= 2.84, SD 0.90), t(120)=2.84, p=.005. Participants (n=55) who reported they had managed to keep all their resolutions at six months had significantly greater resilience at baseline (M=3.38, SD=0.72) than all other participants in the study (M=2.99, SD=0.83), t(217)=3.10, p=.002). Cohen's d for this difference was calculated to be 0.5 which is a medium effect size (Cohen 1992).

A Probit regression analysis was carried out to find out if resilience predicted whether a resolution was kept at six months. The 'number of resolutions made'

was input as the Total Observed, the 'number of resolutions kept' was the response, and 'resilience' was the covariate in the model. The probit model showed resilience was a significant predictor of whether a resolution was kept.

Parameter Estimates

	Parameter	Estimate	Std. Error	Z	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
PROBIT[a]	Resilience (BRS)	.309	.105	2.929	.003	.102	.515
	Intercept	-.707	.344	-2.055	.040	-1.051	-.363

a. PROBIT model: PROBIT(p) = Intercept + BX

Predicting maintenance.

Table 2-3 shows the mean resilience scores according to participant responses at the three follow-ups.

Table 2-3 Mean baseline resilience score for each follow-up category

	Mean (SD) Resilience Score		
	One month	Three month	Six month
Kept at least one resolution	3.20 (0.77)	3.20 (0.77)	3.30 (0.73)
No resolution kept	2.73 (0.87)	3.04 (0.90)	2.84 (0.90)
Non response	2.96 (0.87)	2.95 (0.85)	2.96 (0.84)

A one-way ANOVA conducted on the six month data was significant F(2, 216) = 5.83, p=.003. Planned contrasts revealed that participants who had kept one or more resolution had significantly higher baseline resilience scores (M=3.30, SD =0.73) than participants who responded they had not kept any resolution (M=2.84, SD=0.90), t(216)=2.74, p=.007, but there was no significant difference between the mean baseline resilience scores of people who responded to follow-up (M=3.19, SD = 0.80) and those who did not respond to follow-up (M= 2.96, SD= 0.84) for the six month data, t(216)=0.90, p=.369.

Further analyses found that participants who responded that they had kept all their resolutions at the six-month follow-up (n=55) had significantly higher baseline resilience scores (M=3.38, SD=0.72) compared to all other participants in the study (M=2.99, SD=0.83, t(217)=3.10, p=.002). Cohen's d for this difference was calculated to be 0.5 which is a medium effect size (Cohen 1992).

Binomial logistic regression analyses were conducted with the maintenance of resolutions at six months as the dependent variable and resilience, optimism and self-efficacy measured at baseline as the independent variables. The dependent variable was dichotomous: 'had stopped all resolutions' (n=30) or 'had kept at least one resolution' (n=92). The Odds Ratios calculated in the logistic regression are shown in Table 2-4. Only resilience independently predicated the maintenance of a resolution at six months when optimism and self-efficacy were added into the model. Prediction success of the full model was 76.2% (97.8% for kept one resolution and 10% for stopped all resolutions), whereas the prediction success of the constant only model was 75.4%. This small improvement in prediction was marginally significant, $\chi^2(3)=8.22$, p=.042. Nagelkerke's R^2 of .097 indicated a small relationship between prediction and grouping. The Wald criterion demonstrated that only resilience made a significant prediction, B=0.893, SE=0.351, Wald(1)=6.47, p=.011. Optimism and generalised self-efficacy were not significant: B=-0.018, SE=0.051, Wald(1)=0.128, p=.720 and B=-0.033, SE=0.065, Wald(1)=0.259, p=.611 respectively.

Despite differences between the groups of participants who responded to follow-up requests and those who ignored those requests, these demographic differences were not psychologically interesting and did not increase the predictive value of the model. When demographic variables were entered into the model a small increase in Rsquared but also an increase in AIC (Akaike Information Criterion) occurred since the AIC takes the number of model coefficients into account, because of this, demographic variables were left out of the final model.

Table 2-4 Logistic regression analysis predicting maintenance of a resolution from resilience, optimism and self-efficacy

			95% CI for Odds ratio (exp B)				95% CI for Odds ratio (expB)	
	Unstandardized *B* (SE)	(exp B)	Lower	Upper	Standardized β	(expB)	Lower	Upper
Included								
Constant	-0.293(1.617)				1.148(0.223)			
Resilience	0.893 (.351)	2.442*	1.228	4.857	0.734 (0.288)	2.083*	1.228	3.667
Optimism	-0.018 (.051)	0.982	0.889	1.085	-0.096 (0.267)	0.909	0.889	1.534
Self-efficacy	-0.033 (.065)	0.967	0.851	1.099	-0.143(0.280)	0.867	0.851	1.501

2.4 Discussion

This six month longitudinal study showed that resilience to stress measured at baseline was predictive of maintenance of a New Year resolution six months later. Participants who reported they had managed to keep at least one resolution had higher resilience scores at the start of the study than people who reported they had not kept any resolution. Participants who reported they had kept all their resolutions had greater mean resilience scores than all other participants. Multivariate analyses demonstrated that these differences could not be accounted for by optimism or self-efficacy. These results suggest that the investigation of resilience in relation to maintaining a range of behaviours and developing health behaviour interventions is an important area worthy of further study.

Generalisability

Recruitment for this study was by self-selection from within a university setting, this obviously limits generalizability to a wider population. Despite this, there was a wide age and education range, although the mode for each did reflect the influence of the undergraduate population and there were considerably more females than males in the sample. Sample characteristics for health and life satisfaction were comparable with the Scottish population (Bromley and Given, 2011), with the majority of people rating themselves as having 'good' or 'very good' health and the mode for life satisfaction the same as for the Scottish Health Survey (Bromley and Given, 2011). There were, however only 12.3% of the current sample reporting a level of life satisfaction of 9 or 10 compared to 30% in the Scottish population. This is possibly a reflection of the lower average age for the current sample compared to the Scottish Health Survey as older people tend to score higher on life satisfaction.

Strengths

The strengths of this study were that the measures for resilience, optimism and self-efficacy all had good internal reliability with Cronbach's alpha between 0.7 and 0.9 and the test-retest correlation for resilience at six months was also high, thereby giving strength to the validity and internal and test re-test reliability of the measures. Unlike previous studies of resilience and health behaviour, this was a prospective, longitudinal study, enabling the prediction of future behavioural maintenance from baseline resilience. This study, therefore, allows us to be more confident that it is resilience that is predictive of behaviour maintenance rather than the reverse. Although we cannot be certain that it is resilience to stress that enables behaviour maintenance rather than a third variable, there are plausible mechanisms that are discussed further below.

Limitations

The use of New Year resolutions to investigate the maintenance of behaviour change was a convenient naturalistic opportunity giving good ecological validity to the results. However, the idiosyncratic nature of New Year resolutions introduces several additional confounders that are difficult to control. It is likely that people had different levels of commitment and motivation to their resolutions, also the way in which people operationalised their resolution is likely to have had a bearing on how they later assessed if they had kept them or not. The more vague and general formulations of resolutions are more likely to have had a greater degree of subjectivity in reporting than those resolutions stating specific goals. Incorporating a measure of these differences into future analyses may help control for these effects. Despite these limitations the high ecological validity of this study does reflect that processes involved in resilience to stress do predict maintenance of real-life behaviour change, over and above any effects of optimism or self-efficacy.

Self-report is always an issue but is necessary when examining psychological constructs such as resilience to stress, especially when stress is defined from the

perspective of the individual. Triangulation of resilience measures would be useful. Resilience measures that are currently being developed by researchers include using regression models linking life events and symptoms (Amstadter et al., 2014). Individuals are classified as having high or low resilience depending on whether they have a residual that falls above or below the regression line. Biomarkers such as cortisol, heart rate and blood pressure in response to a laboratory stressor are also objective measures of the stress response that could be used alongside the self-report questionnaire.

Ideally, recording of New Year resolutions should be taken in the first few weeks of the year when the New Year is still salient, however any new start can act in a similar way. For pragmatic reasons (enabling undergraduate students to gain tokens for course requirements) I continued with recruitment and baseline measurements throughout January and February. The semester for undergraduate students did not start until mid-February, which effectively was a "New Year" or new start for them.

Behaviour vs health behaviour

This study was originally devised to tap into the connection between positive health behaviours and resilience. Despite participants being asked to list resolutions for health behaviours and being given examples, several participants also included non-health behaviours. For pragmatic reasons I decided to retain the non-health behaviours for the analysis. There is nothing to suggest their initiation or maintenance is any different from health behaviours, both are desired behaviours. And health behaviours are simply health behaviours by definition of them having an impact on health.

Resilience and behaviour maintenance

In their systematic review of behaviour maintenance theories Kwasnika et al. (2016) found that there were five overarching and interconnected themes that emerged, namely: self-regulation; resources (psychological and physical);

support (environment and social); habit development; and motives. Theories about what makes people resilient overlap with the first three of these themes (Friborg et al., 2003). People who are more resilient are considered to have good self-regulation (Karoly, 2010), have more psychological and physical resources, and greater social support (Feder et al., 2010), enabling them to be more psychologically flexible. It may also be that resilient people have developed coping responses to stressful situations developed through exposure to small amounts of stress (Davydov et al., 2010) and in that sense have developed habitual coping skills/coping planning when barriers to continuing their resolution are put in their way: their psychological flexibility enables overcoming barriers and getting back on track with their resolution.

2.5 Conclusion

In conclusion, this study demonstrates that resilience to stress is predictive of behaviour change maintenance. Resilience, the ability to bounce back from stress and adversity, is a higher-level asset fuelled by a number of other assets. Overall resilience is an asset that is worth developing. Exploring the development of resilience through the mobilising and development of assets is the next step. This study looked at multiple health behaviours. I will focus the next stage of this exploration of developing resilience by using just one specific health behaviour (breastfeeding). I will explore the development of an asset-based intervention using breastfeeding behaviour and resilience as the outcome. The rest of this thesis will report the development of the intervention.

Chapter 3: **RESILIENCE AND BREASTFEEDING**

The purpose of the chapter is to set out why breastfeeding has been chosen as the focus behaviour in this thesis. Results from study 1 (chapter 2) suggested that resilience was an asset that helped with the maintenance of health behaviour. Many women find breastfeeding difficult: perseverance and resilience are oft quoted as necessary for the continuation of breastfeeding (Brown & McPherson, 1998; Johnsen, 2004; Symon et al., 2013). This chapter will outline why breastfeeding is a health behaviour to be encouraged. It will present the epidemiology of breastfeeding in the UK and particularly Scotland. It will also give information on some of the difficulties encountered in breastfeeding and why resilience is an important asset for continuation.

3.1 Definitions of Breastfeeding

This thesis will use the same definitions and terminology as the 2010 Infant Feeding Survey (McAndrew, Thompsom, Fellows, Large, & Speed, 2012). Table 3-1 sets out these key terms and definitions.

Table 3-1 Key terms and definitions for breastfeeding

Key Term	**Definition**
Breastfed Initially	Babies whose mother put them to the breast after birth even if it was just once. It also includes those babies who were given expressed breastmilk.
Incidence of breastfeeding	Percentage of babies who were breastfed initially
Prevalence of breastfeeding	This is the percentage of babies who are being breastfed (including expressed milk) at specific ages, even if they are also receiving infant formula, solid food, or other liquids
Duration of breastfeeding	This is the length of time that a mother continued to breastfeed (including expressed breastmilk)
Prevalence of exclusive breastfeeding	The proportion of babies who have only ever been given breastmilk including expressed breastmilk. The baby has not received infant formula, solid foods or other liquids.
Duration of exclusive breastfeeding	The length of time that mothers who initially gave breastmilk continued to feed exclusively, that is not giving formula, solids, or any other liquids.

3.2 Benefits of Breastfeeding

WHO estimates, that if an optimal breastfeeding regime was adopted for all infants then over 820,000 lives of children under five years old could be saved each year (World Health Organisation, n.d.). The World Health Organisation recommends that all babies are breastfed exclusively for the first six months of

life. Then from six months, babies should be introduced to nutritionally safe solids alongside continued breastfeeding for up to 24 months or longer (World Health Organisation, 2018b). Breastfeeding has positive effects on the health of both mother and child.

High quality systematic reviews carried out for the World Health Organisation (WHO) and the Agency for Healthcare Research (AHRQ) (Horta, Bahl, Martines, & Victora, 2007; Horta & Victora, 2013b; Ip et al., 2007) have found strong evidence that babies who are exclusively breastfed have a reduced relative risk of catching diarrhoea and that any breastfeeding protects babies from respiratory tract infection hospitalisation and mortality. Evidence from a meta-analysis on 23 studies identified by Horta & Victora, (2013a) looking at the effect of intense breastfeeding on infants under 6 months, gave a pooled risk of morbidity from diarrhoea as 0.37 (95% confidence interval: 0.27; 0.50) and the relative risk of mortality for diarrhoea as 0.23 (95% confidence interval: 0.13; 0.42). Meta-analyses in the same systematic review (Horta and Victora ,2013a) found strong evidence that any breastfeeding reduced the risk of hospitalisation due to respiratory infection by 57% and reduced the risk of death from respiratory infection by 70% compared to not breastfeeding. These reduced risks were evident in both developed and developing countries.

Other short-term benefits of breastfeeding for infants in developed countries include reduced risk of otitis media/acute ear infection, reduced likelihood of childhood obesity or type 2 diabetes, reduced asthma, and childhood leukaemia (Horta and Victora ,2013a). Additionally, sudden infant death syndrome is cut by half for babies that are breastfed compared to non-breastfed babies (Ip et al., 2007).

Long-term benefits are harder to attribute due to the possibility of breastfeeding mothers being more health conscious. However, meta-analysis of studies that controlled for this show that breastfeeding appears to have a small protective effect against obesity, raised blood pressure and cholesterol in later life for

children who were breastfed for any length of time (Horta & Victora, 2013b). Small increases in intelligence, based on IQ score and attained schooling are also reported to be higher and are associated with increased income in later life (Victora et al., 2016).

It is not just infants that benefit from breastfeeding, but women who breastfed also benefit. There is consistent evidence that the risk of breast and ovarian cancer is reduced with longer breastfeeding periods: the breast cancer risk is reduced by 4.3% (95% CI 2.9-6.8) for every 12 months a woman breastfeeds (Victora et al., 2016); and for ovarian cancer, a 30% reduced risk is associated with long-term breastfeeding (see review by Chowdhury et al., 2015).

As well as the health benefits to women and their breastfed infants there is an economic argument for encouraging all women to breastfeed. Rollins et al. (2016) carried out economic modelling to show that breastfeeding could increase Gross National Income by approximately 0.5% just by improvements in cognition (IQ) due to breastfeeding. They also estimated savings in treatment costs for health services. For the UK, an increase in exclusive breastfeeding prevalence of 10% at six months is estimated to save £29.5 million in the treatment of infants with otitis media, diarrhoea, necrotising enterocolitis and pneumonia (Rollins et al., 2016).

3.3 Scottish Government Targets for Breastfeeding

Due to the strong evidence for health and economic benefits, breastfeeding has been and remains an important public health priority for the Scottish Government and is a key area targeted to reduce health inequalities (see Scottish Government, 2018). The Scottish Government have adopted the recommendations of the World Health Organisation encouraging women to breastfeed exclusively for the first six months and then to continue with breastfeeding along with solid foods, up to two years. Scotland was the first Government in the UK to protect breastfeeding in Law and make it a criminal offence to stop a woman feeding a child under two milk in a public space by

passing The Breastfeeding etc (Scotland) Act 2005. The Scottish Government recognised that improving breastfeeding prevalence was a key way to reduce and tackle health inequalities (Scottish Government, 2010) and set out the following Health Efficiency Access and Treatment (HEAT) Target:

"Increase the proportion of new-born children exclusively breastfed at six to eight weeks from 26.6 per cent in 2006/07 to 33.3 per cent in 2010/11."

This target, however, was not met. Breastfeeding prevalence remained static with only 26.5 per cent of all babies recorded as being exclusively breastfed at their six to eight-week review in 2010/11 (Scottish Government,2010).

These static changes in behaviour, despite government targeting and investment, make breastfeeding behaviour a particularly pertinent health behaviour for the current thesis.

3.4 Epidemiology of Breastfeeding

3.4.1 **Data sources**

Breastfeeding data for this chapter comes from two sources:

i) UK Infant Feeding Survey (UKIFS)

ii) Information Services Division, Scotland. (ISD)

The UKIFS was a comprehensive survey of breastfeeding carried out every 5 years since 1975. Funding for a survey in 2015 was not made available and so the last UKIFS data available is from the year 2010. This chapter therefore uses 2010 data when describing any UK data and making comparisons between UK countries. The Infant Feeding Survey is self-reported from a sample of the population, weighted in order to capture the full representation of ages and socioeconomic groups.

In Scotland, Infant Feeding Data is collected through Health Visitor first visits and the 6-8 week review and is collated by Information Services Division-Scotland for

the Scottish Government. First visits take place around 10 days after birth. The quality of the data is very high with First Visits taking place for 98% of all live births in 2017/18 and valid breastfeeding status recorded for 99% of these visits (ISD, 2018).

3.4.2 **Incidence and prevalence of breastfeeding**

Incidence of breastfeeding varies widely between countries. Incidence is the percentage of babies breastfed at birth. Figures from the Organisation for Economic Co-operation and Development (OECD, 2009) found incidence of breastfeeding to range from nearly 100% in Scandinavian countries to less than 70% in France, Belgium and Ireland. Despite the incidence rate of breastfeeding rising from 62% in 1990 to 81% in 2010, the UK remains in the lower quarter of all European and OECD countries. This rise in breastfeeding incidence did not translate into a commensurate rise in prevalence (% of babies given any breastmilk at specific age) in the UK until 2005 (McAndrew et al., 2012). In the last Infant Feeding Survey, taken in 2010, only 55% of UK babies were receiving any breastmilk at six weeks of age and only 34% by six months old.

The statistics for incidence and prevalence of breastfeeding in Scotland are lower than for England and the UK as a whole: in Scotland 74% of babies were given breastmilk at birth according to the UKIFS (McAndrew et al., 2012). This is slightly at odds with the ISD-Scotland statistics which reported 64% of babies born in 2017/18 had ever been breastfed. The ISD figures are more likely to be correct, however, since these are collected by Health Visitors making first visits to mothers with new babies aged 10 to 14 days old. The coverage of first visits is very high, reportedly reaching 98% (ISD, 2018), whereas the data collected by the Infant Feeding Survey is from a sample of mothers. Older women and women from less deprived areas are more likely to breastfeed. It is these same women who are more likely to respond to surveys, thereby inflating breastfeeding incidence and prevalence figures for the UKIFS.

Scotland has seen small rises is breastfeeding prevalence since 2000, with 51% of babies in 2017/18 receiving any breastmilk at 10 days compared to 44% of babies in 2001/2002, a percentage rise of 7%. There was a similar rise for breastfeeding prevalence at six weeks with 42% of babies in Scotland receiving any breastmilk in 2017/18 compared to 36% in 2001/2.

Although overall breastfeeding has increased, exclusive breastfeeding rates have remained low with only marginal changes since 2000. Exclusive breastfeeding is recommended by the World Health Organisation for the first six months of life. On average approximately half of all babies are exclusively breastfed at 3 months of age in OECD countries. This falls to 25% by 6 months (OECD, 2009). In the UK, it is estimated that only 17% of babies are exclusively breastfeeding at three months and just 1% at six months (McAndrew et al., 2012). These figures are dramatically lower than the average for OECD countries.

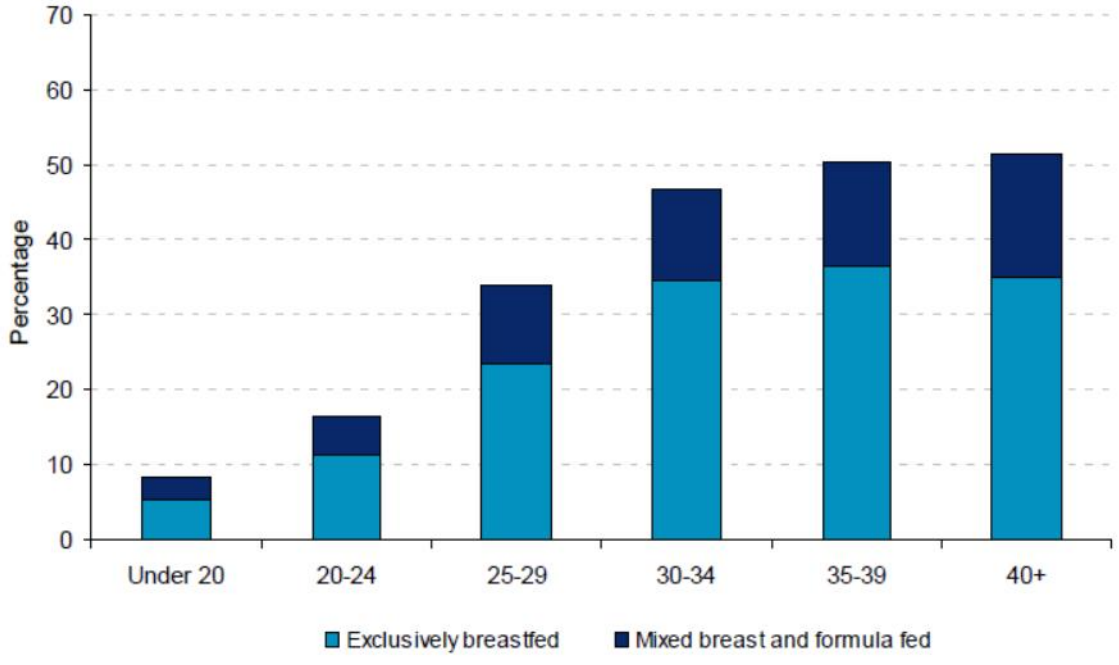
Despite the WHO recommendations for exclusive breastfeeding, Scotland has made little headway at improving exclusive breastfeeding rates. The rate for exclusive breastfeeding actually fell from 39.9% in 2001/2 to 36.4% in 2017/18, although improvements were seen with exclusive breastfeeding at six weeks which increased from 27% in 2001/2 to 30.7% in 2017/18.

These statistics suggest that health messages, policy and interventions developed so far have made only small impacts upon breastfeeding behaviour overall. Helping women who initiate breastfeeding to continue and maintain breastfeeding, especially exclusive breastfeeding, is essential if breastfeeding prevalence rates are to improve. This makes breastfeeding an ideal health behaviour for testing out a new way of developing interventions to improve behaviour maintenance.

3.4.3 **Age and socio-economic inequalities around breastfeeding**

The poor prevalence of breastfeeding in the UK becomes even starker when the age and socio-economic status of the mother is considered. Younger mothers

are less likely to breastfeed than older mothers and women living in the most deprived areas are less likely to breastfeed compared to women in more affluent areas. In 2017/18 only 46.1% of babies born in Scotland to mothers between the ages of 20 and 24 were put to the breast at least once. And only 36.7% of mothers under 20 initiated breastfeeding (ISD, 2018). This is a stark disparity when compared to mothers aged over 30 years. Initial breastfeeding rates (incidence) for mothers aged 30 to 34 is 70.8%, rising to 76.4% for babies of women over 40 years old. Figure 3-1 gives a visual image of the differential prevalence of breastfeeding for mothers of different ages. The graph clearly shows that the prevalence of breastfeeding in younger women is considerably lower than for women over 30 years old. ISD-Scotland report that in 2017/18 only 8.1% of mothers under 20 years were exclusively breastfeeding their babies at six weeks compared to 39.1% of babies to women aged 35 to 39 years (ISD, 2018). The disparities in breastfeeding by age of mothers are also echoed in socio-economic status.



Source: ISD Scotland, CHSP Pre-School Aug 2012

Figure 3-1 Breastfeeding at 6-8 Week Review by Maternal Age

Deprivation in Scotland is classified using the Scottish Index of Multiple Deprivation (SIMD) and organised by deciles or quintiles. Using the SIMD classification, babies born to mothers living in the least deprived quintile are more likely to be given breastmilk than babies living in any of the other SIMD quintiles. 81.3% of babies living in the least deprived quintile are given some breastmilk compared to just 48.5% of babies from the most deprived areas. By six weeks of age, prevalence of breastfeeding is 60% for babies living in quintile 5 (least deprived) and 28% for quintile 1 (most deprived).

3.4.4 **Breastfeeding cessation**

Breastfeeding initiation rates are low in the UK compared to other comparable OECD and European countries, but what is even more alarming is the cessation rate for breastfeeding. Within six weeks, over half of all mothers that start breastfeeding at birth have stopped. The Infant Feeding Survey indicates that, across the UK, 81 % of mothers questioned in 2010 survey had started breastfeeding at birth. This fell to 69% at one week, 55% at six weeks and 34% at six months (McAndrew et al., 2012). In Scotland, the comparable figures are 74% at birth, 50% at six weeks and 32% at six months (McAndrew et al., 2012). Cessation of breastfeeding is greater for younger mothers with estimates giving a 25% drop in breastfeeding prevalence by one week for women under 20 and a 22% drop for women aged 20-25 years. This compares with only a 10% cessation rate at one week for women over 30 years old (McAndrew et al., 2012). Figure 3-2 shows a graph for mothers in Scotland for the same period. The graph shows a clear trend in all mothers to stop breastfeeding as a baby gets older but more importantly is the trend for younger mothers to give up breastfeeding earlier.

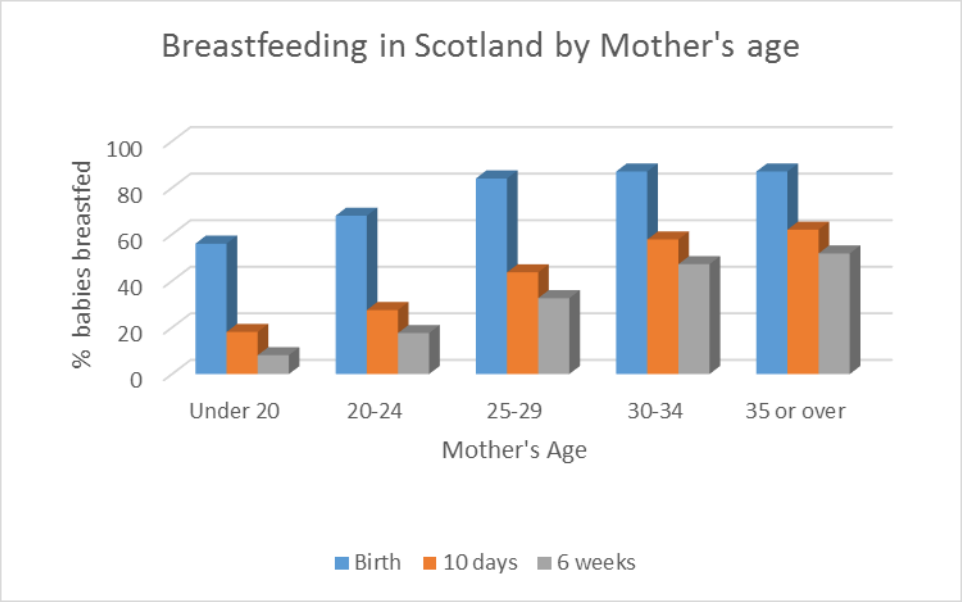


Figure 3-2 Breastfeeding in Scotland by mother's age

It could be argued that younger mothers never really wanted to breastfeed in the first place and only initiated breastfeeding because they were under the supervision of medical staff in hospital. This is a plausible argument to explain the dramatic drop in breastfeeding prevalence for the under 25s compared to the over 30s. However, if prevalence of breastfeeding cessation is taken from the end of the first week, this would rule out the argument that young women only breastfed whilst in hospital to please medical staff and that they did not really want to breastfeed in the first place. We still see a much greater rate of cessation among the younger groups compared to the older groups of women. Figure 3-3 shows this clearly, with a steeper drop-off observed for all groups of women under 30 compared to those over 30 years.

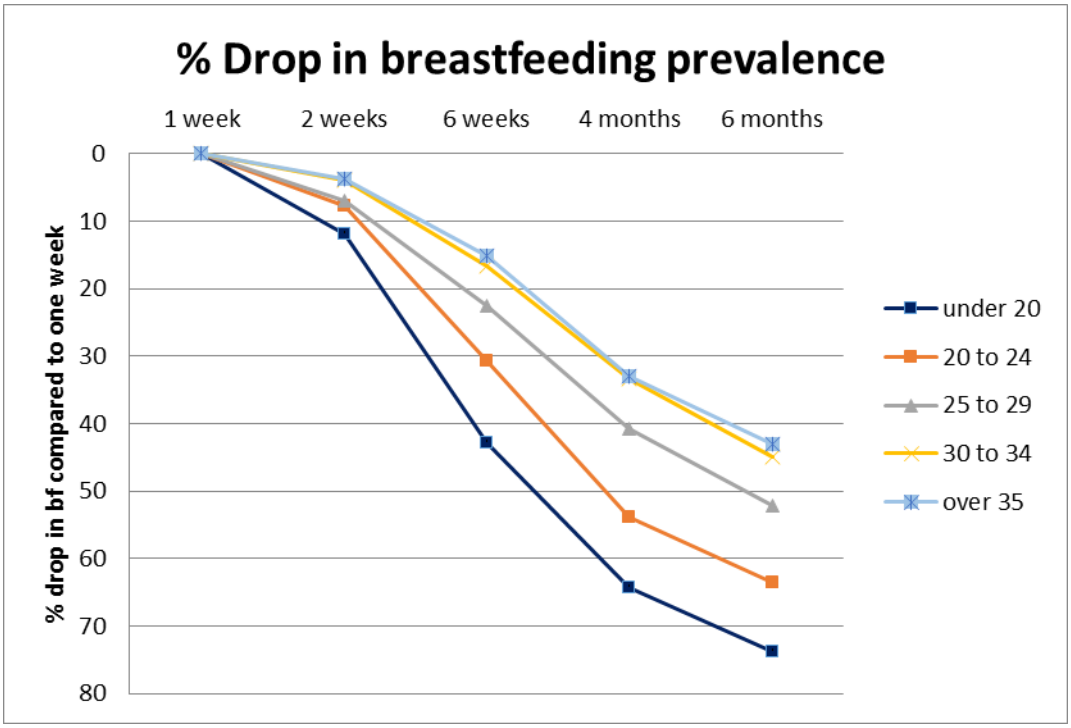


Figure 3-3 Drop in breastfeeding prevalence

"Not really wanting to breastfeed" is therefore not an effective argument for the differential cessation rates seen. Alternative reasons for the greater decline in breastfeeding prevalence for the younger women needs to be explored.

The needs and motivations of young mothers differ from older mothers. Young women feel less able to go against societal norms and the influence of those around them. A study by Condon et al. (2013) supports this. They found young women felt conflicted by the norms of society around breastfeeding, and concluded that health professionals do not sufficiently recognise the importance of this confliction in young mothers. Breastfeeding in a public place is seen as particularly problematic to teenage mothers (Condon et al., 2013; Dykes et al., 2003; Mahon-Daly & Andrews, 2002). Breasts are portrayed sexually in society, so disentangling the sexual element of breasts from the purpose of providing food for a baby can be especially difficult for a younger mother thereby

preventing her from breastfeeding beyond the confines of a medicalised environment i.e. hospital (Bailey & Pain, 2001; Mahon-Daly & Andrews, 2002).

Another reason for the greater rate of breastfeeding cessation seen in younger mothers could be due to a lack of assets or lack of mobilisation of those available. Younger mothers are likely to have fewer physical assets, such as money, than older mothers. Older mothers are more likely to have worked for several years, developed careers, and as a result developed several interpersonal and coping skills. These are all assets. A study by Wambach & Cohen (2009) found that adolescent mothers who did continue breastfeeding beyond six weeks reported receiving significant emotional and instrumental support from family, friends and school, whereas adolescents who gave up earlier reported they did not seek any help. The study by Dykes et al. (2003) suggests more proactive support should be given to younger mothers and include emotional, informational, esteem, network and instrumental support. The asset of esteem is key to accessing and accepting the support. Dykes et al. (2003) reported that the adolescent mothers in the study felt constantly watched and judged compounding their ability to seek out help. It is possible that young mothers think they will be judged as "too young" and "incompetent" if they ask for help.

Having more assets and being able to use these to maintain breastfeeding fits with Steven Hobfoll's Conservation of Resources (COR) theory (Hobfoll, 1989; Hobfoll, 2011;Hobfoll, 2012). This theory says that when there is a loss of resource or the threat of a loss, then an individual will perceive stress. If an individual, prior to an adversity/difficulty, already lacks resources then they will have limited reserve to manage stress (Hobfoll, 2012). COR theory says that individuals will strive to retain, maintain and protect those things that are valued the most by individuals. These, according to Hobfoll (2011) tend to be universally health, well-being, peace, family, self-preservation, and a positive sense of self. So, if difficulties with breastfeeding start to threaten the well-being of a mother, her sense of self or her health, then she is likely to stop breastfeeding.

Hobfoll (2011, 2012) suggests resources are found clustered in what he calls 'caravans of resources', in other words, they travel together. So being part of a strong loving family, provides high self-esteem, emotional support, optimism, physical safety and possibly access to finances. Resource caravans foster more resources (Hobfoll, 2012). Women who have babies when they are older tend to be more affluent women with access to a greater set of resources, hence when they experience breastfeeding difficulties, they have a greater reserve to draw upon. The next section will look at some of the breastfeeding difficulties women report.

3.5 Breastfeeding difficulties

Most women experience breastfeeding difficulties of one sort or another. An Australian survey found that 83% of women who said they wanted to breastfeed reported a breastfeeding problem in the first 10 days (Binns & Scott, 2002). This high percentage of women reporting breastfeeding difficulties was reiterated in an American study which found 92% of 447 primiparous women in the study reporting at least one breastfeeding difficulty at 3 days post-partum (Wagner et al., 2013). Early breastfeeding problems included difficulty getting the infant to latch, the infant being sleepy, the infant refusing the nipple, the infant being fussy or getting frustrated at the breast (Wagner et al., 2013). The length of time and frequency of breastfeeds, and the infant not feeding well were also reported as problems in the early days. Beyond the first week, perceptions of insufficient milk supply, nipple or breast pain, problems with pumping, exhaustion and feeling overwhelmed were reported as reasons for weaning earlier than planned (Brown and Lee, 2011; Wambach and Cohen, 2009).

3.6 Resilience and breastfeeding

Breastfeeding difficulties are reported so frequently by new mothers that 'difficulties' need to be viewed as 'normal'. Despite women citing difficulties as the reason for stopping breastfeeding, there are many women who still manage to continue breastfeeding. The difficulties experienced by women who stop

breastfeeding are no different to the difficulties cited by those women who continue (Brown & McPherson, 1998; Brown & Lee, 2011; Hegney et al., 2008).

Women who manage to continue breastfeeding despite difficulties describe having resilience, persistence and determination (Bottorff, 1990; Hauck et al., 2002; Symons et al., 2013). In a country where infant formula can be prepared under hygienic conditions and is readily available, determination and persistence to continue with a health behaviour that is causing adversity does construe resilience. Research into resilience, shows that resilience is not a personality trait and it is not simply determination (grit) and positive thinking but is about having a strong support network and environment (Ungar, 2019). The Conservation of Resources theory (COR) takes this further by specifically stating it is resources (or assets) that enable individuals to overcome and cope with stresses (Hobfoll, 2011).

Giving the message that you have to be resilient to breastfeed could be detrimental to the psychological health of a new mother, depending how that message is given and received. Many women feel guilty and a failure if they give up breastfeeding (Brown, 2019). Amy Brown, an academic from Swansea University, says that public health messages need to stop telling women that breastfeeding is easy, but instead support women to understand and work through the realities of breastfeeding (Brown, 2018).

The studies carried out for this thesis will be used to identify the assets that help women to overcome difficulties in breastfeeding: in other words, what gives them resilience. By identifying assists that confer resilience, it is hoped to develop an intervention that develops and promotes assets, thereby enabling women to develop and draw upon them to help continue breastfeeding when they encounter difficulties. These assets will also be available for other future challenges that the new mothers face. The intervention is therefore a preventative intervention, developing resilience for future adversity

Chapter 4: **APPROACHES TO INTERVENTION DEVELOPMENT**

This thesis explored the use of the Behaviour Change Wheel to develop an asset-based intervention. This was a new approach to developing asset-based interventions. In this chapter I will outline three widely-used approaches to designing health interventions before outlining why I decided to use the Behaviour Change Wheel.

4.1 Possible Intervention Approaches

4.1.1 The Medical Research Council (MRC) framework

The Medical Research Council has developed guidance for developing and evaluating complex interventions to improve health (Craig et al., 2008). A complex intervention is any intervention that has several interacting components, which the current intervention will have. The MRC framework identifies four key phases to the development of an intervention. These are: 'development'; 'feasibility/piloting'; 'evaluation'; and 'implementation'. Although originally conceptualised as a linear process, it is now recognised that intervention development is neither linear nor circular but is an iterative process, involving several cycles through the different phases (Craig et al., 2008; O'Cathain et al., 2019). The MRC framework is a useful guide, mapping out the different phases of intervention development, implementation and evaluation. In the development phase the framework identifies three key elements, these are (1) identifying the evidence base, (2) identifying/ developing theory, and (3) modelling process and outcomes.

4.1.2 **The PRECEDE-PROCEED planning model**

Another approach to planning health interventions is the PRECEDE-PROCEED planning model (PPM). This model encompasses both planning and evaluation phases. The planning phase, the 'PRECEDE' part of the model is composed of five phases. Each of these phases are followed in strict order and consist of assessments in the following: social; epidemiological; behavioural and environmental; educational and ecological; and, administrative and policy. These assessments are made prior to implementation of an intervention (Green & Kreuter, 2005). It is described as an ecological model and is advocated as one of the tools used in community health programs (Community Toolbox, 2020).

4.1.3 **Intervention Mapping**

A third approach to intervention development is Intervention Mapping (IM) (Bartholomew Eldredge et al., 2016). Intervention Mapping uses six steps to develop health promotion programmes. These are: (1) conduct a needs assessment; (2) specify program outcomes and objectives; (3) program design, including choosing theory and evidence of change methods; (4) refine program; (5) implementation; and (6) evaluation. IM is a very detailed, structured and comprehensive intervention development method.

4.1.4 **Why are these approaches not suitable?**

The MRC framework provides an overall plan for developing an intervention, but there is no guidance on how to choose or apply theory. The PRECEDE-PROCEED planning model could be used in a community context, it does focus on outcomes but like the MRC framework it does not gives any guidance about which theory to choose, which methods to use or guidance about appropriate change techniques. Intervention Mapping, on the other hand, gives a very comprehensive and prescriptive intervention development framework. It is, however, extremely time-consuming, needs extensive training in order to use well, and requires extensive theoretical knowledge of multiple theories about behaviour change. The Behaviour Change Wheel offers a simpler yet

comprehensive and coherent framework with an overarching model of behaviour that allows it to be applied to all health behaviours.

4.2 The Behaviour Change Wheel

The Behaviour Change Wheel (BCW) is a method developed by Michie et al. (2011) for designing and characterising behaviour change interventions. It was developed as a way of simplifying and systemising intervention design and thus making evaluation, including comparative evaluation of differing interventions, easier. Michie et al. (2011) do not purport the BCW to be a theory, rather it is framework.

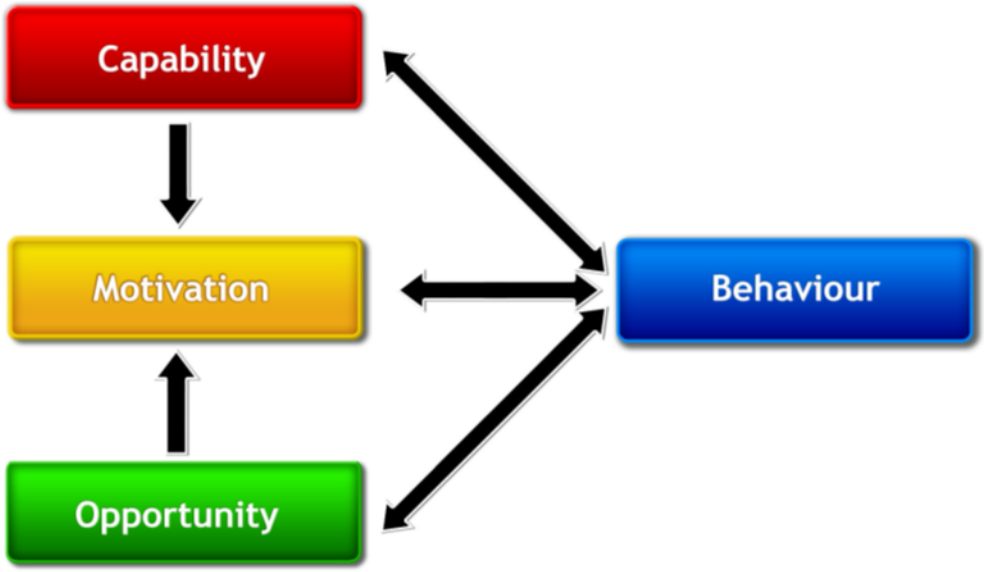


Figure 4-1 COM-B model of behaviour (Michie et al., 2011)

The BCW consists of three layers. At the centre of the wheel is the COM-B model of behaviour (Fig 4.1). COM-B stands for capability, opportunity, motivation and behaviour. COM-B was developed by Michie at al., (2011), to provide an overarching model of behaviour. It identifies the necessary conditions for all volitional behaviour. The arrows indicate the direction of influence. Capability, opportunity and motivation interact to influence behaviour, likewise, behaviour

can also influence each of these components. Motivation can be influenced by opportunity and/or capability.

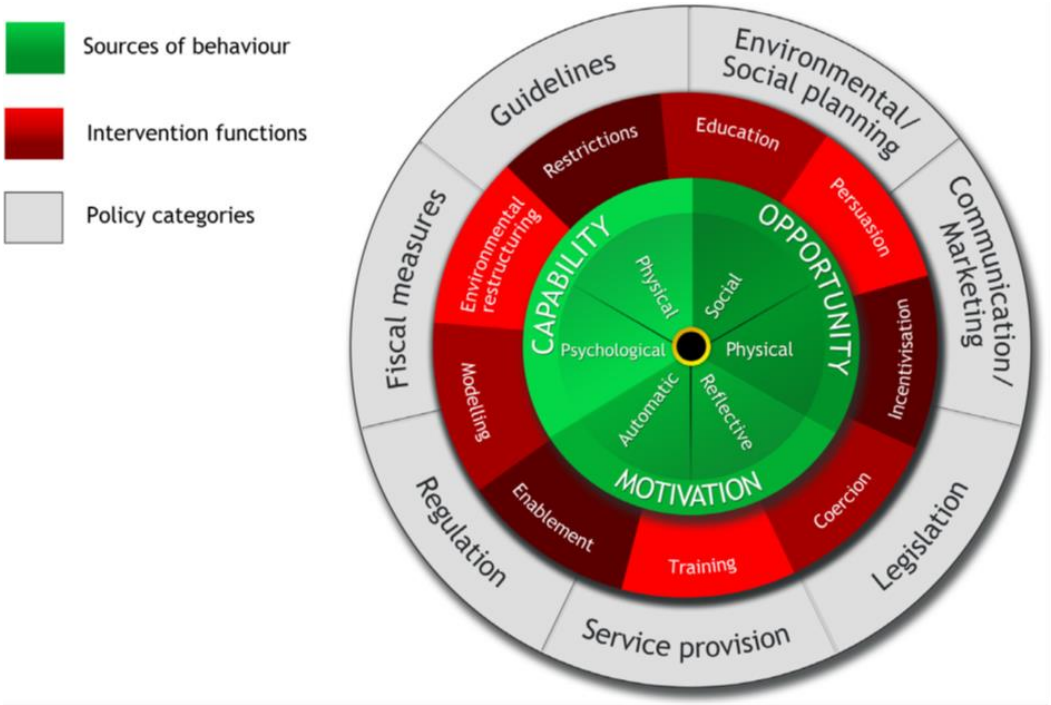


Figure 4-2 The Behaviour Change Wheel (Michie et al., 2011)

Surrounding the COM-B are the intervention functions (see Fig 4.2), these are the activities used to change behaviour. The outer layer identifies policies that can impact behaviour. The BCW is a dynamic framework constructed from 19 behaviour intervention frameworks. It is described as dynamic because there is interaction between the components of the COM-B and between the other layers. Michie et al. (2011) say the choice of functions and policy categories settled upon are non-overlapping and can describe all possible interventions, in other words they are coherent and comprehensive.

4.2.1 **Critique: Why use the Behaviour Change Wheel?**

The BCW has come under fire in recent years, sparked initially by Ogden (2016), who has criticised the work of Michie and colleagues for trying to systemise behaviour change interventions, thereby ignoring variability and professional

creativity. As is always the case in these debates, there are valid arguments for and against Ogden's points. I will not go into the details of the full debate here, but in my opinion, Ogden is raising a philosophical argument at the expense of developing real-life interventions. I will outline my reasoning below.

Firstly, there will always be variability in behaviour. People are complex and so respond in different ways. Having nuanced theories that specify different types of behaviour and different problems are helpful when working with a specific individual with a specific problem. However, in practical terms, public health is trying to improve health for as many as possible. Developing interventions that are systemised and standardised allows comparison and identification of the most effective interventions or parts of interventions. Systemisation also allows parts to be changed, and the effect of that change to be measured. It can allow us to work out where an intervention works best and for whom thereby working out the best intervention to reach as many people as possible.

Secondly, the COM-B elegantly captures the heart of all volitional behaviour, making it widely applicable. The categories 'capability', 'opportunity', and 'motivation' may be wide, but this expanse helps to capture all volitional behaviour, thereby making the model applicable to all health behaviours. It is therefore a very pragmatic model, making it suitable for developing an intervention for any health behaviour.

Thirdly, variability of intervention methodology can be confusing and unhelpful for those who are not designing interventions regularly. Having an easy to understand method allows intervention design to be accessible. Since I am exploring an alternative way to develop asset-based interventions, I wanted to ensure I chose a method that was comprehensive and could be used with minimal training. I anticipated the methods I used in the current intervention needed to be understandable to a wide array of people within a community setting. I did consider using Intervention Mapping (Bartholomew Eldredge, 2016) and received training in both Intervention Mapping and Using the

Behaviour Change Wheel. Although Intervention Mapping does provide a very comprehensive and systemised way of developing an intervention, it does require extensive training in health theories. It is therefore less accessible to people, the Behaviour Change Wheel, on the other hand, is readily explainable and understandable to those without training in health theories or a health psychology background.

4.2.2 **Designing interventions with the Behaviour Change Wheel**

There are three stages to using the BCW in the design of a behaviour change intervention. First, the behaviour needs to be understood. A behaviour analysis (diagnosis) is carried out. The behaviour is understood and mapped in terms of the COM-B components. This analysis helps to identify which components could be targeted to bring about change.

The second stage of intervention development identifies which functions and (if appropriate) policy categories are appropriate for the intervention. Michie et al., (2014) have constructed matrixes to link the COM-B components with the most effective intervention functions, and to link intervention functions with policy categories. These matrixes are based upon the synthesis of 19 behaviour change frameworks identified through a systematic review (Michie et al., 2011).

The final stage of development involves identifying specific behaviour change techniques (BCTs) and mode of delivery (Michie et al., 2014). Behaviour change techniques are defined as "a systematic procedure included as an active component of an intervention designed to change behaviour" (Michie & Johnston, 2013, p182), examples include goal-setting, providing prompts/cues, and information about health consequences. Most behaviour change interventions are complex combining several BCTs (Craig et al., 2008). Identifying and categorising BCTs when reporting an intervention not only makes the intervention replicable but also enables the accumulation of evidence (Michie & Johnston, 2012).

The Behaviour Change Technique Taxonomy (v1) is a tool that enables developers of behaviour change interventions, to choose and categorise BCTs (Michie et al., 2013). This thesis will use the BCT Taxonomy v1 to select and report chosen BCTs. The BCT Taxonomy v1 contains 93 BCTs organised into sixteen groupings. The selection of BCTs and groupings within the taxonomy was developed using a consensus approach involving international behaviour change experts (Michie et al., 2013). Grouping the 93 BCTs into clusters allows easier identification and selection for an intervention developer.

Michie et al. (2011) recommend selection of the BCTs and mode of delivery are made using a set of criteria they call APEASE (affordability, practicability, effectiveness and cost-effectiveness, acceptability, side-effects/safety, and equity).

This thesis will use each of the above three stages as it explores the development of an asset-based intervention.

Chapter 5: **WHAT ASSETS DO WOMEN USE TO CONTINUE BREASTFEEDING DESPITE DIFFICULTIES: A QUALITATIVE EVIDENCE SYNTHESIS (STUDY 2)**

This chapter reports the qualitative evidence synthesis that looked at the experiences of women who managed to overcome breastfeeding difficulties. Through the synthesis of qualitative studies, assets that support breastfeeding despite difficulties were identified. The chapter will use the ENTREQ statement to guide reporting. ENTREQ is an acronym for 'enhancing transparency in reporting the synthesis of qualitative research' and was developed by Tong et al. (2012) in response to the growing use of qualitative evidence syntheses to inform healthcare and health policy. The ENTREQ statement splits the reporting of a synthesis of qualitative research into five main domains:

i) Introduction

ii) Methods and methodology

iii) Literature search and selection

iv) Appraisal

v) Synthesis of findings

Chapter 5 is structured according to each of these domains.

5.1 Introduction

As has already been discussed in Chapter 3, breastfeeding rates in Scotland and the rest of the UK are low. The number of women who make an attempt to breastfeed has increased slightly over the last decade but this small increase in breastfeeding at birth is not translated into increases in breastfeeding prevalence beyond 10 days, suggesting greater numbers of women are giving up breastfeeding in those early days. The reason for the drop-off in breastfeeding

prevalence given by mothers is often difficulties with breastfeeding (Binns & Scott, 2002). Chapter 3 concluded breastfeeding difficulties are extremely common across the Western world.

In line with the rest of the thesis the current chapter uses the salutogenesis approach, examining what works for women and how they manage to continue breastfeeding despite difficulties, rather than focussing on what the difficulty is and why women give up breastfeeding.

The objective of this evidence synthesis is to determine what assets women draw upon to help them continue breastfeeding despite experiencing difficulties. The systematic search therefore set out to locate studies that reported how women continued breastfeeding despite difficulties.

5.1.1 **Why carry out a qualitative synthesis?**

Research should be cumulative, building on the findings and theories of previous research (Chalmers, Hedges, & Cooper, 2002). One way of doing this is to carry out a synthesis of previous research. A synthesis brings together relevant research and can give a fuller understanding about phenomena. This may be due to new ways of interpreting material or identifying and resolving conflicts across studies. A research synthesis can inform the next steps for further research, by identifying 'gaps' and inconsistencies across studies. Additionally, in pragmatic terms, a synthesis can also save time and expense by identifying what has previously been done thereby avoid needless duplication (Booth, Papaioannou, & Sutton, 2012). It enables the examination of a larger sample than a single research study can usually provide.

Syntheses of quantitative research are common in health; they are used to determine the effectiveness or not of a treatment. Qualitative syntheses are not so common but are becoming increasingly recognised as having a vital place in the development and refinement of health interventions (Glasziou et al., 2014; Glenton et al., 2013; Ring et al., 2012). Qualitative research provides in-depth understanding of phenomena that quantitative data does not. It looks at the

'whys' and 'hows' of behaviour and is used to explore meaning, importance and experience.

The purpose of the review carried out for this thesis was not to test an already developed intervention but to bring together research to aid the development of a new intervention. I was trying to develop an intervention to help women continue breastfeeding when they have difficulties, I wanted to identify how women who had experienced this phenomenon managed to overcome these difficulties. Thereby identify the assets they used. By identifying several studies and synthesising the findings, a fuller list of assets that help can be accessed.

5.2 Methods and Methodology

5.2.1 Reporting

Reporting the way research is conducted is essential for the integrity of research especially when the subsequent development of health interventions and policy is based upon them. For any health intervention it is important to know what evidence and/or theoretical base it is founded upon. There are therefore items that are required in any scientific report in order to replicate, understand, and have confidence in the evidence provided. The development of required items or a standard format for reporting research is an iterative process which develops over time and is refined becoming more specific to the requirements of the research methodology and scientific discipline employed. The reporting of systematic literature searches and the resulting meta-analyses of quantitative studies is now well established with the PRISMA statement (Moher et al., 2009) being used as the standard for reporting quality in systematic reports. The PRISMA statement contains items which allows a practitioner or fellow researcher to track back the evidence pathway to original source whilst also allowing the cumulative pooling of research to provide robust evidence for evaluation of current health practice or change to practices. Syntheses of qualitative studies are not as well-established as meta-syntheses of quantitative studies and so the reporting of qualitative syntheses does not, as yet, have a

consensus statement about what are the essential and desired items to report. The ENTREQ statement (Tong et al., 2012), however, is an attempt to bring qualitative research syntheses in line with standard reporting procedures that are now common place within quantitative meta-syntheses. The ENTREQ statement gives 21 items (see APPENDIX 2) that it recommends for the reporting of a synthesis of qualitative research.

These 21 items are split into five main domains:

i) Introduction

ii) Methods and methodology

iii) Literature search and selection

iv) Appraisal

v) Synthesis of findings

This chapter has been structured according to each of these domains.

5.2.2 **Searching the literature**

A pragmatic and iterative approach to searching the literature was adopted, consisting of the development of an initial planned search and then further searches as required to meet the purpose of the review. The purpose of the review was to develop an intervention using the Behaviour Change Wheel. The wheel itself already identified components of behaviour. The review used the BCW to systematically code the assets identified by mothers as helping them continue breastfeeding despite difficulties.

Prior to commencing the search, identification of existing systematic reviews from Cochrane, Campbell, CRD/DARE databases were checked to prevent duplication of the proposed review. Although syntheses were found on breastfeeding, there were no reviews or syntheses that had looked at how women overcame breastfeeding problems specifically.

The plan was to carry out the search for the literature using three stages:

Stage 1: Creating a list of terms for the subsequent search

Stage 2: searching using free-text and thesaurus terms identified in stage 1

Stage 3: citation search of identified studies from stage 2

By using these three stages it was hoped that a wide net would be cast to capture as many relevant studies as possible. Coding of studies from Stage 2 occurred before progressing to stage 3. After the stage 2 coding, it was felt that concept saturation had been reached, since no further concepts of assets were being identified. The citation search planned for Stage 3, therefore, did not occur. This is explained further in section 5.3.

Inclusion and Exclusion Criteria.

Table 5.1 outlines the inclusion and exclusion criteria used to select studies.

Question of interest:

What assets enable women to continue breastfeeding despite experiencing problems and difficulties with breastfeeding?

Table 5-1 Inclusion and Exclusion criteria for search

	Inclusion criteria	**Exclusion criteria**
Population	Women who had given birth within the last 2 years and have attempted to breastfeed.	Premature, low birth weight or unwell babies. Medical complications such as caesarean birth.
Phenomenon of interest	How women continue to breastfeed despite breastfeeding difficulties	No focus on breastfeeding difficulties. Not looking at strategies women used to continue breastfeeding
Study type	Qualitative data collection methods used: Focus groups, unstructured and semi-structured interviews; also questionnaire studies that used 'open' questions about coping with breastfeeding difficulties	Not qualitative
Location	Western Europe, Canada, USA, Australia,	Not Westernised country
Language	English	Not written in English
Type of publication	Full Text Peer-reviewed Primary study	Abstract only Not a primary publication

To be included in the synthesis a study needed to have a focus on exploring the experience of breastfeeding difficulties in women and how these women had overcome their breastfeeding difficulties to continue breastfeeding. Difficulties were either medically recognised such as mastitis or identified subjectively by the woman themselves. Difficulties included pain, tiredness, lack of weight-gain of the baby, excessive feeding, latching difficulties. Studies that focused exclusively

on populations that had medical complications of birth such as caesarean were not included.

Creating list of terms for searching.

Pearl-growing was used to develop the search strategy. Pearl-growing is a way of starting off a search. It takes a known highly relevant paper and uses it to establish free-text and thesaurus search terms. These can then be used for the subsequent search. It uses the assumption that similar papers will be indexed in similar ways (Booth, Papaioannou, & Sutton, 2012). Hegney, Fallon and O'Brien (2008) was used as a 'pearl' for the current review. This paper carried out a study that looked specifically at how women overcame difficulties with breastfeeding.

Table 5-2 Identifying search terms using a 'pearl'

Research Question: What assets do women use to continue breastfeeding despite difficulties?			
PEARL: Hegney D. Fallon T. O'Brien ML. (2008). Against all odds: a retrospective case-controlled study of women who experienced extraordinary breastfeeding problems. *Journal of Clinical Nursing*, *17*(9), 1182–1192.			
PsychInfo Index terms	Key words	women's experiences, extraordinary **breastfeeding** problems, weaning	
	Medical Subject Headings (MeSH)	adaptation, psychological* Adult; Breast Feeding/*adverse effects; Case-Control Studies; Female; Humans; Interviews as Topic; Lactation Disorders; Mastitis; Postnatal Care; Queensland; Retrospective Studies; Sucking Behavior; Surveys and Questionnaires	
	Subjects:	*Breast Feeding; *Experiences (Events); *Human Females; *Weaning	

A concepts table (Table 5-3) was used to map out the search terms. Free-text and thesaurus searching was used to establish subject headings and keywords informed by the key words and MeSH of the 'pearl' to develop the search. Terms such as "breastfeeding" and any variants thereof were mapped to subject headings. Truncation and wild cards were used in order to increase sensitivity.

Table 5-3 Concepts

AND

		Concept A Breastfeeding	**Concept B Breastfeeding problems**	**Concept C Overcoming problems**	**Concept D Qualitative study**
	Free text terms	Infant feeding	Barriers	Coping strategies	Interview
		lactation	Difficulties	Coping	Focus
		Breast-feeding	Lactation disorders	resilience	Qualitative
		breastfeed	Mastitis	persistence	Experience
OR		breastfed	Sucking behaviour	determination	
			Stress	adaptation	
			Psychological distress	solve	
				Problem-solve	
				resilience	
				success	
	MeSH terms				

5.2.3 **The Qualitative Synthesis**

Approach

A pragmatic approach has been taken throughout this thesis thereby adopting the most appropriate methods in order to understand and gain insight into knowledge and reality. There are several different approaches that could be used to answer this question. The ontological position that I have adopted to answer this question is from a critical realist position. The critical realist position is that there are different levels of reality: the empirical domain, made up of what

one experiences through the senses; the actual domain, that exist regardless of whether or not it is observed; and the real domain, which refers to the underlying processes and mechanisms (Ormston et al., 2014). Although I believe that there is an external reality there is also a reality constructed socially through interactions with others in the outside world and the internal workings if the human mind. These internal workings can only be accessed by using in depth questioning.

Reflexivity

Although as researchers we try and aim for objectivity, there will inevitability be some subjectivity in any research. The choice of question, the inclusion and exclusion criteria, the choice of types of research and the actual selection of papers will all have subjective decisions made. My choice of looking from a salutogenic approach, what works rather that what stops breastfeeding will influence the outcome of each part of the research process. The synthesis is no different and although I will try to be as transparent as possible in my selection process of papers, the coding of the papers and the final interpretation will be influenced by my subjectivity.

I have my own experience of breastfeeding, which does not fully match with the accounts of difficulty described in the qualitative studies identified. I do not consider myself to have had breastfeeding difficulties and always considered I had a very positive experience of breastfeeding. Nevertheless, I only breastfed two of my three children for four months, the other I switched onto formula milk after just two weeks due to extreme exhaustion. Acknowledging that my own experience of breastfeeding had considerable differences from mothers in the studies, I needed to pay careful attention to what the issues were and how they were solved. I consider myself empathic and non-judgemental around breastfeeding issues, knowing that everyone, every child and every situation is different. I tried to keep an open mind, not use my own experience and simply code the assets using the behaviour model, COM-B.

Generalisability

There is often debate about how generalisable qualitative research is but generalisability depends on where one stands on the realism-idealism dimension and the approach taken to what knowledge is and how one accesses that knowledge. As I have already stated above, this thesis takes a pragmatic approach throughout and this qualitative synthesis is no different. A pragmatic approach looks to what is useful. Therefore, from a pragmatic point of view taking the views of several women who experienced a similar phenomenon (difficulties with breastfeeding) means that we can learn from their experiences and apply it to other women experiencing similar difficulties. I understand that not all the difficulties will be the same and their social and personal circumstances will be different but gleaning what assets could be useful is helpful.

The asset approach is not didactic and therefore not prescriptive in what assets should or should not be developed. The intervention will be presented in a way that enables others to choose what is most helpful to them and their circumstances. It will not be able to quantify which assets are most helpful.

Subjectivity

Coding necessarily involves the subjectivity of the researcher. In a scientific discipline we try to minimise researcher subjectivity, but the reality is that subjectivity occurs. What is most important is making this subjectivity explicit and transparent for others to see. Transparency can be helped by using computer software like NVivo. NVivo can be set up to chart the coding progress, recording who coded what and when. In this way subjectivity of a researcher can be scrutinised. NVivo was used in the coding process for this thesis, firstly to organise the data but secondly to allow my subjectivity to be scrutinised.

Ideally two or more researchers would have coded the research papers. Having several researchers checking coding and coming to a consensus is the usual way

in which subjectivity is dealt with. Unfortunately, this did not happen in this study. Having multiple researchers does in theory minimise the subjective influence of one single researcher, however consensus does not mean it is subjectivity-free. It just means that two or more researchers have agreed with the others subjectivity. The important point here is that where subjectivity occurs, making that process transparent is key. Using a computer software package, like NVivo, that charts the process of coding enables transparency and gives a window into research subjectivity.

Coding

Since the purpose of this evidence synthesis was to develop an asset-based intervention using the Behaviour Change Wheel, the COM-B was used as a framework for coding. PDFs of the study papers were uploaded into NVivo 10 for Windows which was used to code and organise the data. A pragmatic approach to the coding of each paper was taken, always keeping in mind the purpose of the synthesis. If a paper had a section labelled "results" or "findings" then only that section of the paper was coded. Two papers (Bottorff, 1990; Phillips, 2011) did not organise their paper in this way and so the whole paper was read for coding. As I was looking to answer a specific question i.e. 'what women do to overcome breastfeeding difficulties' then only the sections in the papers that related to this phenomenon were coded. The experience of breastfeeding per se was not coded unless it related to how women cope with difficulties breastfeeding (see Appendix 1 'the experience of breastfeeding').

In the first round of coding each sense unit of the papers was coded according to a component of the COM-B i.e. physical capability, psychological capability, physical opportunity, social opportunity, automatic or reflective motivation. Occasionally it was unclear which component the sense unit should be assigned to. In this case Michie et al. (2014) recommend the Theoretical Domains Framework (TDF) is used. The TDF (Cane et al., 2012) consists of 14 domains: knowledge; skills; memory, attention and decisions processes; behavioural

regulation; social/professional role and identity; beliefs about capabilities; optimism; beliefs about consequences; intentions; goals; reinforcement; emotion; environmental context and resources; and social influences. The extra nuance of the TDF aids judgement with coding of sense units. Since the 14 domains of the TDF fall within the six components of the BCW (see APPENDIX 6) the most appropriate component to code a sense unit into becomes clearer. Some sense units were coded into more than one component. Once this coding had been completed, a thematic analysis was carried out. The thematic analysis overlaid the COM-B coding to help identify and elicit assets.

5.3 Literature Search and Selection

Searching.

Once established the table of subject headings and keywords (Table 5-3) was used to search MIDIRS, CINAHL, MEDLINE, PSYCHINFO, ASSIA, EMBASE. Table 5-4 gives the search used for PsychINFO.

Table 5-4 PsychINFO search

1	exp *breast feeding/ or breast feeding education/
2	Lactation/ or lactation disorder/ or lactation inhibition/
3	(((breastfeed* or breast) adj1 feed*) or lactation or breast-fe*
4	1 or 2 or 3
5	stress/
6	distress syndrome/
7	(stress or problem* or difficult* or barrier* or mastitis)
8	5 or 6 or 7
9	((solv$ adj problem) or 85vercome* or cope or coping or adaptation* or persisten* or determination or resilien* or success)
10	4 and 8 and 9
11	Remove duplicates from 10
12	Interview$.mp
13	Experience$.mp
14	Qualitative.tw
15	12 or 13 or 14
16	11 and 15

Numbers of papers found for each database are listed in Table 5-5. In total 601 papers were identified from the search. Figure 5.1 gives the numbers of papers at each stage of the screening process. 559 were excluded using titles. Abstracts from each of the 45 papers remaining were read. From these, 26 full text articles were retrieved and read in full. 15 papers were excluded with reasons for excluding (see section 5.3.1). The remaining 11 papers were read and coded. It was decided not to carry out stage 3 of the search (see section 5.2.2) because saturation of concepts (assets in this case) had been reached.

Table 5-5 Database search results

Date searched	Database	Number of papers found
24/6/14	OVID MEDLINE	201
24/6/14	CINAHL	188
25/6/14	EMBASE	253
25/6/14	MIDIRS	231
25/6/14	PSYCHINFO	33
25/6/14	ASSIA	16
TOTAL		922
TOTAL after removal of duplicates		601

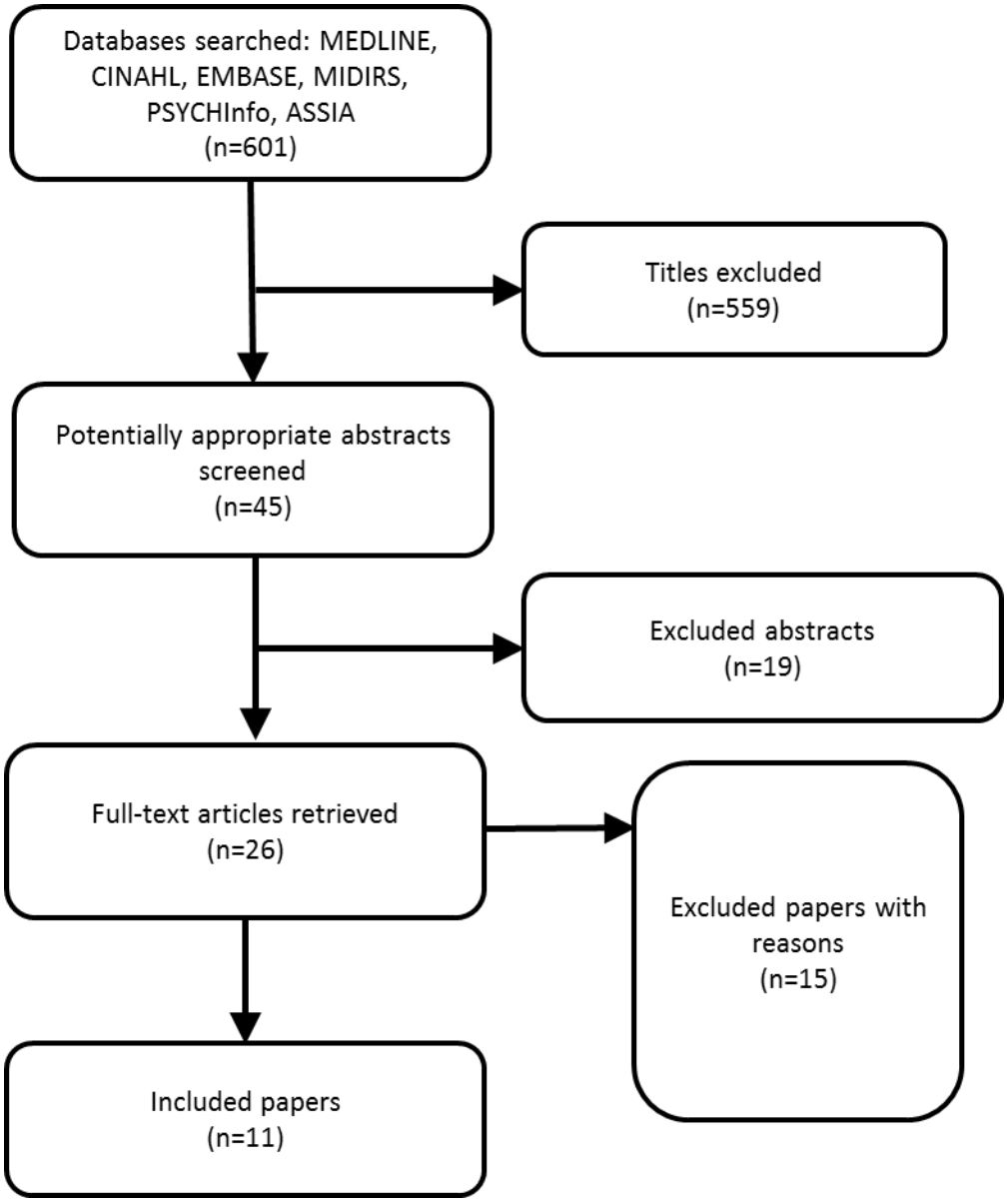


Figure 5-1 Literature screening process

Concept saturation is a difficult phenomenon to specify and researcher subjectivity is inevitable. However, taking a pragmatic approach does mean that judgements of this kind are necessarily made. The ultimate purpose of the review was to inform the development of an intervention to help new mothers prepare for breastfeeding. I had decided to use the Behaviour Change Wheel as a tool for developing that intervention. Keeping in mind the purpose of the intervention as the papers were coded into the BCW was important. By 9 papers

there emerged an obvious pattern to the data. I was aware that data saturation had possibly been reached, I made the decision at this point to code the last two papers selected from Stage 2 of the search and see if any new concepts or a change in the distribution of coding into the BCW was observed. These last two papers did not change the distribution and no new concepts emerged. A search using Stage 3 citations was therefore deemed unnecessary. The emergent pattern would be used as the starting point for developing the intervention.

5.3.1 **Excluded studies**

Twenty-six full text articles were retrieved and reviewed for inclusion in the synthesis. Fifteen articles were excluded, Table 5-6 gives reasons for exclusion for each study. These included being a duplicate, not a primary study, no focus on continuing breastfeeding, no focus on overcoming breastfeeding problems, not having qualitative data, being a conference abstract and being an opinion piece.

Table 5-6 Reasons for excluding studies

Author and Year	Title of Paper	Reasons for excluding from review
Adewale et al. (2006)	The lived experience of first time breastfeeding mothers	No focus on "how" women continued breastfeeding despite difficulties
Berridge et al. (2005).	Views of breastfeeding difficulties among drop-in-clinic attendees.	Does not address "how" women maintain breastfeeding
Blake et al. (2004).	Breast-feeding difficulties experienced by women taking part in a qualitative interview study of postnatal depression	Duplicate – same as Shakespeare et al

Bledsoe-Mansori et al. (2013).	Perceptions of breastfeeding success in depressed and non-depressed mothers: Implications for evidence-based practices	Not a full article. Only an abstract from conference proceedings
Brand et al. (2011).	Factors related to breastfeeding discontinuation between hospital discharge and 2 weeks postpartum.	Does not address the question of how women overcome breastfeeding difficulties. Not qualitative data.
Kouba (2007).	Some women found breast feeding physically and emotionally demanding	Excluded. This is just a commentary on the Kellehar paper
Larsen et al. (2013).	When breastfeeding is unsuccessful - mothers' experiences after giving up breastfeeding.	Excluded. Study focused on effects on mother of giving up breastfeeding rather how women continued
LopezBassols (2013).	Supporting breastfeeding, one mother and baby at a time	Not a primary study
Mozingo et al. (2000).	"It wasn't working. " women's experiences with short-term breastfeeding.	Not focused on how women continue breastfeeding
Oakley, N. (2000).	Why I gave up breast-feeding... 'breast-feeding: Overcoming the barriers'	Not primary qualitative study

Potter, B. (2005).	Women's experiences of managing mastitis	No focus on continuing breastfeeding despite difficulties
Razurel et al. (2011).	Stressful events, social support and coping strategies of primiparous women during the postpartum period: A qualitative study.	No focus on overcoming bf difficulties?
Smith, S. (2003).	How do women learn about breastfeeding and what are the implications for breastfeeding education?	Not focused on how women overcome bf difficulties
Spear, H. J. (2008).	Overcoming challenges: A first-time mother's breastfeeding success story.	Not a qualitative study. Opinion piece
Teich et al. (2014).	Women's perceptions of breastfeeding barriers in early postpartum period: a qualitative analysis nested in two randomized controlled trials.	No focus on overcoming bf difficulties

5.3.3 **Included Studies.**

Eleven studies were included in the synthesis. Table 5-7 lists all the included studies and summarises characteristics of each.

Table 5-7 Characteristics of studies included in the qualitative synthesis

Author and year	Title of paper	Study location	Total number of participants	Age range /mean	Type of study	Methodological approach and/or Design
Bottorff (1990)	Persistence in breastfeeding: a phenomenological investigation.	Canada	3	Not stated	"conversation with mothers" "personal experiences of interacting with breastfeeding mothers"	Phenomenological (lived experience)
Brown & Lee (2011)	An exploration of the attitudes and experiences of mothers in the United Kingdom who chose to breastfeed exclusively for 6 months postpartum.	UK	33	M =27.63 (SD 4.83)	Semi-structured interview	Descriptive qualitative design: content analysis used to analyse transcripts
Hauck et al. (2002)	The path of determination: Exploring the Lived experience of breastfeeding difficulties	Australia	10	28 to 43 (M =35)	Interview (60-90 min)	Phenomenology

Hegney et al. (2008)	Against all odds: a retrospective case-controlled study of women who experienced extraordinary breastfeeding problems.	Australia	Two cohorts of 20 each. N=40	M= 30 at birth of baby	semi-structured interview	Retrospective case-controlled
Hinsliff-Smith et al. (2014)	Realities, difficulties, and outcomes for mothers choosing to breastfeed: Primigravid mothers experiences in the early postpartum period (6–8 weeks)	UK	N=26	Not stated	Written diary (22 women) for six weeks. 13 interviews (9 with women who also completed diaries)	Interpretive phenomenology
Kelleher (2006)	The physical challenges of early breastfeeding.	Canada and US	n = 33 participants who discussed pain.	M=31	semi-structured in depth interview at one month post-partum. 65 min average interview	Part of a qualitative comparative sociological study
Kvist et al. (2006)	A grounded theory study of Swedish women's experiences of inflammatory symptoms of the breast during breast feeding	Sweden	14 women (9 primipara)	24 to 38 years	Interview (40 to 55 mins)	Grounded theory
Mauri et al. (2012)	Exploring the mother's perception of latching difficulty in the first days after birth: an interview study in an Italian hospital.	Italy	N=15, data saturation achieved by 15	29-43 years (M=34)	semi-structured interview. interviewed on average 76 hours	phenomenological-hermeneutic

					post-partum (range 36 to 120 hours	
O'Brien et al. (2009)	Strategies for success: a toolbox of coping strategies used by breastfeeding women.	Australia	N=21, comprised of four focus groups	fully bf 29-40 years; comb bf 19-38; formula 26-32	focus group interview	nominal group comparison
Phillips (2011)	First-time breastfeeding mothers: perceptions and lived experiences with breastfeeding.	USA	19	Not stated	individual interviews	phenomenological
Shakespeare et al. (2004)	Breast-feeding difficulties experienced by women taking part in a qualitative interview study of postnatal depression.	UK	39, of which 15 reported bf difficulties	range 19–42 M= 34 years.	in-depth interview (21-80 min, M=52 min) at approx 15 months post-partum (range 11 to 19 months)	Qualitative thematic analysis

Location of study.

Three papers were from studies carried out in the UK (Brown & Lee, 2011; Hinsliff-Smith et al., 2014; Shakespeare et al., 2004), three from Australia (Hauck et al., 2002; Hegney et al., 2008; O'Brien et al., 2009)**,** three reported on studies from North America (Bottorff, 1990; Kelleher, 2006; Phillips, 2011) one from Italy (Mauri et al., 2012) and one from Sweden (Kvist et al., 2006).

Participants.

The eleven studies included in the synthesis reported having between 3 and 52 participants in their studies. The paper with 52 participants (Kelleher, 2006) later states that the paper just focused on the 33 participants that discussed pain. If only including the 33 from the Kelleher (2006) paper, the total number of participants from the twelve papers is 229. All participants, except one focus group of 4 health professionals (O'Brien et al., 2009**)** were women who had at least indicated antenatally they intended to breastfeed after birth.

Length of time breastfeeding.

The papers varied about the length of time the women in the studies had breastfed. This was dependent on the main question and methodology of each study as well as the time of interviews. One paper (Brown & Lee, 2011) only recruited women who had breastfed for a minimum of six months, another recruited women who had breastfed for any period of time (Kelleher, 2006): 70% of participants in their study were still feeding their baby some breastmilk, either from the breast or pumped, at the time of the interview one month postpartum. Hinsliff-Smith et al. (2014) recruited women who indicated at their 34 week antenatal visit that they wanted to breastfeed. Seventy three percent of the participants in this study were feeding their baby breastmilk on hospital

discharge but only 38% were still giving breastmilk at six weeks (Hinsliff-Smith et al., 2014). Hauck et al. (2002) interviewed women at five to ten months postpartum and all except one participant was breastfeeding at the time of interview. Hegney et al. (2008) do not indicate how long their participants breastfed for or the time of the interview post-partum. Kvist et al. (2006) also do not indicate length of time of breastfeeding but all participants had breastfed up until their first experience of breast inflammation (at 4-17 week, M=9.7 weeks) and most continued beyond. Mauri et al. (2012) interviewed their participants on average 76 hours postpartum (range = 36 to 120 hours). In this study out of the 15 women interviewed because they experienced latching difficulties, 8 were still breastfeeding exclusively and 7 were combining breastmilk with formula. The participants in O'Brien et al. (2009) were recruited based on initially planning to breastfeed their babies for six months, they were separated into actual method of feeding at six months: fully breastfed, complimentary breastfeeding or artificial feeding. The focus group interviews for this study took place within 12 months of birth. The Shakespeare et al. (2004) study interviewed women approximately 15 months postpartum (range = 11 to 19 months). Ten out of fifteen participants interviewed in this study breastfed for more than six weeks. Phillips (2011) and Bottorff (1990) do not mention the length of time the participants in their studies continued to breastfeed or indicated the time afterbirth the interview was conducted.

Demographics.

Some papers did not give demographic data of the participants but for those that did the ages of participants ranged from 19 to 42 years. The lowest average age given of any one study was 27.6 years (Brown & Lee, 2011), all others studies had mean age of the mothers in their thirties: M= 30 (Hegney et al., 2008); M=31 (Kelleher, 2006); M=34 (Mauri et al., 2012); and M=34 (Shakespeare et al., 2004) and M =35, **(**Hauck et al., 2002). Very little socio-demographic data was given in any of the papers : "women hailed from diverse socioeconomic backgrounds as well as racial/ethnic heritages" (Kelleher, 2006) and “a broad spectrum was

recruited according to age, education, parity, severity of symptoms, continuation or not of bf" (Kvist et al., 2006) are examples of the type of socioeconomic information given in the majority of the papers. Four papers, Mauri et al. (2012), Brown & Lee (2011), Hauck et al. (2002) and Hegney et al. (2008) did report on educational level of participants. Mauri et al. (2012) used purposive sampling in their study to gain a range of views and selected to cover views from participants from three educational levels: those completing up to 8 years of education/ primary school (3 participants); those with 13 years of education/ high school diploma (7 participants); and those with further education/college degree (5 participants). In the Brown & Lee (2011) study the participants had a mean of 14.33 (SD 2.01) years in education. All ten participants in the Hauck et al. (2002) study had completed tertiary education. In Hegney et al. (2008) 13 (65%) of women in the continuing breastfeeding group had 12 or more years in education, the non-continuing cohort had slightly less (11 or 55%). Hegney et al. (2008) also mentioned occupations and education level of partners, saying that partners of the continuing cohort were more likely than partners of non-continuing women to be in employment in professional or associate professional occupations such as doctor, lawyer, solider and policeman. No other study in the synthesis reported on partner education or occupation.

Study design and Methodology.

Individual interviews were used in all the studies except O'Brien et al. (2009) who used focus group interviews. Hinsliff-Smith et al. (2014) used written diaries as well as individual interviews to collect information. O'Brien et al. (2009) and Hegney et al. (2008) used comparative groups to look at differences between women that continued breastfeeding despite difficulties and those who did not continue.

A variety of methodologies were adopted: the most frequent methodological approach was phenomenological, with five of the eleven papers adopting this methodology.

Study question.

Seven studies (Hauck et al., 2002; Hegney et al., 2008; Kelleher, 2006; Kvist et al., 2006; Mauri et al., 2012; O'Brien et al., 2009; Shakespeare et al., 2004) used a study question that had a specific focus on understanding and exploring difficulties with breastfeeding. Hauck et al. (2002), Hegney et al. (2008), O'Brien et al. (2009) and Shakespeare et al. (2004) looked globally at difficulties with breastfeeding, covering all types of difficulty, whereas the other three papers chose a specific difficulty to focus upon: Kelleher(2006) looked at pain; Kvist et al. (2006) looked at breast inflammation and Mauri et al. (2012) explored latching difficulty.

The aim of the other four studies included in the synthesis (Bottorff, 1990; Brown & Lee, 2011; Hinsliff-Smith et al. 2014; Phillips, 2011) was to explore the breastfeeding experience and were included in the synthesis because there was a significant focus within each of the papers on difficulties of breastfeeding and ways in which the women overcame these difficulties.

Hegney et al. (2008) and O'Brien et al. (2009) were the only two papers that stated the purpose of their study was to find ways in which women overcome breastfeeding difficulties or problems but all other papers explored ways in which women had overcome breastfeeding difficulties even if this had not been one of the initial or stated aims of the study.

The Kelleher (2006) and the Shakespeare et al. (2004) papers were based upon subsets of larger studies which had not intended to look at breastfeeding difficulties per se, but enough evidence emerged within those larger studies to warrant a specific paper looking at breastfeeding difficulties. In the case of Kelleher (2006) the larger study was looking at women's experiences of postpartum care and for Shakespeare et al. (2004) the study asked women about their experiences of screening for postnatal depression.

5.4 Appraisal

An assessment of quality was carried out using the Critical Appraisal Skills Programme (CASP) checklist for qualitative research (CASP, 2018), on each of the papers. The CASP checklist covers three broad issues for appraisal: firstly, it considers if the results are valid (Q1-Q6), secondly it considers what the results are (Q7-Q9), lastly if the results will help locally (Q10). For each question a value judgement of 'yes', 'no' or 'can't tell' was assigned for each of the papers. Table 5.8 gives a summary of the findings for each question.

Table 5-8 CASP checklist

Question		**Yes**	**No**	**Can't Tell**
1	Was there a clear statement of the aims of the research?	11		
2	Is a qualitative methodology appropriate?	11		
3	Was the research design appropriate to address the aims of the research?	11		
4	Was the recruitment strategy appropriate to the aims of the research?	10		1
5	Was the data collected in a way that addressed the research issue?	9	1	1
6	Has the relationship between the researcher and participant been adequately considered?	3	5	3
7	Have ethical issues been taken into consideration?	8		3
8	Was the data analysis sufficiently rigorous?	7		4
9	Is there a clear statement of findings?	11		
10	How valuable is the research?	11		

All the papers had a clear statement of aims and used a qualitative methodology appropriately to address the research aims. The area which was deemed to have poor quality was the consideration of the relationship between researcher and participants, only three papers addressed this issue sufficiently. The other papers either did not consider this aspect at all or mentioned the relationship of the researcher but did not go on to consider the impact of that relationship on the research findings.

Appraisal of the studies was carried out not to exclude poor-quality studies from the synthesis but to simply indicate quality of papers and validity of results.

The CASP is a quick and easy tool to use. It gives a useful global quality appraisal of studies included. I only used as an indication in this thesis for quality and did not use it to determine whether to include or exclude a study from the synthesis. I felt this was appropriate since this synthesis was simply identifying possible assets that participants in the intervention could use. If more definite targets for an intervention were required then I would have used GRADE-CERQual (Lewin et al., 2015). GRADE-CERQual is a more thorough appraisal tool which assigns a level of confidence to the findings by identifying both the number of studies contributing to that finding and an assessment of the quality of the studies.

5.5 Synthesis of findings

Breastfeeding is a complex behaviour, involving the interaction between a number of elements. Chapter 3 highlighted some of the difficulties and complexities of breastfeeding for women. APPENDIX 1 gives a summary of the experience of breastfeeding. This synthesis will now explore how women negotiate breastfeeding difficulties highlighting the resources/ assets they draw upon. It will use the COM-B, model of behaviour to code and organise the assets identified in the qualitative papers. By using the COM-B as a framework to

analyse the papers it is hoped that easy identification of the categories to be translated into an intervention can be made.

All six behaviour components of the COM-B were identified within and across the 11 studies. It was notable, however, that some components were categorised more frequently than others. Reflective motivation and psychological capability were identified as being present in the findings from all eleven studies and stood out as being the most frequently coded components. Although frequency does not necessarily equate to importance, it does give an indication – this is discussed further in section 6.1 on selecting target components for the intervention.

The analysis below, will focus on the assets/resources used and mobilised by the women and will illustrate each with examples of the women's voices whenever possible. Behaviour is an interaction between the COM-B components i.e. capability, opportunity and motivation, so when illustrating evidence of one component there will inevitably be links to the other components. Separating out assets into clearly contained behaviour components proved to be quite challenging. This is discussed further in section 5.7 which critiques the BCW.

A table of the assets (Table 5-9) identified by COM-B components is given here to help the reader as they read through the more detailed analysis.

Table 5-9 Assets to enhance resilience in breastfeeding

COM-B component	Assets
Capability (Physical)	Physical skill to breastfeed Sleep
Capability (Psychological)	Knowledge Patience Goal setting Positive self-talk Interpersonal skills Self-care Flexibility
Opportunity (physical)	Time Space
Opportunity (Social)	Support from health professionals Support from partners Support from family members Support from other breastfeeding mothers
Motivation (Reflective)	Motivation to breastfeed based on knowledge about benefits
Motivation (automatic)	Motivation to breastfeed based on emotion and desire to "do the right thing"

5.5.1 **Physical capability.**

According to Michie et al. (2014) the category of 'Physical Capability' includes the physical skill, strength and stamina to carry out the behaviour. Occasionally some women cannot breastfeed due to a physical problem, however this is rare, so in this section I start from the premise that a new mother has the physical capability to breastfeed, in terms of physiology. She still needs to learn the skill, however, and have the stamina. Two assets emerged from the synthesis relating to this component:

i) Learning to breastfeed

ii) Sleep

Learning to breastfeed.

Although breastfeeding is 'natural' and a new mother is biologically designed to breastfeed, women still need to learn the skill of breastfeeding. As described in APPENDIX 1 'the experience of breastfeeding', this comes as a surprise to many new mothers and something they are not prepared for. The quotes below are from are chosen form three different papers to illustrate how wide-spread this issue is:

> *But I didn't think it [breastfeeding] would be this difficult because, you know, it looked so easy. You put a baby to the breast, and he drinks, but it's not that easy*
>
> (Jane in: Bottorff, 1990, p.204)

> *You think you're a completely useless mother and, you know, you should be able to know how to do this instinctively [breast feeding] and in fact it's probably the hardest thing I've ever done.*
>
> (Participant 25 in: Shakespeare et al*.,* 2004, p255)

> *…it never dawned on me that I would ever have trouble doing it, or that there would be issues.*
>
> (CC in: Hegney et al., 2008, p.1186)

In the early post-partum days women look to health professionals to help them learn the skill of breastfeeding. Women who managed to successfully breastfeed despite problems often mentioned having a supportive health professional (see section 5.5.4 on Social Opportunity below). Health professionals play a pivotal role in helping a new mother adjust to the demands of having a new baby and the mechanics of breastfeeding, but inconsistent advice can be confusing and create more stress for new mothers:

> *I was given a thousand different suggestions about what to do. They meant well, they were very sweet. But it stressed me out. You're tense and unsure when it's your first baby. What you want is clear-cut instructions about what to do.*
>
> (IP 13 in: Kvist et al., 2006, p143)

A woman who has been taught how to breastfeed, has the practical skills necessary to position her baby correctly. This can avoid some of the other difficulties experienced with breastfeeding. A mother who recognises that she needs to learn how to breastfeed and spend some time developing these skills is more likely to seek out help and not be as distraught that she is unable to do this instinctively.

Sleep

Sleep is a resource that could help support breastfeeding. A new mum has many things she needs to learn on top of coping with a lack of sleep and physical exhaustion. Being able to get enough sleep was an important resource mentioned by women in the O'Brien et al. (2009) study, who believed that a lack of sleep had a negative impact on milk supply. Although there may be no real physiological impact on milk production caused by a lack of sleep, breastfeeding is a very emotional as well as physical process and if a mother is feeling psychologically under par then she may also feel her body is too. Lack of sleep can impact cognitive thinking and result in an inability to mobilise available resources:

> *I suppose you're so emotionally and physically exhausted, that you haven't got the time and the resources to go hunting around…to be able to be helped*
>
> (Paula in: Hauck et al., 2002, p7)

Getting enough sleep will make a new mother feel better both physically and mentally. Seeing sleep as an important asset for helping with the initial establishment of breastfeeding and then the continuation of it should be highlighted to new mothers as they plan for breastfeeding. The quote from Paula

above, shows that waiting until you are too tired is too late, establishing supportive networks before the baby is born will be essential in order to give new mothers the best chance of success.

5.5.2 **Psychological capability.**

Psychological capability includes the knowledge or psychological skills, strength or stamina to engage in the necessary mental processes

The psychological toll upon a new mother can be immense. As has been illustrated in 'the experience of breastfeeding' (appendix 1), there are many psychological demands upon a breastfeeding woman. She needs to be able to cope with the unrelenting nature of breastfeeding; lack of sleep; the responsibility of looking after a new baby; as well learning the balancing of her own needs whilst coping with the needs of her baby. In addition to this, there is the uncertainty and anxiety about whether her baby is receiving enough nutrition, as well as adjusting her own expectations of breastfeeding.

Perseverance, flexibility and persistence were reported as key to successful breastfeeding by participants across many of the studies (Bottorff, 1990; Brown & Lee, 2011; Hegney et al*.,* 2008; Kelleher, 2006; Kvist et al.,2006; Phillips, 2011). Perseverance is the act of keeping going despite difficulty. Flexibility is the skill of being able to change tack when something isn't working, and persistence is akin to perseverance, in that it is keeping going despite not seeing results. These could all be described as psychological strengths, so it seems fitting to mention them explicitly in this section. However, stating to a new mother that she just needs perseverance in order to breastfeed is not particularly helpful. In this analysis, therefore, I have tried to break these qualities down further into more tangible assets that a woman could develop to help her persevere.

There were seven assets identified in the psychological capability category. These were: knowledge, patience, goal-setting, positive self-talk, interpersonal skills, self-care and flexibility.

Knowledge.

There were two areas of knowledge that were identified in the qualitative studies. These were knowledge about the physiology of breastfeeding and knowledge about the benefits of (exclusive) breastfeeding.

Understanding about the physiology of breastfeeding may help to counter the often-cited reason for giving up breastfeeding, which is perceived breast-milk insufficiency or inadequacy (Dykes and Williams, 1999; Odom et al., 2013). Bottorff (1990) states in her paper that women who understood about the physiology of lactation had confidence that they would produce enough milk. Hegney et al. (2008) also found women who understood the signs of a healthy baby had confidence in their own abilities to provide for their baby:

> *… if they're healthy enough and they've got wet nappies and they're bright…I don't know, there are little indicators you can look for.*
>
> (CC in: Hegney et al., 2008)

Understanding the physiology of breastfeeding can empower women to actively seek ways to overcome breastfeeding problems:

> *I think well what can I do to solve this problem and I sort of do everything I can to find some information to help me get through it.*
>
> (O'Brien et al., 2009, p.1578)

> *I latched him a lot of times, and in fact tonight a lot of milk came out; now my breast is full of milk!*
>
> (Participant 7, in: Mauri et al., 2012, p.819)

Knowledge about the benefits of (exclusive) breastfeeding motivated women to continue when they were going through a difficult period:

> *My baby woke 2–3 times a night between 4–6 months whilst I thought weaning might reduce this I did not want to wean because it was not to the health benefit of my baby.*
>
> (P4 in: Brown and Lee, 2011, p.199)

Knowledge about the benefits not only helps the women to rationalise (to themselves) why they were continuing despite difficulties, but also helps them to get others on board:

> *My partner likes science and facts and getting him to understand why I was doing what I was doing meant he was keen for me to carry on too. Personally I just think he liked not having to get up in the night like his friends though!*
>
> [P21, 29, higher education, stay at home mother]

It can also help to counter pressure from others to use formula or start weaning early:

> *My mother did express a lot of surprise about how often he needed feeding and how I was on solids by now. I gave her a book about breastfeeding which she raised her eyebrows at but must have read as her attitude slowly started to change.*
>
> (P18 in: Brown and Lee, 2011, p.201)

Patience

Waiting and having patience was a recurrent theme across the studies:

> *Mums to be should be aware it takes time, effort, and patience to breastfeed your baby*
>
> (P27 diary in: Hinsliff-Smith et al., 2014, p.17)

> *I think you need …you must take your time (13). Having a lot of patience(10).*
>
> (Participant 13 in: Mauri et al., 2012, p.819)

Patience is a quality which according to the Oxford Living Dictionary is 'the capacity to accept or tolerate delay, problems, or suffering without becoming annoyed or anxious'.

There appears to be a passivity to patience which is in contrast to the active aspect of the asset approach. The flexibility of knowing when to be passive and when to be active is likely to be challenging.

Patience will be easier for some women to tolerate than others as it is likely to be bound up in personality. People who score high for the personality trait of emotional stability, for example, are less likely to experience state anxiety. You would expect these women to display more patience with breastfeeding. Indeed, Brown (2014) carried out a questionnaire study examining personality and breastfeeding duration in woman who had babies six months old. They found emotional stability correlated with longer breastfeeding duration (Brown, 2014).

This asset connects closely with the asset of time which is discussed in the physical opportunity component section. Patience can only occur if time is available.

Goal-setting

Five papers (Bottorff, 1990; Brown & Lee, 2011; Hegney et al., 2008; Kvist et al., 2006; O'Brien et al., 2009) mention the setting of breastfeeding goals by mothers in their studies:

> *long before he was born I had made up my mind that I was going to breastfeed no matter what. That was the one thing that I was sure that I was going to do*
>
> (Jane in: Bottorff, 1990, p.203)

However, it was only Hegney et al. (2008) and O'Brien et al. (2009), that talked specifically how goal-setting helped women to continue. Hegney et al. (2008) found that over half of the women who continued breastfeeding in their studies

had reported using goal-setting to cope with difficulties. Some women focussed on their long-term goals:

> *I was not at my [goal of] 12 months and I would not give up – he would be back on the breast*.
>
> (CC in: Hegney et al., 2008, p.1188)

whereas others made short-term goals to help them continue:

> *I made small goals and would think 'I will express till the end of this week'.*
>
> (CC in : Hegney et al*.,* 2008, p.1188)

One of the qualities of resilience is flexibility. It is also one of the assets identified in this analysis and is discussed in more detail below. I mention here because flexibility to move from long-term goals to short-term goals seemed to be important for helping women cope.

Positive Self-talk

Hegney et al. (2008) identified positive self-talk as one of the ways in which women in their study continued to breastfeed:

> *"*The internal dialogue of continuing women appeared to play an important role in successfully overcoming breastfeeding challenges. Their attitude was there was no point 'moping around'. They preferred to make a decision and move on. They used self-talk to manage their cognitive reactions to difficulties they encountered. With the aid of self-talk, they used positive messages and logical argument to keep their problems in perspective"
>
> (Hegney et al., 2008, p.1188)

Bottorff (1990) also identified self-talk was an important way in which women managed to continue breastfeeding:

> *There were so many times I thought of giving up. But I kept talking to myself, saying, 'Well, you have to do this. It's going to get*

better. Think of him. It's good for him'

(breastfeeding mother in: Bottorff, 1990, p207)

Telling themselves that discomfort and pain in breastfeeding was only temporary helped women to continue to breastfeed despite finding it painful (Kelleher, 2006).

Interpersonal skills

Brown and Lee (2011) identified that good interpersonal skills were used to the benefit of mothers who were trying to exclusively breastfeed. Good interpersonal skills enabled breastfeeding mothers to mobilise those around them to feel included and become more supportive with the breastfeeding effort:

> *My mother admitted that she was upset that she couldn't feed the baby and look after him for me. I said that the best way to help him was to ensure that I was looked after and she could really help by cooking meals or just sitting and keeping me company. Once she had a job and realised we really did need her she was much happier.*
>
> (P24 in: Brown and Lee, 2011, p201)

> *My partner did say he felt excluded but knew I was making the best decision for our baby. I suggested that he should be in charge of bath time and he relished the opportunity just to have that daddy daughter time with our little girl.*
>
> (P8 in: Brown and Lee, 2011, p.201)

Negative comments and attitudes towards breastfeeding were countered with polite but decisive comebacks:

> *In the end I used to just smile politely, say that I was going to carry on breastfeeding as that was the best decision for us and move the conversation on.*
>
> (P23 in: Brown and Lee, 2011, p.200)

These examples show how having psychological skills (assets) can allow the woman to tap into assets elsewhere (social support).

Self-care.

Looking after themselves was an important coping strategy mentioned by some of the women:

> *Looking after yourself is really important and you obviously like, intentionally do that when you really need to*
>
> (mother from complimentary bf group in: O'Brien et al., 2009, p1578)

Although the self-care strategies are not spelled out in the papers, trying to relax and reduce stress as well as get enough sleep appears to be important:

> *Everything seems 10 times worse when you haven't had enough rest*
>
> (artificial feeding mother in: O'Brien et al., 2009, p1578)

Flexibility.

Flexibility is mentioned in a number of the papers (Hegney et al., 2008; Kelleher, 2006; Phillips, 2011; Shakespeare et al., 2004). Mothers who were flexible and adaptable appeared to able to manage the challenges of breastfeeding better:

> *If we went to [name of town] or the coast, I would usually have to express in the car on the way.*
>
> (Hegney et al., 2008, p.1188)

The element of flexibility crosses over and within the psychological skills above. Being versed in several psychological skills was a benefit as it meant the new mother had a number of skills and strategies at her disposal. Research into understanding people exhibiting resilient profiles has highlighted psychological flexibility as an important characteristic (Waugh & Koster, 2014).

5.5.3 **Physical opportunity**

Physical opportunity is opportunity afforded by the environment involving time, resources, locations, cues, physical 'affordance'.

This component of the COM-B had the lowest frequency of coding within the papers: only 22 instances in 7 of the papers were noted, compared with psychological capability and motivation which had 133 and 150 instances respectively across 10 papers. This may be because very little physical resources are needed for a mother to breastfeed. The mother simply needs a space in which to seat herself and her baby. Policy in several countries protects woman breastfeeding in public. So when breastfeeding is working a woman can theoretically breastfeeding anywhere at any time. We do know, however, that there are significant attitude issues around this in society which is beyond the scope of this study.

Within this study, where we are looking at the resources that help women, there were two significant physical opportunities (resources) identified. These were 'time' and 'space', each will be discussed in more detail below.

Time

As mentioned in the section on 'patience' above, time is a necessary resource for breastfeeding and is closely linked to patience.

> *I cannot do anything else apart from breastfeeding, no time for bath or shower or even clean the house*
>
> (P15 diary in: Hinsliff-Smith et al., 2014, p.16)

Although time itself cannot be created per se, time as a resource, can be given to mothers by others. They do this by taking over some of the household chores, such as looking after other children, washing, ironing, cleaning and preparing meals. We start to see how the interplay of assets here enables the creation of

more assets. A mother who has the interpersonal skills to be able to mobilise those around her to take over chores or even just leave her alone, helps to create the extra time she needs for breastfeeding when there are difficulties. This idea is very similar to Hobfoll's caravan passageways in his Conservation of Resources (COR) theory (Hobfoll, 2011). Social support, he says contributes to resource passageways. If you can access social support, through good interpersonal skills, then you can access a greater array of resources.

Private Space

In the early days of breastfeeding, mother's need space and time preferably in private to learn how to breastfeed. Family members visiting in the early days can create problems with breastfeeding establishment:

> *You have to feed her and you are not comfortable doing it yet, you are trying to let everyone say hello and have a hold and then she wants feeding*
>
> (P5 interview in: Hinsliff-Smith et al*.,* 2014, p.18)

> *Hard to find privacy, curtains helped, had to keep asking someone to shut the curtains*
>
> (P3 diary in: Hinsliff-Smith et al*.,* 2014, p.18)

Even in places where you imagine there should be more empathy, such as a doctor's surgery, there can be a lack of understanding:

> *I asked the receptionist where I could go and they looked at me and said you can sit down here if you like, it was basically the thoroughfare where everyone walks through – and she said sit down there*
>
> (P3 diary in: Hinsliff-Smith et al., 2014, p.18)

Even after a mother has established breastfeeding, the lack of a private space can be one more trigger to giving up breastfeeding:

> *As I continued to breastfeed I did sometimes wish I had bottle-fed (formula) because going out and about is quite difficult and I am not yet confident enough (6 weeks) just to do it in public*
>
> (P27 diary in Hinsliff-Smith et al., 2014, p.18)

Again, with this example of space, you can see how assets support and extend each other. For a woman to create the space and time she needs to breastfeed, she needs to have the interpersonal skills and confidence to let others know they need to leave or that the space offered is not suitable.

5.5.4 **Social opportunity**

Social opportunity is opportunity afforded by interpersonal influences, social cues and cultural norms that influence the way that we think about things, eg. the words and concepts that make up our language.

Social opportunity in the form of social support was cited in nine of the papers. According to Bottorff (1990) mothers need and seek support, as exemplified by this quote:

> *I really needed somebody to tell me 'Keep going It's going to be okay'*
>
> (Breastfeeding mother in: Bottorff, 1990, p.206)

Mothers found support from health professionals and partners particularly was essential. Support from family and other breastfeeding women were also seen as important assets by the new mothers.

Support from health professionals.

Women who continued talked about kind, sensitive, health professionals being instrumental in helping them overcome problems. They appreciated competent and consistent advice and the availability of health professionals for reassurance around breastfeeding difficulties:

> *I did get into paranoid mummy mode when she spent [baby] about 3 hours during the night latching on for about 5 mins at a time. Luckily, the midwife came to check she was feeding correctly. The midwife reassured me that some babies cluster feed plus she was latching on fine, I feel loads better*
>
> (P11 diary in: Hinsliff-Smith et al*.,* 2014, p.17)

> *The support received from midwives was the best… I even understood the correct way to latch her*
>
> (Participant 7 in: Mauri et al., 2012, p.821)

> *He would have been on formula if it wasn't for the support that I got … he was okay at the hospital… but more like the helpline and my husband helped me. That was important.*
>
> (Marilyn in: Kelleher, 2006, p.2734)

However, as has already been mentioned, consistent advice is the most helpful:

> *I was given a thousand different suggestions about what to do. They meant well, they were very sweet. But it stressed me out. You're tense and unsure when it's your first baby. What you want is clear-cut instructions about what to do.*
>
> (IP 13 in: Kvist et al., 2006, p143)

Support from partners.

Partners were an important asset since they could help a woman feel better about herself and help out in very practical ways with housework and cooking:

> *It really helped to get my husband onside and understanding why it was important. He often tells his friends now why I am breastfeeding, how easy it is and how proud he is of me*.
>
> (P33 in: Brown & Lee, 2011, p.201)

> *My husband was very supportive. He often tells me how proud he is. When it was hard at the start he did everything else for baby and in the house to allow me to concentrate on feeding and recovering from birth.*
>
> (P22 in: Brown & Lee, 2011, p.200)

Support from family members.

Grandmothers and other family members could be a help or hindrance. Using interpersonal skills to get family members on board has already been mention in section 5.5.2 on psychological capabilities above. Family members (especially the grandmother) often needed to feel included in the care of the new baby. The newly breastfeeding mother needed to use interpersonal skills to access this support effectively.

Support from other breastfeeding mothers.,

Social networks are a strength that enable people to cope. Understanding that most women experience breastfeeding problems is empowering, it gives a mother strength and knowledge that enables her to have the confidence to seek out solutions in knowledge that she is not alone:

> *I had a lot of problems … the first two months I had a lot of pain but I was meeting women there [at the breastfeeding support group] who had four and five month old babies saying <u>YES</u> that's*

> *how it was for me, I've been through that…[so I] felt like, OK you know other people really struggle at the start too, but then it gets easier or they figure it out*
>
> [Alison, Focus group 1]

Breastfeeding women would seek out other breastfeeding women through support groups or their own social groups to reinforce breastfeeding goals and get advice when difficulties arose.

> *We just knew where we were both at and we would often be going through the same things.*
>
> (CC in: Hegney et al., 2008, p.1186)

> *I sought a lot of help and support from help lines, breastfeeding cafes and a friend and by 10 weeks it was easy and I never looked back.*
>
> P28 in: Brown & Lee, 2011, p201)

> *Sometimes the night times were just soul destroying when he was having a growth spurt. Just being able to have coffee with a friend and knowing she understood, had been doing the same and wasn't going to tell me that formula was the answer was a life saver. (P20, 34, higher education, professional)*
>
> (P20 in: Brown & Lee, 2011, p.201)

Breastfeeding women would actively avoid mothers who had negative attitudes about breastfeeding or who advised them to put them on formula:

> *I deliberately surrounded myself with people who would support me. The last thing you need when you have been up half the night feeding the baby is someone telling you he needs something more or you haven't got enough milk.*
>
> (P27, in: Brown & Lee, 2011, p.201)

5.5.5 **Motivation**

According to Michie et al. (2011) motivation is "all those brain processes that energise and direct behaviour, not just goals and conscious decision-making. It includes habitual processes, emotional responding, as well as analytical decision-making" (Michie et al., 2011, p4). Motivation is central to volitional behaviour. It is influenced by both capability and opportunity as well as the behaviour itself. The centrality of motivation to behaviour may be the reason why, numerically speaking, motivation scored highest of all the components when coding the papers, with 155 instances across ten papers in the synthesis.

Michie et al. (2011) sub-divide the motivation component of COM-B into reflective and automatic motivation. Reflective motivation is conscious decision-making, the weighing of pros and cons. Automatic motivation on the other hand involves less self-conscious processes and more emotional reactions and desires. Michie et al. expand the definition in their 2013 publication to highlight automatic motivation includes impulses, inhibitions, drive states and reflex responses.

Motivation to breastfeed comes through clearly and strongly from the women in the qualitative papers. The following quote typifies this common theme:

> *Long before he was born I had made my mind up that I was going to breastfeed no matter what. That was the one thing that I was sure that I was going to do*
>
> (Jane in: Bottorff, 1990, p 203)

This quote shows there is a definite conscious and reflective decision-making process taking place with regards to breastfeeding, indicating "reflective motivation" as defined by Michie et al. (2013). However, separating automatic and reflective motivation in the accounts given by the women in the qualitative papers was very difficult. Since unconscious processes by their very nature are less likely to be brought to the fore and talked about. We can therefore only make inferences towards attribution of comments to automatic motivation from

what the women say. The influence of automatic motivation entwined within reflective motivation is illustrated in the following quotes:

> *It just seemed the natural route to follow. When my midwife asked me how I was going to feed I just thought ''well of course I will breastfeed.*
>
> (P7, 29, higher education, professional)

> *I don't eat processed foods myself so why would I feed them to my baby?*
>
> (P10 in: Brown and Lee, 2011, p.198)

> *I believe babies need breast milk. And I really wanted my kids to have the best…there's a reason why we have this milk when we have a baby…I just really am very much a strong believer in breastfeeding.*
>
> (CC in: Hegney et al., 2008, p.1187)

The use of language by the women in the quotes above is quite striking: it is as though there was no decision to make, that it was a completely moral decision that they could not possibly go against. This suggests very emotive and automatic processes are occurring. These quotes show how bound up the decision-making is with emotions and values.

The language and reasoning the women convey in their words suggests a very high value is placed on the behaviour of breastfeeding and accords with motivational theory (Stockdale et al., 2011). It was evident from the volume and consistency of coding for motivation across the papers how important motivation is for breastfeeding. Any intervention to promote the maintenance of breastfeeding, therefore, needs to look at this area carefully. Developing motivation, as an asset, however is complex.

Motivation is an asset to continue a behaviour, however, motivation leading to behaviour is complex. Valuing the behaviour highly, like the women quoted

above, is important. However, according to expectancy-value theories, the success of actually carrying out the behaviour will be due to the interaction of the women's expectations and the value they place on the activity (Stockdale et al., 2011). A woman will only be motivated to breastfeed if she places a high value on breastfeeding such as thinking it is the best source of nutrition for her baby AND she thinks she is capable of breastfeeding. Breastfeeding self-efficacy, the belief that you have the ability to succeed at breastfeeding, has been found to be predictive of breastfeeding duration (de Jager et al., 2013; Meedya et al., 2010).

Breastfeeding self-efficacy will change as women engage in the breastfeeding activity. Persistence to continue with the activity will be influenced by the set-backs and difficulties the woman experiences and how she manages those set-backs (Stockdale et al., 2011). Developing an intervention that helps her identify the assets around and within her and getting her to think of the set-back in a positive way, rather than making her feel she is failing will help her with future difficulties and set-backs too.

5.6 Conclusion

The aim of this study was to identify assets women use to overcome breastfeeding difficulties. The clear identification of assets such as psychological skills and social support, rather than more vague qualities of persistence and perseverance help make solving breastfeeding difficulties tangible. A woman who can identify assets available to her and has the skills to mobilise those assets may be more likely to continue breastfeeding.

The assets identified through the qualitative synthesis has shown how intertwined the components of behaviour are. It has also highlighted that possessing one asset can lead onto the accessing of other assets. A woman who has good 'interpersonal skills', for example, is able to mobilise the 'support of family' giving her help with practical household tasks. This in turn gives her

greater access to the asset of 'time'. Her interpersonal skills also enable her to ask people to give her 'space' as she learns to breastfeed.

Quantitatively speaking motivation was the most commonly coded component from the COM-B. Motivation could be considered an essential asset required to propel an individual towards a behaviour. With breastfeeding this may result in seeking out ways to continue breastfeeding despite difficulties. Women whose automatic motivation to breastfeed has been triggered may increase this motivation by equipping themselves with knowledge about the benefits of breastfeeding. This motivation then feeds into actively seeking out solutions to problems and identifying social supports.

Chapter 6 will detail a possible intervention that could be used to help women continue breastfeeding despite difficulties, based on the assets identified here.

5.7 Critical reflection on using the COM-B framework

There were two major challenges to using the COM-B as the coding framework. These were the broadness of the components and their inter-relatedness. Strangely, it is these two elements that make the COM-B an attractive model to use. The COM-B is accessible to lay-people as well as practitioners because of its simplicity. It is easy to explain and understand. When using it for coding purposes, however, being able to separate out the different components of behaviour proved difficult at times. Separating out motivation to breastfeed from psychological capability to breastfeed was particularly challenging. There was a constant referring back to the definitions of capability, opportunity and motivation as given by Michie et al. (2014). Even when this was done it was sometimes still unclear which component to code a meaning unit into. At this point it was helpful to use the theoretical domains framework (TDF) overlaid onto the COM-B. Michie et al. (2014) suggest the TDF can be used in conjunction with the COM-B. The TDF categorises behaviour into more domains than the COM-B,

making it easier to identify the most appropriate component. Sometimes the components were so inter-related that a meaning unit was coded into more than one component. For example, the following meaning unit was coded into both psychological capability and social opportunity:

> *I sought a lot of help and support from help lines, breast- feeding cafes and a friend and by 10 weeks it was easy and I never looked back*
>
> (Brown and Lee, 2011, p201)

Analysis of qualitative data is recognised by researchers as an iterative process. The current synthesis of the qualitative studies here was no different. Each paper was read carefully during the coding process several times. On first reading a broad coding (COM-B component) was given to meaning units. Meaning units could be single sentences or a few sentences that together were needed to understand what the woman was meaning. All the text coded into each component of the COM-B was then analysed separately to look at nuances. Thematic coding was used to freely code these exerts. Although the units of meaning had been separated from the original paper at this point, because they had been electronically coded using NVivo 10 seeing the exert in full text was a simple process. Constant contact with the original text was maintained by having Nvivo opened on the computer screen alongside a paper copy of the now coded component exerts.

Chapter 6: **THE INTERVENTION**

The chapter will outline the proposed asset-based intervention for maintaining breastfeeding despite difficulties. The intervention was designed using the behaviour change wheel developed by Michie et al. (2011). Michie et al. (2014) suggest there are eight steps to the development of an intervention. These can be summarised into three broad stages, as shown in Figure 6.1. This chapter will detail the development of the intervention with reference to these three stages.

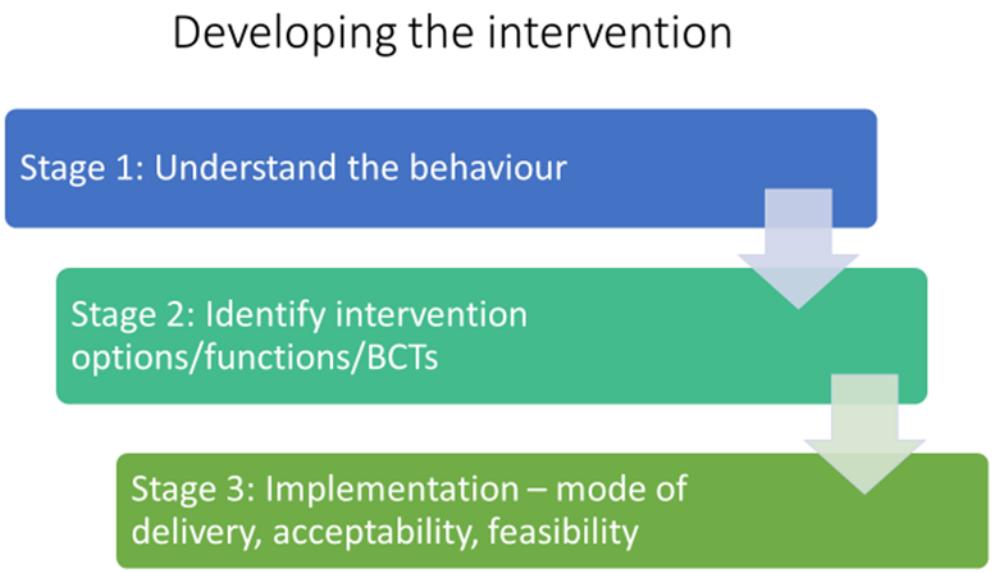


Figure 6-1 Stages of intervention development

6.1 Understand the behaviour

In the current study, breastfeeding after experiencing difficulties, stress or set-backs was the behaviour I was interested in. Breastfeeding is a complex

behaviour: it entails social and emotional elements alongside the necessary physical and biological aspects. A woman needs to be able to produce milk, as well as have the physical skill to position herself and her baby. She needs to know how to latch a baby onto her breast; know when that process is not working and how to get help. Even if everything is working physically and she is motivated to continue with breastfeeding, having a new baby is tiring. When internal resources are depleted due to tiredness continuing an intended behaviour is challenging (Kwasnicka et al., 2016). Knowing what assets/resources help women to continue breastfeeding despite difficulties was the basis of the current intervention.

Chapter 5 of this thesis reports the qualitative synthesis (study 2) carried out to look at what women do when they experience breastfeeding difficulties. This took a positive strengths-based approach. The qualitative synthesis informs stage 1 'understand the behaviour' of intervention design. This thesis was looking specifically at the behaviour from the aspect of assets and how these help with the maintenance of behaviour. The assets identified are listed in Table 6.1.

Table 6-1 Assets for resilience in breastfeeding

Behaviour: Continuation of breastfeeding despite difficulties		
COM-B component	**Asset**	**Example**
Capability (Physical)	Physical ability to breastfeed	Training in how to position baby from kind and supportive HP
	Sleep	Sleep helped woman to cope with both physical and psychological exhaustion
Capability (Psychological)	Knowledge	Knowing many women have breastfeeding difficulties and that these can be overcome.
	Patience	Having knowledge and stamina to know bf takes time to establish. Understand physiology of bf

	Goal-setting	Setting a long-term goal of breastfeeding duration e.g. six months. Using short-term goals such as "breastfeed to end of week", to get through difficult patch.
	Positive self-talk	CBT- type cognitions
	Interpersonal skills	Being able to ask others for help
	Self-care	Looking after own needs, such as eating properly, sleep, having a bath, meeting with others
	Flexibility	Knowing there are alternatives and being willing to try things out and change approach
Opportunity (physical)	Time	Asking others to help with other family and household tasks to allow time to spend on bf
	Space	Privacy for learning techniques for latching and positioning
Opportunity (Social)	Support from health professionals	Know how to contact HPs and support groups
	Support from partners	Explain to partners reasons for bf and how they can support
	Support from family members	Inform family members about bf decision and reasons. Give them supporting tasks.
	Support from other breastfeeding mothers	Identify bf support groups. Develop friendships with other bf mothers through antenatal and post-natal groups
Motivation (Reflective)	Motivation to breastfeed based on	Read information on benefits of breastfeeding

	knowledge about benefits	
Motivation (automatic)	Motivation to breastfeed based on emotion and desire to "do the right thing"	

As was pointed out in chapter 5, these assets are not independent of each other but are inter-connected. A private space may only be available if access to that space is managed through interpersonal skills: asking people to leave a room or not visit for a few days takes tact and skill. Accessing assets is an active process. It's about taking control and making choices. This asset-based intervention, therefore, needs to help develop confidence. Confidence to ask, confidence to find out and confidence to create and develop more assets. Ideally any asset-based intervention will develop and make use of social networks (McNeish et al., 2016; Rippon & Hopkins, 2015). Social support was an important asset identified in the qualitative synthesis (study 2) that helped with the continuation of breastfeeding (see Table 6.1). Keeping these outcomes in mind, as well as the health behaviour outcome, developing an intervention that is not top-down and didactic, but is empowering for participants is challenging.

The assets identified through study 2 were categorised as components of the COM-B model of behaviour. By classifying the assets in this way, it enables a systemised development of the intervention. Michie et al. (2014) suggest this component analysis helps to identify potential levers of change. Although this was a qualitative study and so effect size cannot be ascertained, frequency of coding does give an indication which assets might be most helpful. For the current study psychological capability and motivation were coded most frequently, followed by social opportunity.

Specifying a specific lever of change, may seem a very top-down approach which goes against the philosophy behind an asset-based approach. The current intervention wants to enable potential mothers to identify their own assets, rather than specify specific assets that should be employed. There are several assets listed in Table 6.1, that if developed will be beneficial for mobilising other assets. The development of psychological skills will not only benefit the maintenance of breastfeeding but could also potentially be an asset in other areas of life. The current intervention will therefore be developed and delivered in a way that helps prospective mothers develop psychological skills, at the same time as helping them identify other assets in their own lives that can help them while they are breastfeeding.

Due to its probable impact upon the ability to mobilise other assets such as social opportunities, I therefore chose psychological capability, as the key lever of change in the intervention. Motivation also appeared to be key in many women's accounts about overcoming breastfeeding difficulties. So, reflective motivation will also be targeted in the intervention.

6.2 Identify intervention options, functions and BCTs

The second stage of intervention development using the Behaviour Change Wheel is to make decisions about what functions will be effective and how to implement these functions. The Behaviour Change Wheel lists nine possible intervention functions. These were developed from 19 different frameworks of behaviour change identified through a systematic literature review (Michie et al., 2011). According to Michie et al. (2011) an expert consensus exercise was undertaken to match each component of the COM-B to the most appropriate intervention functions for bringing about effective change. The result is the matrix table shown in Table 6.2. The table lays out the most appropriate intervention function for each COM-B component. For example, physical

capability is most likely to be impacted upon by an intervention that uses training or enablement.

Table 6-2 Matrix linking COM-B components and intervention functions (Michie et al., 2014)

COM-B components	Intervention functions								
	Education	Persuasion	Incentivisation	Coercion	Training	Restriction	Environmental restructuring	Modelling	Enablement
Physical capability					■				■
Psychological capability	■				■				■
Physical opportunity					■	■	■		■
Social opportunity						■	■	■	■
Automatic motivation		■	■	■	■		■	■	■
Reflective motivation	■	■	■	■					

Since the current intervention is going to focus on psychological capability and reflective motivation, then education, persuasion, incentivisation, and coercion as well as training and enablement are listed as suitable intervention functions. Complex interventions could have multiple functions, honing down exactly which functions to take forward is not a precise science but requires judgement to what is most appropriate for the context (Michie et al., 2014). Michie et al. (2014) suggest the APEASE criteria are helpful in this regard. Table 6.3 below, shows judgements made using the APEASE criteria. For the current intervention incentivisation and coercion were rejected as unsuitable, as these go against the values of a strengths-based asset approach. Education, persuasion and enablement were chosen as possible main functions of the intervention. Training was also a possible function but through the iteration process of developing the

complex intervention it became clear that the training element was subsumed within the 'enablement' function i.e. training in psychological skills. Training, therefore, was considered a secondary function of this complex intervention and is listed as such in Tables 6-5 and 6-6 which summarise the behaviour change techniques (BCTs) and overall intervention.

Table 6-3 Using APEASE to select function

Candidate intervention functions	**Does the intervention function meet the APEASE criteria (affordability, practicability, effectiveness/cost effectiveness, acceptability, side-effects/safety, equity)** in the context of building assets for breastfeeding?
Education	Yes
Persuasion	Yes
Incentivisation	Not practicable or effective. The intervention is preventative (identification of assets), whereas the outcome (breastfeeding) is in the future. Incentivisation works best if proximal.
Coercion	Not acceptable or equitable for an asset-based intervention that aims to empower
Training	Yes
Enablement	Yes

Having identified the intervention functions, the next step is to identify and select the content of the intervention in terms of appropriate BCTs that serve these functions. A

BCT is the active component of an intervention. Most complex interventions contain several BCTs. The Behaviour Change Technique Taxonomy v1 (Michie et al., 2013) and consensus tables (Michie et al., 2014) were used to assist with this selection. As explained in Chapter 4, section 4.2.2, the BCT Taxonomy v1 is a tool to help with the selection of BCTs and the subsequent reporting of the complex intervention. There are 93 BCTs clustered into 16 groups. These are:

1. Goals and Planning
2. Feedback and Monitoring
3. Social support
4. Shaping knowledge
5. Natural consequences
6. Comparison of behaviour
7. Associations
8. Repetition and substitution
9. Comparison of outcomes
10. Reward and threat
11. Regulation
12. Antecedents
13. Identity
14. Scheduled consequences
15. Self-belief
16. Covert learning

The consensus tables (Michie et al., 2014) identify the frequently used BCTs for each intervention function. These tables, showing just the BCT label (see appendix 7) were examined alongside the BCTTv1 (Michie et al., 2013) which gave the full BCT definition. Reading the fuller definition description is necessary

in order to judge the appropriateness of the BCT for the aim of the intervention. It was important to remember that this complex intervention was not focussed on teaching the mechanics of breastfeeding but how a new mother could identify and use the assets in her life. The development of psychological skills for breastfeeding as well as developing reflective motivation was kept in mind as BCTs were considered. A 'long list' of BCTs were identified for the functions of education, persuasion, enablement and training (training was later subsumed within the enablement function). The 'long list' was then narrowed using an iterative process of judgement against APEASE criteria, keeping the purpose of the intervention in mind, coherence with an asset-approach and overall coherence of the complex intervention itself. An intermediary list is shown in Table 6-4 as an example of the iterative process. Using this iterative process seven BCTs were identified that were to be included in the intervention, these are listed in Table 6-5.

Table 6-4 Example of Iteration in intervention development

Intervention Function	**COM-B component**	**Possible BCTs**	**Does the BCT meet APEASE criteria** in context of an asset-intervention
Education	Reflective Motivation Psychological capability	Information about social and environmental consequences	YES
		Information about health consequences	YES
		Feedback on behaviour	Not practicable. Intervention is preventative rather than being delivered as behaviour in progress
		Information about emotional consequences	YES
		Information about others' approval	Not acceptable – limits agency
Persuasion	Reflective motivation	Credible source	YES
		Information about social and environmental consequences	YES
		Information about health consequences	YES
		Verbal persuasion about capability	Practical issues– subsume into self-talk
		Information about emotional consequences	YES
Training	Psychological capability	Demonstration of the behaviour	Practicality issues – how can train in identifying assets? subsume into enablement
		Instruction on how to perform the behaviour	YES – but connect into enablement activity
Enablement		Goal setting	YES

	Psychological capability	Problem solving	YES – find practical activity to demonstrate
		Social support (emotional)	Possible practicality issues within intervention – think how to incorporate into intervention eg. group delivery
		Reduce negative emotions	Practicality issues to deliver within intervention. Use Education to inform
		Conserve mental resources	Not practical, but mention importance in education element
		Self-talk	YES – include activity to demonstrate importance and practice

Table 6-5 Behaviour Change Techniques (BCTs) chosen for the intervention to target psychological capability and reflective motivation

Intervention Function	**COM-B component**	**BCT Label (BCTTv1)**	**BCT Definition**
Education	Reflective motivation Psychological capability	5.6 Information about emotional consequences	Provide information (e.g. written, verbal, visual) about emotional consequences of performing the behaviour
		5.1 Information about health consequences	Provide information about health consequences of performing the behaviour
		5.3 Information about social and environmental consequences	Provide information about social and environmental

			consequences of performing the behaviour
Persuasion	Reflective Motivation	9.1 Credible source	Present verbal or visual communication from a credible source in favour of or against the behaviour
Enablement	Psychological Capability	15.4 Self-talk	Prompt positive self-talk (aloud or silently) before and during the behaviour
		1.3 Goal-setting	Set or agree a goal defined in terms of a positive outcome of wanted behaviour
		1.2Problem-solving	Analyse, or prompt the person to analyse factors influencing the behaviour and generate or select strategies that include overcoming barriers and/or increasing facilitators (includes 'relapse prevention' and 'coping planning'

Once the BCTs have been selected, decisions need to be made about how to implement them, this could involve developing individual activities to exemplify individual or combined BCTs, mode of delivery for the overall complex intervention could also play a part in this (Dombrowski et al, 2016). One of the practical activities proposed to deliver the 'problem solving' BCT was to use a volitional help sheet. This will be explained further in the next section (Section

6.3). Mode of delivery will be discussed in section 6.4 and a complete summary of the proposed intervention is proposed in section 6.5.

6.3 Volitional help sheet

A volitional help sheep will be included within the complex intervention, to enable problem-solving skills, one of the BCTs identified as useful for this intervention in the previous section (section 6.2). A volitional help sheet was first conceptualised by Armitage (2008). It is based on implementation intentions which Gollwitzer and Sheeran (2006) have shown to cause sustained behaviour changes. Implementation intentions are plans that specify the when, where and how of a plan. The volitional help sheet goes further by providing examples of temptations or critical situations, that would derail attempts to achieve the goal, and giving possible solutions. In the study carried out by Armitage (2008), he examined the effectiveness of a volitional help sheet to help quit smoking. The sheet consisted of a list of temptations smokers faced when trying to quit. These were labelled as 'IF' situations. Next to this was a list of solutions to help assuage the temptation. These were labelled 'THEN' solutions. Armitage (2008) found that significantly more people quit in the condition that asked people to draw a line from the tempting 'IF' situation to the 'THEN' solution, than any of the other conditions in the study. This is an important point to note for use in the current intervention. Simply presenting a list of tempting situations and possible solutions is not as effective as getting participants to actively connect the critical situation with a solution. By actively linking a behavioural solution to the critical situation before it occurs this triggers an automatic response when the situation is encountered (Gollwitzer and Sheeran, 2006).

The current intervention will use 'when' statements of critical situations. When-then plans have been shown to be more effective at changing habits than if-then plans (Armitage, 2016). Participants in the current intervention will be asked to draw a line from the 'when' situation on the left of the page to the 'then I will'

solution on the right-hand side of the page. There is an example of the possible format this will take in APPENDIX 8.

6.4 Mode of delivery

This thesis has used the Behaviour Change Wheel to develop an intervention that aims to help pregnant women identify, develop and use assets to help them continue breastfeeding if/when they experience difficulties. It is a proactive, preventative intervention in line with the asset-approach. Deciding on mode of delivery is the final step of intervention design as suggested by Michie et al. (2014).

Modes of delivery can broadly be categorised into distance or face-to-face. Distance delivery includes print, phone and digital media and can be targeted either at individual or population level. Face-to-face delivery is either individual or group. Distance delivery can reach more participants than face-to-face, however drop-off rates are far greater than face-to-face programmes (Chesnut et al., 2019) and effect sizes for parenting programmes are much smaller than the same programme delivered face-to-face (Cotter et al., 2013). For the current intervention, therefore, I propose to use a face to face delivery to maximise effect size.

In study 2 (chapter 5), other breastfeeding mothers were identified as important assets. In order to help foster friendship and support between mothers and develop this asset, it is proposed that the intervention be delivered in a group. This social aspect of an asset-based intervention is in keeping with the theory behind asset-based techniques whereby asset-based interventions are social rather than individual. Mode of delivery is not classed as a BCT in the BCT Taxonomy v1 (Michie et al., 2013; Michie et al., 2014), however, there is debate that it should be included (Dombrowski et al., 2016) since the form in which an intervention is delivered can affect effectiveness of the intervention (Cotter et al., 2013). Notwithstanding whether mode of delivery is a BCT or not there is no

doubt that the form in which an intervention is delivered IS an 'active ingredient' (Dombrowski et al., 2016).

Delivering the current intervention via a group is therefore deemed essential to the aims of the intervention but proposing to deliver in this form is not without its challenges. An intervention with a similar target audience, The Happy and Active Parenting Programme (HAPPY), uses a face to face group delivery to reduce infant obesity (McEachan et al., 2016). Its target population is pregnant women, so has many similarities to the current intervention being developed. In a randomised controlled trial of the HAPPY intervention 384 eligible (BMI > 25, 22-26 weeks gestation) women were asked to take part. Of these only 242 (63%) women initially agreed, and of these more than one third of women declined to take part or were unreachable. Ultimately only 120 entered the trial. Of the 59 pregnant women assigned to the intervention arm of the trial, only 25 (44%) attended at least one session (McEachan et al., 2016). In summary, less than a third of eligible participants entered the trial, and less than half of those ultimately attended. These figures show the challenge of recruitment. It is not just antenatal programmes that have difficulty recruiting participants however, difficulties of recruitment are seen across the board (see Bower et al., 2014; Cooke & Jones, 2017; Ryan et al., 2019). Recruitment to any intervention has its challenges, a focus on recruitment issues will therefore be essential if the current asset-based intervention is to make a difference. Study 3 of this thesis (reported in Chapter 7) explores this further.

6.5 Summary of proposed intervention

The proposed intervention is a complex intervention, meaning it has several interacting components (Craig et al., 2008). The long-term outcome of the intervention is to improve breastfeeding duration; however, the more proximal aim of the intervention is to help pregnant women identify assets they could mobilise and develop. There are seven BCTs in this intervention (Table 6.5). BCT's by definition are the active components of an intervention. However, as already

argued the means by which these BCTs are delivered could arguably also be active components. The use of a volitional help sheet to enable the problem-solving BCT and the use of a face-to-face group to deliver the whole intervention itself is likely to create a cumulative effect. The rationale for including all these components has been outlined in this chapter. The BCTs, the form in which BCTs are delivered and mode of delivery of the overall intervention will interact to produce the outcome. Not one single component is anticipated to produce the desired outcome but each will combine to contribute to the overall effect. Table 6.6 summarises the overall complex intervention.

Table 6-6 Intervention Summary Table

Intervention Aim: To identify and develop assets to help with breastfeeding		
Mode of delivery: Face to face group		
Education	Provide information about: (BCT 5.1, 5.3, 5.6)	Specific content or activity
	The realities of breastfeeding – the good, the bad, and the ugly!	HP to introduce benefits of breastfeeding, then go on to talk about many women struggle with breastfeeding. (Expert) Mothers talk about their experience.
	What are assets/strengths	Introduce the idea of assets
	What works for other women. Give list of assets that helped	Provide information about range of assets that have helped.
	Where to get help locally	Give specific support groups, how to contact HP, also online information and groups, list other places for support (family, friends, other mothers)
Persuasion	Use a credible source (BCT 9.1):	
	Intervention to be delivered by Health Professional (preferably midwife or Family nurse) Mother(s) who have recently or still are breastfeeding will talk about experience (experts)	See above
Enablement	Training in Psychological skills (BCT 15.4, 1.3, 1.2)	
	Goal setting	Examples given of when this is helpful and how to go about it
	Self talk	Examples and practical exercise in self talk
	Problem solving Volitional help sheet	Use a volitional help sheet to help women identify assets already available to them and any assets they could develop further.

Chapter 7: **ACCEPTABILITY TESTING OF THE INTERVENTION (STUDY 3)**

Stage three of intervention development (see chapter 6) is to find out about the acceptability and feasibility of the intervention. The intervention developed in chapter 6 proposed to use a face to face group-based delivery. This was to help foster friendships and support among new mothers. These kinds of friendships had been identified as assets in the qualitative evidence synthesis (study 2, chapter 5).

In the current study (study 3) I therefore wanted to find out from potential participants how appropriate and acceptable this mode of delivery would be and to explore what could be done to maximise recruitment. The current study, therefore set out with the following research questions:

1. Is delivering the intervention through a group an acceptable mode of delivery?
    a. Would potential participants be likely to attend?
    b. Is a group activity likely to foster the intended outcome of developing a support network?
2. What would be the most appropriate method of recruitment to the intervention?

7.1 Feasibility tests

Developing an intervention involves many decisions. Once designed the intervention needs to be tested in a pilot trial. Before a full pilot, however, the Medical Research Council (MRC) suggests feasibility tests take place (Craig et al.,

2008). Several feasibility tests are required. Feasibility tests could include estimation of value, recruitment of participants, retention rates, as well as the appropriateness, acceptability and language used in materials. Although many aspects of the intervention could be tested in this phase, the most pertinent aspect for the current intervention is the mode of delivery.

The reasoning for choosing a face-to-face group as the mode of delivery is outlined in section 6.4. However, it was also recognised that this mode of delivery could potentially make participants reluctant to attend. Many interventions fail because they are unable to reach the participants who are most likely to benefit (Daykin et al., 2018; McDonald et al., 2006). Understanding potential participants reasoning for those decisions is essential so the intervention can be honed to maximise reach, determine feasibility and assess effectiveness.

The most pertinent issue to intervention success was going to be recruitment. And since, most of participants were mothers with babies, who had restricted time and availability due to the demands of their children, a pragmatic decision was made to keep the focus of the current study to the mode of delivery. Other components of the intervention, such as refining the language of the volitional help sheet could be included in future feasibility test studies.

Yardley et al. (2015) suggest person-based approaches are best for investigating operational aspects, such as recruitment and delivery, of any intervention. They go on to say that qualitative research, such as in-depth interviews and focus groups, are invaluable for improving acceptability of an intervention (Yardley et al., 2015). I have taken this advice on board and used qualitative methodology for the current study. The next section will look at why I chose focus groups rather than individual interviews for this study.

7.2 Why use focus groups?

Focus groups are a frequently used method in qualitative research. Although traditionally used by market research to gather feedback about new products, focus groups are often the method of choice to develop and refine health interventions (Avis et al., 2015; Benavides-Vaello et al., 2004; Mitchell & Branigan, 2000; Suntornsut et al., 2016).

I decided to use focus groups for this feasibility study since focus groups generate discussion, enabling exploration of a topic in greater depth. Opinions could have been collected by one to one interview or questionnaire, however, focus group create a depth of discussion that does not usually happen in a one to one interview. The open supportive environment, created by a focus group, elicits greater depth as participants question each other and justify why opinions are held (Morgan, 1996).

For the current study I wanted to elicit a wide range of views and opinions about the acceptability of the proposed intervention. I particularly wanted to ensure I included the opinions of younger mothers who, demographically, have lowest breastfeeding rates and the highest cessation rates. A one to one interview can be intimidating, particularly where there are perceived power differentials created by age or status differences. Creating discussion using a pre-established group can help minimise any power differential. The focus groups were therefore chosen as the more appropriate method, allowing a more natural discussion of the topic. Both Barbour (2005) and Smithson (2007) recommend using focus groups for accessing the views of underrepresented groups.

7.3 Materials and methods

7.3.1 Recruitment

I used colleagues and networks to identify groups of mothers who met on a regular basis. Sampling was purposeful to cover a wide age range. I contacted the organiser/leader of the group to explain the study. The group organiser/leader then asked the members of the group if they would be happy to take part. A date and time was arranged and consent forms were sent to the group leader for all members to read before the planned visit. Ethical approval was granted by the Psychology Department Ethics Committee before commencement of recruitment or data collection.

7.3.2 Sampling

Sampling was purposeful. The aim was for diversity in terms of age, parity, socio-economic background and infant feeding method. In order to maximise comparative potential one group of young women who were not yet mothers was included.

7.3.3 Data collection

Focus group discussions were recorded using two digital audio recorders and a digital video recorder, in order to capture discussion as accurately as possible and identify speaker. Video recorder was not used in two of the focus groups at the request of participants.

7.3.4 Focus group interviews

The focus group was used to generate discussion, rather than get an answer to the questions from every member of the group.

The format for each focus group was as follows:

a) Introduction: I introduced myself and the purpose of the focus group. I acted as moderator throughout and guided the participants through the information sheet (which had been given out during the recruitment process) before obtaining informed consent from each participant.

b) Participants: Each person introduced themselves. This usually included age, number of children and if they had breastfed their children. This also had the added benefit of helping identify speakers when transcribing the recordings.

c) General discussion about having a baby and what they found difficult or stressful about becoming a parent. This was used to put the participants at ease and set the scene for introducing the intervention.

d) Intervention scenarios discussion: Three vignettes (see Figure 7-1) were used to prompt discussion around recruiting to the intervention and the acceptability of delivering the intervention in a group situation.

Scenario 1

During your pregnancy you are invited to attend three 1-hour weekly group sessions that provide education information and support for parenting issues and breastfeeding.

Scenario 2

You see a poster in your doctor's surgery telling you about sessions for pregnant women and their partners to support parenting issues and breastfeeding. There is a number to call to find out more information.

Scenario 3

Your midwife gives you a pack of pregnancy information, among this there is a leaflet giving information about regular weekly sessions for pregnant women that provides support for parenting issues and breastfeeding. These sessions are held in a community centre close to your home. It says you can just turn up and are able to bring along a friend or partner with you. It also gives a number to ring to find out

Figure 7-1 Vignettes for use in focus groups

The scenarios were used to prompt discussion. Scenario 1 and 2 were deliberately sparse in detail. Scenario 1 was used to prompt discussion about the use of groups. And was also used to find out if it was important who gave the invite. Scenarios 2 and 3 introduced other elements to be discussed, such as the use of posters and leaflets as methods of recruitment. Scenario 3 introduced the idea of a more informal drop-in group.

7.3.5 **Description of Focus Groups and participants**

Focus groups were purposefully selected to collect opinions across a range of ages and socio-economic groupings. I was particularly interested in collecting opinions from younger mothers who (as a grouping) had statistically low rates of breastfeeding and comparing their opinions to older mothers.

There were forty seven women who took part in seven focus groups. Five groups were pre-formed groups (breastfeeding café; young mums church playgroup; a young mothers' unit at secondary school; a friendship group; HP-referred support group). The other two groups (group 6 and group 7) were recruited through the university psychology department.

Focus Group 1 took place at a breastfeeding café. Five women, (age range 26 to 34 years; median 29.8 years) took part in this focus group. Average primiparous age was 29 years. All women in this group were currently breastfeeding their most recent infant who ranged in age from 3 months to 20 months.

Focus Group 2 was a friendship group who met through what they called "boob group", an NHS breastfeeding support group at the local hospital. This friendship group kept in contact through social media and met regularly in local cafes and to meet up for walks and social support. There were eleven women who took part in this focus (age range 24 to 40 years; median 32 years; average primiparous =31 years). All women in this focus group had breastfed their babies until at least 3 months old. The recording of this focus group took place in a private room at the local library, immediately after a Rhythmn and Rhyme activity attended by the women with their babies. This was one of the regular activities this group took part in.

Focus Group 3 took place at a Young Mother's Unit at a secondary school. The unit supported pregnant school girls and young mothers still at school. This was the only Young Mother's Unit in the city but any young mother/pregnant school girl from schools within the city could apply to attend. Four mothers took part in

this focus group. Their ages ranged from 15 to 18 years. They each had one child (10 months to 1 year). One mother in this group breastfed her baby for three months; another managed 5 days before switching to formula; another pumped breastmilk for two weeks to help support her baby whilst in SBCU; the fourth mother decide to formula feed her baby from the start.

Focus group 4 consisted of seven mothers (aged 25 to 38 years, mean 32 years). This focus group was conducted in a community centre, where they had attended a postnatal support group every fortnight for six to eight sessions. The focus group took place a fortnight after the last session at the same time slot. All women had been referred to the support group by a health professional, usually the health visitor. All but one of the women had tried to breastfeed. Four of the women had managed to continue breastfeeding to three months and beyond.

Focus group 5 took place in a church hall where the seven women in the focus group attended a group set up by the church to support young parents. All the women in this group were 21 years or younger. The average age of the mothers at birth of first child was 16.6 years. All mothers in this group had given formula to their child since birth except once mother who gave newborn twins her expressed milk for two weeks. Most of the mothers had been encouraged to put the baby to the breast but none continued beyond this first experience.

Focus group 6 consisted of just one participant, aged 23 years who had her child aged 20 years. The participant had tried to bring along another two friends who were mothers under 25 but on the day they were unable to make the meeting. It was decided to continue the interview with just one participant. This participant told me she tried to breastfeed her baby initially but could not stop the baby crying and so asked the midwives to give formula to the baby.

Focus group 7 This focus group was conducted in a room within the university psychology department. There were six women (aged 20 to 22) in this group. All

attended university, none had children. Four were from the UK, one member was from France and the sixth member was from Belgium.

Table 7-1 gives details of age, children and feeding method for each participant in the focus groups.

Table 7-1 Focus group participants

Participant code	Focus Group	Current Age	Age at first birth	Number of children	Age of Children	Infant feeding
P11	1	27	26	1	20 months	bf at 20m
P12	1	29	26	2	3 years	bf for 2 m then formula
					3 months	bf
P13	1	26		2	2 years	tried bf then formula
					4 months	bf
P14	1	33	33	1		exclusive bf
P15	1	34	31	2	28 months	combination at beginning to start then exclusive bf
					8 months	exclusive bf
P21	2	28	28	1	7 months	bf for 3 months
P22	2	40	38	2	4 years	bf until 7.5 months
					8 months	exclusive bf
P23	2	24	23	1	9 months	exclusive bf
P24	2	36	35	1	11 months	combination
P25	2	38	37	1	12 months	bf (exclusive until solids introduced)

P26	2	32	31	1	8 months	exclusive bf to 7 months, now combination
P27	2	28	28	1	9 months	exclusive until solids introduced at 6 months, still bf
P28	2	34	33	1	12 months	Combination
P29	2	30	30	1	7 months	exclusive bf to six months, then combination
P210	2	31	31	1	7 months	exclusive bf
P211	2	32	31	1 (currently pregnant with 2nd)	10 months	exclusive bf to 6.5 months, then formula
P31	3	17	16	1	1 year	bf for 3 months
P32	3	18	17	1	1 year	formula fed from birth
P33	3	17	16	1	1 year	bf 5 days, then formula
P34	3	15	14	1	10 months	baby in SCBU for 5 weeks, pumped breastmilk 2 weeks
P41	4	32	32	1	5 months	exclusive bf to 3 months
P42	4	38	38	1	15 weeks	bf 4 days, then formula
P43	4	36	36	1	4 months	bf
P44	4	29	25	2	4 years	bf til 13 months
					29 weeks	exclusive bf
P45	4	34	34	1	14 weeks	bf
P46	4	34	33	1	8 months	bf 2 days, then formula
P47	4	25	25	1	6.5 months	formula fed from birth

P51	5	18	16	1	18 months	
P52	5	19	15	2	4 years	formula
					6 months	
P53	5	?	?	?	2 years	formula
P54	5	19	16	2 (twins)	3 years	expressed breastmilk first 3 weeks
P55	5	19	17	1	20 months	formula
P56	5	21	19	1	2 years	formula
P57	5	?	?	1		formula
P61	6	23	20	1	3 years	formula
P71	7	20	N/A	N/A	N/A	N/A
P72	7	20	N/A	N/A	N/A	N/A
P73	7	20	N/A	N/A	N/A	N/A
P74	7	22	N/A	N/A	N/A	N/A
P75	7	20	N/A	N/A	N/A	N/A
P76	7	21	N/A	N/A	N/A	N/A

7.3.6 **Data Analysis**

Transcripts were made using the audio and video recordings. Audio recordings were used as the primary source for transcripts. Occasionally, more than one speaker would talk, and separating out the talk from each participant was difficult. The second audio recording and video recording was used to improve the accuracy of the transcript in these cases. Once written the transcript was checked for accuracy against the video recording, making sure the correct participant had been assigned. At this stage gestures made by participants, that were pertinent to the discussion, were also included in the transcripts.

The final transcripts were upload into NVivo10 for carrying out analysis. The constant comparative method (Glaser, 1965) was used following a similar procedure laid out by Boeije (2002). The constant comparative method is a recommended method for analysing focus groups (Barbour, 2005). It highlights the identification of similarities and differences between and within groups.

Initially each transcript was free coded using NVivo. NVivo was also used to identify the sections in the transcript that related to each of the research questions. These were broadly i) what were the opinions about group-based antenatal/postnatal interventions, ii) would members of the focus group attend this kind of intervention and if not why not, iii) what opinions did the focus group have about recruitment methods.

By doing this coding and identification process in NVivo, I was then able to use the NVivo programme to help me look for patterns in the data. All sections of a transcript that pertained to the research question about opinions about a group activity, for instance, could be accessed together. First, I looked at similarities and differences within each focus group. I would ask myself 'what is the core message?' and 'is the storyline consistent?' If there were contradictions, then I would look to identify conditions that caused the contradiction. For example, in FG5, the core message was that none of the women in this group had or would attend group activities, and that if they had attended, they found them negative experiences. However, they all attended the current group and would recommend it to others (this contradiction is explored in Section 7.4 but is simply mentioned here as an example).

Next, I compared focus groups with each other. I split the groups into categories. One grouping was based on age. The focus groups that contained predominantly younger women, for example, (FG3, FG5, FG6 and FG7) were compared with each other. They were then compared as a whole group with the older women groups. Within this 'younger group' I also compared mothers and non-mothers. Comparison within and between all groups was carried out in this way, always looking for similarities, differences and contradictions.

By using this process of constant comparison, I was able to develop axial codes. Axial coding is a term originally used by Strauss and Corbin (2008). An axial code brings together the free coding to give structure or frame, naming the conditions

or processes that connect the initial coding. The term comes from the metaphor for an axis or hub of a wheel (Bazeley, 2013).

The axial coding, with examples, was presented to two experienced researchers, one who had extensive qualitative research experience and the other who had breastfeeding research experience. By discussing the axial coding with these experts and because my process of coding was recorded in NVivo, allowing it to be examined, I was able to have confidence that my findings were credible and confirmable.

The axial coding was used to frame the results section (section 7.4).

7.4 Results

The results are organised under two main headings in accordance with the research aims. The first aim was to find out if using a group-based delivery was going to be acceptable to potential participants. The second aim was to find out what participants thought would be the most effective recruitment method.

7.4.1 **Opinions about the intervention being a group-based activity.**

Table 7-2 Summary table of opinions about a group intervention

Summary of opinions about choosing to attend face to face group intervention
• Younger mothers (under 20 years) were unlikely to attend a group 'open to all' • Choosing to attend a group is more complex than simply age • Attending a group for the first time is daunting Ways to help: - Go with a friend - Feeling you 'fit' the group - Knowing everyone is attending for first time - Informality and friendliness

  - Buddy system
- Groups are a lifeline
- Young mothers do not want to show they need help, so will not ask for help.

Choosing to attend a group intervention

There were noticeable differences between the focus groups about whether they would attend a group-based antenatal intervention or not. None of the participants in FG3, participant 61, who gave the individual interview, and most participants in FG5 had attended any antenatal classes. These women were all young mothers less than 25 years old:

M: (reads out scenario 1)

M: so what would be your initial thoughts if you were invited along to something like that?

P54: I never went to any of them

P52: me neither

P53: yeah I got pushed to go but I never went

When probed why they hadn't attended, a variety of answers were given:

P55: I just remember being scared [...]to go, I dunnae remember why I was scared

P54: [yeah]

P53: I'm not a mingling going sort of person

P52: (P52 screws her nose up while looking at P53, as if to gesture that's not right) reeeeally

Being scared about age differences initially appeared to be the main reason when asked what worried them the most:

M: what would be your worries

P33: like you don't know anyone who'd be there and you'd be by yourself and then I'd feel ?? 'cos like all of the could be like older and you're the young one and oh gosh she's too young to be here

M: so what would make it easier to go to that kind of group

P54: have it for young people

P53: yeah I think it should just be a certain age

But, not all young mothers had the same opinion. Participant 13 in FG1 recalls her experience of going along to antenatal classes when pregnant aged 24, with her first child:

P13: we did go to our antenatal classes... and we're probably one of the younger couples. There was perhaps one other couple who were younger. They were all older, erm, I didn't really feel out of place. However, had I not have been told about the antenatal classes I would never have known to seek out something like that ... so yeah...being a younger mum I still went along that didn't put me off, because I wanted to know everything that I could to provide the best for that I could provide for my child. So it didn't really put me off being younger. Er, but that first time you go and you realise you are probably one of the youngest, it can feel a wee bit intimidating

The young women in FG7 (non-mothers) also thought they would be happy to go along to an antenatal group:

M: (reads out scenario one)

M: what would be your initial thoughts if you got that invitation?

P75: I'd go definitely, 'cos I've not had kids before so it would all be new. I'd want to go and get more information and talk about it. It's quite an exciting time and meet other folk in the same situation. Think it's a good idea.

P72: I agree. I think I would go as well. It would be one of those things you just wouldn't want to pass up on. 'Cos if you've not got any prior knowledge on it except from TV or watching family

members, it's nice for someone to focus on you and tell you about it. So i think I would definitely go.

P71: I agree I would be eager to learn as much as I could, you know.

Although having a group for younger women was initially proposed by FG5 as one way to make it easier for younger women to attend a group-based antenatal intervention, the discussion quickly progressed to reveal that it wasn't just age that was the issue:

P57: yeah I think that would help, not just restricting ages but more..

P52: in the same situation type thing, like you can't have a bought house if you come

(laughter)

P52: you got to live in a council flat

……

P54: I'd want to know who went

M: do you mean the actual people names or type of people?

P52: I think you should get told the actual peoples names when coming into a group

This idea was also reiterated by participant 61 in her interview, when talking about her experience of deciding whether to go to an antenatal group or not:

P61: yeah, I didn't want to go down there... and I didn't know what other mums would be there. I didn't know if it would be like quite... I don't want to sound like ... bad ... but I kindda wouldn't fit in going to a group if it was like Oh I don't know who would be there, what type of people

M: what was it you were worried about, older mums? or people you were at school with?

P61: yeah I was worried in case it was like ... I don't know when I think back then. I was quite worried if they were rough and ready type people that were there.

What appears to be the essential element to these discussions was that the women needed to feel that they were going to fit in with the rest of the group. Although age was important, age itself was not the defining factor. This is borne out in a conversation in FG1:

M: <P13 NAME> would you have felt you had gone along if you had been invited to a YOUNG mums group …rather than the general antenatal thing?

P13: ermm I'd probably still have went anyway erm with a very open mind erm 'cos sometimes yeah the language does play a big part in how younger people understand things so yeah I'd still have went, I don't think it would have put me off, if I was invited to something like that

P12: You see I think I wouldn't have 'cos <husbands NAME> and I was I was 22 when we got married and we did kinda discussed at that point, …. but I think if I'd had a child at that point, like I was 22, I'd been teaching for a full year at that point. I was a grown-up heh. I think I might have kinda went "No but I'm not a young mum" and that kind of thing, by an age bracket

P14: I think you get a lot of young mums that are a lot older and a lot of older mums that are a lot younger

M: so differentiating them can be difficult?

P13: yeah

Restricting the age of the group intervention became a moralistic dilemma for FG7:

P7? :I don't think age range would bother me too much because at the end of the day you're there to learn about pregnancy and stuff and you have all of that in common, so it would be, I don't know I would be quite accepting of that, but I could see why that would maybe bother if, for example you are there yourself and like you might be the youngest there.

P7?: I think people who are older and pregnant could be quite supportive to the younger people

P7?: I think this is more of a societal problem . I don't think there should be separate classes for different ages because that just reaffirms a , im not sure of the word, negative attitude to younger mums [they should be hidden away and separated]. They are all going through the same experience [pregnancy]

P7?: Yeah, its reinforcing the stigma

P7?: but imagine if you are 16 and pregnant and all the other women are looking at you. Wouldn't you prefer to be in another group with 16, 17 18 year olds?

P7?: Yeah they could feel intimidated by people

As the conversations developed in all the FGs, it became clear that choosing to go along to a group activity or not was a complex process. Even if a decision had been made to attend a group activity, the initial experience could potentially put participants off from going back. The next section will look at the experiences of attending groups.

Attending a group for the first time

It was recognised that going along to a group activity can be daunting for anyone, no matter what age:

P27: in terms of the kind of groups we go to and the circles we run in with mums here, I'm one of the youngest at 28 and but likewise there are lots of young mums but I think it's a confidence issue because I know the first time I went to what we call boob group at <HOSPITAL NAME> with <BABY > when she was 4 weeks old I was absolutely terrified…so so scary cos you don't know anybody

……..

P41: I would definitely say get out and meet other people, it might be quite daunting you know it is stressful the first few times you go out 'cos it's like have I got everything, is anyone going to speak to me and stuff but I would say definitely get out and meet people

Going to a group that is already established can be particularly daunting:

P44: I think it can be quite intimidating going into a group on your own, you know 'cos I've found it can get quite cliquey like particularly if you turn up with a new born and there's people who've been going for a couple of months and it's the same people every time they end up sort of sitting talking to themselves, talking to people they've already spoken to before and you end up sort of turn up and hope someone else turns up with a new baby 'cos that lot are going to sit there with their three month old babies chatting and that lot are going to sit there with their six month old babies chatting 'cos they've all been going to the breastfeeding groups for that length of time.

Here participant 54 talks about her experience of going to a new playgroup:

P54: I got asked to go to another playgroup because I had twins in it. I went but literally the people in there were old enough to be my mum

P52: yeah

P54: and none of them spoke to me and I just stood there to the point I cried and I just stood there

P52: aw, I would have hugged you. Did you actually cry?

P54: but they still asked me to go back

P52: why don't you come now I'm there

P54: I cried I couldn't go back

This dialogue above from FC5 shows how important the first impression of the group is and how that can determine continuation of the group. FC4 discussed how a first experience of a group can be made easier:

P46: a buddy system, that would be good

P44: even if someone came to your house for an hour or so and then the following week came with you to a group or something, like so you'd met them so you then felt you were going in with someone you knew, so you had someone to talk to until you had someone to talk to in the group, sometimes just walking in on your own is just intimidating

P47: yeah I walked in here thinking I don't know anyone then I saw <P44> 'oh I know you' 'cos we met when at the health visitor 'cos if it's the same health visitor that encourages you to go you'll usually make 'cos we had the same appointment at the same time and we were sat next to each other that's how we met, just saw every week so when we went to group we went Oh .. good

P44: Yeah so having someone to go in with or feeling 'cos obviously the expectation is you can't take your partner because say going to a breastfeeding support group you don't expect a load of men to be there so people like me who don't have family or a friend who's pregnant to go with then a peer support type thing or just volunteers

P47: yeah if the health visitor said there's a young lady same situation as you, same age how about you's meet at this cafe at this time and then you both meet up and get to know each other

P45: yeah I went to a.. like. it was meant to be a baby and toddler group but it turned out like just being a toddler group (heheh) so we just sat like there, I sit and spoke to other mums but the woman that ran it when I phoned her up to say can I come along she now 'I'll meet you outside opening the door's the hardest part, and I'll be there and look out for you' and I went along and she was lovely she showed me round herself but it turned out I knew people there erm so yeah she just make sure you come along and I'll make sure I'm there

P46: that's nice

This idea of friendliness and knowing that you would know someone at the group came up in discussion in several focus groups. Informality was also touched upon, prompted by scenario 3. All the groups appreciated the informality that appeared to be offered by scenario 3:

P13 ..erm silly things like the language [make a difference]..like you can just turn up. The number of times I've gone 'can you just go to this group or do you need to phone?' … not knowing things like that, if you are a bit shy

P12: and can you show up half way through

P14: yeah exactly

P12: and knowing that I can be half an hour late

P14: someone says just come along any time between these hours, you know, just turn up and if someone can come with you make that clear, you know

P1?: yeh

P14: because

P11: that's true because the turning up on time thing is a big thing when you've got a little one with you. If you know you're allowed to be late and that's Uh (makes a sense of relief sound)

Focus Group 5, who were all mothers under 21, particularly preferred the 'drop-in' type of group to a more formal 'signing-up for a number of sessions' type of group:

P52: *say you can't go and their waiting on ye' and you feel bad `cos their waiting on ye'*

P57: … but if you're just able to turn up they're not expecting you to turn up and things like that it's just

M: less pressure?

P57: yeah ah ha. Sometimes it can be a hassle, 'cos you can be having a day where you don't want to speak to anyone. But you want to go along to a class. Like, you might want to get out the house and it might just be good to sit there. But you just don't want to speak to anyone there. So the fact you can just turn up and not book it.

P54: but then if you've got your name down it feels like you HAVE to do it when you don't want to

In contrast, FG4 liked the idea of going along to a group that you had to sign up to. Knowing that everyone else was also new to the group was not as intimidating as going along to a group that was already established, according to FG4. Focus Group 4 were all referred to the current group by a health professional, to help them get extra social support:

M: so how was [this group] compared to going to a group that was already established?

P44: It was easier,

P47: Yeah we got a start date

P44: yeah, knowing that everyone was just coming in and that nobody would know. It happened that people did know each other, but the expectation was well we're all being referred to this group, we're all starting, it's for eight weeks and we're all, it's just us for those eight weeks -it's not people coming and going meeting once and not expecting to see them again.

Groups are a lifeline

Despite it initially being quite scary to go to an organised group, these groups often became an essential part of a new mothers life, and were described as 'a lifeline' by at least two participants:

P45: one of my friends she erm ended up really depressed after she had her baby, so the minute my husband went back to work I was like I need to do like stuff I can't just sit in the house, so I erm I looked into like groups and things like that

…….

P29: …you suddenly realise it's [the group] your lifeline, like having people that you know and groups to go to and getting out every day and going to groups is is so important.

The women in Focus group 1 advised anyone who was considering breastfeeding to:

P12: come to support groups while they're still pregnant

P15: yeah while they're still pregnant

P12: yeah know what's there, make sure they're comfortable coming back, 'cos my thought was if this goes the same way as the first time round I need to know the people I'm going to cry at in five weeks time (laughs) so I came a couple of times while I was still pregnant,

However, it did not need to be an organised group. The important element was to find other mothers who had babies at a similar age:

P46: I think something that's really useful to people is to have a erm a support group of mums with babies the same age, I think that's been really helpful so you can compare

M: is this group where you've had that?

P46: not for me. I actually luckily had babies who were the same age well actually within 5 days and 7 days erm, and there's another 2 girls that's joined our group, "joined our group", it's just informal, so there's five of us who've got babies within 8 days of each other and I think that's …Erm, I found that useful but I guess for us we knew each other anyway, so it wasn't a group that somebody else had helped us with, a bit of luck really

FG2 also felt lucky to have met each other. They recognised that it was the breastfeeding support group at the local hospital that enabled them to become friends and meet out with that organised group. FG2 now met regularly as a friendship group:

P25: well I think we were quite lucky actually in <Town> there's quite a community of people

P27: the breastfeeding support group

P25: the breastfeeding group

P?: the breastfeeding group

P25: yeah <hospital name>

P27: yeah, that was our lifeline

P24: absolutely

M: So it was through the breastfeeding group you met?

P211: yeah, it was breastfeeding we met

P25: (inaudible) knew each other (pointing to P22) before but it was just by chance

P27: it's how I know everyone I know in <Town> I didn't know a soul in <Town> before I had <BABY>, yeah I met everyone through <baby>

Surprisingly, the mothers in FG5, who as a group were reluctant to go to any organised antenatal class or health professional run group, did actually find groups were helpful. When the group was asked what advice they would give to a young expectant mum like themselves, they were keen to encourage her to join their group:

> *P53: I'd tell her to come here*
>
> *M: so do you think it's important to come to something like this?*
>
> *P57: yeah it gets you out the house, it breaks up the day even if you're in the house and then go back to the house after*
>
> *P52: at least you've done something*
>
> *P57: and the fact you've had a good lunch and fresh air*
>
> *P52: and if you're having real problems they'll help you, if you're absolutely skint and can't afford shopping they'll help you. I've not done that myself*
>
> *P52: yeah they give you everything you need, if they can*
>
> *P57: yeah it depends on your situation they will like tailor your needs and stuff. But if you're just chancing your luck and stuff*
>
> *M: you've got to be genuine*
>
> *P57: yeah*
>
> *P53: I'd recommend they come to this group because I've been to a few other groups and this is the only one where the staff help play with the children and take notice of you. They know your name.*

These young mothers appreciated the support this church group gave to them. Finding a group where they felt others understood them and didn't judge them was important. Being surrounded by other mothers who shared similar experiences was also important. As has already been mentioned above, age was an obvious difference:

> *P55: There's a [play] group in <AREA> that I used to go to on a Monday and it's for like everyone, anyone can go but it's when you walk in, because it's like childminders and grans and older mums that are going, like you just feel weird if you're like the only young person.*

But it was different circumstances, rather than age, that these young mothers felt set them apart from other mothers at the playgroup:

> *P57: I was the only one that was under 20... It just kind of put you off becos' they're all married and they're all in bought homes and they're all settled …and I don't even know what bed my boyfriend's in right now, (heh) you know what I mean*

The young mothers in FG5 were put off attending groups where they possibly thought their inadequacies (in coping) were highlighted in contrast to other women in the group:

> *P54: the first time I came it was like me and <P52> then everyone else who was like a lot older*
>
> *P52: and they were like really pretty, had their make-up all the time*
>
> *P54: and we come in looking like we've had the flu for ten weeks*
>
> *(group laughter)*

This possible perceived inadequacy brings us to the last theme about attending groups: 'asking for help'.

Asking for help

'Asking for help' was not a theme I would have expected to come up when I posed the question about attending a group intervention. The theme, however, was raised explicitly in three of the focus groups. Participant 61 pointed out the wording in the scenarios implied that you go along to the group because you don't know what you are doing with your child. She did not like this idea and it would put her off attending:

P61: As well I think the biggest issue for me when I was 19 was that [it] says "support for parenting" to me that sounds like I don't know what I'm doing, like I`m going along there 'cos I'm clueless

It seemed important that the younger mothers showed they were capable. The young women in focus groups 3, 5 and 6 all felt quite keenly that society had negative attitudes towards them for having an unplanned pregnancy at a young age. This was difficult for them to deal with at times and added extra stress upon them as a new parent:

M: when you first became a mum, what were the most difficult things?

P32: people looking at ye like and it was maybe them thinking ye too young or something like that. It was people's opinions I think that was the hardest to deal with like people's opinions like .... I had the odd old person say 'O your too young to have a child' (puts on a funny voice)

This is explained clearly by the Conservation of Resources theory (Hobfoll, 2011). This theory states that stress occurs when there is a loss or a potential loss of resources. This includes status. The accounts of the young mothers indicates they feel stress when their status as mother is challenged. According to the Conservation of Resources theory, people will try to minimise this loss and protect the things they centrally value (Hobfoll, 2011). This includes how they operate social relations. Several of the younger mothers were adamant they would not ask for help:

P52: I'll never ask any other person for advice

P54: No

P53: there's people ask for advice

P54: yeah you ask for advice then they (???) for not doing what they told you to do,

P52: I'll never ask anyone for advice ever

P53: no there's mums on facebook giving you advice and I'm like, 'I don't need it'

The attitudes of society tell the young mothers that they are too young and incapable of being a mother. According to COR theory, by not asking for help this protects their identity as a 'capable mother'. This contrasts with the older mothers in the other focus groups, who recognised they didn't know everything about babies and would actively ask for help. They do not need to prove to society that they are old enough to be mothers, that is an accepted norm. Participant 22 is aged 40 years, this quote from her highlights this difference:

> *P22: I'm just imagining I'm 17 and probably the thing if you go to one of these groups people will tell you what to do, whereas I went to the group and I'm like TELL ME WHAT TO DO, so it's a different mentality. You don't want people looking down on you and telling you [when you are 17] whereas actually that's what we [older mums] want, you know what I mean*
>
> *M: so at 17, 18, 19 you're trying to show that you're an adult?*
>
> *P22: yeah, that you're capable of being a good mum,*

Not all the young mothers in FC3 and FC5 had the same attitude about not asking for help. Participant 57 describes herself as 'mature' for understanding that getting help and asking for help was not an indicator that she was not capable of being a good mother:

> *P57: my social workers really helped me. They would come out and come up to the house and make sure I was getting on and everything like that. Because I co-operated with them and done stuff they suggested would be better for <BABY> and everything like that 'cos I was mature enough to realise that they were trying to help me.*

She recognises that young mothers like herself may be scared to ask for help because it will be perceived as not being old enough to cope with a baby. However, she advises other young mothers to ask for help when needed:

> *P57: I would say not to be scared to ask for help, … 'cos nobody's going to judge you for it. Ask your health visitor for help 'cos that's what she's there for, that's what she wants - not that you're having a great day. Of course, she wants to hear that, but*

she would rather hear you say 'I'm needing help. I'm going to the doctor'.

7.4.2 **Opinions about recruitment method:**

Table 7-3 Summary Table of Opinions about recruitment methods

Summary of opinions about effective recruitment methods

• Direct invite from a known health professional
• Younger mothers (under 25) need more and different recruitment methods compared to the older (over 25 years) mothers
• Methods thought to be more effective for younger mothers
  • Being invited (and taken) along by a friend
  • Social media
  - Invites
  - Hearing stories about other people attending (normalising attendance for people they identify with)

The three scenarios given offered different ways of recruitment: direct invitation, poster, and leaflet. The scenarios allowed probing of the focus groups about their opinions on the best method(s) for recruitment to the intervention. Although all three methods had some merit, direct invitation from the midwife or doctor backed up with a leaflet was deemed the most successful method:

P44: I really liked the fact I saw the same midwife … appointments with the same one really helped and then if she'd asked me to do something then I'd have done it…'cause I knew her and sort of trusted her with my baby so far and if she had said come along to this yeah I would have done it

P47: Yeah, I'd be more inclined to go because you're invited. Someone's actually gone out their way to tell you about it,

---

P12: If it's just a leaflet in a pack all these questions are going to come up, you might not even not notice if it's just one leaflet in between everything but if your midwife actually gives any extra five minutes and sit and read through them and says and this one is this kind of group and you show up at, it's fine, do bring someone it's really good for that. If you got that more information explained to you,

The young mothers in FC5 needed more persuading than just a trusted health professional asking them to go along:

M: Would it matter who asked you to go along? Say your family nurse?

P53: Mmm, I don't know 'cos my family nurse was Oh if you come here I'll give you a lift

M: so she really tried to get you to go to stuff?

P53: it wasn't like I'd stay in all day, Like I preferred to go walking instead of being in

P55: yeh I know, I was never in

M: tell me more about what the family nurse did to try and get you to go

P53: yeah she was like I'll take you down, I'll meet you there, I'll sit wi' ye'

M: and what was it that put you off

P53: 'cos I didn't know anyone else who was pregnant

M: but you all come to this group, so tell me a bit about how you came here

P52: we have friends

M: you made friends through it or you knew each other before?

P55: Yeah basically

P56: yeah I knew

P52: I knew everyone but they two,

P56: I knew everyone, I didn't know <P53>

P55: I met <p52> on the bus

P56: she's so forward

(heh heh)

P54: 'cos <P52> asked me to come

P51: yeah she asked me

P52: Gawd!

Word of mouth and a personal recommendation from someone in a similar situation gave more weight to these younger mothers. This was also echoed by participant 61, who thought the use of social media would help:

> *P61: I think if there was more awareness about them. The only people that told me about it [antenatal classes] was the midwives, who told me about it when I went along to appointments, so that's the only time I ever heard about it. I never seen any posters or any online or anything through social media or anything about them. So maybe if they advertised it more, to make it more approachable.*

Using social media came up in several groups, although none of the scenarios or questioning from the moderator made mention of it. Focus Group 2 were adamant that social media played a big part in supporting them and saw it as a way into helping younger mothers.

P25: I think social media needs to play a bigger part…

P2?: Yeah

P25: 'cos that's how younger people get their information, if there was an app or something like that

---

P21: your phone's your lifeline, when everyone's asleep, it's so lonely, social media

P27: five of us met, made up this group chat, I'd have lost my mind without that, so social media is the way to go, especially with young mums.

P26: and you can follow [NHS breastfeeding support] on facebook. Everyone puts in their stories. I like reading them at 3 in the morning

(laughter)

P25: yeah that's very useful. 'cos people will ask a question that maybe 10 other people have, and then you all follow

P24: you get loads of advice

Participant 61 had been quite open that she got most of her antenatal and postnatal advice on social media. She also advised using social media to create local support groups:

M: so in summary you got most of your advice online? And you definitely would just go online if you had a problem that you wanted to find out about? That's you first port of call?

P61: Yeah, I always just google stuff. I google everything. I think younger mums they will find most of their information online. So for support groups and stuff like that maybe if they made it like social media, say the local area created a social group like a facebook group. And if one young person's involved in it then another will take interest… if I seen other parents on my facebook that had gone to these groups then maybe I'd be "well I'll go along and try it"

7.5 Discussion

This study set out to find:

1. Is delivering the intervention through a group an acceptable mode of delivery?
    a. Would potential participants be likely to attend?
    b. Is a group activity likely to foster the intended outcome of developing a support network?
2. What would be the most appropriate method of recruitment to the intervention?

This focus group study confirmed that groups were a source of support for women who had babies, and more specifically, for women coping with breastfeeding difficulties. Although not all the women in the study had attended antenatal classes, most had found supportive groups to attend since the birth of their baby. Even those who did not attend any groups said they thought they would be helpful. The proposal to use a group as the mode of delivery for the intervention therefore made sense. A group does provide a supportive network, however, this intended outcome will only be realised if those attending the group feel they belong and have others in the group they can relate to. Most of the younger mothers were clear that they were unlikely to attend any antenatal group without already being friends with the other people in the group.

Despite new mothers finding strength and support from a group activity, this focus group study showed that choosing to attend a group is complex for the mothers, especially the younger mothers. Everyone needs to feel comfortable in a group situation and that they belong there. The focus group study highlighted that the younger (unmarried) mothers particularly found going along to a group was particularly daunting. Although relationship status was not collected in the focus group study, it was obvious through the discussions that the mothers in groups 3, 5 and 6 were not in stable relationships, as opposed to the mothers in the other groups (FG1,FG2,and FG4). These young unmarried mothers felt judged by society. It may be that in order to protect themselves they choose

carefully which group to go to. Their suggestion that they wanted to know who was going to be at the group reinforced the idea that they needed information to make a judgement about whether they would belong in that group or not. Theories from social psychology such as social identity theory (Tajfel and Turner, 1979) and the work of Croker and Major (2003) on stigmatization help make sense of the comments from the young (unmarried) mothers.

Some ideas were suggested that could help the mothers attend. Warmth, acceptance and friendliness were necessary for anyone coming along. Familiarity was also suggested to help reduce barriers – knowing the venue and/or the person leading the group could help to reduce anxiety about attending. Going along with a friend was favoured in all the focus groups. A buddy system was proposed by one of the focus groups to help encourage young mothers especially. These suggestions are nothing new or revolutionary and all are mentioned by Davis et al. (2012) in their discussion paper for the British Psychological Society about ensuring parenting programmes are socially inclusive. The buddy system, especially, helps to create social capital, a recognised asset, and one which the current intervention is hoping to foster. The buddy system, should, therefore be explored more and considered for the current intervention.

The use of online social media and information was mentioned in several focus groups. Recruitment to an online parenting intervention does appear to be easier than recruitment to a face to face group intervention. Results from the GROW online intervention (Chesnut et al., 2019), which adapted a group face-to-face parenting intervention programme for delivery online, was able to recruit more participants and recruit them faster to their online version than their face-to-face programme. Attrition rate, however, for the online intervention was much greater than the face-to-face intervention (Chesnut et al., 2019).

Overall it may be that more people can be reached if an online intervention is used, but only using online content could compromise the effectiveness of the

intervention. In a parenting skills intervention called Parenting Wisely different modes of delivery were evaluated (Cotter et al., 2013). The results showed face to face group delivery of the intervention over five weeks had greater effect sizes on all measures, and on some measures nearly double the effect size, than the online version or a one-day workshop (Cotter et al., 2013).

Dismissing face-to-face delivery due to poorer recruitment does not seem a sensible option. However, combining online materials and social media chat with a face-to-face group intervention is worth exploring further. Using social media in combination with face-to-face could help keep the group connected from one session to the next and thus help foster greater social connectedness. Using social media for recruitment and advertising of the intervention should also be explored. This could help normalise the face-to-face intervention and reduce anxiety about attending the group.

7.6 Strengths

A key strength of the current study was the number of participants who were younger mothers. Three of the seven focus groups were made up exclusively of mothers under the age of 25 years. Fourteen mothers in total had their first baby under the age of 25, and of these, eleven were under 20 years old. It is younger mothers, as outlined in chapter 3, who are least likely to breastfeed and if they do initiate breastfeeding, then they are more likely to stop earlier than their older counterparts. Younger mothers, therefore, are likely to see greatest effect from the intervention so it is essential we understand what attracts or puts off these potential participants from taking part.

Research studies and health interventions find it hard to engage younger mothers (Robinson et al., 2016). Williams et al. (2020), for example, were unable to report conclusive findings from their feasibility study for a parenting intervention, due to the low engagement and retention rates. They concluded further feasibility tests were needed especially around recruitment and retention before being able to test for effectiveness (Williams et al., 2020). This lack of

recruitment and retention of younger mothers means their voices and opinions are missing from acceptability and feasibility studies. My study, however, by using purposive recruitment, was able to ensure this was not the case and the voices of this often-unheard group were captured. This gives greater validity to my findings and ensures the intervention can be honed to reach women who will benefit the most from the intervention.

7.7 Limitations

Using focus groups did enable a deep discussion of issues around attendance at a group and the benefits of groups. It could be argued that using group discussion to ask about attendance at groups and benefits of groups is counterproductive: you would expect people attending a group to be positive about a group activity. The discussion generated, however, was balanced - exploring both benefits and drawbacks.

One of the participants (P61) was interviewed on her own. Some researchers would disregard the data if this occurred, others would not. I decided to make a pragmatic decision to continue with the interview and keep her contribution in the study. The participant had gone to the effort of turning up at the focus group on time. The other two participants were unable to come along at the last minute due to an ill child for one and a change in circumstances for the other. I felt it was more respectful to interview P61 in a one to one interview and continue to use the data. Although there was obviously a different feel to the interview, and possibly not the same justification and depth of answers compared to the focus group discussions, P61 gave good thought to the questions and the scenarios posed. She provided valuable insights to her reasons for not attending antenatal groups.

A criticism of the whole focus group study could be made at this point – why use focus groups if you can get insightful information from one to one interviews. This is a valid criticism but as I alluded to in my reasoning for using focus groups, they allow access to participants who are in 'hard to reach' sociodemographic

groups. By their own accounts, the young mothers in FG3 and FG5 would not volunteer to take part in something that was outside their comfort zone. Allowing them to speak in a group they are familiar with however, enabled their voices to be heard. It is unlikely I would have managed to get the younger mothers to sign-up to one-to-one interviews, and therefore would have missed out on their extremely valuable and opposing views from the other older mothers.

7.8 Conclusion

Although a face-to-face group intervention would be a beneficial and acceptable mode of delivery, the intervention is unlikely to attract younger (unmarried) mothers in it's current form. This study has highlighted that the mode of delivery of an intervention can inadvertently widen health inequalities. The proposed mode of delivery has good reasoning and theory behind it, and other similar interventions have shown group face-to-face produces better effect sizes than online delivery. This mode of delivery would however need to be adapted to recruit younger women. It is this group of women who already have the lowest uptake in breastfeeding, and the highest rate of early cessation. Offering the intervention to all in its current form is likely to increase the gap. In order to decrease rather than increase this health inequalities gap, the intervention needs to work with younger mothers and get them to endorse it to their friends.

Chapter 8: **CONCLUSION**

The primary aim of this thesis was to explore the development of an asset-based intervention using the Behaviour Change Wheel (Michie et al., 2011). A secondary aim, nestled within this primary aim, was to identify assets that helped maintain a positive health behaviour

The thesis started by looking at resilience as an asset. Resilience is the ability to bounce back from adversity and setbacks. In study 1, I found that people scoring high in resilience were more likely to maintain an intended positive health behaviour. Research and theory from the wider field suggest that resilience is a collection of assets and opportunities that are available to an individual (see Ungar, 2019; Reich et al., 2010). These include both innate and acquired assets, as well as environmental and social assets.

A systematic review by Kwasnika et al. (2016) of behaviour maintenance theories, found there are five overarching and interconnected themes within maintenance theories. These are self-regulation; resources (psychological and physical); support (environment and social); habit development; and motives. Theories about what makes people resilient overlap with the first three of these themes (Friborg et al., 2003). People who are more resilient are considered to have good self-regulation (Karoly, 2010), have more psychological and physical resources, and greater social support (Feder et al., 2010), enabling them to be more psychologically flexible. The idea that maintenance of behaviour is resource or asset-based made me want to look at whether it was possible to design an asset-based intervention for the maintenance of a health behaviour.

The next step in this thesis was to look at a specific health behaviour to find out which assets could help maintain that behaviour when difficulties or adversity

arose, in other words, which assets would confer resilience for this health behaviour. Breastfeeding was chosen as the health behaviour in question because of the number of women reporting breastfeeding difficulties and the poor continuation rates for breastfeeding in Scotland.

The rest of the thesis took a systematic approach to developing the intervention. I chose to use the Behaviour Change Wheel because of its wide applicability across behaviours. The COM-B at the hub of the BCW was used as an a priori framework to code qualitative studies looking at how women overcame breastfeeding difficulties by giving focus to identifying assets. Coding the assets within the COM-B framework allowed a systematic approach to intervention development.

The intervention was outlined in Chapter 6. It was proposed to deliver the intervention through a face-to-face group. The reasoning behind this was to foster friendships within the group, thereby developing greater social connectedness with other new mothers. This asset was identified in study 2 as being helpful for the continuation of breastfeeding.

A feasibility study, using focus groups (study 3), was carried out to find if the proposed face-to-face group-based delivery was going to be acceptable in terms of recruitment. This study found that younger, unmarried women were unlikely to attend the intervention if it was a group open to all pregnant women. In order to reach these younger women, who have lowest breastfeeding rates and highest cessation rates, a more targeted approach to recruitment is warranted. This is likely to include greater use of social media, showing the normalisation of attendance at a group for this demographic. A buddy system, whereby the young mother is matched up with another young mother is also worth exploring. Lastly, using young mothers themselves to recruit other young mothers was also deemed to be a productive way of targeting recruitment.

8.1 Identifying assets to develop an intervention for health behaviour maintenance during times of stress

This thesis identified assets that could be mobilised or developed within an asset-based intervention for breastfeeding. Table 8-1 below gives a summary of the assets identified as being helpful for maintaining breastfeeding despite difficulties.

Table 8-1 Assets for resilience in breastfeeding

COM-B component	Assets
Capability (Physical)	Physical skill and ability to breastfeed Sleep
Capability (Psychological)	Knowledge Patience Goal setting Positive self-talk Interpersonal skills Self-care Flexibility
Opportunity (physical)	Time Space
Opportunity (Social)	Support from health professionals Support from partners Support from family members Support from other breastfeeding mothers
Motivation (Reflective)	Motivation to breastfeed based on knowledge about benefits
Motivation (automatic)	Motivation to breastfeed based on emotion and desire to “do the right thing”

The identified assets fit into four of the five overarching themes identified by Kwasnicka et al. (2016) in their systematic review of behaviour maintenance theories, namely: motives; self-regulation; resources (psychological and physical); environmental and social influences. Recognising these assets are

consistent within a theoretical explanation for behaviour maintenance gives confidence in the findings.

Habits was the fifth theme, which the above assets do not readily align with. This may simply be because the health behaviour chosen is a behaviour that is carried out on demand, the frequency is regulated by the baby rather than by the mother. Habits, such as going to bed at a regular time and having routines, were therefore not considered. It may be that the inability to form habits for breastfeeding, make it a more challenging behaviour than other health behaviours such as exercising or brushing teeth. It would be interesting to find out and compare what assets are deemed helpful for maintenance of other health behaviours.

The assets identified in the table above were specifically identified as useful when breastfeeding difficulties were experienced. These assets could therefore be said to confer resilience i.e. they are used to help overcome a difficulty or adversity. The Conservation of Resources theory (COR) helps to explain how assets mitigate against stress and confer resilience (Hobfoll, 2011). Understanding how assets work together and can be drawn upon during times of difficulty can help prepare for future difficulties and adversity. Theoretically, the psychological skills developed through this intervention for breastfeeding resilience will impact and have benefit on other areas of the women's lives, hopefully enhancing health and wellbeing into the future. Long-term evaluation would be required for this to be determined.

8.2 Is the BCW an appropriate tool to develop an asset-based intervention?

This thesis explored the use of the Behaviour Change Wheel to develop an asset-based intervention. The COM-B, at the hub of the BCW, can be used as the framework for organising identified assets. Most previous asset-based interventions have been developed using co-production/co-creation, which is not a systemised way of working, often resulting in vague intervention description and unclear health outcomes. The use of the BCW gives a systematic

way of working. It provides a model for how assets are linked to behaviour. This allows clearer outcomes to be identified enabling better evaluation for effectiveness of an intervention.

One of the strengths of the BCW is that it can be applied to any behaviour. The COM-B is an overarching model of volitional behaviour that is simple to understand. The components of the COM-B, capability, opportunity and motivation, are wide and interactive. This simplicity makes it easy for lay audiences to grasp. Unfortunately, as well as being a real strength of the BCW the wideness of the COM-B components also creates some practical difficulties when deciding which component an asset belongs to. Greater clarity, however, can be achieved by overlaying the theoretical domains framework (TDF) onto the COM-B. The TDF is more nuanced, giving more direction and assurance that the correct coding has been made.

There is a danger that using a tool like the BCW can create a top-down intervention. This goes against the philosophy behind asset-based interventions. Asset-based interventions are theorised to work best when individuals and communities make their own decisions and have control over how they deploy resources available to them. I, therefore, suggest the BCW is used within a wider model or framework working with a community. The addition of the BCW to the PRECEDE-PROCEED model (Green & Kreuter, 2005) is a possible way forward.

In this thesis, the initial work with the BCW was carried out independently of potential participants before focus groups were used for feasibility tests. Although carrying out initial work using before presenting to potential participants is one way of using the BCW, I suggest the BCW could be used by a community group, if given training and guidance.

Having a model that shows how assets can work together to bring about behaviour change could help an individual, community or organisation understand where to place their efforts in mobilising and developing assets. The BCW, therefore, should be included in the toolbox for developing asset-based

interventions. A real positive of the BCW is it is a readily understandable model that can be easily explained to lay audiences. This is helpful if it is going to be used within groups and communities.

8.3 Challenges of using a group for delivering a health intervention

This thesis presented a rationale in section 6.4 for using a group to develop assets identified as beneficial from study 2 (chapter 5), specifically the development of social support from other breastfeeding mothers. Study 3 (chapter 7) found that attending groups with other mothers was viewed beneficially beyond simply breastfeeding. All groups of mothers saw a group as helpful and for some essential as a new mother. Despite this, study 3 also found that younger mothers were unlikely to attend a group activity and encouraging them along to an intervention that used a face-to-face group as its mode of delivery was going to be challenging.

Without carrying out the feasibility study reported in chapter 7, I would not have found out that a group-based intervention was unlikely to reach the younger mothers. However, just because I discovered this does not mean groups should be excluded as a possible mode of delivery. The group offers opportunities for developing greater social connection, which continues beyond just the time the intervention is delivered. Developing social assets is one of the key tenets of the asset approach (Garven et al., 2016). And it is an asset that is carried forward to build resilience throughout life. However, without understanding the reasons for possible non-intervention, implementing a group-based intervention could widen health inequalities.

In order to ensure there is a reduction rather than a widening of health inequalities implementation of a group-based intervention needs to be done in a considered and appropriate way. This thesis found, in study 3, that a greater focus on the ways in which recruitment is carried out was needed if the intervention was to reach younger mothers. For younger mothers to make the choice of attending a group, they had to feel that the group itself was going to

accept them. Knowing that there were going to be other mothers there like themselves was important. Being invited to the group by a friend or hearing it being talked about in a positive way on social media was also deemed to be essential in their decision-making to attend. Whereas, the older mothers were most likely to attend if a health professional, who had established a supportive relationship with them, told them about the group and recommended it to them.

Study 3, of this thesis, highlighted the importance of consulting a wide range of potential participants if a group-based intervention is the mode of choice. Finding out what the concerns of potential participants are and getting them to offer solutions needs to be an essential part of the development of any intervention but particularly if a group-based intervention is the desired mode of delivery. If this is not done, then the intervention could fail to reach the intended recipients and hence widen health inequalities.

This thesis adds to our knowledge about the reasons for attendance and non-attendance and possible ways to counteract non-attendance at antenatal and postnatal groups for expectant mothers.

8.4 Limitations

This thesis set out with an aim of developing an asset-based intervention focussed on a positive health behaviour. Only one behaviour (breastfeeding) was examined as a test case in this thesis. Other health behaviours need to be examined to check the approach is still applicable to other behaviours.

This thesis examined qualitative studies to identify assets that helped to maintain breastfeeding. Although saturation of concepts was reached within the sample of papers identified, it cannot be certain that all assets have been captured.

By using qualitative studies, I do not know the contribution each asset plays in the maintenance of breastfeeding, or even which combination of assets is most

effective. Further experimental studies would be needed to quantify attributions.

8.5 Implications for practice

To date most asset-based interventions have used co-production methods which have not been outcome focussed, resulting in little evaluation. This thesis addresses this problem by using a systematic approach to the development of an asset-based intervention which has an outcome on health behaviour.

Study 3 (chapter 7) in this thesis found that more work is needed to find a suitable recruitment method and mode of delivery that is acceptable to young unmarried mothers. Study 3 was able to recruit a high number of young mothers. These young mothers' voices are frequently missing from health development studies, so having a strong representation of young mothers in study 3 was a real strength of this thesis. Study 3 highlighted that there were considerable differences between the views of the older (over 25 years) and younger (under 25 years) mothers. If I had not recruited so many young mothers to study 3, I would not have found out these differences. Although there was good reasoning for delivering the current intervention via a group, and the younger mothers recognising the benefits of the group as a mode of delivery, the younger mothers were unanimous that they would not attend a group-based intervention.

This thesis found that a group-based intervention using a simple 'open-to-all' invite is unlikely to attract any younger mothers. If the intervention was implemented in its current form it is likely to widen inequalities since those mothers who are most likely to attend are within the demographic groups that have higher breastfeeding rates. Attracting younger women and those from demographic groups with lowest breastfeeding rates will be necessary if health inequalities are going to narrow. The current intervention therefore needs further development before being used in practice. It may be that a group face to face delivery is still acceptable if recruitment is targeted and managed to include women who share commonalities of circumstance.

However, once refined and a targeted recruitment used, the intervention could be a way to reduce health inequalities. The Conservation of Resources (COR) theory states that those who lack resources are more vulnerable to resource loss and hence stress and ill health, whereas those who possess resources enter a cycle of gain (Hobfoll, 2011). By targeting the intervention to those who are most vulnerable enables a greater impact on health inequalities. The young unmarried mothers, for example, will gain greater social support and psychological skills, this will enable them, according to COR theory, to have greater resiliency. It is not just breastfeeding that this intervention will help with, but also future challenges. Asset-based interventions are preventative approaches to health because they increase the availability of assets, which if we look at COR theory promotes the acquisition of greater assets.

8.6 Directions for future research

This thesis has raised the possibility of using the BCW in designing asset-based interventions. This will allow a greater focus on health outcomes. The implementation of any asset-based intervention needs to have the individuals and community at the heart of the intervention. The intervention therefore needs to undergo further feasibility tests and development in a community setting. This should include working with community members on recruitment strategies and reaching demographic groups who will benefit most from the intervention. Tailoring the elements of the intervention, including education materials, volitional help sheet and developing psychological skills is also necessary.

The intervention needs to be evaluated against the health behaviour outcome i.e breastfeeding duration, but other social and psychological determinants and outcomes could be measured. These include measuring resilience, self-efficacy and social connectedness. Using both qualitative and quantitative methodology should be used to capture a full evaluation of the intervention.

8.7 What does this thesis add?

1. Resilience is predictive of behaviour maintenance; this is a novel finding.
2. The identification of assets that confer resilience in breastfeeding.
3. An asset-based intervention to develop and mobilise assets for breastfeeding maintenance.
4. The critical exploration of using the BCW to develop an asset-based intervention.
5. Understanding asset-based interventions in terms of stress using the Conservation of Resources theory.
6. Understanding of the differing reasons between younger (under 25 years) and older mothers for attending or not attending a group intervention.

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APPENDIX 1: The experience of breastfeeding

In this thesis I did not set out to gather data on the experiences of women's breastfeeding. However, as I read through the papers for the study 2, the qualitative synthesis, and then later transcribed and analysed the transcripts from the focus groups in study 3, it became clear that when women talked about what helped them breastfeed (or not in some cases), they imbued their accounts with details of their experience.

in order to respect and honour the voices of the women in the focus groups, especially, it felt right and sensitive to use these experiences and ideas somewhere in my thesis. I have therefore included an appendix about 'the experience of breastfeeding'.

I carried out a thematic analysis of both the focus group transcripts (study 3) and the qualitative papers from study 2. I read and coded the papers and transcripts with the help of NVivo. There were three main themes that related to the experience of breastfeeding. These were 'unrealistic expectations', 'breaking point' and 'the ups and downs of breastfeeding'. Within the 'unrealistic expectations' theme there were 3 sub-themes which were highlighted. The first sub-theme was the surprise at breastfeeding not being an innate skill but rather a skill that needed guidance and learning to master. The second was that mothers felt they were not told the truth about breastfeeding: they were not told how hard it was and were left in the dark about the number of women who found it difficult. The third was the overwhelming tiredness of having a new baby. These themes are expanded and illustrated with quotes below.

Unrealistic expectations

A theme which I labelled 'unrealistic expectations' was evident in both the papers from study 2 and the focus groups (study 3). Shakespeare et al. (2004) summarise this theme by saying: "When some women started to breast feed the reality could be devastatingly different from their expectations. Physically they were

exhausted; it was a difficult skill to learn, time consuming and painful" (Shakespeare et al., 2004, p255). Participants words from the qualitative studies capture this aptly:

> *I thought it would be fairly easy to, to sort of have this perfect little baby that does exactly the things that it's supposed to - that goes to bed at half past seven and sleeps through the night. Ha, ha, ha, ha. Eats regular meals and eats properly for you and has a proper feed then settles down for three hours.*
>
> (Participant 31, in: Shakespeare et al., 2004, p255)

This 'unrealistic expectations' theme is similar to the theme of "idealism vs realism" theme identified by Hoddinott et al. (2010) in their longitudinal study looking at the experience of breastfeeding for women from pregnancy and through the first six months after birth.

Surprise at needing to learn how to breastfeed

Many of the women were surprised that they had to learn how to breastfeed:

> *You think you're a completely useless mother and, you know, you should be able to know how to do this instinctively [breast feeding] and in fact it's probably the hardest thing I've ever done.*
>
> (Participant 25, in: Shakespeare et al., 2004, p255)

Breastfeeding is a natural phenomenon and 'natural' appears to equate to 'intuitive'. Unfortunately 'natural' and 'intuitive' appears to be mismatched with regards to breastfeeding. There are several quotes across the qualitative papers that show many new mothers are surprised to find that breastfeeding skills needed to be learned rather than it being intuitive. The theme also came up in the focus groups and is aptly illustrated by Beth who describes 'the lion king moment', highlighting how far removed from reality a new mother's expectations of breastfeeding are by comparing it to a Walt Disney fantasy movie:

you have this image of the lion king moment where you're going bring this baby to you and it comes (Beth gestures holding a baby up and bringing towards her) and you can almost hear the beautiful music and it goes to verse and it feeds and it's amazing.

[laugh]

Now in four weeks I'm still crying with <baby > and he's my second child and I thought ..it's going to be even easier, and I'll just pop him on and he'll know what to do. But babies don't know what to do and it's really not fair 'cos baby cows know what to do … and piglets and things but to know the baby won't know, the baby has got to learn with you

(Beth, Focus group 2)

Not being told the truth

The last part of Beth's quote above "but to know the baby won't know " leads into the next theme about 'not being told the truth'. Several women in the focus groups gave the impression that they felt health professionals deliberately didn't tell mothers-to-be the truth about breastfeeding in case it risked putting the soon-to-be mother off the whole breastfeeding process.

They don't tell you about the cracks … I'd rather they had just said it's easy but it's also hard and all that

(Dawn, focus group 2)

Whether health professionals deliberately just tell the good things about breastfeeding is hard to say. This thesis has not investigated how health professionals convey the message about breastfeeding. However, several papers that have examined this have highlighted mothers and partners perceptions of antenatal breastfeeding information as "painting a rosy picture" (see Burns et al., 2010; Hoddinott et al., 2010; Schmied et al., 2011). And this was certainly felt in the focus groups by the women who did breastfeed:

> ANGELA: *erm...Yeah you go to your antenatal classes and yeah 'breast is best' and..all the stuff that IS true erm, and then however you want to feed your child is then up to you, you make that that call erm, but they never tell you it can be difficult or this could happen x could happen Y could happen and what to do if it does. They don't tell you that.*
>
> ALYS: *it's like they give you that booklet and DVD and it tells you allegedly how to do things but it doesn't actually like say tell you about any [trouble] shooting*
>
> ANNA: *Yeah 'cos the antenatal class even we were there and people actually asked questions that were basically were well what if you're having this issue, and ... I would say they were even a little dismissive of that like, oh like oh don't invite problems, well like you're just actually trying to figure out how you would be able to persevere through problems not wishing it on yourself, you know.*
>
> (Focus group 1)

It may be that health professionals think telling women antenatally about some of the difficulties will put women off even trying breastfeeding. In the UK, where breastfeeding rates are especially low, this is an understandable concern. Not telling the truth, however, disempowers a mother and risks a new mother feeling that she is the only one experiencing problems. This is illustrated aptly by Angela in focus group 1:

> *they make it sound so easy and then when you have problems you feel very isolated like there's something that you're doing wrong erm and you do, you feel very alone*
>
> (Angela, focus group 1)

The asset approach looks to empower individuals and communities – knowledge empowers, so a with-holding of knowledge by health professionals, even unwittingly, takes away power from the mothers. If Angela had known what she was experiencing was common, then it is unlikely she would have felt so isolated.

Overwhelming tiredness

> *I don't think you can prepare someone for how tired … especially like after you've just given birth, you're just drained….being tired… that was probably the worst*
>
> (Emma, age 17, Focus group 3)

The quote above is from a young mother who ended up bottle feeding her baby. Some women cite tiredness as a reason for giving up breastfeeding. Many women in the focus groups, however, were strongly of the view that breastfeeding helped them cope with the extreme tiredness they felt in the early days and weeks of having a new baby.

Aimee recounts, when she was in hospital, just after giving birth to her second child, how she overheard a young mother discussing with her boyfriend the reason she wanted to give formula was because it would be easier:

> ALYS: *so many people think the bottle is easy*
>
> AIMEE: *Yeah I kinda wanted to go and say to her, do you want to try and put your baby down for half an hour to wash a days worth of bottles run them through a steriliser, do you know how long it takes for to fill a kettle, wait for it to cool run the bottle under cold water while you've got a crying baby on your hip who's starving .. 'cos I've done that at two o'clock in the morning and that was not fun, whereas rolling over in bed: boob out – feed - sleep: life's cracked!*
>
> (Focus Group 1)

Although not unique to breastfeeding, tiredness is highlighted here because it affects emotions and thinking and since I am developing an intervention about accessing assets, it needs to be acknowledged that it can affect how and if a woman is able to mobilise the assets around her.

> *I suppose you're so emotionally and physically exhausted, that you haven't got the time and the resources to go hunting around…to be able to be helped*
>
> (Paula in: Hauck et al., 2002, p7)

Crisis point.

The emotion of having a baby, the tiredness, and the dependence of the baby upon the mother can make a new mother extremely emotional:

> *You're fragile when you've got a new baby, I think. And there's lots going on in your body and at the same time you feel like you've got to cope with the home.*
>
> (IP 2 in: Kvist et al., 2006, p142)

> *You're so vulnerable; it doesn't take a lot [to upset you].*
>
> (IP3 in: Kvist et al., 2006, p142)

Sometimes the emotions are so overwhelming that a "crisis " or "breaking point" is reached. This was specifically identified in the Hegney, Fallon & O'Brien (2008) paper but can also be seen in other papers. These 'crisis' or 'breaking points' seem akin to the 'pivotal points' Hoddinot et al., (2010) found in their longitudinal study. It is at these points that according to Hoddinot et al., (2010) feeding transitions occur.

Women in the focus groups also referred to a point in their breastfeeding journey that was a significant turning or crisis point where they were emotionally and physically exhausted. It is this point where women make the decision to continue breastfeeding or not. Aimee who now had two children recognised that a crisis point was likely to happen after her breastfeeding experience with her first baby. She refers to the same incident at two different points in the focus group discussion. The first time it was introduced to illustrate how being prepared (with phone numbers) before the baby was born was a necessary requisite for just such a time:

> AIMEE: *Yeah, it made a big difference this time, I had the same issues at the start but I was a bit more minded of "no I'm sticking with this, I'm not giving formula" so when it was 11 O' clock at night and I was sat on the kitchen floor in floods of tears.. erm, at*

> *least I had the phone numbers I could phone and Susan who takes the [breastfeeding support] group, I end up text her and said this is happening, this is happening what can I do and she like "can I phone you" so at 11 O' clock at night poor Susan had me on the phone in hysterical fits of tears ..erm but we made it through the night and we're still going and I think if that hadn't been the case … my husband would have been at 24 hours TESCO getting some formula, and that would have been that.*
>
> (Aimee, Age , second baby, Focus Group 1)

The second time was to illustrate how important it was to convey to the people around you really wanted to breastfeed so they could be used as support through the crisis point. In this case it was her husband:

> AIMEE: *my husband has been really good this time round knowing what i was like first time round erm after my daughter, we'd been at friends when she was about six months and her little boy 3 months old, she sat and breastfed (inaudible) and I cried the whole way home in the car ... and that was my reaction to a breastfeeding mother for about a year, I just cried. So when I was sat on the kitchen floor crying at 11 o'clock at night and he said do you want to cry tonight or do you want to cry for the next year? What are we going to do about it? ... yeah it's just that not giving up and making sure you've got people around who know what you want ... and are happy to support you in that and won't just go but's ok 'cos you can just do this*
>
> ALISON: *it's a bit of tough love needed*
>
> AIMEE: *exactly*
>
> (Focus Group 1)

As illustrated by Aimee, understanding that a crisis point is going to be reached and what you will do when you reach it could be a key to support women in the continuation of breastfeeding.

Ups and downs.

Even after breastfeeding has been established there are still ups and downs on the breastfeeding journey.

> *It seemed that every time I would overcome one problem another one would come up. There may have been a few weeks in there where things were going good and I thought, 'Oh, gee we finally have it!' And then the next week something else would happen or come along, and he would have another growth spurt or something else. I just about quit fifty million times.*
>
> (Jane in: Bottorff, 1990, p.204)

At times breastfeeding is all-consuming, with little else achieved.

> *I couldn't go anywhere: I was forced to sit and breastfeed. It was boring for me; I couldn't go and have a coffee or anything.*
>
> (IP12 in: Kvist et al., 2006, p.142)

Hinsliff-Smith et al. (2014) gives two quotes from women in her study to typify this:

> *I just could not do anything around the house. I look around and see the washing and ironing pile… "*
>
> (P9 interview in: Hinsliff-Smith et al., 2014, p.16)
>
> *I cannot do anything else apart from breastfeeding, no time for bath or shower or even clean the house*
>
> (P15 diary in: Hinsliff-Smith et al., 2014, p.16)

This can be a frustrating time and can lead to a real conflict of needs between the mother and baby. The baby is dependent on the mother, the mother knows this and when she starts wanting her needs met she can start to feel guilt. Maternal guilt is recognised as common among mothers and is well documented in the literature (Andrews and Knaak, 2013; Hauck et al., 2002; Hinsliff-Smith et al., 2014;):

> *the other thing I think people should know is to not feel guilty to mourn about the life they had before… I think people should be aware that you are going to feel at 2 o'clock in the morning, this was a terrible mistake and that you had a previous life that was nice and easy and full of sleep and it's ok to have those emotions because they'll pass. 'cos I had it with both my boys and I remember thinking even with <BABY 2> why did I do this I already have a child I don't need another child yeah but you know that's normal.*
>
> (Beth, Age 40, FG2)

The experience of breastfeeding I have reported here is not exhaustive but does highlight themes that appear to be common in many experiences. Understanding these common themes, the mix of emotions that new mothers face and what they find difficult as well as helpful also helped inform the education materials used in the intervention.

APPENDIX 2: ENTREQ items

No	Item	Guide and description
1	Aim	State the research question the synthesis addresses
2	Synthesis methodology	Identify the synthesis methodology or theoretical framework which underpins the synthesis, and describe the rationale for choice of methodology (e.g. meta-ethnography, thematic synthesis, critical interpretive synthesis, grounded theory synthesis, realist synthesis, meta-aggregation, meta-study, framework synthesis).
3	Approach to searching	Indicate whether the search was pre-planned (comprehensive search strategies to seek all available studies) or iterative (to seek all available concepts until theoretical saturation is achieved).
4	Inclusion criteria	Specify the inclusion/exclusion criteria (e.g. in terms of population, language, year limits, type of publication, study type).
5	Data sources	Describe the information sources used (e.g. electronic databases (MEDLINE, EMBASE, CINAHL, psycINFO, Econlit), grey literature databases (digital thesis, policy reports), relevant organisational websites, experts, information specialists, generic web searches (Google Scholar) hand searching, reference lists) and when the searches conducted; provide the rationale for using the data sources.
6	Electronic Search strategy	Describe the literature search (e.g. provide electronic search strategies with population terms, clinical or health topic terms, experiential or social phenomena related terms, filters for qualitative research, and search limits).
7	Study screening methods	Describe the process of study screening and sifting (e.g. title, abstract and full text review, number of independent reviewers who screened studies).

8	Study characteristics	Present the characteristics of the included studies (e.g. year of publication, country, population, number of participants, data collection, methodology, analysis, research questions).
9	Study selection results	Identify the number of studies screened and provide reasons for study exclusion (e,g, for comprehensive searching, provide numbers of studies screened and reasons for exclusion indicated in a figure/flowchart; for iterative searching describe reasons for study exclusion and inclusion based on modifications t the research question and/or contribution to theory development).
10	Rationale for appraisal	Describe the rationale and approach used to appraise the included studies or selected findings (e.g. assessment of conduct (validity and robustness), assessment of reporting (transparency), assessment of content and utility of the findings).
11	Appraisal items	State the tools, frameworks and criteria used to appraise the studies or selected findings (e.g. Existing tools: CASP, QARI, COREQ, Mays and Pope [25]; reviewer developed tools; describe the domains assessed: research team, study design, data analysis and interpretations, reporting).
12	Appraisal process	Indicate whether the appraisal was conducted independently by more than one reviewer and if consensus was required.
13	Appraisal results	Present results of the quality assessment and indicate which articles, if any, were weighted/excluded based on the assessment and give the rationale.
14	Data extraction	Indicate which sections of the primary studies were analysed and how were the data extracted from the primary studies? (e.g. all text under the headings “results /conclusions” were extracted electronically and entered into a computer software).
15	Software	State the computer software used, if any.

16	Number of reviewers	Identify who was involved in coding and analysis.
17	Coding	Describe the process for coding of data (e.g. line by line coding to search for concepts).
18	Study comparison	Describe how were comparisons made within and across studies (e.g. subsequent studies were coded into pre-existing concepts, and new concepts were created when deemed necessary).
19	Derivation of themes	Explain whether the process of deriving the themes or constructs was inductive or deductive.
20	Quotations	Provide quotations from the primary studies to illustrate themes/constructs, and identify whether the quotations were participant quotations of the author's interpretation.
21	Synthesis output	Present rich, compelling and useful results that go beyond a summary of the primary studies (e.g. new interpretation, models of evidence, conceptual models, analytical framework, development of a new theory or construct).

APPENDIX 3: Ethical Approval, Participant Information and Consent Forms

Ethical Approval (Study 1)

Catriona Snodin

From: James Anderson
Sent: 09 December 2013 13:06
To: Catriona Williams
Cc: Vivien Swanson; Psychology Enquiries
Subject: Williams ethics

Catriona,

This is to inform you that your proposal:

"The Role of Resilience in the Maintenance of Health Behaviours"

has been approved by the Psychology Ethics Committee.

Jim Anderson
Chair, Psychology Ethics Committee

Ethical Approval (Study 3)

Catriona Snodin

From: Psychology Ethics Submissions
Sent: 20 January 2016 09:33
To: Catriona Snodin
Cc: Ronan O'Carroll; Vivien Swanson
Subject: RE: Ethics forms CSnodin focus groups

Dear Catriona
Thank you for your ethics application. Your project titled:
"Focus Groups to develop young mums' resilience intervention"
has been approved by the Psychology Ethics Committee.
Regards,
Lindsay

Lindsay Wilson
Chair, Psychology Ethics Committee

APPENDICES

INFORMATION SHEET and CONSENT FORM

OVERVIEW

I, Catriona Williams, am a postgraduate student at The University of Stirling. This project forms part of my PhD, and*[it has received ethical approval from the Psychology Department Ethics Committee at the University of Stirling*]. Dr Vivien Swanson will be supervising this project.

The study is trying to find out what affects peoples abilities to change and maintain healthy behaviours. You will be asked to complete a questionnaire about New Year resolutions and starting behaviours that could improve your health. There will be an initial questionnaire which should take approximately 10 minutes. You will then be sent three further e-mails (at one, three and six months) to find out if you continued with any intended New Year resolutions. These follow-up questions will consist of only three questions and will take less than two minutes to complete.

You will be entered into a prize draw for a £25 Amazon voucher on completion of the initial questionnaire and then after completion of each of the follow-up questions.

CONFIDENTIALITY/ANONYMITY

All the data you supply will be confidential and kept securely.

You will be asked for an e-mail address in order to contact you for the three follow-up questionnaires. Your e-mail information will be separated from the answers you give in the questionnaire. It will be stored securely and separately from the questionnaire data you provide. Only the researcher will be able to link your e-mail address to the data. E-mail addresses will be destroyed at the end of the study.

WHO CAN TAKE PART?

Anyone who is 18 years or over and able to consent for themselves can take part in this study.

DO I HAVE TO ANSWER ALL THE QUESTIONS?

No. All questions are optional, but I would appreciate if you can answer as many as you feel able.

RIGHT TO WITHDRAW

You may decide to stop being a part of the research study at any time. In the initial questionnaire, just exit the website and your answers will not be recorded. You will not be obliged to take part in the follow-up but it would be greatly appreciated if you could do so, as this will enable us to learn more about how people manage to maintain healthy behaviours.

FOR FURTHER INFORMATION

I will be glad to answer any questions you may have about this study. You may contact me via email c.a.williams@stir.ac.uk.

APPENDICES

PLEASE GIVE CONSENT

1. By selecting "YES" below, you are agreeing that:

   (1) you have read and understood the Information Sheet

   (2) questions about your participation in this study have been answered satisfactorily

   (3) you are taking part in this research study voluntarily (without coercion)

   (4) you are at least 18 years old

   If you do not agree to any of the statements above, please do not continue. Thank you for your time.

   YES

APPENDICES

INFORMATION SHEET and INFORMED CONSENT

Below are some questions you may have about the research:

What is the research about?

This study is trying to help young pregnant women cope with stresses and difficulties that can occur after their baby is born. We have developed material to be delivered in group sessions before the baby is born to help us do this. We would like to find out from you what you think will encourage (and put off) young women attending this kind of workshop.

Why have I been asked to take part?

You have been asked because you are either i) a mum with a baby or toddler; ii) under 25 years old or iii) both.

What do I have to do?

The researcher will ask the group some questions and you would join in the discussion with other people in your group. There are no right or wrong answers, the researcher is interested in whatever your opinion is.

How long will it take? The maximum time it will take is 90 min, but usually takes no more than one hour.

Will people find out what I say?

The researcher will change your name and any details that could identify you. This means no one except the researcher (and other people in group) will know it is you who has given the opinion. The researcher will share your opinions with other researchers, health professionals and people who make decisions about funding health resources, but will not reveal your identity. This is so we can make the best use of the research to improve peoples' lives, in this case young mothers and their babies.

How will my information be kept safe? The recording that is made of the discussion will be deleted at the end of the research. It will be kept on an encrypted pen drive, in a locked drawer until the end of the study. This means that if anyone found it they would not be able to access the recording. Paper consent forms will be kept in a locked filing cabinet separate from the recording or any other material that could link you to the things you say in the discussion.

Do I have to take part? NO, taking part is entirely voluntary and you do not have to give any reasons if you decide you do not want to. Of course we would like you to take part, but we only want you to do that if you want to.

Once I have decided to take part can I change my mind? YES, you can stop at any time. If you do not want the researcher to use your information then you can ask for it to be removed.

I'm still not sure! Make sure you ask the researcher any questions. She is there to answer any questions you have.

As an informed participant of this research, I understand that:

1. My participation is voluntary and I may cease to take part in this research at any time, without penalty.

2. I am aware of what my participation involves.

3. *There are no risks involved in the participation of this study.*

4. All my questions about the study have been satisfactorily answered.

I have read and understood the above, and give consent to participate:

Participant's Signature:_____ Date:_____

I have explained the above and answered all questions asked by the participant:

Researcher's Signature:_____ Date:_____

If you have any questions about the study, you want further information or you wish to withdraw from the study for any reason then you can contact the researcher by emailing her at catriona.snodin@stir.ac.uk, phoning 01786 466843 or writing to Catriona Snodin, CSO Doctoral Training Fellow, Psychology Department, School of Natural Sciences, University of Stirling, Stirling, FK9 4LA.

APPENDIX 4: Generalised Self-Efficacy Scale (GSES)

	Not at all true	Barely true	Moderately true	Exactly true
1. I can always manage to solve difficult problems if I try hard enough.	1	2	3	4
2. If someone opposes me, I can find means and ways to get what I want.	1	2	3	4
3. It is easy for me to stick to my aims and accomplish my goals.	1	2	3	4
4. I am confident that I could deal efficiently with unexpected events.	1	2	3	4
5. Thanks to my resourcefulness, I know how to handle unforeseen situations.	1	2	3	4
6. I can solve most problems if I invest the necessary effort.	1	2	3	4
7. I can remain calm when facing difficulties because I can rely on my coping abilities.	1	2	3	4
8. When I am confronted with a problem, I can usually find several solutions.	1	2	3	4
9. If I am in a bind, I can usually think of something to do.	1	2	3	4
10. No matter what comes my way, I'm usually able to handle it.	1	2	3	4

APPENDIX 5: Revised Life Orientation Test (LOT-R)

Revised Life Orientation Test (LOT-R)

Instructions:
Please answer the following questions about yourself by indicating the extent of your agreement using the following scale:

[0] = strongly disagree
[1] = disagree
[2] = neutral
[3] = agree
[4] = strongly agree

Be as honest as you can throughout, and try not to let your responses to one question influence your response to other questions. There are no right or wrong answers.

_____ 1. In uncertain times, I usually expect the best.
_____ 2. It's easy for me to relax.
_____ 3. If something can go wrong for me, it will.
_____ 4. I'm always optimistic about my future.
_____ 5. I enjoy my friends a lot.
_____ 6. It's important for me to keep busy.
_____ 7. I hardly ever expect things to go my way.
_____ 8. I don't get upset too easily.
_____ 9. I rarely count on good things happening to me.
_____ 10. Overall, I expect more good things to happen to me than bad.

Scoring:
1. Reverse code items 3, 7, and 9 prior to scoring (0=4) (1=3) (2=2) (3=1) (4=0).
2. Sum items 1, 3, 4, 7, 9, and 10 to obtain an overall score.

Note Items 2, 5, 6, and 8 are filler items only. They are not scored as part of the revised scale.

APPENDIX 6 : The Theoretical Domains Framework (TDF) and its links to COM-B

TDF Domain	Theoretical constructs represented	COM-B component
Knowledge An awareness of the existence of something	Knowledge (including scientific rationale); procedural knowledge; knowledge of task environment	Psychological Capability
Skills An ability or proficiency acquired through practice	Physical skills, competence, ability	Physical capability
	Cognitive and interpersonal skills	Psychological capability
Memory, attention and decision processes The ability to retain information, focus on selective aspects and choose between alternatives	Memory; attention; attention control; decision making; cognitive overload/ tiredness	Psychological capability
Behavioural regulation Anything aimed at managing or changing objectively observed or measured actions	Self-monitoring' breaking habit; action planning	Psychological capability
Social/professional role and identity A coherent set of behaviours and displayed personal qualities of an individual in a social or work setting	Professional identity; professional role; social identity; group identity	Reflective Motivation
Beliefs about capabilities Acceptance of the truth, reality, or validity about an ability or talent	Self-confidence; perceived competence; self-efficacy; perceived behavioural control; beliefs; self-esteem; empowerment	Reflective Motivation
Optimism The confidence that things will happen for the best or that desired goals will be attained	Optimism; pessimism; unrealistic optimism	Reflective Motivation
Beliefs about consequences Acceptance of the truth, reality, or validity about outcomes of behaviour	Beliefs' outcome expectancies; characteristics of outcome; expectancies; anticipated regret	Reflective Motivation
Intentions A conscious decision to perform a behaviour or resolve to act in a certain way	Stability of intentions; stages of change model; transtheoretical model and stages of change	Reflective Motivation

Goals Mental representations of outcomes or end states that an individual wants to achieve	Goals (distal/proximal); target setting; action planning; implementation intention	Reflective Motivation
Reinforcement Increasing the probability of a response by arranging a dependent relationship	Rewards; incentives; punishment; consequents; reinforcement; contingencies; sanctions	Automatic Motivation
Emotion A complex reaction pattern, involving experiential, behavioural, and psychological elements, by which the individual attempts to deal with a personally significant matter	Fear; anxiety; affect; stress; depression; positive/negative affect; burn-out	Automatic Motivation
Environmental context and resources Any circumstances of a person's situation or environment that discourages the development of skills and abilities, interdependence, social competence, and adaptive behaviour	Environmental stressors; resources; organisational culture; salient events; barriers and facilitators	Physical Opportunity
Social influences Those interpersonal processes that can cause individuals to change their thoughts, feelings, or behaviours	Social pressure; social norms; group conformity; social comparisons; group norms; social support; power; group identity; modelling	Social Opportunity

APPENDIX 7: BCT Labels

Group 1: Goals and Planning

1.1 Goal setting (behaviour)
1.2 Problem solving
1.3 Goal setting (outcome)
1.4 Action Planning
1.5 Review behaviour goal(s)
1.6 Discrepancy between current behaviour and goal
1.7 Review outcome goal(s)
1.8 Behavioural contract
1.9 Commitment

Group 2: Feedback and monitoring

2.1 Monitoring of behaviour by others without feedback
2.2 Feedback on behaviour
2.3 Self-monitoring of behaviour
2.4 Self-monitoring of outcome(s) of behaviour without feedback
2.5 Monitoring of outcome(s) of behaviour without feedback
2.6 Biofeedback
2.7 Feedback on outcome(s) of behaviour

Group 3: Social support

3.1 Social support (unspecified)
3.2 Social support (practical)
3.3 Social support (emotional)

Group 4: Shaping knowledge

4.1 Instruction on how to perform the behaviour
4.2 Information about antecedents
4.3 Re-attribution
4.4 Behavioural experiments

Group 5: Natural Consequences

5.1 Information about health consequences
5.2 Salience of consequences
5.3 Information about social and environmental consequences
5.4 Monitoring of emotional consequences
5.5 Anticipated regret
5.6 Information about emotional consequences

Group 6: Comparison of behaviour

6.1 Demonstration of the behaviour
6.2 Social comparison
6.3 Information about others' approval

Group 7: Associations

7.1 Prompts/cues
7.2 Cue signalling reward
7.3 Reduce prompts/cues
7.4 Remove access to the reward
7.5 Remove aversive stimulus
7.6 Satiation
7.7 Exposure
7.8 Associative learning

Group 8: Repetition and substitution

8.1 Behavioural practice/rehearsal
8.2 Behavioural substitution
8.3 Habit formation
8.4 Habit reversal
8.5 Overcorrection
8.6 Generalisation of target
8.7 Graded tasks

BCT Labels (continued)

Group 9: Comparison of outcomes

9.1 Credible source
9.2 Pros and cons
9.3 Comparative imagining of future outcomes

Group 10: Reward and threat

10.1 Material incentive (behaviour)
10.2 Material reward (behaviour)
10.3 Non-specific reward
10.4 Social reward
10.5 Social incentive
10.6 Non-specific incentive
10.7 Self-incentive
10.8 Incentive (outcome)
10.9 Self-reward
10.10 Reward (outcome)
10.11 Future punishment

Group 11: Regulation

11.1 Pharmacological support
11.2 Reduce negative emotions
11.3 Conserving mental resources
11.4 Paradoxical instructions

Group 12: Antecedents

12.1 Restructuring the physical environment
12.2 Restructuring the social environment
12.3 Avoidance/reducing exposure to cues for the behaviour
12.4 Distraction
12.5 Adding objects to the environment
12.6 Body changes

Group 13: Identity

13.1 Identification of self as role model
13.2 Framing/reframing
13.3 Incompatible beliefs
13. 4 Valued self-identity
13.5 Identity associated with changed behaviour

Group 14: Scheduled

14.1 Behaviour cost
14.2 Punishment
14.3 Remove reward
14.4 Reward approximation
14.5 Rewarding completion
14.6 Situation-specific reward
14.7 Reward incompatible behaviour
14.8 Reward alternative behaviour
14.9 Reduce reward frequency
14.10 Remove punishment

Group 15: Self-belief

15.1 Verbal persuasion about capability
15.2 Mental rehearsal of successful performance
15.3 Focus on past success
15.4 Self-talk

Group 16: Covert learning

16.1 Imaginary punishment
16.2 Imaginary reward
16.3 Vicarious consequences

Building resilience for parenthood

Becoming a parent is an exciting but also sometimes stressful time.

As your child grows you will face different challenges. Identifying the skills and strengths you have and how to build on these will set you up well for the challenges of parenthood.

In the first few weeks and months the three biggest challenges new mums say are the hardest from a psychological perspective are:

- Tiredness
- Loneliness
- Infant feeding problems

Research shows the following things help new mums get through these challenges:

- Having a supportive network
- Setting goals but also being flexible within those goals to address problems as they arise
- Having good interpersonal skills so you can ask for help effectively

For women who wanted to breastfeed the following also helped

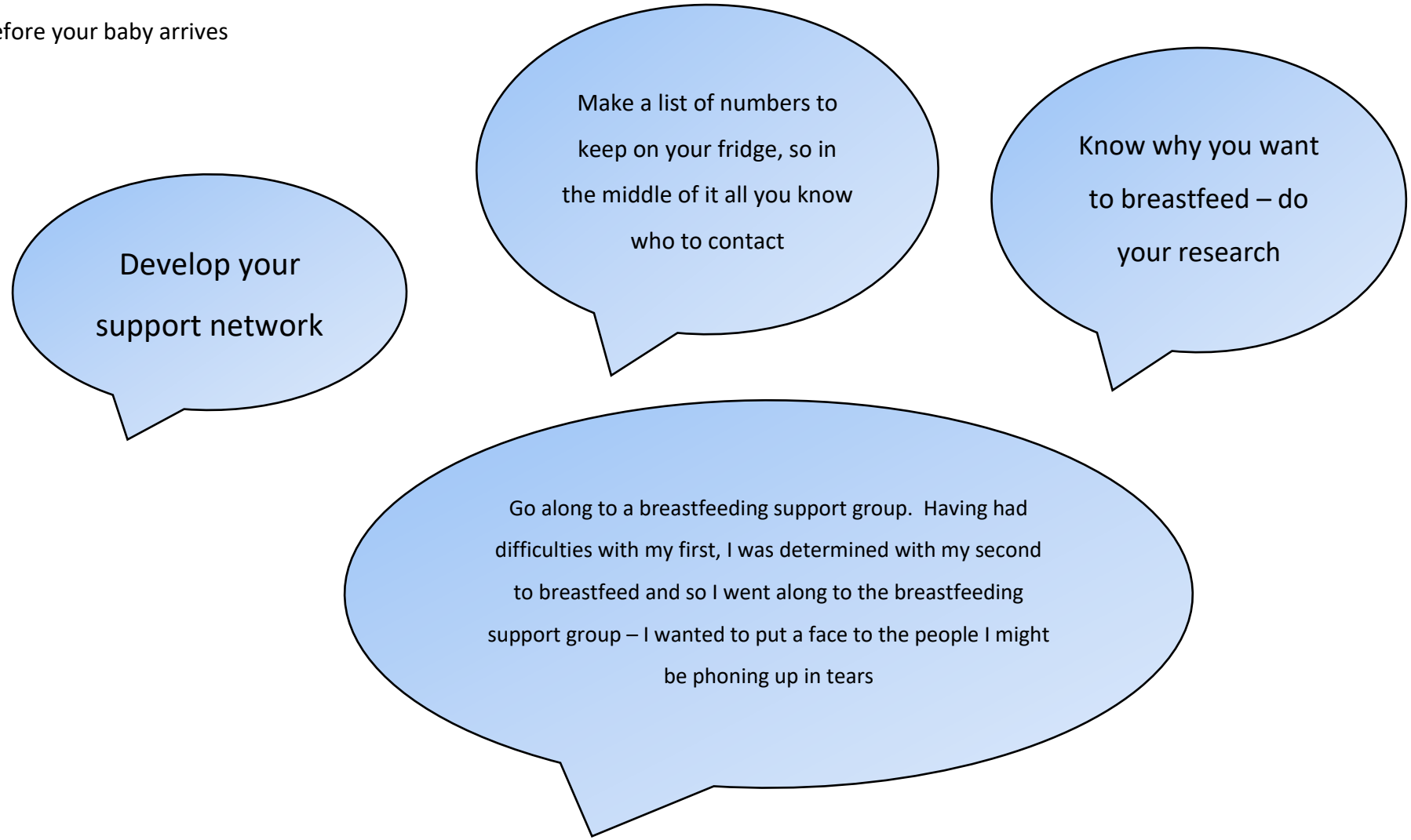
- Setting a breastfeeding goal before the baby is born
- Knowing why you want to breastfeed and what the benefits are
- Meeting up with other breastfeeding mums
- Knowing that most women have difficulties with breastfeeding
- Knowing how to access help

Useful Websites:

Local Support groups:

Advice from other mums:

Before your baby arrives



Planning out possible solutions before you are in the middle of a stress/difficulty/challenge has been shown to be helpful. Listed on the left hand side are some problems/ stresses that may happen after your baby is born. Draw a line from each of the problems (IF) to the solutions (THEN) – choose up to three that might work for you personally. There is space at the bottom for you to add in some of your own.

WHEN	THEN I will
• I'm too tired • I'm feeling lonely • My emotions are all over the place • My baby is feeding all the time • My baby is not latching properly • I feel like giving up • I have sore nipples • I think my baby isn't getting enough milk • Breastfeeding is painful • Getting out the house with a baby is too hard • I'm too embarrassed to breastfeed in public • I find it really scary going along to a new group or activity	• tell myself "I can do this" • tell myself " this is only for a short time" • look up my list of contact numbers to ring • set myself a short-term goal • remind myself to have confidence in own intuition • tell myself to keep going • ring a friend for moral support • remind myself that all new mums experience similar problems • make an active effort to develop friendships with other mums • ask my health visitor for help • ask my partner/ mother/ friend to help with chores in house • go along to a breastfeeding support group/café • look up an online breastfeeding problem solver • ask the midwife/lactation support worker about it • remind myself of the benefits of breastfeeding • ask my family/friends for advice • tell myself that my baby comes first • remind myself that I need to look after myself too