

LEEDS BECKETT UNIVERSITY

AN EVALUATION OF THE IMPACT OF THE 5 WAYS TO HEALTHY HEARTS PROJECT – FINAL REPORT

**Ann-Marie Bunyan, Dr Louise Warwick-Booth,
Dr Gary Raine**

APRIL 2017

www.leedsbeckett.ac.uk



Contents

Section	Page Number
Executive Summary	3
1. Introduction	7
2. Project Overview	9
2.1 <i>Demographics</i>	9
2.2 <i>Workshop feedback</i>	12
3. Findings	14
3.1 <i>Outcome 1 – The impact of the programme on physical health</i>	14
3.2 <i>Outcome 2 - The impact of the programme on health and wellbeing</i>	17
4. Discussion	23
5. Learning from the 5 Ways to Healthy Hearts Programme	25
6. Conclusion	25
7. Issues for consideration	25
8. How we conducted the research	26
8.1 <i>Evaluation approach</i>	26
8.2 <i>Data analysis</i>	27
8.3 <i>Research ethics</i>	27
8.4 <i>Limitations of the evaluation</i>	27
9. References	29-31
Appendices	32-36

Executive Summary including summary of evaluation findings

Introduction

The 5 Ways to a Healthy Heart Programme was set up in 2015 as a prototype approach aiming to support disadvantaged and vulnerable black and minority ethnic groups (BME) groups to prevent heart disease within the South Leeds CCG area (Beeston and Holbeck). The Programme is located within Hamara Leeds, the largest ethnic minority organisation in the voluntary and community sector in Leeds. This report presents the findings from an evaluation of the 5 Ways to Healthy Hearts Programme conducted by the Centre for Health Promotion Research, Leeds Beckett University. It presents evidence about the impact of the programme on the health and wellbeing of BME community members.

Background

The Beeston and Holbeck area of Leeds an ethnically diverse community, with a higher percentage of black and ethnic minority groups (27.4%) compared to the city BME rate (18.9%), and the rate of the BME population having increased almost three fold from 10.2% in 2001. Singularly the Pakistani community is the largest BME group in the ward (The Office of National Statistics, 2011).

There is a substantial amount of deprivation in Beeston and Holbeck with subsequently poorer health. Within the 2015 index of multiple deprivation, at ward level Beeston and Holbeck are ranked ninth by their LSOA's in the most deprived 10% nationally, with rates remaining consistently high for living environment deprivation, barriers to housing and services as well as crime and disorder (Leeds Observatory, 2015a). In comparison to the city average (5.4%), the Beeston and Holbeck ward have a higher proportion of people describing their general health as being 'bad' or 'very bad' (6.8%). The rate of those describing their health as 'very good' is 5% lower than the total figure for the city (42.9%, 48.1% respectively) (Leeds Observatory, 2015b). According to the 2011 Census a higher proportion of people living in the Beeston and Holbeck ward (18.6%) state that they have a long-term illness that limits their day to day activities in comparison to the city average (16.8%) (The Office of National Statistics, 2011).

Although ethnicity, deprivation and health is complex, deprivation and socioeconomic status are undoubtedly linked to poorer health (The Kings Fund, 2015). In relation to lifestyle, data consistently demonstrates that lower income groups purchase and consume to a lesser degree healthful foods such as fruits and vegetables and consume higher levels of added sugars compared to higher income groups (Foods Standards Agency, 2007; Department of Environment, Food and Rural Affairs, 2015). Poor diet and lifestyle is inextricably linked to cardiovascular health (Rees et al, 2013) and cardiovascular disease is one of the main causes of death in the UK (Bhatnagar et al, 2015). Furthermore, much data indicates that coronary heart disease rates are higher in South Asian population groups and the prevalence of diabetes is

also higher in South Asian and people of African Caribbean decent compared to white populations (Scarborough et al, 2010). For example, incidences of myocardial infarction are greater in South Asian men and women compared to non-South Asians, with the prevalence of CHD being the highest in Pakistani and Indian men (Scarborough et al, 2010). Rates of myocardial infarction in South Asians are five fold in comparison to non-South Asians, and occurs at a younger age (Joshi et al, 2007). South Asian populations in the UK have the highest premature CHD deaths of any other ethnic group (Joshi et al, 2007).

Although factors such as smoking, poor diet and sedentary lifestyle contribute widely to the risk of CVD, as a group South Asians have a propensity toward obesity due to a higher waist to hip ratio in comparison to white populations (National Obesity Observatory, 2011) increasing the risk of a number of diseases. Furthermore, health inequalities that might exist in more deprived areas such as poorer access to health services can exacerbate the problem. In addition, literature suggests that South Asian groups are more likely to lead sedentary lifestyles; in particular South Asian women are less likely to meet the recommended physical activity levels (Babakus and Thompson, 2012). It is therefore important to target such groups for intervention in order to educate individuals around the risks of CVD as well as lifestyle changes that can be made to reduce those risks. As such, the 5 Ways to Healthy Hearts Programme delivered by Hamara aims to address a number of issues amongst BME groups including diet, exercise, and emotional health delivered in a culturally appropriate way.

Evaluation aims and objectives

The overall aim of the evaluation was to determine the effectiveness of the 5 Ways to Healthy Hearts Programme and the degree to which the intervention model has improved the health and wellbeing of individuals. The objectives of the evaluation research were to:

- Measure impacts on health and wellbeing;
- Measure impacts on physical health using physical health parameters.

Summary of findings

- From baseline to six months there was a statistically significant decrease in body weight, BMI, systolic blood pressure and waist to hip ratio amongst participants. Over two thirds of participants (79%) had lower systolic blood pressure readings.
- The number of individuals reporting moderate physical activity 4-5 times per week increased from 9% at baseline to 27% at post stage. The proportion of individuals reporting moderate physical activity 5 or more times per week almost doubled from 7% to 13%.
- There were statistically significant improvements in all four strands of wellbeing for both males and females: social outlook and connections, physical health management, managing and using time well for meaningful activities, emotional health and wellbeing. For example, with a score rating from 0 to 10, the average score for emotional health and wellbeing at baseline was 7.60 compared to 8.18 at the post stage.
- Diet improved significantly with participants reporting consuming significantly less fried foods, red meat, frozen meals, salt, sugary foods and soft drinks at the post stage compared to baseline. In addition, participants reported consumed significantly more servings of fruit per day at the post stage compared to baseline.
- Thirty individuals were referred to their GP as a result of high or very high blood pressure.
- Five more people than at baseline, aged between 40-74 years reported having had an NHS Health Check at the post stage as a result of taking part in the 5 Ways to Healthy Hearts Programme.

Learning from the 5 Ways to Healthy Hearts Programme

- The workshops provided an engaging way to help people learn about cardiovascular disease risk, diet and lifestyle. As such participants reported being enabled to apply their learning to everyday life using practical and informative tips gained from the workshops.
- The programme was developed and facilitated by BME women which meant that specific cultural needs were addressed. However, input from male BME groups for future projects may be beneficial to encourage more males to attend such programmes and to enrich their experience.
- The programme used a multicomponent approach and covered all aspects of health including physical and emotional wellbeing allowing for several health issues to be addressed at once.

Issues for consideration

- The majority of those that took part in the 5 Ways to Healthy Hearts Programme were female. Similar interventions have also reported greater uptake of women (Farooqi and Bhavsar, 2001; Kandula et al, 2015) and men are notoriously harder to engage in public health interventions. If the programme is to be delivered in the future, it may wish to focus on trying to increase the uptake amongst South Asian males in light of the highest prevalence of CHD being in Pakistani and Indian men. Potentially a male only programme may be a useful approach.
- Health and wellbeing indicators were self-reported and therefore may introduce some bias. Although several aspects of health and wellbeing were captured for this evaluation strengthening the findings, for future programme delivery it may be useful to use validated tools such as a quality of life scale (QOL) and the Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS) (Stewart-Brown et al, 2011)
- Whilst evidence of short term impacts of the programme has been demonstrated, it is important that the longer term impacts are captured. For example, accessing health service usage data for those who participated in the programme would allow for a fuller conclusion to be drawn.
- A cost/benefit analysis would help to determine the programmes best approach that will achieve programme outcomes whilst limiting costs.
- Logistically it was difficult to retain all participants for the full length of the programme due to various factors (festive periods, religious festivals, health issues, and work commitments). This is a factor that may need to be considered for future projects in terms of how this can be best managed within the time scales available.
- Data showed that the individuals aged between 60 to 69 years were the least likely to complete the programme. It may be useful to further explore what the barriers may be for this particular age group in order to increase retention in the future.
- In order to gain a greater depth of insight into the effectiveness of the programme and learning from delivery, it may be necessary to undertake further evaluation using other methods such as qualitative interviews with service users and programme facilitators.

1. Introduction

Hamara is a Leeds based charity and within the voluntary and community sector is now the largest ethnic minority organisation in Leeds. Hamara is able to respond to local and national inequalities agendas through its several strands of work including gender specific activities, community cohesion, health education and health promotion. In particular, Hamara's focus is on increasing awareness and knowledge amongst Asian and minority communities around health issues such as diabetes and coronary heart disease, which disproportionality effect South Asian communities (Scarborough et al, 2010).

In 2015 Hamara undertook a period of consultation work with current service users, local people and stakeholders to ascertain potential barriers to improving health. Individuals were asked about the barriers that they faced and the type of support that they would require. Individuals responded with the following:

- Busy family life resulted in being less active and eating less healthful foods;
- Individuals found it difficult to obtain suitable appointments with their GP as well as experiencing language and communication barriers once appointments were secured;
- There was a lack of awareness around existing community based support;
- Individuals preferred non-clinical group activities taking a whole family approach when learning about healthy lifestyle;
- Individuals required resources that were in multiple languages to aid learning.

As part of that consultation a focus group was held with a sample of sixty individuals from the local community to gain insight into barriers to physical activity. This resulted in 70% of respondents stating that they did not participate in regular exercise, with 90% stating that they wished to be more active if they were provided with appropriate support and facilities to do so.

It is within this context that the pilot programme 5 Ways to Healthy Heart was initiated. The programme is in partnership with the Leeds South and East CCG and the Leeds Community Fund, targeting mainly black, Asian and Minority Ethnic communities within the 10% most deprived communities. Its aim is to reduce the risk of chronic heart disease within these communities. Using a community development approach, the programme aims to address the barriers to better health through the delivery of workshops and physical activity sessions, building personal capacity for individuals to be able to lead healthier lifestyles (e.g. eating healthier, reduced isolation, being more physically active, increased access to support). The individuals recruited for the 5 Ways programme were BME community members, those who were not accessing statutory services and not active.

The 5 Ways to Healthy Hearts programme included the following strands:



- One-and-a-half-hour healthy heart workshops which included an educational presentation on the risks of cardiovascular disease and prevention using the 5 ways model;
- Health MOTs and one to one sessions;
- Physical activity sessions including walking, yoga and gym-based sessions.

The programme comprised of educational workshops followed by practical activities. The workshops included a presentation on the risks of and prevention of cardiovascular disease using the '5 Ways' to promote wellbeing and behavioural changes. The 5 Ways to Wellbeing' model uses five evidence-based actions to promote health and wellbeing, including: Take notice, be active, learn, connect socially and give.

The actions were incorporated into the programme in the following ways:

- Health MOTs were conducted and one-to-one sessions around current lifestyle, the impacts of lifestyle on the individual's health and personal goals;
- A programme of exercise including a variety of different exercise modalities and settings to best suit the individual's needs (5 x 30 minutes each week);
- Educational presentations based on diet and exercise as an early intervention to reduce disease risk;
- The development of individual health plans;
- Opportunities for participants to share their experiences with other individuals by becoming 5 Ways Champions.

The location and the delivery of the 5 Ways to Healthy Hearts Programme was particularly important in ensuring engagement and to address the main barriers to health. As such the programme was delivered from the Hamara South Leeds Hub and Healthy Living centre as well as from other organisational venues such as Women's Health Matters and Asha Neighbourhood Project. In addition, 'Champions' were also available to accompany individuals to GP appointments if immediate health risks were flagged up (e.g. very high blood pressure) during health MOTs. All resources were available in multiple languages with visuals (pictures and symbols) to address language and literacy barriers. The programme was designed by BME women so that it addressed specific cultural needs including diet and behavioural aspects.

The project was promoted in a number of ways using various medium such as: leaflets and posters, radio advertising, social media, outreach sessions and Champions delivered activities in the community.

2. 5 Ways to Healthy Hearts Project – Project Overview

2.1 Demographics

In total, demographic information was provided for 184 individuals who participated in the 5 Ways to Healthy Hearts Programme.

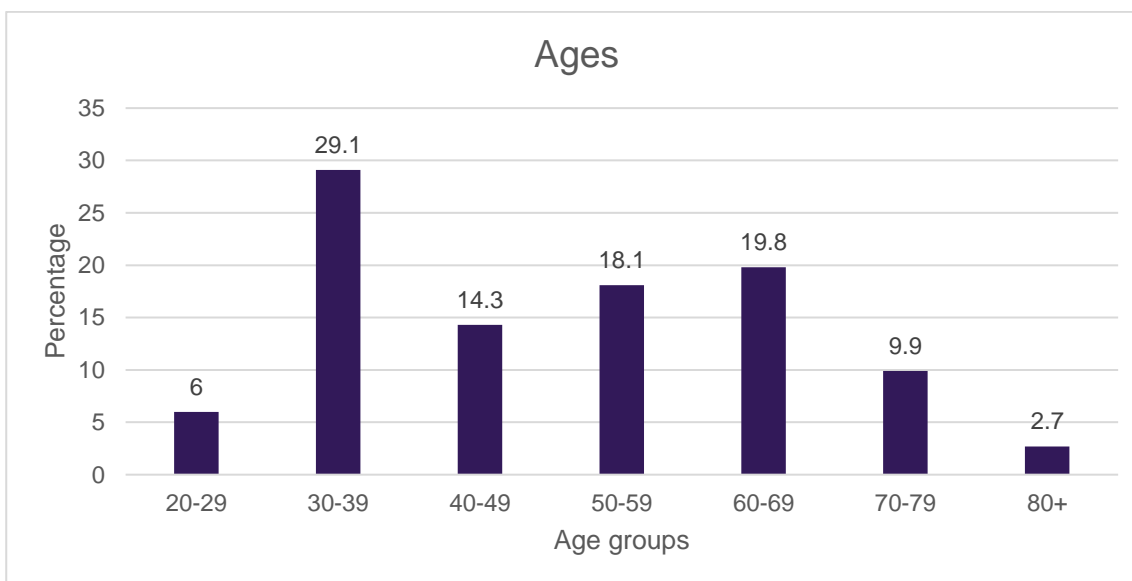
Sex (n=184)

Overall, 79% of participants were female and 21% male.

Age (n=182)

The mean age of participants was 50.2 years (SD=15.9 years), with the oldest individual being 87 years and the youngest 22 years. As Figure 1 shows, the largest proportion of individuals were between 30-39 years old (29%). Similar proportions of individuals were between 50-59 years old (18%) and 60-69 years old (20%). In total, 51% of participants were 50 years old or over.

Figure 1: Age of participants



Ethnicity (n=184)

Table 1 shows that nearly two thirds of the individuals (65%) were Asian/Asian British (Pakistani 49%, Indian 9% & Bangladeshi 8%). Approximately 16% were White British (12%) or White Irish (4%).

Table 1: Ethnicity of participants

	Frequency	Percentage
Pakistani	90	48.9
British	22	12
Indian	16	8.7
Bangladeshi	14	7.6
African	13	7.1
Irish	8	4.3
Other Asian background	5	2.7
Mixed: White and Black African	4	2.2
Other Black background	3	1.6
Other	3	1.6
Caribbean	1	0.5
Chinese	1	0.5
Other mixed background	1	0.5
Other White background	1	0.5
Mixed: White and Asian	1	0.5
Mixed: White and Black Caribbean	1	0.5

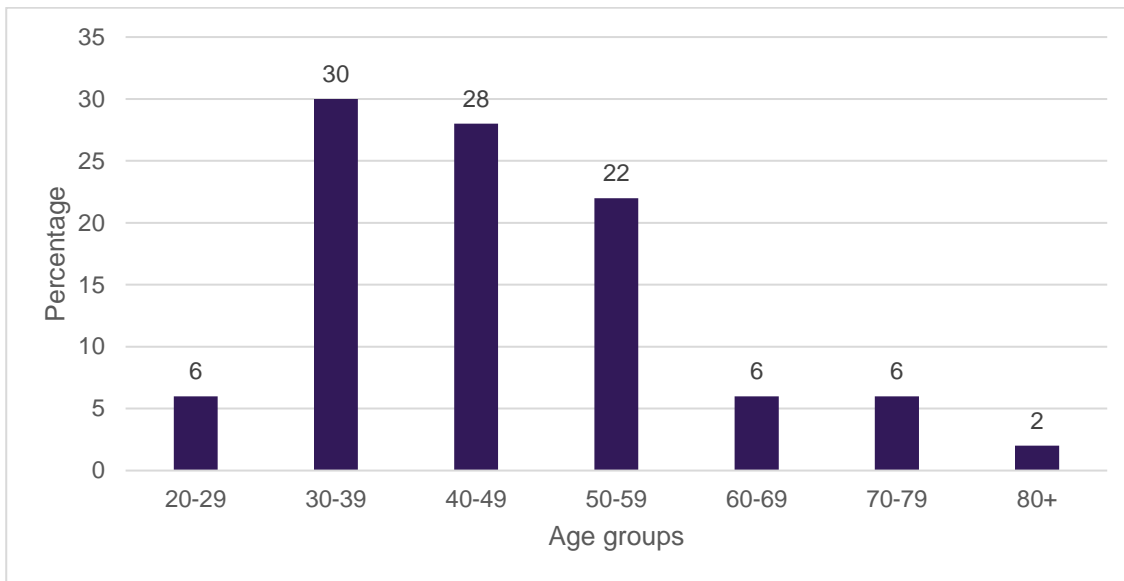
Disability (n=184)

Nine individuals (5%) had some form of disability.

Although demographic information was recorded for 184 individuals, health related data was only available for a smaller number of participants. In total, baseline and 3-month data were available for 50 participants. Baseline, 3 months and 6-month data were available for 14 participants. Two analyses were performed:

- The first assessed change between baseline and 3 months only
- The second assessed change between baseline and 6 months only

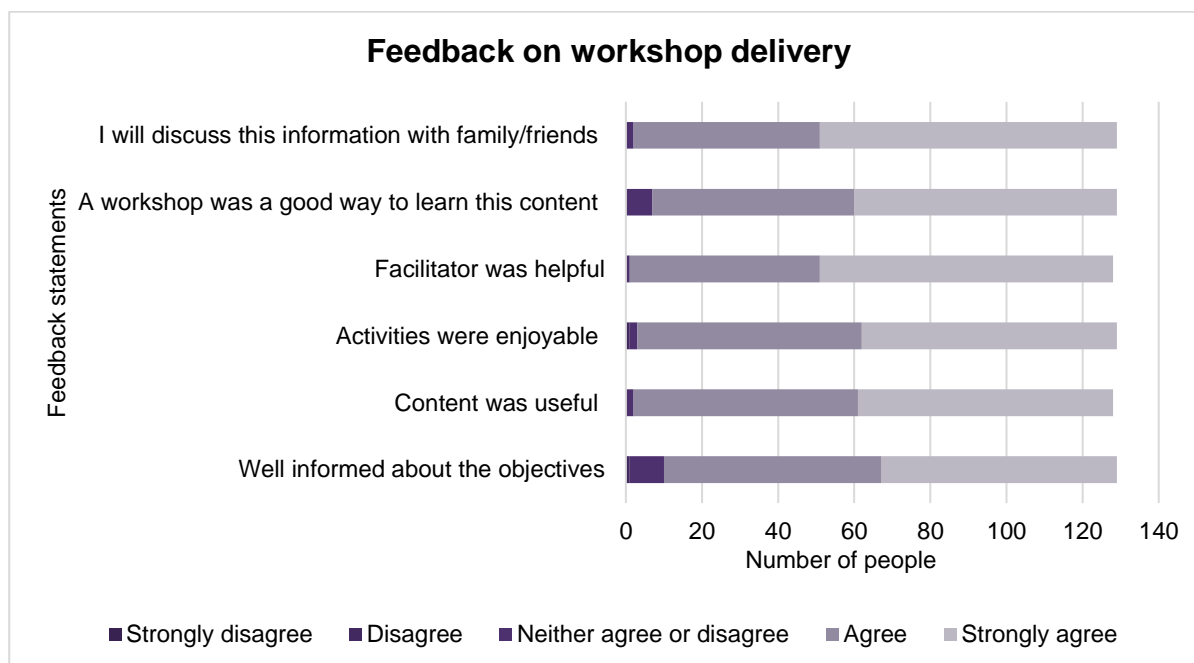
There were some notable differences between the ages of the 50 individuals who provided baseline and 3-month data and all 184 individuals for whom demographic information was provided. Overall, 28% of individuals with recorded baseline/post data were aged between 40-49 years, compared to 14% of the 184 individuals included in the demographic data. Furthermore, individuals aged 60-69 years comprised 20% of participants included in the demographic data, but just 6% of individuals who had recorded baseline and 3-month measurement data. In total, almost one third of the demographic data related to individuals 60 and older, but just 14% of the baseline and 3-month data came from this age group. Figure 2 provides the ages of those providing baseline/3-month data.

Figure 2: Ages of individuals with recorded baseline/3-month data

2.2 Workshop feedback

129 participants provided feedback following the workshops. As figure 3 shows, the majority of participants either agreed or strongly agreed that the workshop has been useful and a good way to learn about the content. 78 of the participants strongly agreed that they would discuss the content of the workshops with family and/or friends.

Figure 3: Feedback summary



Open comments

Learning

When asked about the learning that they had experienced participants recorded learning in a number of topics areas as follows:

- Causes and symptoms of CVD
- What to do if an event occurs concerning heart
- Well-being and life-style
- Diet and exercise such as eating less oils and fats, eating less sugar and exercising more
- To get fit, worry less, and manage weight
- Exercise is very important and also being happy
- I have learned how to keep my heart healthy and what will affect it
- Socialise with people and don't be alone
- It has motivated me to do something about getting fitter and healthier
- I have learnt about how blood sugar affects our health and how to prevent heart disease
- I have learnt a great deal about the heart

- Avoid junk food, less chocolate
- Stress relief
- What to do if I have heart problems and diabetes
- Social happiness helps to keep the heart happy
- Stay happy and active

Lifestyle changes

When asked about changing lifestyle as a result of their learning from the workshop, some participants noted the intentions that they had in relation to making changes:

- I will join dance lessons
- I will use less salt in cooking and less ghee
- I want to lose weight and learn new things such as cooking and baking
- I will do exercise and eat less fried food
- I want to start volunteering and stop smoking
- I will eat less sweets and meet people more often
- Start hobby – sewing lesson
- I will eat smaller portions and exercise more
- Connect more with the community
- I will start exercising – walking, may join walking class
- Attend activities at Hamara
- Will use the learning and will also work with my family to educate them so that we can make positive changes to our lifestyle
- Keep an eye on my portions and keep checking my BMI and weight
- I will reduce my sugar and salt in diet and be more active
- Decrease sugar in foods
- I would like to join the gym
- Try to attend community events and make new friends
- Check my health
- Be confident, raise self-esteem
- I will participate in social activities and start volunteering

Others offered examples of changes that they were already undertaking:

- Already taking measures such as cutting down on saturated fat, salt and sugar, eating 5 a day and attending the gym and Tai Chi at Hamara
- I have joined the gym at Hamara and the breakfast group to increase socialising
- Joined the walking group and English ESOL class at Hamara

3. Findings

The data was analysed using the statistical software package SPSS. For clarity, the number of responses on which analyses were based is provided (n =). In some cases, percentages may not add up to exactly 100% due to rounding.

For some questions, additional analytical tests were performed on the data to investigate whether the change from the start (baseline) to the end of the programme (post) was statistically significant. A paired t-test was used for the questions related to personal measurements: weight, BMI, systolic and diastolic blood pressure, waist/hip ratio and pulse rate. This test was also used to examine change in participants' ratings of the following: 'social outlook and connections', 'physical health management'; 'managing & using time well for meaningful activities', and 'emotional and mental health'. A Wilcoxon Paired Signed-Rank Test was used for the questions related to diet. For all these tests a p value of 0.05 or less was taken to be statistically significant.

For some analyses a confidence interval is reported. A confidence interval provides an indication of the range within which the true effect is likely to be. The width of a confidence interval is affected by the size of the sample, with smaller samples tending to have larger confidence intervals than bigger ones. A confidence interval of a mean difference that does not pass through 0 is indicative of a statistically significant change.

3.1 - Outcome 1 – The impact of the programme on physical health

The following measurements were collected from participants at baseline, 3 months and 6 months:

- Weight (Kg)
- BMI
- Systolic blood pressure
- Diastolic blood pressure
- Waist/hip ratio
- Pulse rate

Results

a) *Baseline to 3 months*

Table 2 presents the average change in participants' measurements from baseline to 3 months. It can be seen that there was a statistically significant decrease in systolic blood pressure over time. There was also a decrease in both average weight and BMI, but this change was not statistically significant. Conversely, there was a non-significant increase in average diastolic blood pressure and pulse rate from baseline to the 3-month point. When the results were analysed by sex, a significant decrease in average weight and BMI was found in males only at 3 months (weight: $t=3.84$, $df=10$,

$p=0.003$; BMI: $t=3.71$, $df=10$, $p=0.004$). There was no significant change in any other measurement when males and females were analysed separately.

Table 2: Average measurements from baseline to 3 months

	Average at baseline (SD)	Average at 3 months (SD)	Average Change (SD)	95% confidence interval	Statistically significant change	
Weight (n=50)	81.11 (14.98)	80.58 (15.72)	-0.53 (2.79)	-1.315 to .269	✗	$t=1.33$, $df=49$, $p=0.191$
BMI (n=50)	32.10 (6.21)	31.89 (6.41)	-0.21 (1.02)	-.49 to .0891	✗	$t=1.39$, $df=49$, $p=0.170$
Systolic BP (n=50)	132.08 (14.51)	129.10 (11.42)	-2.98 (10.50)	-5.964 to 0	✓	$t=2.01$, $df=49$, $p=0.05$
Diastolic BP (n=50)	82.42 (9.32)	83.06 (7.33)	0.64 (8.56)	-1.793 to 3.073	✗	$t=0.53$, $df=49$, $p=0.60$
Waist/hip ratio (n=50)	0.92 (0.08)	0.92 (0.08)	0 (0.03)	-.012 to .006	✗	$t=0.68$, $df=49$, $p=0.50$
Pulse (n=50)	81.06 (11.19)	81.6 (10.13)	0.54 (10.34)	-2.398 to 3.478	✗	$t=0.37$, $df=49$, $p=0.71$

Table 3 shows the number of programme participants whose measurements increased, decreased or remained the same from baseline to 3 months. Two thirds of participants (68%) showed a decrease in weight and BMI, and a majority of individuals (62%) had lower systolic blood pressure. For both waist/hip ratio and pulse rate, the largest proportion of participants had a decrease in readings (waist/hip ratio, 40%; pulse rate, 48%). Conversely, over half (52%) experienced an increase in diastolic blood pressure over time.

Table 3: Number of participants with increases, decreases or no change in measurements from baseline to 3 months

	Number with lower measurement at 3 months	Number with no change at 3 months	Number with increase in measurement at 3 months
Weight (n=50)	34/50	4/50	12/50
BMI (n=50)	34/50	4/50	12/50
Systolic BP (n=50)	31/50	2/50	17/50
Diastolic BP (n=50)	22/50	2/50	26/50

Waist/hip ratio (n=50)	20/50	15/50	15/50
Pulse rate (n=50)	24/50	3/50	23/50

b) Baseline to 6 months

Table 4 presents the average change in measurements from baseline to 6 months for the 14 participants who had data recorded. There was a statistically significant decrease over this period for weight, BMI, systolic blood pressure and waist/hip ratio. Average measurements for diastolic blood pressure and pulse rate were also lower at 6 months than at baseline, but this change was not statistically significant.

Table 4: Average measurements from baseline to 6 months

	Average at baseline (SD)	Average at 6 months (SD)	Average Change (SD)	95% confidence interval	Statistically significant change	
Weight (n=14)	81.77 (12.40)	79.77 (12.41)	-2 (1.07)	-2.619 to -1.381	✓	t=6.78, df=13, p<0.001
BMI (n=14)	32.1 (5.25)	31.31 (5.21)	-0.79 (0.42)	-1.033 to -0.5432	✓	t=6.95, df=13, p<0.001
Systolic BP (n=14)	134.5 (15.08)	124.79 (8.42)	-9.71 (11.45)	-16.326 to -3.102	✓	t=3.17, df=13, p=0.007
Diastolic BP n=14)	85.36 (9.45)	83.43 (4.05)	-1.93 (7.75)	-6.404 to 2.547	×	t=0.93, df=13, p=0.37
Waist/hip ratio (n=14)	0.90 (0.06)	0.87 (0.06)	-0.03 (0.02)	-0.0338 to -0.0148	✓	t=5.50, df=13, p<0.001
Pulse rate (n=14)	80.79 (10.44)	78.64 (8.27)	-2.15 (7.34)	-6.379 to 2.093	×	T=1.09, df=13, p=0.29

Table 5 shows the number of programme participants whose measurements increased, decreased or remained the same from baseline to 6 months. For weight, BMI and waist/hip ratio, all 14 participants had lower readings at 6 months. Over two thirds of participants (79%) had lower systolic blood pressure readings. A majority (57%) also had lower diastolic blood pressure and pulse rate measurements at 6 months.

Table 5: Number of participants with increases, decreases or no change in measurements from baseline to 6 months

	Number with lower measurement at 6 months	Number with no change at 6 months	Number with increase in measurement at 6 months
Weight (n=14)	14/14	0/14	0/14
BMI (n=14)	14/14	0/14	0/14
Systolic BP (n=14)	11/14	0/14	3/14
Diastolic BP (n=14)	8/14	2/14	4/14
Waist/hip ratio (n=14)	14/14	0/14	0/14
Pulse rate (n=14)	8/14	2/14	4/14

3.2 - Outcome 2 –The impact of the programme on health and wellbeing

Smoking (baseline, n=45; post, n=43)

The same number of individuals (8) smoked at the post stage as baseline.

Passive smoking (n=44)

One person reported passive smoking at baseline compared with 4 at the post stage.

Average physical activity per week (n=45)

Figure 4 shows that at baseline 36% of respondents reported taking moderate physical activity once a week (20%) or less than once a week (16%). At post stage, the proportion had declined to 16%, with 11% taking moderate exercise once a week and 4% less than once a week. There was a large increase in the proportion reporting moderate physical activity 4-5 times per week, rising from 9% at baseline to 27% at post stage. There was also an increase from 7% to 13% in the proportion of respondents taking moderate physical activity 5 or more times per week. Further analysis revealed that the frequency of moderate physical activity per week was significantly higher at post stage than at baseline ($Z=3.27$, $p=0.001$).

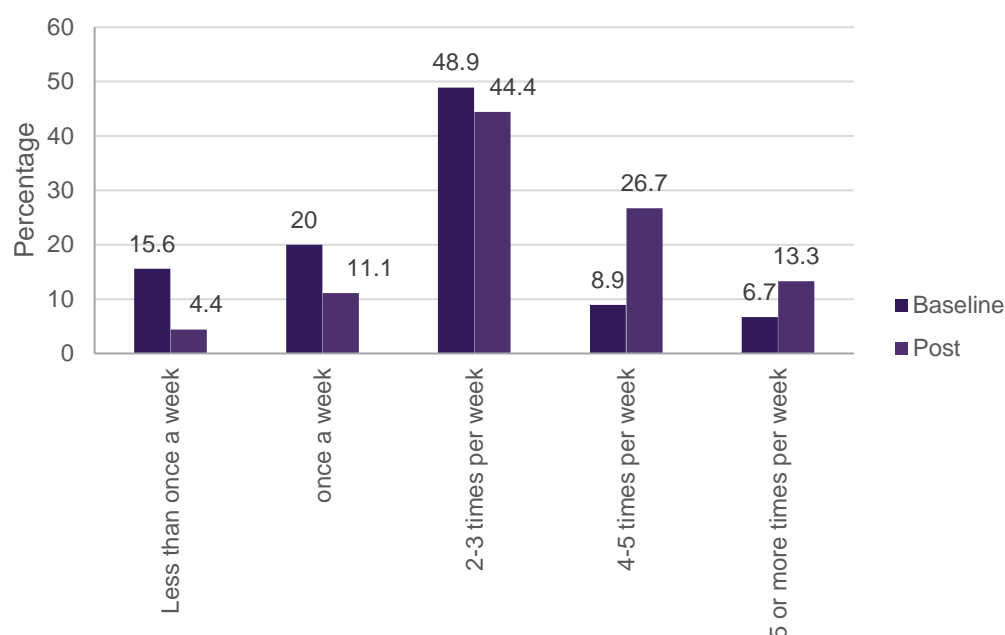
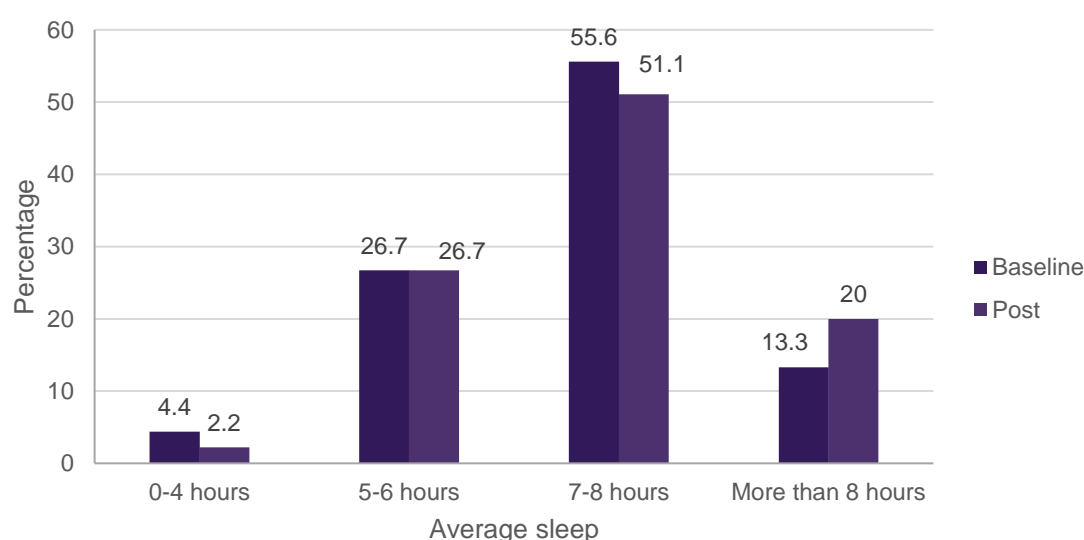
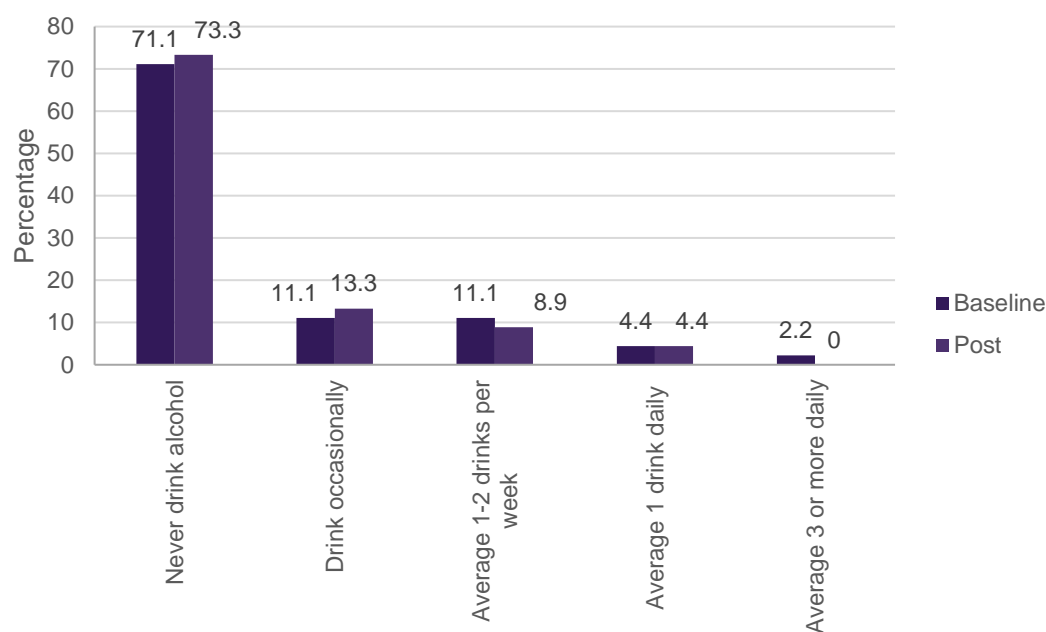
Figure 4: physical activity of participants (average per week)**Sleep (n=45)**

Figure 5 shows the average number of hours sleep per night that participants had in the last month. The largest change was in the proportion of individuals who reported more than 8 hours sleep, which increased from 13% at baseline to 20% at the post stage. Overall, there was no significant change in the amount of sleep reported by participants from baseline to the post stage ($z=1.29$, $p=0.20$).

Figure 5: Sleep in the last month**Alcohol (n=45)**

There was no statistically significant change in the amount of alcohol consumed by participants over time ($z=1.511$, $p=0.131$). As can be seen from Figure 6, the largest proportion at both time points did not drink alcohol (71% at baseline, 73% at post stage).

Figure 6: Alcohol consumption of participants**Social outlook and connections (n=45)**

Participants were asked to rate their social connections with other people on a scale of 0 to 10. A score of 10 represented an individual who was feeling well connected, and 0 someone who always felt alone and was mostly around people who had a negative influence. The analysis revealed a statistically significant improvement in 'social connections' from baseline to post stage ($t=4.39$, $df=44$, $p<0.001$) (95% CI: .517-1.39). The average rating at baseline was 7.38 (SD=2.14) compared to 8.33 (SD=1.35) at the post stage.

Physical health management (n=45)

Participants rated their management of physical health from 0 to 10. A score of 10 represented an individual who was managing and maintaining their physical health well. A score of 0 represented someone who was suffering from poor physical health but was not thinking of making any changes. The analysis revealed a statistically significant improvement in 'physical health management' from baseline to post stage ($t=4.56$, $df=44$, $p<0.001$) (95% CI: .422-1.089). The average rating at baseline was 6.96 (SD=1.65) compared to 7.71 (SD=1.36) at the post stage.

Managing and using time well for meaningful activities (n=45)

Participants also rated on a scale of 0 to 10 how well they were managing and using their time, where 10 was "I am using my time well" and 0 was "I am not doing anything with my time". The analysis revealed a statistically significant improvement in time management and usage from baseline to post stage ($t=4.31$, $df=44$, $p<0.001$) (95% CI: .450-1.239). The average rating at baseline was 7.11 (SD=1.85) compared to 7.96 (SD=1.36) at the post stage.

Emotional health and wellbeing (n=45)

Participants rated their emotional health and wellbeing from 0 to 10. A score of 10 represented an individual who was feeling fine and able to manage well emotionally. A score of 0 represented someone who was feeling very low most of the time, but who did not want to talk about it. The analysis revealed a statistically significant improvement in emotional health and wellbeing from baseline to post stage ($t=4.48$ $df=44$, $p<0.001$) (95% CI: .318-.838). The average rating at baseline was 7.60 (SD=1.68) compared to 8.18 (SD=1.45) at the post stage.

Analysis of change in rating scores by sex

An analysis was conducted to examine change in these 4 rating scores for males and females separately. As can be seen from Table 6, average rating scores for all 4 aspects improved significantly from baseline to post stage for both males and females.

Table 6: change in rating scores by sex

	Males baseline-post		Females baseline-post	
	Average change in rating baseline-post	Statistically significant change	Average change in rating baseline-post	Statistically significant change
Social outlook and connections	1.9 (SD=2.13) (n=10)	✓ P=0.02	0.69 (SD=1.11) (n=34)	✓ P=0.001
Physical health management	1.3 (SD=1.16) (n=10)	✓ P=0.006	0.60 (SD=1.06) (n=34)	✓ P=0.002
Managing time	1.3 (SD=1.77) (n=10)	✓ P=0.45	0.71 (SD=1.15) (n=34)	✓ P=0.001
Emotional health	1.1 (SD=1.10) (n=10)	✓ P=0.012	0.43 (SD=0.74) (n=34)	✓ P=0.002

Diet

Participants were asked about their consumption of 12 different types of food and drink at both baseline and post stage. The analysis revealed that participants:

- Ate fried food significantly less often at post stage than at baseline (n=43, $z=3.07$, $p=0.002$).
- Ate red meat significantly less often at post stage than at baseline (n=44, $z=3.88$, $p<0.001$).
- Ate frozen meals significantly less often at post stage than at baseline (n=43, $z=3.15$, $p=0.002$).
- Added salt to food significantly less often at post stage than at baseline (n=44, $z=3.83$, $p<0.001$).

- Added significantly less sugar to food/hot drinks per day at post stage than at baseline (n=45, z=3.99, p<0.001).
- Drank significantly less soft drink at post stage than at baseline (n=44, z=2.31, p=0.021).
- Drank significantly fewer cups of coffee per day at post stage than at baseline (n=45, z=2.95, p=0.003).
- Ate significantly fewer servings of sweet foods per day (e.g. cakes/biscuits/chocolates/ice cream) at post stage than at baseline (n=45, z=3.70, p<0.001).
- Ate significantly fewer servings of bread/pasta/rice/potatoes & other starchy foods per day at post stage than at baseline (n=45, z=4.39, p<0.001).
- Ate significantly more servings of fruit a day at post stage than at baseline (n=45, z=2.04, p=0.04).

The analysis also found that participants ate more vegetables at post stage compared to baseline but the change was not statistically significant (n=45, z=1.89, p=0.06) (median at baseline= 1-2 servings; median at post stage = 3-4 servings). In addition, there was no significant change in the amount of fish eaten by participants between baseline and the post stage (n=35, z=0.45, p=0.66).

The percentage responses for each of the questions related to food and drink consumption are provided in Tables 7-18 (Appendices). The percentages are based on those individuals who provided complete data at both baseline and post stage. Some tables show large changes in responses from baseline to post stage. For example, 42% of participants ate 4 or more daily servings of bread, pasta, rice, potatoes, other starchy foods at baseline, compared to 4% at post stage. In addition, the proportion of participants eating red meat 3 or more times per week decreased from 45% at baseline to 9% at post stage. It can also be seen that 71% of participants added salt to their food more than twice a day at baseline. At post stage this proportion had decreased to just over one quarter (27%).

Medication (baseline, n=43; post, n=45)

Overall, 40% of participants were currently on medication at baseline compared to 38% at post stage.

NHS Health check (baseline, n=45; post, n=44)

In total, 5 more people between 40-74 years reported having an NHS health check at post stage (23) than at baseline (18).

Tables 7-18 (Appendices): Percentage responses at baseline and post stage for the 184 service users that took part in the programme thirty of consumption of food/drink.

Summary of findings

- From baseline to six months there was a statistically significant decrease in body weight, BMI, systolic blood pressure and waist to hip ratio amongst participants. Over two thirds of participants (79%) had lower systolic blood pressure readings.
- The number of individuals reporting moderate physical activity 4-5 times per week increased from 9% at baseline to 27% at post stage. The proportion of individuals reporting moderate physical activity 5 or more times per week almost doubled from 7% to 13%.
- There were statistically significant improvements in all four strands of wellbeing for both males and females: social outlook and connections, physical health management, managing and using time well for meaningful activities, emotional health and wellbeing. For example, with a score rating from 0 to 10, the average score for emotional health and wellbeing at baseline was 7.60 compared to 8.18 at the post stage.
- Diet improved significantly with participants reporting consuming significantly less fried foods, red meat, frozen meals, salt, sugary foods and soft drinks at the post stage compared to baseline. In addition, participants reported consuming significantly more servings of fruit per day at the post stage compared to baseline.
- Thirty individuals were referred to their GP as a result of high or very high blood pressure.
- Five more people than at baseline, aged between 40-74 years reported having had an NHS Health Check at the post stage as a result of taking part in the 5 Ways to Healthy Hearts Programme.

4. Discussion

This evaluation has sought to determine the effectiveness of the 5 Ways to Healthy Hearts Programme and the degree to which the programme has improved the health and wellbeing of individuals who took part. As an evaluation team, we feel that the evidence gathered from this report demonstrate that meaningful education and support is being provided to disadvantaged and vulnerable groups within the South Leeds CCG area who may be at an increased risk of heart disease. The evaluation shows some extremely promising outcomes both in relation to physical health parameters and lifestyle changes. Amongst the data that was analysed there was a statistically significant decrease in systolic blood pressure, body weight, BMI, and waist to hip ratio at post measure compared to baseline. In addition, significant positive changes were seen in diet, physical activity levels and overall wellbeing.

The benefits of physical activity as a means of preventing premature deaths from non-communicable diseases such as cardiovascular disease, stroke, hypertension and type two diabetes have been widely documented, and indeed dietary factors are a crucial determinant of chronic disease risk, particularly cardiovascular disease (Warburton et al, 2010; World Health Organisation, 2010; Lee et al, 2012; Rees et al, 2013). Adults who are physically inactive have a 30% increased risk of hypertension compared to adults who are physically active (Warburton et al, 2010). Data from this evaluation showed that on average the number of individuals participating in moderate physical activity four to five times per week increased from 9% at baseline to 27% post measure. The number of individuals that participated in moderate physical activity five times or more per week almost doubled from 7% to 13%.

Physical activity can also be an important factor for enhancing other lifestyle indicators which measure quality of life. For example, on average, adults who are physically active experience more positive wellbeing, better sleep, lower risk of depression and lower risk of dementia compared to adults who are inactive (Department of Health and Human Services, 2008). Psychological wellbeing is associated with both morbidity and mortality, with positive wellbeing and social connectedness being a factor for disease risk reduction (Holt-Lunstad, Smith and Layton, 2010; Boehm et al, 2011). In this evaluation a significant improvement was found in all four strands of wellbeing (social outlook and connection, physical health management, using time well, emotional health and wellbeing) as a result of taking part in the 5 Ways to Healthy Hearts Programme, and this was evident in both males and females. In addition, the post workshop evaluation data which recorded service users' open comments indicated that lifestyle changes having been made or with intention to be made included components of dietary and physical activity as well as social connectedness.

There were sizeable dietary changes made amongst the participants of the programme, with a significant decrease in the consumption of fried foods, red meat, added sugars, salt, sugary drinks and coffee. Conversely, a



significant increase in fruit consumption was recorded. Although self-reported, the dietary and physical activity changes reported here would suggest that the individuals who attended the workshops gained valuable knowledge around healthy lifestyle, consequently making positive steps toward adhering to UK Government healthy eating guidelines and physical activity recommendations, ultimately reducing morbidity risk (Department of Health, 2011; Public Health England, 2017). The outcomes that transpired here are inextricably linked with improvements in healthier lifestyle leading to better mental wellbeing and vice versa. This highlights how imperative a holistic service is when trying to make any kind of impact on high risk communities, such as the ones that participated in the 5 Ways to Healthy Hearts Programme.

Evidence for community based cardiovascular prevention programmes, such as the one evaluated here is limited, particularly in the UK, potentially due to the difficulty of translating evidence-based lifestyle recommendations into interventions within high risk communities. Both short and long term multicomponent lifestyle interventions targeting high risk South Asian groups, have shown modest or no improvements in health and wellbeing using similar markers such as blood pressure, body weight and physical activity levels, and with low adherence (Admiraal et al, 2013; Kandula et al, 2015). Other gender specific diet and lifestyle intervention programmes have reported significant increases in physical activity and decreases in blood pressure, blood glucose, and cholesterol in Pakistani women with high risk factors for metabolic syndrome after six months (Kousar, Burns and Lewandowski, 2008). More long term lifestyle interventions for disease prevention have reported greater adherence, but mainly in White populations (Ackermann et al, 2008). In this evaluation, post data was only captured for a modest number of individuals. For example, 180 individuals attended a healthy hearts workshop, whereas post data was available for a lower number of individuals. This could be due to the differing effectiveness of such lifestyle interventions amongst BME groups, as well as the appeal factor for the different components of the programme. For example, the data that was captured here showed that the older individuals (60 plus) were less likely to adhere to the programme long term, suggesting that although the 5 Ways to Healthy Hearts Programme has potential for engaging BME groups, older adults may need a more tailored approach around specific aspects of the programme.

The large numbers that initially attended the healthy hearts workshops can be seen as an outcome in itself, with awareness of cardiovascular disease raised amongst individuals who are defined as being most at risk of cardiovascular disease. Of the 184 service users that initially signed up to the programme, thirty of those individuals were referred to their GP as a result of high or very high blood pressure. Although physical parameters are an important measure of disease risk, disengagement from health services should also be an important consideration. The data evaluated here showed that five more people than at baseline, aged between 40-74 years reported having had an NHS Health Check at the post stage as a result of taking part in the 5 Ways to Healthy Hearts Programme. In addition, one individual accessed the NHS stop smoking services. Although this not an absolute measure of the effectiveness of the

programme, such outcomes demonstrate the potential for this type of programme to be an effective way to engage high-risk individuals and bridge the gap between primary care services and communities to promote healthier lifestyles. Creating linkages between primary care services and community organisations may help vulnerable groups to begin to make and to sustain healthy behaviour changes, ultimately reducing the risk of diseases such as cardiovascular disease.

5. Learning from the 5 Ways to Healthy Hearts Programme

Hamara has successfully established and developed an effective programme to potentially engage individuals that may be at greater risk of cardiovascular disease. From this there are some learning points for consideration for future projects. These are discussed below:

- The workshops provided an engaging way to help people learn about cardiovascular disease risk, diet and lifestyle. As such participants reported being enabled to apply their learning to everyday life using practical and informative tips gained from the workshops.
- The programme was developed and facilitated by BME women which meant that specific cultural needs were addressed. However, input from male BME groups for future projects may be beneficial to encourage more males to attend such programmes and to enrich their experience.
- The programme used a multicomponent approach and covered all aspects of health including physical and emotional wellbeing allowing for several health issues to be addressed at once.

6. Conclusion

Although only short term, the 5 Ways to Healthy Hearts model shows positive direction towards healthier lifestyles and therefore potentially reduced risk of heart disease and other diseases amongst high risk individuals.

7. Issues for consideration

- The majority of those that took part in the 5 Ways to Healthy Hearts Programme were female. Similar interventions have also reported greater uptake of women (Farooqi and Bhavsar, 2001; Kandula et al, 2015) and men are notoriously harder to engage in public health interventions. If the programme is to be delivered in the future, it may wish to focus on trying to increase the uptake amongst South Asian males in light of the highest prevalence of CHD being in Pakistani and Indian men. Potentially a male only programme may be a useful approach.
- Health and wellbeing indicators were self-reported and therefore may introduce some bias. Although several aspects of health and

wellbeing were captured for this evaluation strengthening the findings, for future programme delivery it may be useful to use validated tools such as a Quality of Life scale (QOL) and the Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS) (Stewart-Brown et al, 2011)

- Whilst evidence of short term impacts of the programme has been demonstrated, it is important that the longer term impacts are captured. For example, accessing health service usage data for those who participated in the programme would allow for a fuller conclusion to be drawn.
- A cost/benefit analysis would help to determine the programmes best approach that will achieve programme outcomes whilst limiting costs.
- Logistically it was difficult to retain all participants for the full length of the programme due to various factors (festive periods, religious festivals, health issues, work commitments etc.). This is a factor that may need to be considered for future projects in terms of how this can be best managed within the time scales available.
- Data showed that the individuals aged between 60 to 69 years were the least likely to complete the programme. It may be useful to further explore what the barriers may be for this particular age group in order to increase retention in the future.
- In order to gain a greater depth of insight into the effectiveness of the programme and learning from delivery, it may be necessary to undertake further evaluation using other methods such as qualitative interviews with service users and programme facilitators.

8. How we conducted the research

The overall aim of the evaluation was to determine the effectiveness of the 5 Ways to Healthy Hearts Programme and the degree to which the model has improved the health and wellbeing of individuals. The overarching aim was to:

- Assess if the programme improved the health and wellbeing in BME communities;
- Assess whether long term change can be sustained through a community development model which particularly targets one member of the family with a view to building personal capacity.

The objectives of the evaluation research were to:

- Measure impacts on health and wellbeing;
- Measure impacts on physical health using physical health parameters.

8.1 - Evaluation approach

- *Data from in-depth one to one sessions*

Data from pre and post one to one sessions were gathered and analysed to ascertain current lifestyle and impacts on physical and mental wellbeing, any barriers to health and individual goals. This data was recorded using wellbeing charts (Richter scale and emotive faces) and lifestyle questionnaires. This data included;

- Lifestyle reports at the start of the programme (e.g. diet, smoking, physical activity, alcohol intake);
 - Self-reported impacts of lifestyle on physical and mental health (e.g. social outlook and connections);
 - Self-reported barriers to health improvement;
 - Self-reported physical health management.
- *Data from workshops*

Data from the workshop evaluation (using Richter scale and feedback sheets) was gathered and analysed to assess any changes to lifestyle as well as understanding and retention of health information.

8.2 - Data analysis

Descriptive analysis was carried out by the evaluation team in order to record changes in relation to specified physical health parameter data including weight, body mass index, resting heart rate, blood pressure, and waist to hip ratio collected at baseline, three months and six months as part of the 'Health MOT's' to establish any changes as a result of the programme.

8.3 - Research ethics

The evaluation was given ethical approval through Leeds Beckett University ethics procedures. The following practices were adhered to, to ensure ethical rigour. Confidentiality and anonymity – no personal identifying information has been used in the reporting the data. Secure information management – security was maintained through password-protected university systems.

8.4 - Limitations of the evaluation

The evaluation has sought to address the specified aims and to highlight what works and what might be done differently. Nevertheless, like any piece of work, there are limitations. The evaluation team were reliant on Hamara staff to access data, which was provided. However, the evaluation data would have been richer had the team been able to talk to service users and stakeholders directly, but sensitivity was needed in terms of the willingness of these groups to participate in the research process. The evaluation was conducted throughout the project life-span, which is positive however, some of the information gathered relies upon self-reports which may have limited the reliability of the findings. Those that were referred to the GP with high blood pressure as a result of health checks may have been provided with medication or had

their medication dose amended which may be a confounding factor with post measurements.

9. References

- Ackermann, R.T. et al (2008) Translating the Diabetes Prevention Program into the Community: The DEPLOY Pilot Study. *American Journal of Preventative Medicine*, 35 (4), 357-363.
- Admiraal, W.M. et al (2013) Intensive lifestyle intervention in general practice to prevent type 2 diabetes among 18 to 60-year-old South Asians: 1-year effects on the weight status and metabolic profile of participants in a randomized controlled trial. *PLoS One*, 8 (7), 1-10.
- Babakus, W.S. and Thompson, J.L. (2012) Physical activity among South Asian women: a systematic, mixed-methods review. *International Journal of Behavioral Nutrition and Physical Activity*, 9 (150), 1-18.
- Bhatnagar, P. et al (2015) The epidemiology of cardiovascular disease in the UK 2014. *British Medical Journal*, 0, 1-8.
- Boehm, J.K. et al (2011) A Prospective Study of Positive Psychological Well-Being and Coronary Heart Disease. *Health Psychology*, 30 (3), 259-267.
- Department for Environment, Food and Rural Affairs (2015) Family Food 2014. [Online]. Available: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/485982/familyfood-2014report-17dec15.pdf (Accessed November 2016).
- Department of Health (2011) UK physical activity guidelines. [Online]. Available: <https://www.gov.uk/government/publications/uk-physical-activity-guidelines> (Accessed November 2016).
- Food Standards Agency (2007) Low income diet and nutrition survey: Summary of key findings [Online]. Available: http://tna.europarchive.org/20110116113217/http://www.food.gov.uk/multimedia/pdfs/lidns_summary.pdf (Accesses November 2016).
- Holt-Lunstad, J., Smith, T.B and Layton, J.B. (2010) Social Relationships and Mortality Risk: A Meta-analytic Review. *PLOS Medicine* 7(7).
- Horne, M. et al (2012) Attitudes and beliefs to the uptake and maintenance of physical activity among community-dwelling South Asians aged 60 to 70 years: A qualitative study. *Public Health*, 126, 417-423.
- Joshi. P. et al (2007) Risk Factors for Early Myocardial Infarction in South Asians Compared With Individuals in Other Countries. *JAMA*, 297 (3), 286-294.

Kandula, N.R. et al (2015) Translating a heart disease lifestyle intervention into the community: the South Asian Heart Lifestyle Intervention (SAHELI) study; a randomized control trial. *BMC Public Health*, 15, 1-10.

Kousar, R., Burns, C. and Lewandowski, P. (2008) A culturally appropriate diet and lifestyle intervention can successfully treat the components of metabolic syndrome in female Pakistani immigrants residing in Melbourne, Australia. *Metabolism*, 57 (11), 1502-1508.

Lee, I. et al (2012) Effect of physical inactivity on major non-communicable diseases worldwide: An analysis of burden of disease and life expectancy. *The Lancet*. 380 (9838):219-229.

Leeds Observatory (2015a) Indices of Deprivation 2015 Selection: Beeston and Holbeck Ward Geo-type: Wards. [Online].
<http://observatory.leeds.gov.uk/profiles/profile?profileId=274&geoTypeId=> (Accessed November 2016)

Leeds Observatory (2015b) Overview Selection: Beeston and Holbeck Ward Geo-type: Wards. [Online]. Available:
<http://observatory.leeds.gov.uk/profiles/profile?profileId=247#iasProfileSection8> (Accessed November 2016).

National Obesity Observatory (2011) Obesity and ethnicity. [Online]. Available:
http://www.noo.org.uk/uploads/doc/vid_9851_Obesity_ethnicity.pdf (Accessed November 2016).

Physical Activity Guidelines Advisory Committee. Physical activity guidelines advisory committee report, 2008. Washington, DC: U.S. Department of Health and Human Services [Online]. Available: <https://health.gov/paguidelines/report/pdf/committeereport.pdf> (Accessed March 2017).

Public Health England (2017) The Eatwell Guide. [Online]. Available:
<https://www.gov.uk/government/publications/the-eatwell-guide> (Accessed March 2017).

Rees, K. et al (2013) Dietary advice for reducing cardiovascular risk. *Cochrane Database of Systematic Reviews*, 12, 1-88.

Ritchie, J., Spencer, L. & O'Connor, W. (2003) 'Carrying out qualitative analysis' Ritchie, J. & Lewis, J. (eds) (2003) *Qualitative research practice: A Guide for Social Scientist Students and Researchers*. Pp. 219-262. London: Sage.

Scarborough, P. et al (2010) Ethnic differences in cardiovascular disease. [Online]. Available: [file:///C:/Users/Bunyan01/Downloads/hs2010fc_ethnic_differences_in_cardiovascular_disease-full-copy%20\(2\).pdf](file:///C:/Users/Bunyan01/Downloads/hs2010fc_ethnic_differences_in_cardiovascular_disease-full-copy%20(2).pdf) (Accessed November 2016).

Stewart-Brown, S.L. et al (2011) The Warwick-Edinburgh Mental Well-being Scale (WEMWBS): a valid and reliable tool for measuring mental well-being in diverse populations and projects. *Journal of Epidemiology and Community Health*, 65 (Suppl 2), A38-A39.

The Kings Fund (2015) Inequalities in life expectancy. Changes over time and implications for policy. [Online]. Available: https://www.kingsfund.org.uk/sites/files/kf/field/field_publication_file/inequalities-in-life-expectancy-kings-fund-aug15.pdf (Accesses November 2016).

The Office of National Statistics (2011) Beeston and Holbeck: A summary of the results of the 2011 Census. [Online]. Available: [file:///C:/Users/Bunyan01/Downloads/Beeston%20and%20Holbeck%20\(2\).pdf](file:///C:/Users/Bunyan01/Downloads/Beeston%20and%20Holbeck%20(2).pdf) (Accessed November 2016).

Warburton, D.E et al (2010) A systematic review of the evidence for Canada's physical activity guidelines for adults. *International Journal of Behavioural Nutrition and Physical Activity*. 7 (39), 1-220.

World Health Organisation (WHO) Global recommendations on physical activity for health. Geneva, Switzerland: WHO Press. [Online]. Available: http://apps.who.int/iris/bitstream/10665/44399/1/9789241599979_eng.pdf (Accessed November 2016).

Appendices – dietary analysis data

Table 7: Daily servings of bread, past, rice, potatoes, other starchy foods (n=45)

	Baseline	Post
0-1 servings daily	6.7	11.1
2 servings	17.8	44.4
3 servings	33.3	40
4 or more daily	42.2	4.4

Table 8 Sugar added to food/hot drinks daily (n=45)

	Baseline	Post
0-3 teaspoons daily	51.1	75.6
4-6 teaspoons daily	28.9	24.4
7-9 teaspoons daily	15.6	0
10 or more teaspoons daily	4.4	0

Table 9: Frequency of red meat consumption (n=44)

	Baseline	Post
Never	4.5	9.1
1-2 per week	50	81.8
3-4 times per week	40.9	9.1
5 or more times per week	4.5	0

Table 10: Salt added to food daily (n=44)

	Baseline	Post
Never	9.1	11.4
Once a day	9.1	15.9
Twice a day	11.4	45.5
>Twice a day	70.5	27.3

Table 11: Servings of sweet foods per day (cakes/biscuits/ice cream/chocolate) (n=45)

	Baseline	Post
Usually none	26.7	33.3
1-2 servings daily	26.7	42.2
>2 servings daily	13.3	22.2
4 or more servings daily	33.3	2.2

Table 12: Frequency of frozen foods consumption (n=43)

	Baseline	Post
Never	39.5	44.2
Once per week	30.2	48.8
2-3 times per week	27.9	7
Daily	2.3	0

Table 13: Frequency of fried food consumption (n=43)

	Baseline	Post
Less than once a week	20.9	18.6
1-2 times per week	27.9	60.5
3-6 times per week	32.6	20.9
Everyday	18.6	0

Table 14: Cups of coffee per day (n=45)

	Baseline	Post
None	35.6	44.4
1-2 cups	40	48.9
3-4 cups	15.6	4.4
5 or more cups	8.9	2.2

Table 15: Amount of soft drink consumed (n=44)

	Baseline	Post
Less than 500ml per week	61.4	75
1-2 litres per week	29.5	22.7
3-4 litres per week	6.8	2.3
5 or more litres per week	2.3	0

Table 16: Servings of fruit per day (n=45)

	Baseline	Post
None	2.2	4.4
1-2 servings	62.2	33.3
3-4 servings	31.1	55.6
5 or more servings	4.4	6.7

Table 17: Servings of vegetables eaten per day (n=45)

	Baseline	Post
None	4.4	2.2
1-2 servings	53.3	37.8
3-4 servings	40	60
5 or more servings	2.2	0

Table 18: Frequency of fish consumption (n=35)

	Baseline	Post
Never/rarely	40	40
1-2 times per week	54.3	51.4
3-6 times per week	5.7	8.6
Everyday	0	0

Appendices – example of Health MOT data sheet


HEALTH MOT DATA SHEET



Participant ID No:

No.	Parameter	Initial Stats	After 3 months	After 6 months	After 9 months	After 12 months
1.	Height					
2.	Weight					
3.	Pulse					
4.	Blood Pressure					
5.	BMI <u>Weight (kgs)</u> (Height (m)) ²					
6.	Waist/Hip Ratio					

Appendices – example of lifestyle questionnaire


LIFESTYLE QUESTIONNAIRE

Participant ID No: _____

1) SMOKING

a) Do you smoke? Yes [] No []

Ex-smoker (less than 20 cigarettes a day)

Ex-smoker (more than 20 cigarettes a day)

Current smoker (less than 20 cigarettes a day)

Current smoker (more than 20 cigarettes a day)

b) Passive smoking (a non-smoker exposed to smoke most days at home or work)

Yes [] No []

2) EXERCISE

Healthy exercise usually involves moderate activity that lasts for at least 30 minutes on at least 5 days a week (150 minutes per week). Moderately intense exercise/activity raises your heart rate, makes you breathe faster and makes you feel warmer. You should still be able to talk but not be able to sing a song. Examples would be fast walking, water aerobics, riding a bike.

Do you take this type of exercise?

Less than once a week (sedentary) []

Average once a week []

Average 2-3 times per week []

Average 4-5 times per week []

Average 5 or more times per week []

I cannot take exercise because of disability []

Please state disability or prefer not to say: _____

3) SLEEP

How many hours of sleep did you average per night in the last month?

0-4 []

5-6 []

7-8 []

More than 8 hours []

Is there any particular reason for the sleep pattern. If less or more sleep?

4) DIET

How often do you usually eat fried foods?	Less than once a week	1-2 times per week	3-5 times per week	Everyday
How many serves of bread, pasta, rice, potatoes or other starchy foods do you have a day? <small>(One serve = 1 slice bread, 1/2 cup cooked rice, potatoes, pasta, or cereal)</small>	0 - 1 serves daily	2 serves daily	3 serves daily	4 or more serves daily
How many servings of sweet foods like cakes, biscuits, lollies and/or chocolate do you consume a day? <small>(One serve = 50-60g cakes, 30-40g biscuits, 100-120g ice cream and milk puddings)</small>	Usually none	1-2 serves daily	More than 2 serves daily	4 or more serves daily
How many teaspoons of sugar do you consume daily in not drinks, added to foods, etc.?	0-3 tsp daily	4-6 tsp daily	7-9 tsp daily	10 or more tsp daily
How often do you eat fish?	Never/ Rarely	1-2 times per week	3-5 times per week	Everyday
How many serves of fruit do you usually eat a day? <small>(One serve = 1 medium fruit, 1/4 cup dried fruit, 1/2 cup fresh, frozen, or canned fruit)</small>	None	1-2 serves daily	3-4 serves daily	5 or more daily
How many serves of vegetables (excluding potatoes) do you usually eat a day? <small>(One serve = 1 cup raw leafy vegetables, 1/2 cup cut-up raw or cooked vegetables)</small>	None	1-2 serves daily	3-4 serves daily	5 or more daily
How many cups of coffee do you usually drink a day?	None	1-2 cups daily	3-4 cups daily	5 or more daily
How much soft-drink do you consume on average?	Less than 500ml per week	1-2 litres per week	3-4 litres per week	5 or more litres per week
How often do you add salt to food?	Never	Once a day	Twice a day	More than twice a day
How often do you eat frozen meals?	Never	Once per week	2-3 times per week	Daily
How often do you eat red meat (e.g. beef, pork, lamb, bacon, ham)?	Never	1-2 times per week	3-4 times per week	5 or more times per week

I eat a special medical diet []

Please specify: _____

5) ALCOHOL

Please tick the statement which most closely describes your usual average alcohol intake. (1 unit is 1 glass wine, ½ pint beer or a single measure of spirit)

I never drink alcohol []

I drink occasionally []

Average 1-2 drinks per week []

Average 1 drink daily (or seven units per week) []

Average 2 drinks daily (or 14 units per week) []

Average 3 or more drinks daily (or 21 or more units per week) []

.....

6) CARDIOVASCULAR HISTORY

a) Do you have high blood pressure? Yes [] No []

b) Do you have diabetes? Yes [] No []

c) Have you ever had a heart attack or suffered from angina? Yes [] No []

d) Have you ever had a stroke, "shock" or any weakness down one side?
Yes [] No []

e) Do you have diagnosed cardiovascular disease, atherosclerosis, previous heart attack, and/or previous stroke?
Yes [] No []

f) Have you ever experienced angina (heart pain) within the last 3 months?
Yes [] No []

g) Do you have a first relative with cardiovascular disease (high blood pressure, heart attack, angina, stroke, hardening of arteries)?
Yes [] No []

If yes,

A mother or sister with cardiovascular disease at less than 65 years Yes [] No []

A father or brother with cardiovascular disease at less than 55 years Yes [] No []

Parent/parents with type 2 diabetes Yes [] No []

7) Are you currently on any medication? Yes [] No []

Please specify: _____

8) If age 40-74 years, have you had the free NHS Health Check? Yes [] No []