The impact of a group intervention to promote nutritional improvement and behaviour change for women following treatment for breast cancer

Appendix 2 Main study

J A Richardson

University of Worcester

2020

Appendix 2 contents

2 Appendix 2

2.1 Main study approval documents

2.1.1 NHS Favourable ethical opinion letter 2/11/15

NHS
Health Research Authority
West Midlands - Solihull Research Ethics Committee
The Old Chapel
Royal Standard Place
Nottingham
NG1 6FS

Telephone: 0115 8839525

02 November 2015

Mrs Jane Richardson
University of Worcester
Henwick Grove
Worcester
WR2 6AJ

Dear Mrs Richardson

Study title:	**The impact of a group intervention to improve nutritional intake and physical activity for women who have had treatment for breast cancer**
REC reference:	**15/WM/0332**
IRAS project ID:	**181365**

Thank you for your letter of 2 November 2015, responding to the Committee's request for further information on the above research and submitting revised documentation.

The further information has been considered on behalf of the Committee by the Chair.

We plan to publish your research summary wording for the above study on the HRA website, together with your contact details. Publication will be no earlier than three months from the date of this opinion letter. Should you wish to provide a substitute contact point, require further information, or wish to make a request to postpone publication, please contact the REC Manager, Joanne Unsworth, nrescommittee.westmidlands-solihull@nhs.net.

Confirmation of ethical opinion

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation as revised, subject to the conditions specified below.

Conditions of the favourable opinion

The favourable opinion is subject to the following conditions being met prior to the start of the study.

Management permission or approval must be obtained from each host organisation prior to the start of the study at the site concerned.

Management permission ("R&D approval") should be sought from all NHS organisations

2.1.2 University of Worcester ethical approval 19/1/16 FRJR190116

University of Worcester

Institute of Health and Society
Direct Line: 01905 54 2767

IHS ETHICS REVIEW FEEDBACK

19 January 2016

Dear Jane

RE: THE IMPACT OF A GROUP INTERVENTION TO IMPROVE NUTRITIONAL INTAKE AND PHYSICAL ACTIVITY FOR WOMEN WHO HAVE HAD TREATMENT FOR BREAST CANCER.

Thank you for submitting this project for review by the IoHS committee. The committee has now undertaken a peer review of the project work and would be happy to grant this project ethical approval to proceed.

Your REC approval code is **FRJR190116.** You should keep a record of this approval code as you may need to refer to it with future correspondence or include in any final project reports.

Next Steps

You can now commence with your research project.

If you make any amendments to your research project, you should notify the IoHS ethics committee with any further information. If major amendments are proposed, these may require additional ethical scrutiny from the committee. As part of our annual audit procedures, you may be contacted and asked to complete a brief questionnaire to summarise your research activities.

Thank you for submitting your research project to the IoHS ethics committee and good luck with your research.

Kind regards

Eleanor

PROFESSOR ELEANOR BRADLEY *CPsychol AFBPsS*
Professor of Health Psychology
Chair, Institute of Health and Society Ethics Committee
IHSEthics@worc.ac.uk

2.1.3 NHS REC response to PIS amendment 3/2/16

NHS
Health Research Authority

West Midlands - Solihull Research Ethics Committee
The Old Chapel
Royal Standard Place
Nottingham
NG1 6FS

Tel: 0115 8839525

03 February 2016

Mrs Jane Richardson
University of Worcester
Henwick Grove
Worcester
WR2 6AJ

Dear Mrs Richardson

Study title:	**The impact of a group intervention to improve nutritional intake and physical activity for women who have had treatment for breast cancer**
REC reference:	**15/WM/0332**
Amendment number:	**MA1**
Amendment date:	**22 January 2016**
IRAS project ID:	**181365**

Thank you for your letter of 22 January 2016, notifying the Committee of the above amendment.

The Committee does not consider this to be a "substantial amendment" as defined in the Standard Operating Procedures for Research Ethics Committees. The amendment does not therefore require an ethical opinion from the Committee and may be implemented immediately, provided that it does not affect the approval for the research given by the R&D office for the relevant NHS care organisation.

Documents received

The documents received were as follows:

Document	*Version*	*Date*
Notice of Minor Amendment	MA1	22 January 2016
Participant information sheet (PIS)	4	09 January 2016
Research protocol or project proposal	4	09 January 2016

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

15/WM/0332:	**Please quote this number on all correspondence**

2.1.4 NHS REC Amendment approval 15/WM/0332 amendment 1 4/5/16

NHS
Health Research Authority

West Midlands - Solihull Research Ethics Committee

The Old Chapel
Royal Standard Place
Nottingham
NG1 6FS

01 June 2016

Mrs Jane Richardson
University of Worcester
Henwick Grove
Worcester
WR2 6AJ

Dear Mrs Richardson

Study title:	**The impact of a group intervention to improve nutritional intake and physical activity for women who have had treatment for breast cancer**
REC reference:	**15/WM/0332**
Amendment number:	**1**
Amendment date:	**04 May 2016**
IRAS project ID:	**181365**

The above amendment was reviewed by the Sub-Committee in correspondence.

Ethical opinion

The members of the Committee taking part in the review gave a favourable ethical opinion of the amendment on the basis described in the notice of amendment form and supporting documentation.

Approved documents

The documents reviewed and approved at the meeting were:

Document	*Version*	*Date*
Covering letter on headed paper		09 May 2016
Notice of Substantial Amendment (non-CTIMP)	1	04 May 2016
Research protocol or project proposal	5	09 May 2016

Membership of the Committee

The members of the Committee who took part in the review are listed on the attached sheet.

R&D approval

All investigators and research collaborators in the NHS should notify the R&D office for the relevant NHS care organisation of this amendment and check whether it affects R&D approval of the research.

2.2 Main study recruitment documents

2.2.1 Recruitment leaflet

McClelland Centre
Health & Wellbeing at the University of Worcester

Research project: Evaluation of a breast cancer survivors' lifestyle programme

- *Are you interested in joining a **research study** for women who have been treated for **breast cancer**?*
- *Are you interested in improving your **diet** and being more **physically active**?*
- *Would you like to meet other women who have had breast cancer in a relaxed and supportive lifestyle group?*

The University is currently recruiting **women who have had breast cancer** to participate in a research project which aims to find out about the impact of a **nutrition and physical activity** programme.

The programme is for just over **2 hours a week for 12 weeks** and is held in the University of Worcester McClelland Centre for Health and Wellbeing, City Campus, Infirmary Walk (off Castle Street), Worcester WR1 3AS (on the site of the old Worcester hospital).

Each week will involve an hour of gentle physical activity, tea and chat, and an hour of discussion about healthy eating and trying new foods.

If you might be interested in participating in the study, please let your breast care nurse know, or contact us directly at the University using the contact details below. We will then contact you and send you more information.

Best wishes (*Researcher name and contact details*)

2.2.2 Participant information sheet

Participant Information Sheet

Title of Project: Evaluation of a lifestyle programme for patients who have had breast cancer.

Name of researcher: Jane Richardson

Invitation

We would like to invite you to take part in a research project. Before you decide whether to take part it is important that you understand why the study is being carried out and what it will involve. Please take time to read this carefully and ask the team if you have any questions. Talk to others about the study if you wish. You will have at least 7 days to decide if you want to take part.

What is the purpose of the study?

This study aims to find out about the impact of a nutrition and physical activity intervention for women who are recovering from breast cancer. We are interested in the effects of programme and how it could be improved.
Large international research reports have recommended that cancer survivors follow a healthy diet, achieve a healthy weight and become more physically active. This study will contribute to the debate about the best ways to achieve this for women who have completed their primary breast cancer treatment.

Why have I been invited to take part?

You have received this invitation because you have completed your primary treatment for breast cancer. We are hoping to recruit about 60 participants in total for this study.

Do I have to take part?

Your participation in the study is entirely voluntary, and you may change your mind at any time without giving a reason. If you choose not to continue to take part in the research programme this will not impact on you in any other way.

Please take your time to decide whether or not you want to take part in this study; we will wait for at least 7 days before asking for your decision. You can decide not to take part or to withdraw from the study at any point until 12 months after the lifestyle programme ends when the data will be published. If you wish to have your data withdrawn please contact the team with your participant number and your data will then not be used.
If you do decide to take part you will be asked to sign a consent form.

What will the research involve?

If you agree to take part in the research project then you will be invited to participate in a 12 week group lifestyle programme with up to 15 other people. It will be held at the McClelland Centre which is at the City Campus, University of Worcester. There will be several programmes starting at different times and you will be able to choose the most convenient group to join. The weekly sessions last for 2 hours and 15 minutes and involve an hour of supervised gentle physical activity and an hour of discussion about healthy eating, with a tea and chat in the middle. Some of the sessions will involve trying foods that we provide. The programme will aim to help you to reach your own health goals.

As part of the research project, you will also have some measurements taken and questionnaires to fill in on 5 occasions through the study. This will be;

- 12 weeks before the programme starts,
- on the first and last days of the programme,
- 6 and 12 months after the programme ends.

Data collected on the first and last day of the programme will be collected during the lifestyle sessions at the University. On the other occasions, data can be collected in your own home if you prefer and can be at a time that is convenient to you.

The data that will be collected as part of the lifestyle project will include;

- A 4 day food diary
- Body measurements including weight, height, waist and hip circumference, blood pressure and heart rate.
- Measures of your physical activity
- A form in which you will be asked to identify and rate your current concerns
- Questionnaire about your confidence in making lifestyle changes
- Forms asking for your feedback on the programme sessions.

You may also be invited to participate in a 45 minute research interview approximately 6 months after you have attended the lifestyle programme. In this interview we will ask you about your lifestyle and any changes that you have made or would like to make. Your interview will be audio recorded and anonymous quotes from it may be used in the research report.

We will ask for your verbal consent for each of these measures and you will be able to decline to participate in any aspect of the programme without giving a reason.

Are there any disadvantages or risks to taking part?

The research study does not include any known risks and the main disadvantage to you is the inconvenience of attending the intervention each week for 12 weeks. To minimise the effect of this you will be offered a choice of different days and times to attend. Additional data collection can be arranged at a time to suit you and can be carried out in your own home if you prefer.

If you do have any concerns during the research project, then you are advised to discuss it with a member of the research team, or to contact your breast care nurse, hospital support group or clinic or your General Practitioner as appropriate for further advice.

What are the possible benefits of taking part?

The potential benefit is that you will be able to attend the group sessions and gain support from other patients who have had breast cancer. You will have the opportunity to engage in physical activities using the McClelland facilities at no cost. The McClelland Centre is well equipped and has experienced and well qualified staff who are able to ensure that you are able to exercise safely. You will become more aware of the links between diet, physical activity and health and will gain the knowledge and skills to help you to make changes to achieve your personal lifestyle goals. You will have the opportunity to give feedback to the research group to influence future lifestyle interventions.

Will the information I give stay confidential?

Everything you say/report is confidential unless you tell us something that indicates that you or someone else is at risk of harm. We would discuss this with you before telling anyone else.
The information you give may be used for a research report, but it will not be possible to identify you from the report or any other dissemination activities. Personal identifiable information (such as your name and contact details) will

be securely stored and kept for up to 2 years after you consent to join the project and will then securely disposed of. The research data (such as your food diary) will be stored anonymously and securely and may be used for in publications for up to 10 years.

What will happen to the results of the evaluation study?

This study is being carried out as part of my PhD at the University of Worcester. The findings will be reported as part of my thesis and may also be published in academic journals or at conferences.
If you wish to receive a summary of the research findings please contact the research team.

Who is organising the study?

This research has been approved by the NHS Research Ethics Committee and the University of Worcester Institute of Health and Society Ethics Committee.

What happens next?

Please keep this information sheet. If you do decide to take part, please contact the team using the details below.

Thank you for taking the time to read this information

If you decide to take part, or if you have any questions, concerns or complaints about this study please contact one of the team using the details below.
(*Contact details of Researcher, Supervisor and Research manager, plus contact details for Patient Advice and Liaison Service (PALS), NHS Trust, and a local advocacy group).*

2.2.3 Consent form

University of Worcester

Participant Consent Form

Title of project**: Evaluation of a lifestyle programme for patients who have had breast cancer.**

Participant Identification Number for this study: ☐

Name of Researcher: **Jane Richardson**

Please initial

I confirm that I have read and understood the information sheet for the above study and have had the opportunity to ask questions. ☐

I confirm that I have had sufficient time to consider whether I want to take part in this study ☐

I understand that I do not have to take part in this research and I can change my mind at any time. I understand that I may withdraw my data by contacting the researcher with my participant number **within 12 months** following my attendance on the programme. ☐

I agree to the research interview being audio recorded. ☐

I agree to take part in the study. ☐

I have been made aware of support services that are available if I need them. ☐

I know who to contact if I have any concerns about this research ☐

(*Signed by researcher and participant)*

2.3 Main study data collection tools

2.3.1 Demographic data collection

Evaluation of a breast cancer lifestyle programme	
Participant information number:	
Date of birth:	
Age:	
Demographic, family and medical information	*Please circle or write letter*
1. What is your highest level academic qualification? a. No qualifications b. GCSE/O level c. A level or equivalent such as BTEC National d. Undergraduate degree of diploma e. Postgraduate qualification	
2. How would you describe your ethnic group? a. White/Caucasian b. Black or Black British c. Asian or Asian British d. Mixed e. Other (please specify)	
3. How many people live in your household? a. I live alone b. I live with 1 other person c. I live with 2 other people d. I live with 3 other people e. I live with 4 other people **f.** Other number (please specify)	
4. Who prepares most of the shared meals in your house? a. Me b. Other member of household **c.** We do not share meals in my household	
5. When were you diagnosed with breast cancer? (approx. month and year)	
6. Have you had the following types of treatment for breast cancer? *Please include all that apply* a. Radiotherapy b. Chemotherapy c. Surgery d. Hormone treatment **e.** Other (please specify	
7. **When did you finish your treatment or is it ongoing**? a. My treatment is ongoing b. I finished treatment within the last 6 months c. I finished my treatment between 6 months and a year ago	

d. I finished my treatment between 1 and 2 years ago e. I finished my treatment between 2 and 4 years ago **f.** I finished my treatment more than 4 years ago	
8. Are you currently taking any other medication? ***If YES, please specify***	YES NO
9. Do you have any other medical conditions that affect your diet or your ability to be physical active? ***If YES, please specify***	YES NO
To be completed by the researcher	
INCLUSION/EXCLUSION CRITERIA CHECK **Check Inclusion criteria:** • Women with a diagnosis of breast cancer who have completed initial treatment/ may have ongoing treatment for metastatic disease. • Interested in attending 12-week intervention • Able to understand spoken and written English. • What is your first language? o If it is not English, can you understand written and spoken English fluently?	YES NO
Check exclusion criteria; • **Men** • **Ongoing initial treatment**	YES NO
Contact details checked	YES NO
Date completed	

2.3.2 Self-efficacy tools

2.3.2.1 Self-efficacy for eating habits tool

Self-efficacy to improve eating habits

(Adapted from Bandura, 2006)

A number of situations are described below that can make it hard to follow a healthy pattern of eating.

Please rate in each of the blanks on the column on the right how likely you are to make healthy choices on a **regular basis**.

Rate your degree of confidence by recording a number from 0 to 100 using the scale given below:

0 10 20 30 40 50 60 70 80 90 100

Cannot do at all

Moderately can do

Highly certain can do

Situation	*Confidence (0-100)*
1. Eating while watching television	
2. When you are away on holiday	
3. When you feel upset	
4. Eating at a friend's house for dinner	
5. Eating out at a restaurant or pub	
6. Preparing meals for others	
7. When you feel stressed	
8. When you are angry or annoyed	
9. When you are very hungry	
10. When celebrating with others	
11. When you are preparing your own meals	
12. When shopping in a supermarket	
13. When you are feeling down	
14. When lots of unhealthy food is available in the house	
15. When you want more variety in your diet	

2.3.2.2 Bandura self-efficacy tool (Bandura, 2006)

Self-Efficacy to Regulate Eating Habits

A number of situations are described below that can make it hard to stick to a diet that is low in fat. Please rate in each of the blanks on the column how certain you are that you can stick to a healthy diet on **a regular basis.**

Rate your degree of confidence by recording a number from 0 to 100 using the scale given below:

0	10	20	30	40	50	60	70	80	90	100
Cannot do at all					Moderately can do				Highly certain can do	

	Confidence (0-100)
While watching television	_____
Feeling restless or bored	_____
During holiday times	_____
Feeling upset or tense over job-related matters	_____
Eating at a friend's house for dinner	_____
Preparing meals for others	_____
Eating at a restaurant alone	_____
When angry or annoyed	_____
When very hungry	_____
When depressed	_____
When you want to sit back and enjoy food	_____
When lots of high fat food is available in the house	_____
Feel like celebrating with others	_____
Someone offers you high fat foods	_____
Feel a strong urge to eat foods high in fat that you like	_____
When you are entertaining visitors	_____
During vacations	_____
Eating out with others when they are ordering high fat meals	_____
Parties where a lot of appetizing high fat food is served	_____
At recreational and sport events where high fat fast foods are served	_____
When visiting a city and needing a quick meal	_____
Airplane meals with high fat items	_____
When visiting a city and wanting to experience the local food and restaurants	_____
Holidays and celebrations where high fat foods are served	_____
When upset over family matters	_____
When you want some variety in your diet	_____
When eating breakfast in a restaurant	_____
Others bring or serve high fat foods	_____
When you have to prepare your own meals	_____
When faced with appealing high fat foods in the supermarket	_____

2.3.3 Food diary template

4 DAY FOOD DIARY

Participant identification number: ☐

Date completed _____

As part of this programme we would like to analyse your diet. To complete this food diary:

Choose **4 fairly typical days** (*2 week days and a Saturday and a Sunday*).

Continue to eat your current normal diet. Record all of your food and drink as you go through each of the 4 days, with each item on a separate line. There is a separate table for foods eaten in the morning, afternoon and evening each day.

Give as much information as possible about the foods such as home cooked, brand names, ingredients etc. Weigh foods using kitchen scales if you have them or estimate food quantities (*handful, small bowl, heaped teaspoon, 3 slices etc*).

If you have any questions about completing this questionnaire, please contact (*contact details*)
Please return the questionnaire at your next session, or by post. You can also complete this online and return it electronically if you wish.
Thank you.

_____

Which common foods do you usually use: *(Please tick or highlight and fill in as appropriate)*

Milk: skimmed, semi-skimmed or full fat? Other?_____

Bread: White, wholemeal, granary? Large or small loaf? Thick, thin or medium sliced? Other? _____

Spread on bread: Butter, margarine or spread? Brand_____

Cooking oil: vegetable oil, olive oil, sunflower oil, butter or lard? Other?_____

Sugar: Do you take sugar in tea and/or coffee? Yes/ No 1 spoon, 2 spoons, 3 spoons or more?

Supplements: Do you regularly take any supplements? Yes No

If yes, please specify_____

Participant No.		Date:	
Day 1	**BREAKFAST AND MORNING**	**Day of week:**	

Time of day (am)	Food or drink (include type or brand)	Quantity (weighed or estimated)	Please leave columns below blank	
			Code	Quantity in g.

Day 1 LUNCH and AFTERNOON				
Time of day	**Food or drink**	**Quantity (weighed or estimated)**	**Please leave columns below blank**	
			Code	Quantity in g.
Lunch/ afternoon				

Time of day (pm continued)	**Food or drink**	**Quantity (weighed or estimated)**	**Please leave columns below blank**	

Day 1 DINNER AND EVENING				
Time of day	**Food or drink**	**Quantity (weighed or estimated)**	**Please leave columns below blank**	
			Code	Quantity in g.
Dinner/ evening				

Day 2	Participant No.		Date:	
			Day of week:	
Time of day	Food or drink (include type or brand)	Quantity (weighed or estimated)	Please leave columns below blank	
			Code	Quantity in g.
Breakfast/ morning				

Day 2				
Time of day	Food or drink	Quantity (weighed or estimated)	Please leave columns below blank	
			Code	Quantity in g.
Lunch/ afternoon				

Time of day (pm continued)	**Food or drink**	**Quantity (weighed or estimated)**	**Please leave columns below blank**	

Day 2				
Time of day	**Food or drink**	**Quantity (weighed or estimated)**	**Please leave columns below blank**	
			Code	Quantity in g.
Dinner/ evening				

Day 3	Participant No.		Date:	
			Day of week:	

Time of day	Food or drink (include type or brand)	Quantity (weighed or estimated)	Please leave columns below blank	
			Code	Quantity in g.
Breakfast/ morning				

Day 3				
Time of day	**Food or drink**	**Quantity (weighed or estimated)**	**Please leave columns below blank**	
			Code	Quantity in g.
Lunch/ afternoon				

Time of day (pm continued)	**Food or drink**	**Quantity (weighed or estimated)**	**Please leave columns below blank**	

Day 3				
Time of day	**Food or drink**	**Quantity (weighed or estimated)**	**Please leave columns below blank**	
			Code	Quantity in g.
Dinner/ evening				

Day 4	Participant No.		Date:	
			Day of week:	

Time of day	Food or drink (include type or brand)	Quantity (weighed or estimated)	Please leave columns below blank	
			Code	Quantity in g.
Breakfast/ morning				

Day 4				
Time of day	**Food or drink**	**Quantity (weighed or estimated)**	**Please leave columns below blank**	
			Code	Quantity in g.
Lunch/ afternoon				

Time of day (pm continued)	Food or drink	Quantity (weighed or estimated)	Please leave columns below blank	

Day 4				
Time of day	**Food or drink**	**Quantity (weighed or estimated)**	**Please leave columns below blank**	
			Code	Quantity in g.
Dinner/ evening				

Please leave blank

(To be completed by research team)

PIN	
DoB	
Age	
Food diary No.	
Height:	
Weight:	
Waist:	

2.3.4 Main study evaluation forms

2.3.4.1 Mid-intervention evaluation form

McClelland Lifestyle Project- mid intervention review

Participant number: ☐

We would be very grateful for some feedback from your experience of attending the lifestyle project so far.

We will use this feedback to tailor the rest of the programme to the needs of the group and to help us to plan further programmes in the future.

Thank you!

1. What have you liked or found useful about the McClelland lifestyle project so far?
2. Which aspects have been less useful, or could be improved?
3. Has the programme been relevant to you?
4. Are there any particular areas or aspects that you would like us to include in the remaining weeks?
5. Do you have any other comments or feedback about the programme so far?

Thank you!

We will let you know of any changes that we make as a result of your feedback.

2.3.4.2 End of intervention evaluation form

McClelland Lifestyle Project- end of programme evaluation

Participant number: ☐

We would be very grateful for some feedback from your experience of attending the lifestyle project. We will use this feedback to improve the programme for future participants. Thank you!

1. What have you liked or found useful about the McClelland lifestyle project?
2. What do you think that you have gained from it?
3. How do you think that it could be changed or improved?
4. Do you have any suggestions of other aspects that could also be included?
5. Was the day and timing of the programme suitable?
6. Do you have any other comments or feedback about the programme?

Many thanks for your participation and for your feedback!

2.3.5 Main study interview schedule

2.3.5.1 Original interview question schedule

1. Why were you interested in participating in the lifestyle programme at the University?
    a. What were you hoping to gain from your attendance on the programme?
    b. Why were you interested in joining the programme at that particular time?
    c. How did you feel about being part of the group?

2. While you were on the programme, what was your experience of trying to make lifestyle changes?
    a. How did the programme affect your views on your own lifestyle?
    b. Which parts of the programme influenced you the most?
    c. What were some of the difficulties that you experienced in trying to make changes?
    d. Were you able to overcome them? How?

3. During the programme, how did others in your household react to the changes that you were trying to make?
    a. How did the changes that you were trying to make impact on your family or friends
    b. Were you able to discuss the changes with family or friends?

4. After you finished the programme, how did you feel about maintaining the changes?
    a. Which changes have you been able/not able to maintain? Why do you think that is?
    b. How do you feel about making further changes?
    c. How do you feel about your current lifestyle?
    d. What support would help you to achieve your health goals?

5. Is there anything else that you would like to tell us about your experience of participating in the lifestyle programme?

2.3.5.2 Amended interview question schedule

1. Why were you interested in participating in the lifestyle programme at the University?
    a. How did you hear about the programme?
    b. Why were you interested/ What were you hoping to gain from your attendance on the programme?
    c. Why were you interested in joining the programme at that particular time?
        i. How long was it after your diagnosis/treatment?
    d. How did you feel about being part of the group?

        i. Was that a positive or negative thing for you?
2. While you were on the programme, what was your experience of trying to make lifestyle changes?
    a. How did the programme affect your views on your own lifestyle?
    b. Which parts of the programme do you remember the most/influenced you the most?
    c. What lifestyle changes were you successful in making/ pleased about/ did you try to make?
        i. What were your goals while on the programme?
        ii. What were some of the difficulties that you experienced in trying to make changes?
        iii. Were you able to overcome them? How?
        iv. What other changes would you have liked to make?
3. During the programme, how did others in your household react to the changes that you were trying to make?
    a. Who prepares the meals in your household?
        i. Did anyone else try to make changes with you? Support you?
    b. How did the changes that you were trying to make impact on your family or friends?
        i. Did you share any booklets or things you had learned with others?
    c. Were you able to discuss the changes with family or friends?

4. After you finished the programme, how did you feel about maintaining the changes?
    a. Which changes have you been able/not able to maintain? Why do you think that is?
        i. Have you referred to any of the resources since finishing the programme?
    b. How do you feel about making further changes? Do you have any current lifestyle goals?
    c. How do you feel about your current lifestyle? (Confident about making future changes?)
    d. What support would help you to achieve your current health goals?

5. Is there anything else that you would like to tell us about your experience of participating in the lifestyle programme?

2.4 MYCaW data analysis

2.4.1 MYCaW: normality tests

Results showed that most of the data were not normally distributed. Only the baseline profile scores and the follow up scores had non-significant values (p>0.05) which indicated that, in these few cases, data may have been normally distributed.

	Kolmogorov-Smirnov[a]		
	Statistic	df	Sig.
T1 Baseline concern 1	.274	31	.000*
T1 Baseline concern2	.176	30	.019*
T1 Baseline wellbeing	.172	31	.020*
T1 Baseline profile	.131	31	.188
*T2 Intervention start concern 1	.289	31	.000*
T2 Intervention start concern 2	.185	30	.010*
T2 Intervention start wellbeing	.242	31	.000*
T2 Intervention start profile	.171	31	.021*
T3 Intervention end concern 1	.177	31	.015*
T3 intervention end concern 2	.249	30	.000*
T3 Intervention end wellbeing	.258	31	.000*
T3 Intervention end profile	.173	31	.019*
T4 Follow up concern 1	.172	20	.125
T4 Follow up concern 2	.180	20	.089
T4 Follow up wellbeing	.182	20	.082
T$ Follow up profile	.129	20	.200

Non-significant results indicate that the data were normally distributed.

* significant result (p≤0.05) which indicates that the data were not normally distributed

2.4.2 MYCaW: inferential tests for follow up group (n=20)

Friedman test results for MYCaW profile scores

Significance testing	
N	20
Chi-Square	39.000
df	3
Asymp. Sig.	.000*

*indicates a that there is a significant difference in the data (p≤0.05)

Descriptive statistics for MYCaW profile scores

	N	Percentiles 25th	50th (Median)	75th
Baseline profile	20	3.300	3.850	4.225
Intervention start profile	20	3.300	4.150	4.300
Intervention end profile	20	1.000	2.150	3.225
Follow up profile	20	1.000	1.850	2.600

Wilcoxon Signed Rank Test post hoc analysis for follow up group (n=20)

Test Statistics for T2 compared to T1

	Intervention start concern 1 - Baseline concern 1	Intervention start concern 2 - Baseline concern2	Intervention start wellbeing - Baseline wellbeing	Intervention start profile - Baseline profile
Z	-.298[b]	-1.714[c]	-.624[c]	-1.485[c]
Asymp. Sig. (2-tailed)	.766	.086	.532	.138

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

c. Based on negative ranks.

Test Statistics for T3 compared to T2

	Intervention end concern 1 - Intervention start concern 1	intervention end concern 2 - Intervention start concern 2	Intervention end wellbeing - Intervention start wellbeing	Intervention end profile - Intervention start profile
Z	-4.359[b]	-3.944[b]	-3.119[b]	-4.501[b]
Asymp. Sig. (2-tailed)	.000*	.000*	.002*	.000*

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

*indicates a that there is a significant difference in the data ($p \leq 0.05$)

Test Statistics T4 compared to T3

	Follow up concern 1 - Intervention end concern 1	Follow up concern 2 - intervention end concern 2	Follow up wellbeing - Intervention end wellbeing	Follow up profile - Intervention end profile
Z	-1.581[b]	-1.824[b]	-.684[b]	-1.702[b]
Asymp. Sig. (2-tailed)	.114	.068	.494	.089

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

Test Statistics T4 compared to T2

	Follow up concern 1 - Intervention start concern 1	Follow up concern 2 - Intervention start concern 2	Follow up wellbeing - Intervention start wellbeing	Follow up profile - Intervention start profile
Z	-3.855[b]	-3.846[b]	-2.843[b]	-3.924[b]
Asymp. Sig. (2-tailed)	.000*	.000*	.004*	.000*

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

*indicates a that there is a significant difference in the data (p≤0.05)

Wilcoxon Signed Rank test MYCaW trial (T3-T2) compared to control (T2-T1)

Test Statistics

	Test Concern 1 - Control Concern 1	Test Concern 2 - Control Concern 2	Test Wellbeing - Control Wellbeing	Test MYCaW profile - Control MYCaW profile
Z	-3.759[b]	-3.905[b]	-2.478[b]	-4.312[b]
Asymp. Sig. (2-tailed)	.000*	.000*	.013*	.000*

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

*indicates a that there is a significant difference in the data (p≤0.05)

2.5 Self-efficacy data

2.5.1 Self-efficacy: scale reliability testing

Cronbach alpha coefficient: **quantitative subgroup data (T1, T2 and T3)**

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.954	.955	45

Cronbach alpha coefficient: **follow up group (T1, T2, T3 and T4)**

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.951	.953	60

2.5.2 Self-efficacy normality tests

The Kolmogorov-Smirnov statistic was more than 0.05 at each time point for data from the quantitative analysis group (T1, T2 and T3) and the follow up group (T1, T2, T3 and T4). These were non-significant results indicating that the data were normally distributed in all cases (Field, 2012; Pallant, 2013).

Normality testing of self-efficacy profile data quantitative analysis group (n=31)

	Kolmogorov-Smirnov[a]		
	Statistic	df	Sig.
T1 profile	.115	31	.200
T2 profile	.091	31	.200
T3 profile	.124	31	.200

Non-significant results indicate that the data were normally distributed.

Normality test of self-efficacy profile data follow up group (n=20)

	Kolmogorov-Smirnov[a]		
	Statistic	df	Sig.
T1 profile	.134	20	.200
T2 profile	.133	20	.200
T3 profile	.108	20	.200
T4 profile	.175	20	.110

Non-significant results indicate that the data were normally distributed.

2.5.3 Self-efficacy: inferential tests

One-way ANOVA quantitative analysis group (n=31)

Multivariate test quantitative analysis group

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Time	Pillai's Trace	.323	6.905[b]	2.000	29.000	.004*	.323
	Wilks' Lambda	.677	6.905[b]	2.000	29.000	.004*	.323
	Hotelling's Trace	.476	6.905[b]	2.000	29.000	.004*	.323
	Roy's Largest Root	.476	6.905[b]	2.000	29.000	.004*	.323

a. Design: Intercept

Within Subjects Design: Time

b. Exact statistic

*indicates a that there is a significant difference in the data (p≤0.05)

Pairwise comparisons quantitative analysis group

Measure: MEASURE_1

					95% Confidence Interval for Difference[b]	
(I) Time	(J) Time	Mean Difference (I-J)	Std. Error	Sig.[b]	Lower Bound	Upper Bound
1	2	.542	2.266	1.000	-5.205	6.289
	3	-9.919*	3.031	.008*	-17.606	-2.232
2	1	-.542	2.266	1.000	-6.289	5.205
	3	-10.461*	2.866	.003*	-17.729	-3.193
3	1	9.919*	3.031	.008*	2.232	17.606
	2	10.461*	2.866	.003*	3.193	17.729

b. Adjustment for multiple comparisons: Bonferroni.

*indicates a that there is a significant difference in the data (p≤0.05)

One-way ANOVA follow up group (n=20)

Multivariate tests follow up group

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Time	Pillai's Trace	.431	4.291	3.000	17.000	.020*	.431
	Wilks' Lambda	.569	4.291	3.000	17.000	.020*	.431
	Hotelling's Trace	.757	4.291	3.000	17.000	.020*	.431
	Roy's Largest Root	.757	4.291	3.000	17.000	.020*	.431

*indicates a that there is a significant difference in the data (p≤0.05)

Pairwise comparisons follow up group

Measure: MEASURE_1

(I) Time	(J) Time	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b] Lower Bound	Upper Bound
1	2	-2.660	2.584	1.000	-10.268	4.948
	3	-13.240*	3.509	.008*	-23.571	-2.909
	4	-11.550	5.037	.201	-26.379	3.279
2	1	2.660	2.584	1.000	-4.948	10.268
	3	-10.580*	3.513	.043*	-20.921	-.239
	4	-8.890	4.969	.537	-23.518	5.738
3	1	13.240*	3.509	.008*	2.909	23.571
	2	10.580*	3.513	.043*	.239	20.921
	4	1.690	4.079	1.000	-10.318	13.698
4	1	11.550	5.037	.201	-3.279	26.379
	2	8.890	4.969	.537	-5.738	23.518
	3	-1.690	4.079	1.000	-13.698	10.318

Based on estimated marginal means

b. Adjustment for multiple comparisons: Bonferroni.

*indicates a that there is a significant difference in the data (p≤0.05)

2.6 Anthropometric data

2.6.1 Anthropometric data: normality tests

Normality tests of anthropometric data for quantitative subgroup (n=31)

Normality testing of the anthropometric data was carried out in SPSS. The Kolmogorov-Smirnov statistic was non-significant (p>0.05), indicating a normal distribution of data (Field, 2012; Pallant, 2013) at each time point for the quantitative analysis group (T1, T2 and T3) for all anthropometric parameters with two exceptions. The data for hip circumference at T1 and waist to hip ratio (WHR) at T1, had significance values of less than 0.05 which were significant results indicating that these sets of data were not normally distributed (Field, 2012; Pallant, 2013).

	Kolmogorov-Smirnov[a]		
	Statistic	df	Sig.
T1 waist circumference	.144	31	.098
T1 hip circumference	.162	31	.038*
T1 WHR	.200	31	.003*
T1 weight	.086	31	.200
T1 height	.082	31	.200
T1 BMI	.141	31	.120
T2 waist circumference	.094	31	.200
T2 hip circumference	.133	31	.174
T2 WHR	.136	31	.150
T2 weight	.092	31	.200
T2 height	.059	31	.200
T2 BMI	.142	31	.112
T3 waist circumference	.127	31	.200
T3 hip circumference	.120	31	.200
T3 WHR	.137	31	.142
T3 weight	.085	31	.200
T3 height	.083	31	.200
T3 BMI	.126	31	.200

Non-significant results indicate that the data were normally distributed.

* significant result (p≤0.05) which indicates that the data were not normally distributed

Normality tests of anthropometric data for follow up group (n=20)

Normality testing of the follow up group data at T1, T2, T3 and T4 were also carried out. The Kolmogorov-Smirnov statistic was non-significant (p>0.05), indicating a normal distribution of data (Field, 2012; Pallant, 2013) at each time point for the follow up group (T1, T2, T3 and T4) for all anthropometric parameters with 3 exceptions. The data for waist to hip ratio at T1, hip circumference at T4 and weight at T4 had significance values of less than 0.05 which were significant results indicating that these data were not normally distributed.

	Kolmogorov-Smirnov[a]		
	Statistic	df	Sig.
T1 waist circumference	.119	20	.200
T1 hip circumference	.171	20	.127
T1 WHR	.200	20	.035*
T1 height	.120	20	.200
T1 weight	.129	20	.200
T1 BMI	.189	20	.060
T2 waist circumference	.112	20	.200
T2 hip circumference	.126	20	.200
T2 WHR	.145	20	.200
T2 height	.099	20	.200
T2 weight	.149	20	.200
T2 BMI	.182	20	.082
T3 waist circumference	.143	20	.200
T3 hip circumference	.131	20	.200
T3 WHR	.146	20	.200
T3 height	.135	20	.200
T3 weight	.144	20	.200
T3 BMI	.186	20	.068
T4 waist circumference	.150	20	.200
T4 hip **circumference**	.267	20	.001*
T4 WHR	.150	20	.200
T4 height	.121	20	.200
T4 weight	.197	20	.041*
T4 BMI	.183	20	.078

Non-significant results indicate that the data were normally distributed.

* significant result (p≤0.05) which indicates that the data were not normally distributed

2.6.2 Anthropometric data: inferential tests

2.6.2.1 Weight data quantitative analysis group (n=31)

Multivariate test: weight quantitative analysis group

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Time	Pillai's Trace	.343	7.564[b]	2.000	29.000	.002*	.343
	Wilks' Lambda	.657	7.564[b]	2.000	29.000	.002*	.343
	Hotelling's Trace	.522	7.564[b]	2.000	29.000	.002*	.343
	Roy's Largest Root	.522	7.564[b]	2.000	29.000	.002*	.343

*indicates a that there is a significant difference in the data (p≤0.05)

Post-hoc analysis: pairwise comparisons weight quantitative analysis group

					95% Confidence Interval for Difference	
(I) Time	(J) Time	Mean Difference (I-J)	Std. Error	Sig.	Lower Bound	Upper Bound
1	2	.171	.269	1.000	-.512	.854
	3	1.274*	.355	.003*	.374	2.174
2	1	-.171	.269	1.000	-.854	.512
	3	1.103*	.302	.003*	.337	1.870
3	1	-1.274*	.355	.003*	-2.174	-.374
	2	-1.103*	.302	.003*	-1.870	-.337

*indicates a that there is a significant difference in the data (p≤0.05)

2.6.2.2 Weight data follow up group (n=20)

Multivariate test: weight follow up group

Effect		Value	F	Hypothesis df	Error df	Sig.
time	Pillai's Trace	.577	7.718[b]	3.000	17.000	.002*
	Wilks' Lambda	.423	7.718[b]	3.000	17.000	.002*
	Hotelling's Trace	1.362	7.718[b]	3.000	17.000	.002*
	Roy's Largest Root	1.362	7.718[b]	3.000	17.000	.002*

*indicates a that there is a significant difference in the data (p≤0.05)

Post-hoc analysis: pairwise comparisons weight follow up group

(I) time	(J) time	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval for Difference	
					Lower Bound	Upper Bound
1	2	-.275	.267	1.000	-1.060	.510
	3	1.135	.429	.096	-.129	2.399
	4	1.490	.942	.782	-1.284	4.264
2	1	.275	.267	1.000	-.510	1.060
	3	1.410*	.323	.002*	.458	2.362
	4	1.765	.934	.445	-.985	4.515
3	1	-1.135	.429	.096	-2.399	.129
	2	-1.410*	.323	.002*	-2.362	-.458
	4	.355	1.024	1.000	-2.660	3.370
4	1	-1.490	.942	.782	-4.264	1.284
	2	-1.765	.934	.445	-4.515	.985
	3	-.355	1.024	1.000	-3.370	2.660

*indicates a that there is a significant difference in the data ($p \leq 0.05$)

2.6.2.3 BMI data quantitative analysis group (n=31)

Multivariate test: BMI quantitative analysis group

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Time	Pillai's Trace	.294	6.040	2.000	29.000	.006*	.294
	Wilks' Lambda	.706	6.040	2.000	29.000	.006*	.294
	Hotelling's Trace	.417	6.040	2.000	29.000	.006*	.294
	Roy's Largest Root	.417	6.040	2.000	29.000	.006*	.294

*indicates a that there is a significant difference in the data ($p \leq 0.05$)

Post-hoc analysis: pairwise comparisons BMI quantitative analysis group

(I) Time	(J) Time	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval for Difference	
					Lower Bound	Upper Bound
1	2	.231	.123	.209	-.080	.542
	3	.538*	.157	.005*	.141	.936
2	1	-.231	.123	.209	-.542	.080
	3	.307*	.109	.026*	.030	.585
3	1	-.538*	.157	.005*	-.936	-.141
	2	-.307*	.109	.026*	-.585	-.030

*indicates a that there is a significant difference in the data (p≤0.05)

2.6.2.4 BMI data follow up group (n=20)

Multivariate test BMI follow up group

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Time	Pillai's Trace	.369	3.316[b]	3.000	17.000	.045*	.369
	Wilks' Lambda	.631	3.316[b]	3.000	17.000	.045*	.369
	Hotelling's Trace	.585	3.316[b]	3.000	17.000	.045*	.369
	Roy's Largest Root	.585	3.316[b]	3.000	17.000	.045*	.369

*indicates a that there is a significant difference in the data (p≤0.05)

Post-hoc analysis: pairwise comparisons BMI follow up group

(I) Time	(J) Time	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval for Difference	
					Lower Bound	Upper Bound
1	2	.002	.122	1.000	-.357	.360
	3	.386	.181	.279	-.148	.920
	4	.439	.326	1.000	-.522	1.400
2	1	-.002	.122	1.000	-.360	.357
	3	.385*	.130	.049*	.002	.767
	4	.438	.343	1.000	-.571	1.446
3	1	-.386	.181	.279	-.920	.148
	2	-.385*	.130	.049*	-.767	-.002
	4	.053	.375	1.000	-1.051	1.157

4	1	-.439	.326	1.000	-1.400	.522
	2	-.438	.343	1.000	-1.446	.571
	3	-.053	.375	1.000	-1.157	1.051

*indicates a that there is a significant difference in the data ($p \leq 0.05$)

2.6.2.5 Waist circumference data quantitative group (n=31)

Multivariate test: waist quantitative group

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
time	Pillai's Trace	.074	1.161	2.000	29.000	.327	.074
	Wilks' Lambda	.926	1.161	2.000	29.000	.327	.074
	Hotelling's Trace	.080	1.161	2.000	29.000	.327	.074
	Roy's Largest Root	.080	1.161	2.000	29.000	.327	.074

2.6.2.6 Waist circumference follow up group (n=20)

Multivariate Test: waist follow up group

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Time	Pillai's Trace	.097	.606[b]	3.000	17.000	.620	.097
	Wilks' Lambda	.903	.606[b]	3.000	17.000	.620	.097
	Hotelling's Trace	.107	.606[b]	3.000	17.000	.620	.097
	Roy's Largest Root	.107	.606[b]	3.000	17.000	.620	.097

2.6.2.7 Hip circumference quantitative group (n=31)

Multivariate test: hip circumference quantitative group

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
time	Pillai's Trace	.167	2.915	2.000	29.000	.070	.167
	Wilks' Lambda	.833	2.915	2.000	29.000	.070	.167
	Hotelling's Trace	.201	2.915	2.000	29.000	.070	.167
	Roy's Largest Root	.201	2.915	2.000	29.000	.070	.167

2.6.2.8 Hip circumference follow up group (n=20)

Multivariate test: hip circumference follow up group

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
time	Pillai's Trace	.194	1.365	3.000	17.000	.287	.194
	Wilks' Lambda	.806	1.365	3.000	17.000	.287	.194
	Hotelling's Trace	.241	1.365	3.000	17.000	.287	.194
	Roy's Largest Root	.241	1.365	3.000	17.000	.287	.194

2.6.2.9 Waist to hip ratio (WHR) quantitative group (n=31)

Multivariate test: WHR quantitative group

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
time	Pillai's Trace	.025	.366	2.000	29.000	.697	.025
	Wilks' Lambda	.975	.366	2.000	29.000	.697	.025
	Hotelling's Trace	.025	.366	2.000	29.000	.697	.025
	Roy's Largest Root	.025	.366	2.000	29.000	.697	.025

2.6.2.10 Waist to hip ratio (WHR) follow up group (n=20)

Multivariate Test: WHR follow up group

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
time	Pillai's Trace	.018	.105	3.000	17.000	.956	.018
	Wilks' Lambda	.982	.105	3.000	17.000	.956	.018
	Hotelling's Trace	.019	.105	3.000	17.000	.956	.018
	Roy's Largest Root	.019	.105	3.000	17.000	.956	.018

2.7 Blood pressure and heart rate data

2.7.1 Blood pressure and heart rates: normality tests

Normality tests of heart rate and blood pressure data quantitative group (n=30)

	Kolmogorov-Smirnov		
	Statistic	df	Sig.
T1 systolic blood pressure	.121	30	.200
T1 diastolic blood pressure	.126	30	.200
T1 heart rate	.074	30	.200
T2 systolic blood pressure	.080	30	.200
T2 diastolic blood pressure	.106	30	.200
T2 heart rate	.102	30	.200
T3 systolic blood pressure	.072	30	.200
T3 diastolic blood pressure	.169	30	.028*
T3 heart rate	.097	30	.200

Non-significant results indicate that the data were normally distributed.

* significant result (p≤0.05) which indicates that the data were not normally distributed

Normality test of blood pressure and heart rate data follow up group (n=20)

	Kolmogorov-Smirnov		
	Statistic	df	Sig.
T1 systolic blood pressure	.150	20	.200
T1 diastolic blood pressure	.185	20	.071
T1 heart rate	.133	20	.200
T2 systolic blood pressure	.131	20	.200
T2 diastolic blood pressure	.126	20	.200
T2 heart rate	.126	20	.200
T3 systolic blood pressure	.118	20	.200
T3 diastolic blood pressure	.223	20	.011*
T3 heart rate	.095	20	.200
T4 systolic blood pressure	.116	20	.200
T4 diastolic blood pressure	.078	20	.200
T4 heart rate	.184	20	.075

Non-significant results indicate that the data were normally distributed

* significant result (p≤0.05) which indicates that the data were not normally distributed

2.7.2 Blood pressure and heart rate: change over time

2.7.2.1 Mean (SD) blood pressure and heart rate before and during the intervention for the quantitative analysis group (n=30)

	Baseline (T1)	Intervention start (T2)	Intervention end (T3)
Mean (SD) systolic blood pressure (SBP) (mmHg)	121.3 (15.1)	129.8 (14.8)*	125.2 (15.7)°
Mean (SD) diastolic blood pressure (DBP) (mmHg)	83.6 (10.0)	86.9 (11.0)	83.7 (7.4)
Mean (SD) heart rate (beats/minute)	77.0 (11.3)	73.9 (11.0)	76.0 (12.6)
No. (%) with SBP < 140 mmHg	26 (87%)	24 (80%)	26 (87%)
No. (%) with DBP < 90 mmHg	20 (67%)	18 (60%)	24 (80%)

T1= Baseline before the intervention, T2= week 1 of intervention, T3= week 12 of intervention, T4= 12 months post-intervention. SD= standard deviation, mmHg= millimetres of mercury

**indicates a statistically significant difference between T2 and T1 (p≤0.01)*

°indicates a statistically significant difference between T3 and T2 (p≤0.05)

2.7.2.2 Mean (SD) blood pressure and heart rate over time for the follow up group (n=20)

	Baseline (T1)	Intervention start (T2)	Intervention end (T3)	Follow-up (T4)
Mean (SD) systolic blood pressure (SBP) (mmHg)	122.8 (14.5)	129.9 (15.3)	125.0 (16.1)	119.8 (14.0)*
Mean (SD) diastolic blood pressure (DBP) (mmHg)	84.0 (9.3)	88.5 (9.1)	84.4 (7.6)°	80.6 (8.2)**®
Mean (SD) Heart rate (beats/minute)	77.7 (12.4)	74.3 (10.7)	78.2 (13.2)	78.6 (12.1)
No. (%) with SBP < 140 mmHg	17 (85%)	16 (80%)	18 (90%)	18 (90%)
No. (%) with DBP < 90 mmHg	14 (70%)	13 (65%)	16 (80%)	16 (80%)

T1= Baseline before the intervention, T2= week 1 of intervention, T3= week 12 of intervention, T4= 12 months post-intervention. SD= standard deviation, mmHg= millimetres of mercury

**indicates a statistically significant difference between T4 and T2 (p≤0.01)*

***indicates a statistically significant difference between T4 and T2 (p≤0.001)*

° indicates a statistically significant difference between T3 and T2 (p≤0.05)

® indicates a statistically significant difference between T4 and T3 (p≤0.05)

2.7.3 Blood pressure and heart rate inferential tests

2.7.3.1 Systolic blood pressure (SBP) quantitative group (n=30)

Multivariate test: systolic blood pressure quantitative group

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
time	Pillai's Trace	.281	5.474	2.000	28.000	.010*	.281
	Wilks' Lambda	.719	5.474	2.000	28.000	.010*	.281
	Hotelling's Trace	.391	5.474	2.000	28.000	.010*	.281
	Roy's Largest Root	.391	5.474	2.000	28.000	.010*	.281

*indicates a that there is a significant difference in the data (p≤0.05)

Post-hoc analysis: pairwise comparisons SBP quantitative group

					95% Confidence Interval for Difference	
(I) time	(J) time	Mean Difference (I-J)	Std. Error	Sig.	Lower Bound	Upper Bound
1	2	-8.467*	2.679	.004*	-13.946	-2.987
	3	-3.867	2.961	.202	-9.922	2.189
2	1	8.467*	2.679	.004*	2.987	13.946
	3	4.600	2.262	.051*	-.027	9.227
3	1	3.867	2.961	.202	-2.189	9.922
	2	-4.600	2.262	.051*	-9.227	.027

*indicates a that there is a significant difference in the data (p≤0.05)

2.7.3.2 Systolic blood pressure (SBP) follow up group (n=20)

Multivariate test: SBP follow up group

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Time	Pillai's Trace	.446	4.564	3.000	17.000	.016*	.446
	Wilks' Lambda	.554	4.564	3.000	17.000	.016*	.446
	Hotelling's Trace	.805	4.564	3.000	17.000	.016*	.446
	Roy's Largest Root	.805	4.564	3.000	17.000	.016*	.446

*indicates a that there is a significant difference in the data (p≤0.05)

Post-hoc analysis: pairwise comparisons SBP follow up group

(I) Time	(J) Time	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval for Difference	
					Lower Bound	Upper Bound
1	2	-7.100	3.727	.432	-18.071	3.871
	3	-2.200	3.695	1.000	-13.079	8.679
	4	3.000	4.104	1.000	-9.081	15.081
2	1	7.100	3.727	.432	-3.871	18.071
	3	4.900	2.449	.360	-2.311	12.111
	4	10.100*	2.736	.009*	2.047	18.153
3	1	2.200	3.695	1.000	-8.679	13.079
	2	-4.900	2.449	.360	-12.111	2.311
	4	5.200	3.090	.652	-3.895	14.295
4	1	-3.000	4.104	1.000	-15.081	9.081
	2	-10.100*	2.736	.009*	-18.153	-2.047
	3	-5.200	3.090	.652	-14.295	3.895

*indicates a that there is a significant difference in the data ($p \leq 0.05$)

2.7.3.3 Diastolic blood pressure (DBP) quantitative group (n=30)

Multivariate test: DBP quantitative group

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Time	Pillai's Trace	.180	3.072	2.000	28.000	.062	.180
	Wilks' Lambda	.820	3.072	2.000	28.000	.062	.180
	Hotelling's Trace	.219	3.072	2.000	28.000	.062	.180
	Roy's Largest Root	.219	3.072	2.000	28.000	.062	.180

2.7.3.4 Diastolic blood pressure (DBP) follow up group

Multivariate test: DBP follow up group

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Times	Pillai's Trace	.655	10.757	3.000	17.000	.0003*	.655
	Wilks' Lambda	.345	10.757	3.000	17.000	.0003*	.655
	Hotelling's Trace	1.898	10.757	3.000	17.000	.0003*	.655
	Roy's Largest Root	1.898	10.757	3.000	17.000	.0003*	.655

*indicates a that there is a significant difference in the data ($p \leq 0.05$)

Post-hoc analysis: pairwise comparisons DBP follow up group

(I) Times	(J) Times	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval for Difference	
					Lower Bound	Upper Bound
1	2	-4.500	2.172	.313	-10.895	1.895
	3	-.450	2.065	1.000	-6.530	5.630
	4	3.400	2.216	.849	-3.125	9.925
2	1	4.500	2.172	.313	-1.895	10.895
	3	4.050	1.204	.020*	.505	7.595
	4	7.900	1.320	.00006*	4.015	11.785
3	1	.450	2.065	1.000	-5.630	6.530
	2	-4.050	1.204	.020*	-7.595	-.505
	4	3.850	1.225	.032*	.243	7.457
4	1	-3.400	2.216	.849	-9.925	3.125
	2	-7.900	1.320	.000*	-11.785	-4.015
	3	-3.850	1.225	.032*	-7.457	-.243

*indicates a that there is a significant difference in the data ($p \leq 0.05$)

2.7.3.5 Heart rate (HR) quantitative group (n=30)

Multivariate test: HR quantitative group

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
time	Pillai's Trace	.103	1.604	2.000	28.000	.219	.103
	Wilks' Lambda	.897	1.604	2.000	28.000	.219	.103
	Hotelling's Trace	.115	1.604	2.000	28.000	.219	.103
	Roy's Largest Root	.115	1.604	2.000	28.000	.219	.103

2.7.3.6 Heart rate (HR) follow up group (n=20)

Multivariate test: HR follow up group

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Time	Pillai's Trace	.210	1.503	3.000	17.000	.250	.210
	Wilks' Lambda	.790	1.503	3.000	17.000	.250	.210
	Hotelling's Trace	.265	1.503	3.000	17.000	.250	.210
	Roy's Largest Root	.265	1.503	3.000	17.000	.250	.210

2.8 Food diary data

Most of the food diary data were normally distributed. However, in the quantitative group (n=22) intakes of alcohol (T1, T2 and T3), fibre (T1), sodium (T1) Starch (T2), free sugar (T2), sucrose (T2), total fat (T3) and vitamin C (T3) were not normally distributed. In the follow up group (n=10) intakes of free sugar (T3), alcohol (T4) and vitamin C (T3 and T4) were not normally distributed. In these instances, the Kolmogorov-Smirnov test had a significance value of less than 0.05.

2.8.1 Food diary data normality tests

2.8.1.1 Food diary normality test quantitative group (n=22)

	Kolmogorov-Smirnov		
	Statistic	df	Sig.
T1 Carbohydrate	.132	22	.200
T3 Carbohydrate	.093	22	.200
T1 GL	.160	22	.146
T1 Protein	.083	22	.200
T1 Total fat	.159	22	.156
T1 Energy	.111	22	.200
T1 Starch	.121	22	.200
T1 Sugar	.174	22	.083
T1 Free sugar	.181	22	.058
T1 Sucrose	.124	22	.200
T1 Alcohol	.240	22	.002*
T1 Fibre	.236	22	.003*
T1 Saturated fat	.120	22	.200
T1 Cholesterol	.142	22	.200
T1 Sodium	.187	22	.043*
T1 Vitamin C	.079	22	.200
T2 Carbohydrate	.160	22	.149
T2 GL	.095	22	.200
T2 Protein	.136	22	.200
T2 Total fat	.141	22	.200
T2 Energy	.115	22	.200
T2 Starch	.205	22	.017*
T2 Sugar	.133	22	.200
T2 Free sugar	.192	22	.034*
T2 Sucrose	.192	22	.035*
T2 Alcohol	.229	22	.004*
T2 Fibre	.178	22	.069

T2 Saturated fat	.150	22	.200
T2 Cholesterol	.102	22	.200
T2 Sodium	.102	22	.200
T2 Vitamin C	.153	22	.198
T3 Carbohydrate	.093	22	.200
T2 GL	.118	22	.200
T3 Protein	.121	22	.200
T3 Total fat	.205	22	.017*
T3 Energy	.100	22	.200
T3 Starch	.155	22	.180
T3 Sugar	.076	22	.200
T3 Free sugar	.141	22	.200
T3 Sucrose	.163	22	.131
T3 Alcohol	.257	22	.001*
T3 Fibre	.128	22	.200
T3 Saturated fat	.139	22	.200
T3 Cholesterol	.123	22	.200
T3 Sodium	.160	22	.150
T3 Vitamin C	.188	22	.041*

Non-significant results indicate that the data were normally distributed.

* significant result (p≤0.05) which indicates that the data were not normally distributed

2.8.1.2 Food diary normality test follow up data (n=10)

	Kolmogorov-Smirnov		
	Statistic	df	Sig.
T1 GL	.177	10	.200
T1 Protein	.160	10	.200
T1 Fat	.155	10	.200
T1 Carbohydrate	.141	10	.200
T1 Energy	.179	10	.200
T1 Starch	.182	10	.200
T1 Sugar	.152	10	.200
T1 Free sugar	.214	10	.200
T1 Sucrose	.175	10	.200
T1 Alcohol	.215	10	.200
T1 Fibre	.237	10	.119
T1 Saturated fat	.168	10	.200

T1 Cholesterol	.221	10	.182
T1 Sodium	.220	10	.185
T1 Vitamin C	.186	10	.200
T2 GL	.137	10	.200
T2 Protein	.112	10	.200
T2 Fat	.243	10	.097
T2 Carbohydrate	.242	10	.099
T2 Energy	.128	10	.200
T2 Starch	.159	10	.200
T2 Sugar	.240	10	.105
T2 Free sugar	.208	10	.200
T2 Sucrose	.197	10	.200
T2 Alcohol	.238	10	.114
T2 Fibre	.167	10	.200
T2 Saturated fat	.212	10	.200
T2 Cholesterol	.183	10	.200
T2 Sodium	.170	10	.200
T2 Vitamin C	.235	10	.126
T3 GL	.180	10	.200
T3 Protein	.160	10	.200
T3 Fat	.237	10	.119
T3 Carbohydrate	.217	10	.200
T3 Energy	.142	10	.200
T3 Starch	.176	10	.200
T3 Sugar	.139	10	.200
T3 Free sugar	.281	10	.024*
T3 Sucrose	.149	10	.200
T3 Alcohol	.195	10	.200
T3 Fibre	.185	10	.200
T3 Saturated fat	.207	10	.200
T3 Cholesterol	.190	10	.200
T3 Sodium	.136	10	.200
T3 Vitamin C	.303	10	.010*
T4 GL	.235	10	.124
T4 Protein	.148	10	.200
T4 Fat	.109	10	.200

T4 Carbohydrate	.180	10	.200
T4 Energy	.106	10	.200
T4 Starch	.190	10	.200
T4 Sugar	.192	10	.200
T4 Free sugar	.143	10	.200
T4 Sucrose	.137	10	.200
T4 Alcohol	.297	10	.013*
T4 Fibre	.248	10	.081
T4 Saturated fat	.127	10	.200
T4 Cholesterol	.159	10	.200
T4 Sodium	.160	10	.200
T4 Vitamin C	.273	10	.034*

Non-significant results indicate that the data were normally distributed.

* significant result (p≤0.05) which indicates that the data were not normally distributed

2.8.2 Food diary data inferential tests

2.8.2.1 Glycaemic Load

Glycaemic load (GL) quantitative group (n=22)

Multivariate test: GL quantitative group

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
time	Pillai's Trace	.378	6.070	2.000	20.000	.009*	.378
	Wilks' Lambda	.622	6.070	2.000	20.000	.009*	.378
	Hotelling's Trace	.607	6.070	2.000	20.000	.009*	.378
	Roy's Largest Root	.607	6.070	2.000	20.000	.009*	.378

*indicates a that there is a significant difference in the data (p≤0.05)

Post-hoc analysis: pairwise comparisons GL quantitative group

(I) time	(J) time	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Lower Bound	95% Confidence Upper Bound
1	2	-4.234	5.153	1.000	-17.638	9.171
	3	12.925	5.356	.075	-1.007	26.857
2	1	4.234	5.153	1.000	-9.171	17.638
	3	17.159*	4.923	.007*	4.352	29.965
3	1	-12.925	5.356	.075	-26.857	1.007

Multivariate Test: GL follow up group

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
GL	Pillai's Trace	.690	5.189	3.000	7.000	.034*	.690
	Wilks' Lambda	.310	5.189	3.000	7.000	.034*	.690
	Hotelling's Trace	2.224	5.189	3.000	7.000	.034*	.690
	Roy's Largest Root	2.224	5.189	3.000	7.000	.034*	.690

*indicates a that there is a significant difference in the data (p≤0.05)

Post-hoc analysis: pairwise comparisons GL follow up group

(I) GL	(J) GL	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval for Difference	
					Lower Bound	Upper Bound
1	2	-2.260	7.234	1.000	-26.597	22.077
	3	22.090	7.010	.070	-1.492	45.672
	4	21.880	7.780	.122	-4.293	48.053
2	1	2.260	7.234	1.000	-22.077	26.597
	3	24.350	7.342	.054*	-.350	49.050
	4	24.140*	6.166	.021*	3.397	44.883
3	1	-22.090	7.010	.070	-45.672	1.492
	2	-24.350	7.342	.054*	-49.050	.350
	4	-.210	6.148	1.000	-20.895	20.475
4	1	-21.880	7.780	.122	-48.053	4.293
	2	-24.140*	6.166	.021*	-44.883	-3.397
	3	.210	6.148	1.000	-20.475	20.895

*indicates a that there is a significant difference in the data (p≤0.05)

2.8.2.2 Carbohydrate

Carbohydrate quantitative group (n=22)

Multivariate test: carbohydrate quantitative group

Effect		Value	F	Hypothesis df	Error df	Sig.
time	Pillai's Trace	.383	6.209	2.000	20.000	.008*
	Wilks' Lambda	.617	6.209	2.000	20.000	.008*
	Hotelling's Trace	.621	6.209	2.000	20.000	.008*
	Roy's Largest Root	.621	6.209	2.000	20.000	.008*

*indicates a that there is a significant difference in the data (p≤0.05)

Post-hoc test: pairwise comparisons carbohydrate quantitative group

(I) time	(J) time	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval for Difference	
					Lower Bound	Upper Bound
1	2	-11.785	8.840	.590	-34.780	11.210
	3	16.572	10.667	.406	-11.176	44.321
2	1	11.785	8.840	.590	-11.210	34.780
	3	28.357*	7.979	.006*	7.600	49.115
3	1	-16.572	10.667	.406	-44.321	11.176
	2	-28.357*	7.979	.006*	-49.115	-7.600

*indicates a that there is a significant difference in the data (p≤0.05)

Carbohydrate follow up group (n=10)

Multivariate test: carbohydrate follow up

Effect		Value	F	Hypothesis df	Error df	Sig.
time	Pillai's Trace	.782	8.376	3.000	7.000	.010*
	Wilks' Lambda	.218	8.376	3.000	7.000	.010*
	Hotelling's Trace	3.590	8.376	3.000	7.000	.010*
	Roy's Largest Root	3.590	8.376	3.000	7.000	.010*

*indicates a that there is a significant difference in the data (p≤0.05)

Post-hoc analysis: pairwise comparisons carbohydrate follow up

					95% Confidence Interval for Difference	
(I) time	(J) time	Mean Difference (I-J)	Std. Error	Sig.	Lower Bound	Upper Bound
1	2	3.250	11.047	1.000	-33.913	40.413
	3	41.060	10.735	.024*	4.944	77.176
	4	37.420	9.064	.015*	6.927	67.913
2	1	-3.250	11.047	1.000	-40.413	33.913
	3	37.810	9.778	.023*	4.915	70.705
	4	34.170	8.558	.019*	5.378	62.962
3	1	-41.060	10.735	.024*	-77.176	-4.944
	2	-37.810	9.778	.023*	-70.705	-4.915
	4	-3.640	7.932	1.000	-30.324	23.044
4	1	-37.420	9.064	.015*	-67.913	-6.927
	2	-34.170	8.558	.019*	-62.962	-5.378
	3	3.640	7.932	1.000	-23.044	30.324

*indicates a that there is a significant difference in the data (p≤0.05)

2.8.2.3 Energy

Energy quantitative group (n=22)

Multivariate test: energy quantitative group

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
time	Pillai's Trace	.360	5.615	2.000	20.000	.012*	.360
	Wilks' Lambda	.640	5.615	2.000	20.000	.012*	.360
	Hotelling's Trace	.561	5.615	2.000	20.000	.012*	.360
	Roy's Largest Root	.561	5.615	2.000	20.000	.012*	.360

*indicates a that there is a significant difference in the data (p≤0.05)

Post-hoc analysis: pairwise comparisons energy quantitative group

(I) time	(J) time	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval for Difference	
					Lower Bound	Upper Bound
1	2	-61.772	66.630	1.000	-235.099	111.555
	3	163.188	82.376	.183	-51.101	377.478
2	1	61.772	66.630	1.000	-111.555	235.099
	3	224.960*	65.588	.008*	54.344	395.577
3	1	-163.188	82.376	.183	-377.478	51.101
	2	-224.960*	65.588	.008*	-395.577	-54.344

Energy follow up group (n=10)

Multivariate test: energy follow up group

Effect		Value	F	Hypothesis df	Error df	Sig.
time	Pillai's Trace	.731	6.348[b]	3.000	7.000	.021*
	Wilks' Lambda	.269	6.348[b]	3.000	7.000	.021*
	Hotelling's Trace	2.721	6.348[b]	3.000	7.000	.021*
	Roy's Largest Root	2.721	6.348[b]	3.000	7.000	.021*

*indicates a that there is a significant difference in the data (p≤0.05)

Post-hoc analysis: pairwise comparisons energy follow up

					95% Confidence Interval for Difference	
(I) time	(J) time	Mean Difference (I-J)	Std. Error	Sig.	Lower Bound	Upper Bound
1	2	.500	73.587	1.000	-247.063	248.063
	3	227.930	88.850	.183	-70.978	526.838
	4	317.010	73.730	.012*	68.966	565.054
2	1	-.500	73.587	1.000	-248.063	247.063
	3	227.430	102.133	.318	-116.165	571.025
	4	316.510	76.255	.015*	59.972	573.048
3	1	-227.930	88.850	.183	-526.838	70.978
	2	-227.430	102.133	.318	-571.025	116.165
	4	89.080	64.816	1.000	-128.974	307.134
4	1	-317.010	73.730	.012*	-565.054	-68.966
	2	-316.510	76.255	.015*	-573.048	-59.972
	3	-89.080	64.816	1.000	-307.134	128.974

*indicates a that there is a significant difference in the data (p≤0.05)

2.8.2.4 Starch

Starch quantitative group (n=22)

Multivariate test: starch quantitative group

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
time	Pillai's Trace	.294	4.173	2.000	20.000	.031*	.294
	Wilks' Lambda	.706	4.173	2.000	20.000	.031*	.294
	Hotelling's Trace	.417	4.173	2.000	20.000	.031*	.294
	Roy's Largest Root	.417	4.173	2.000	20.000	.031*	.294

*indicates a that there is a significant difference in the data (p≤0.05)

Post-hoc analysis: pairwise comparisons starch quantitative group

(I) time	(J) time	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval for Difference	
					Lower Bound	Upper Bound
1	2	-7.950	7.160	.838	-26.576	10.677
	3	8.110	6.713	.721	-9.353	25.573
2	1	7.950	7.160	.838	-10.677	26.576
	3	16.060	5.449	.023*	1.885	30.235
3	1	-8.110	6.713	.721	-25.573	9.353
	2	-16.060	5.449	.023*	-30.235	-1.885

*indicates a that there is a significant difference in the data (p≤0.05)

Starch quantitative group data (Friedman test)

Friedman test statistics

N	22
Chi-Square	5.727
df	2
Asymp. Sig.	.057

Starch follow up group (n=10)

Multivariate test: starch follow up group

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
time	Pillai's Trace	.708	5.659	3.000	7.000	.028*	.708
	Wilks' Lambda	.292	5.659	3.000	7.000	.028*	.708
	Hotelling's Trace	2.425	5.659	3.000	7.000	.028*	.708
	Roy's Largest Root	2.425	5.659	3.000	7.000	.028*	.708

*indicates a that there is a significant difference in the data (p≤0.05)

Post-hoc analysis: pairwise comparisons starch follow up

(I) time	(J) time	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval for Difference	
					Lower Bound	Upper Bound
1	2	4.640	9.251	1.000	-26.482	35.762
	3	21.840*	5.899	.029*	1.993	41.687
	4	16.700	5.807	.110	-2.834	36.234
2	1	-4.640	9.251	1.000	-35.762	26.482
	3	17.200	7.266	.253	-7.246	41.646
	4	12.060	7.829	.947	-14.279	38.399
3	1	-21.840*	5.899	.029*	-41.687	-1.993
	2	-17.200	7.266	.253	-41.646	7.246
	4	-5.140	5.476	1.000	-23.562	13.282
4	1	-16.700	5.807	.110	-36.234	2.834
	2	-12.060	7.829	.947	-38.399	14.279
	3	5.140	5.476	1.000	-13.282	23.562

*indicates a that there is a significant difference in the data (p≤0.05)

2.8.2.5 Sugars

Sugars quantitative group (n=22)

Multivariate test: sugars quantitative group

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
time	Pillai's Trace	.123	1.407	2.000	20.000	.268	.123
	Wilks' Lambda	.877	1.407	2.000	20.000	.268	.123
	Hotelling's Trace	.141	1.407	2.000	20.000	.268	.123
	Roy's Largest Root	.141	1.407	2.000	20.000	.268	.123

Sugars follow up group (n=10)

Multivariate Test: sugars follow up group

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
time	Pillai's Trace	.602	3.529	3.000	7.000	.077	.602
	Wilks' Lambda	.398	3.529	3.000	7.000	.077	.602
	Hotelling's Trace	1.512	3.529	3.000	7.000	.077	.602
	Roy's Largest Root	1.512	3.529	3.000	7.000	.077	.602

2.8.2.6 Free sugars

Free sugars quantitative group (n=22)

Multivariate test: free sugar quantitative group

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
time	Pillai's Trace	.232	3.025	2.000	20.000	.071	.232
	Wilks' Lambda	.768	3.025	2.000	20.000	.071	.232
	Hotelling's Trace	.303	3.025	2.000	20.000	.071	.232
	Roy's Largest Root	.303	3.025	2.000	20.000	.071	.232

Free sugars follow up group {n=10)

Multivariate test: free sugars follow up group

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
time	Pillai's Trace	.561	2.980	3.000	7.000	.106	.561
	Wilks' Lambda	.439	2.980	3.000	7.000	.106	.561
	Hotelling's Trace	1.277	2.980	3.000	7.000	.106	.561
	Roy's Largest Root	1.277	2.980	3.000	7.000	.106	.561

2.8.2.7 Sucrose

Sucrose quantitative group (n=22)

Multivariate test: sucrose quantitative group

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
time	Pillai's Trace	.207	2.615	2.000	20.000	.098	.207
	Wilks' Lambda	.793	2.615	2.000	20.000	.098	.207
	Hotelling's Trace	.261	2.615	2.000	20.000	.098	.207
	Roy's Largest Root	.261	2.615	2.000	20.000	.098	.207

Sucrose follow up group (n=10)

Multivariate test: sucrose follow up group

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
time	Pillai's Trace	.333	1.163	3.000	7.000	.389	.333
	Wilks' Lambda	.667	1.163	3.000	7.000	.389	.333
	Hotelling's Trace	.498	1.163	3.000	7.000	.389	.333
	Roy's Largest Root	.498	1.163	3.000	7.000	.389	.333

2.8.2.8 Protein

Protein quantitative group (n=22)

Multivariate test: protein quantitative group

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
time	Pillai's Trace	.047	.492	2.000	20.000	.618	.047
	Wilks' Lambda	.953	.492	2.000	20.000	.618	.047
	Hotelling's Trace	.049	.492	2.000	20.000	.618	.047
	Roy's Largest Root	.049	.492	2.000	20.000	.618	.047

Protein follow up group (n=10)

Multivariate test: protein follow up group

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
time	Pillai's Trace	.661	4.557	3.000	7.000	.045*	.661
	Wilks' Lambda	.339	4.557	3.000	7.000	.045*	.661
	Hotelling's Trace	1.953	4.557	3.000	7.000	.045*	.661
	Roy's Largest Root	1.953	4.557	3.000	7.000	.045*	.661

*indicates a that there is a significant difference in the data (p≤0.05)

Post-hoc analysis: pairwise comparisons protein follow up group

					95% Confidence Interval for Difference	
(I) time	(J) time	Mean Difference (I-J)	Std. Error	Sig.	Lower Bound	Upper Bound
1	2	-1.790	3.029	1.000	-11.979	8.399
	3	1.980	6.309	1.000	-19.245	23.205
	4	10.910	4.276	.187	-3.475	25.295
2	1	1.790	3.029	1.000	-8.399	11.979
	3	3.770	6.395	1.000	-17.744	25.284
	4	12.700	5.241	.230	-4.931	30.331
3	1	-1.980	6.309	1.000	-23.205	19.245
	2	-3.770	6.395	1.000	-25.284	17.744
	4	8.930	3.638	.219	-3.308	21.168
4	1	-10.910	4.276	.187	-25.295	3.475
	2	-12.700	5.241	.230	-30.331	4.931
	3	-8.930	3.638	.219	-21.168	3.308

2.8.2.9 Total fat

Total fat quantitative group (n=22)

Multivariate test: total fat quantitative group

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
time	Pillai's Trace	.204	2.566	2.000	20.000	.102	.204
	Wilks' Lambda	.796	2.566	2.000	20.000	.102	.204
	Hotelling's Trace	.257	2.566	2.000	20.000	.102	.204
	Roy's Largest Root	.257	2.566	2.000	20.000	.102	.204

Total fat follow up group (n=10)

Multivariate Test: total fat follow up group

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
time	Pillai's Trace	.327	1.136	3.000	7.000	.398	.327
	Wilks' Lambda	.673	1.136	3.000	7.000	.398	.327
	Hotelling's Trace	.487	1.136	3.000	7.000	.398	.327
	Roy's Largest Root	.487	1.136	3.000	7.000	.398	.327

2.8.2.10 Saturated fat

Saturated fat quantitative group (n=22)

Multivariate test: saturated fat quantitative group

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
time	Pillai's Trace	.215	2.733	2.000	20.000	.089	.215
	Wilks' Lambda	.785	2.733	2.000	20.000	.089	.215
	Hotelling's Trace	.273	2.733	2.000	20.000	.089	.215
	Roy's Largest Root	.273	2.733	2.000	20.000	.089	.215

Saturated fat follow up group (n=10)

Multivariate test: saturated fat follow up

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
time	Pillai's Trace	.335	1.177	3.000	7.000	.385	.335
	Wilks' Lambda	.665	1.177	3.000	7.000	.385	.335
	Hotelling's Trace	.505	1.177	3.000	7.000	.385	.335
	Roy's Largest Root	.505	1.177	3.000	7.000	.385	.335

2.8.2.11 Cholesterol

Cholesterol quantitative group (n=22)

Multivariate test: cholesterol quantitative group

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
time	Pillai's Trace	.001	.006	2.000	20.000	.994	.001
	Wilks' Lambda	.999	.006	2.000	20.000	.994	.001
	Hotelling's Trace	.001	.006	2.000	20.000	.994	.001
	Roy's Largest Root	.001	.006	2.000	20.000	.994	.001

Cholesterol follow up group (n=10)

Multivariate Test: cholesterol follow up

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
time	Pillai's Trace	.388	1.482	3.000	7.000	.300	.388
	Wilks' Lambda	.612	1.482	3.000	7.000	.300	.388
	Hotelling's Trace	.635	1.482	3.000	7.000	.300	.388
	Roy's Largest Root	.635	1.482	3.000	7.000	.300	.388

2.8.2.12 Fibre

Fibre quantitative group (n=22)

Multivariate test: fibre quantitative group

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
time	Pillai's Trace	.004	.038	2.000	20.000	.962	.004
	Wilks' Lambda	.996	.038	2.000	20.000	.962	.004
	Hotelling's Trace	.004	.038	2.000	20.000	.962	.004
	Roy's Largest Root	.004	.038	2.000	20.000	.962	.004

Fibre follow up group (n=10)

Multivariate Test: fibre follow up group

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
time	Pillai's Trace	.351	1.261	3.000	7.000	.359	.351
	Wilks' Lambda	.649	1.261	3.000	7.000	.359	.351
	Hotelling's Trace	.540	1.261	3.000	7.000	.359	.351
	Roy's Largest Root	.540	1.261	3.000	7.000	.359	.351

2.8.2.13 Vitamin C

Vitamin C quantitative group (n=22)

Multivariate test: vitamin C quantitative group

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
time	Pillai's Trace	.078	.851	2.000	20.000	.442	.078
	Wilks' Lambda	.922	.851	2.000	20.000	.442	.078
	Hotelling's Trace	.085	.851	2.000	20.000	.442	.078
	Roy's Largest Root	.085	.851	2.000	20.000	.442	.078

Vitamin C follow up group (n=10)

Multivariate test: vitamin C follow up

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
time	Pillai's Trace	.320	1.097	3.000	7.000	.412	.320
	Wilks' Lambda	.680	1.097	3.000	7.000	.412	.320
	Hotelling's Trace	.470	1.097	3.000	7.000	.412	.320
	Roy's Largest Root	.470	1.097	3.000	7.000	.412	.320

2.8.2.14 Sodium

Sodium quantitative group (n=22)

Multivariate test: sodium quantitative group

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
time	Pillai's Trace	.371	5.900	2.000	20.000	.010*	.371
	Wilks' Lambda	.629	5.900	2.000	20.000	.010*	.371
	Hotelling's Trace	.590	5.900	2.000	20.000	.010*	.371
	Roy's Largest Root	.590	5.900	2.000	20.000	.010*	.371

*indicates a that there is a significant difference in the data ($p \leq 0.05$)

Post-hoc analysis: pairwise comparisons sodium quantitative group

(I) time	(J) time	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval for Difference	
					Lower Bound	Upper Bound
1	2	-123.372	118.500	.929	-431.633	184.888
	3	224.717	170.575	.606	-219.010	668.443
2	1	123.372	118.500	.929	-184.888	431.633
	3	348.089*	108.639	.013*	65.481	630.697
3	1	-224.717	170.575	.606	-668.443	219.010
	2	-348.089*	108.639	.013*	-630.697	-65.481

*indicates a that there is a significant difference in the data ($p \leq 0.05$)

Sodium quantitative group data (Friedman test)

Friedman Test Statistics

N	22
Chi-Square	4.727
df	2
Asymp. Sig.	.094

Sodium follow up group (n=10)

Multivariate test: sodium follow up group

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
time	Pillai's Trace	.506	2.393	3.000	7.000	.154	.506
	Wilks' Lambda	.494	2.393	3.000	7.000	.154	.506
	Hotelling's Trace	1.026	2.393	3.000	7.000	.154	.506
	Roy's Largest Root	1.026	2.393	3.000	7.000	.154	.506

2.8.2.15 Alcohol

Alcohol quantitative group (n=22)

Multivariate test: alcohol quantitative group

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
time	Pillai's Trace	.049	.516	2.000	20.000	.605	.049
	Wilks' Lambda	.951	.516	2.000	20.000	.605	.049
	Hotelling's Trace	.052	.516	2.000	20.000	.605	.049
	Roy's Largest Root	.052	.516	2.000	20.000	.605	.049

Alcohol follow up group (n=10)

Multivariate Test: alcohol follow up

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
time	Pillai's Trace	.281	.912[b]	3.000	7.000	.482	.281
	Wilks' Lambda	.719	.912[b]	3.000	7.000	.482	.281
	Hotelling's Trace	.391	.912[b]	3.000	7.000	.482	.281
	Roy's Largest Root	.391	.912[b]	3.000	7.000	.482	.281

2.8.3 Food diary data: percent (%) contribution to energy

2.8.3.1 Normality tests

Normality test quantitative subgroup % contribution to energy data

	Kolmogorov-Smirnov		
	Statistic	df	Sig.
T1 carbohydrate	.103	22	.200
T1 free sugar	.162	22	.139
T1 total fat	.147	22	.200
T1 saturated fat	.089	22	.200
T2 carbohydrate	.134	22	.200
T2 free sugar	.195	22	.029*
T2 total fat	.078	22	.200
T2 saturated fat	.126	22	.200
T3 carbohydrate	.127	22	.200
T3 free sugar	.182	22	.056
T3 total fat	.196	22	.028*
T3 saturated fat	.128	22	.200

*indicates a that there is a significant difference in the data ($p \leq 0.05$)

Normality test follow up group % contribution to mean energy intake

	Kolmogorov-Smirnov		
	Statistic	df	Sig.
T1 carbohydrate	.162	10	.200
T1 free sugar	.220	10	.185
T1 total fat	.172	10	.200
T1 saturated fat	.145	10	.200
T2 carbohydrate	.240	10	.109
T2 free sugar	.199	10	.200
T2 total fat	.188	10	.200
T2 saturated fat	.173	10	.200
T3 carbohydrate	.196	10	.200
T3 free sugar	.255	10	.064
T3 total fat	.274	10	.032*
T3 saturated fat	.161	10	.200
T4 carbohydrate	.203	10	.200

T4 free sugar	.225	10	.165
T4 total fat	.152	10	.200
T4 saturated fat	.250	10	.076

*indicates a that there is a significant difference in the data ($p \leq 0.05$)

2.8.3.2 Carbohydrate (% contribution to energy intake)

Carbohydrate % contribution quantitative group (n=22)

Multivariate test: carbohydrate % contribution quantitative group

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
time	Pillai's Trace	.076	.823	2.000	20.000	.454	.076
	Wilks' Lambda	.924	.823	2.000	20.000	.454	.076
	Hotelling's Trace	.082	.823	2.000	20.000	.454	.076
	Roy's Largest Root	.082	.823	2.000	20.000	.454	.076

Carbohydrate % contribution to energy follow up (n=10)

Multivariate Test: carbohydrate % contribution follow up

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
time	Pillai's Trace	.580	3.220	3.000	7.000	.092	.580
	Wilks' Lambda	.420	3.220	3.000	7.000	.092	.580
	Hotelling's Trace	1.380	3.220	3.000	7.000	.092	.580
	Roy's Largest Root	1.380	3.220	3.000	7.000	.092	.580

2.8.3.3 Free sugars (% contribution to energy intake)

Free sugars % contribution quantitative group (n=22)

Multivariate test: free sugars % contribution quantitative group

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
time	Pillai's Trace	.106	1.184	2.000	20.000	.327	.106
	Wilks' Lambda	.894	1.184	2.000	20.000	.327	.106
	Hotelling's Trace	.118	1.184	2.000	20.000	.327	.106
	Roy's Largest Root	.118	1.184	2.000	20.000	.327	.106

Free sugars % contribution follow up group (n=10)

Multivariate Test: free sugars % contribution follow up group

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
time	Pillai's Trace	.488	2.221	3.000	7.000	.173	.488
	Wilks' Lambda	.512	2.221	3.000	7.000	.173	.488
	Hotelling's Trace	.952	2.221	3.000	7.000	.173	.488
	Roy's Largest Root	.952	2.221	3.000	7.000	.173	.488

2.8.3.4 Total fat (% contribution to energy intake)

Total fat % contribution quantitative group (n=22)

Multivariate test: total fat % contribution quantitative group

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
time	Pillai's Trace	.121	1.375	2.000	20.000	.276	.121
	Wilks' Lambda	.879	1.375	2.000	20.000	.276	.121
	Hotelling's Trace	.138	1.375	2.000	20.000	.276	.121
	Roy's Largest Root	.138	1.375	2.000	20.000	.276	.121

Total fat % contribution follow up group (n=10)

Multivariate test: total fat % contribution follow up

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
time	Pillai's Trace	.207	.610	3.000	7.000	.630	.207
	Wilks' Lambda	.793	.610	3.000	7.000	.630	.207
	Hotelling's Trace	.261	.610	3.000	7.000	.630	.207
	Roy's Largest Root	.261	.610	3.000	7.000	.630	.207

2.8.3.5 Saturated fat (% contribution to energy intake)

Saturated fat % contribution quantitative group (n=22)

Multivariate Test: saturated fat % contribution quantitative group

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
time	Pillai's Trace	.117	1.326	2.000	20.000	.288	.117
	Wilks' Lambda	.883	1.326	2.000	20.000	.288	.117
	Hotelling's Trace	.133	1.326	2.000	20.000	.288	.117
	Roy's Largest Root	.133	1.326	2.000	20.000	.288	.117

Saturated fat % contribution follow up group (n=10)

Multivariate test: saturated fat % contribution follow up

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
time	Pillai's Trace	.217	.645	3.000	7.000	.610	.217
	Wilks' Lambda	.783	.645	3.000	7.000	.610	.217
	Hotelling's Trace	.277	.645	3.000	7.000	.610	.217
	Roy's Largest Root	.277	.645	3.000	7.000	.610	.217

2.9 Interview data analysis framework

Key themes;

1. **Preparing for lifestyle change**
   - *1.1.* Motivation for lifestyle change
     - *1.1.1. Recurrence*
     - *1.1.2. Recovery*
     - *1.1.3.Other health conditions*
   - *1.2.* Timing of the intervention within personal patient journey
     - *1.2.1.Diagnosis*
     - *1.2.2. Treatment*
     - *1.2.3. Moving forward*
   - 1.3. Support after breast cancer treatment
     - 1.3.1. *Breast cancer support*
     - 1.3.2. *Information*

2. **Initiation of lifestyle change**
   - 2.1. Format of the sessions
   - 2.2. Group discussions
   - 2.3. Written resources
   - 2.4. Group activities
   - 2.5. Household and friends

3. **Maintaining lifestyle change**
   - *3.1.* Making easy changes
     - *3.1.1.Make small changes*
     - *3.1.2. Informed choices*
     - *3.1.3. Autonomous changes*
   - *3.2.* Embed changes
   - 3.3. Relapses
   - *3.4.* Ongoing support
     - *3.4.1.Ongoing weight concerns*
     - *3.4.2.Ongoing information needs*
     - *3.4.3. Ongoing group support*