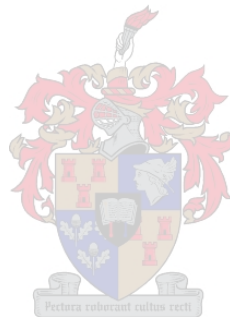


A qualitative study of weight loss maintenance in obese Nigerians

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Abstract

The rising prevalence of overweight and obesity globally is a major public health concern. There are no simple solutions to obesity, weight management is a long term challenge influenced by behavioural, emotional and physical factors. In order to establish effective weight management strategies, overweight and obese people's experiences with weight management need to be comprehensively understood. This study explores the experiences of adult Nigerians who have been successful at weight loss maintenance.

Aim: To establish effective weight loss maintenance strategies used by overweight and obese adults in Abuja, Nigeria

Method: Qualitative study with in-depth interviews of 7 successful weight losers in Abuja, Nigeria.

Results: Participants employed a combination multiple dietary strategies and exercise to maintain their weight loss. They reported that they avoided certain meals, substituted meals, practiced portion control, skipped meals, counted calories, avoided eating out, ate many small meals, ate unprocessed foods, ate low calorie meal, and ate mainly fruits and vegetables. Most had a flexible eating restraint behaviour. For most, dancing was the favorite form of exercise. They viewed these changes as life goals. From their report, a sustainable weight loss plan, setting weight loss goals, regular self-monitoring of weight, positive outcomes, positive thinking, positive feedback, self-encouragement and determination, helped them to maintain their weight loss.

Conclusion: This study has helped us understand some of the factors that doctors should consider when giving advice to Nigerian women on maintenance of weight loss. The combination of multiple strategies is consistent with existing literature on successful weight loss maintenance.

Introduction

Overweight and Obesity are global public health concern with 35% of adults over 20years overweight in 2008 and 11% obese according to WHO report.¹ Many Nigerians are overweight and obese.^{2,3,4} Though there is no national prevalence rate of overweight and obesity in Nigeria, the prevalence of overweight individuals ranged from 20.3%–35.1%, while the prevalence of obesity ranged from 8.1%–22.2% in a systematic review by Chukwuonye II *et al.*⁵

The attainment of weight loss and weight maintenance is the desired goal in the management of overweight and obesity.⁶ Weight management is vital in the successful management of many chronic disease conditions. Studies have shown that Obesity increases the risk of morbidities from hypertension, type 2 diabetes, dyslipidemia, sleep apnea, respiratory problems, and cancer of the endometrium, breast, prostate and colon. Obesity also increases mortality from all cause.^{6,7}

Many people who succeed to lose weight are unable to maintain their reduced weight in the long term.⁸ many quantitative and qualitative studies have been carried out in search of effective strategies for weight reduction and maintenance. In Nigeria there is still a dearth of studies in obesity and weight management.

Overweight and obesity are defined as body mass index(BMI) $25 < \text{BMI} < 29.9 \text{kg/m}^2$ and $\geq 30 \text{kg/m}^2$ respectively.^{1,6} The development of obesity is due to an energy imbalance between calories consumed and calories expended, and a complex integration of behavioural, environmental, cultural, socioeconomic

status and genetic factors.^{1,6} Its rising prevalence globally is as a result of a growing westernized lifestyle that promotes intake of high calorie diet and increased inactivity level from the sedentary nature of many jobs. Effective weight control involves multiple techniques and strategies including dietary therapy, physical activity, behavior therapy, pharmacotherapy, and surgery as well as combinations of these strategies.^{1,9}

Successful weight loss maintenance is losing at least 10 percent of one's initial body weight and maintaining the loss for at least one year.^{10, 11} A sustained weight loss of 5–10% of initial body weight in overweight and obese people is associated with benefits to physical and psychosocial health, functional ability and quality of life.¹²

In a quantitative study by Kruger, Blanck and Gillespie in 2006, one-third (31%) were successful at losing weight and keeping their weight off.¹³ Significantly more successful versus unsuccessful weight losers reported that on most days of the week they planned meals, tracked calories, tracked fat, and measured food on plate. Successful weight losers were also more likely to weigh themselves daily and individuals who were successful at weight loss and maintenance had higher odds of taking part in physical activity on most days of the week than those who were unsuccessful at weight loss.¹³ Similar studies have reported that self-monitoring strategies such as weighing oneself, planning meals, tracking fat and calories, exercising 30 or more minutes daily, and/or adding physical activity to daily routine may be important in successful weight loss maintenance.¹³⁻¹⁸ Other factors identified as relevant to weight management include health concerns, expectations towards weight management, attributions of weight gain, body image and positive outcomes.¹⁹

The purpose of this study was to identify effective weight loss maintenance practices among adult Nigerians.

Aim

To establish effective weight loss maintenance strategies used by overweight and obese adults in Abuja, Nigeria

Objectives

1. To determine the dietary practices among adults successful at weight loss maintenance
2. To determine the physical activity practices among adults successful at weight loss maintenance
3. To identify any fears or concerns, beliefs and expectations regarding weight management strategies
4. To determine factors that motivate behavior change in weight management

Methods

Study design

This was a qualitative study conducted in Abuja, Nigeria. Participants were adults 18 years and above who had lost at least 10% of their highest weight intentionally and maintained a weight loss of at least 10% for one year or more. Eight subjects were recruited, one by purposeful sampling from the Garki Hospital Dietetics register, one by purposeful sampling at a Gymnasium, and the six others were recruited

by snowballing by these two recruits and the researcher. Some subjects were approached face to face and others via telephone.

Data Collection:

Data was collected using open ended semi-structured individual interview of participants. Interviews were conducted by the researcher at Garki Hospital, Abuja, Nigeria where the researcher worked. Garki hospital is a well-known hospital with a dietetics clinic. It is centrally located and generally easily accessible. It was considered that conducting the interview in the hospital environment may put the participants at ease in terms of disclosing personal confidential information.

Prior to the interview, participants were briefed on the purpose of the study and given the study information leaflet. A written consent was obtained from each participant and they were re-assured of anonymity when reporting the results. A personal data form was also administered to obtain demographic information (age, sex, marital status, current weight, maximum lifetime weight).

Interviews were conducted in English and they lasted 30 to 60mins. An interview guide was used to explore participants' views. Questions asked were

1. Tell me how you began to lose weight.
Probe: How much weight did you lose and for how long have you maintained your weight?
2. How do you maintain your weight-loss?
Probe on dietary practice (meals, eating times, snacking between meals, social habits such as smoking alcohol intake, etc.)
Probe on exercise types and frequency?
3. In your own words what are effective strategies that work for you in weight maintenance?
Probe: would you recommend this to others?
Probe: Which other ways did you try to lose weight and what happened?
4. What are the challenges you experienced and still experiencing in maintaining your weight?
Probe: What do you see as hindrances to weight maintenance?

Interviews were audio-recorded digitally and recordings were transcribed verbatim with the help of a transcriber. Transcriptions were validated by researcher.

Data Analysis

Data was analyzed using the framework method.^{20, 21} Both transcripts and recordings were read and listened to respectively over and over again to get familiar with the data. Major and minor themes were identified from two transcripts and a thematic index was developed. All the transcripts were then coded systematically with the thematic index. Using ATLAS.ti7 data was arranged into charts and data interpreted.

Results:

A total of seven interviews were conducted at Garki Hospital from December 2013 to June 2014 when analysis showed that the point of data saturation had been reached (Appendix 1). All were female, four were married and the others were single.

Recruiting males was difficult. [Stellenbosch University https://scholar.sun.ac.za](https://scholar.sun.ac.za) Those approached did not meet the criteria of losing at least 10% of their highest weight and/or maintained the weight loss for a minimum of one year.

In losing weight participants modified their lifestyle. They described the changes they made to their diet and level of activity (Table 1). In the quotations, participants are labeled “p” and an interview number.

Table 1 Quotations illustrating themes

Major theme	Minor theme	Representative Quotations
Meal Strategies	Avoid certain meals	"I don't eat oily foods or snack anyhow. I don't go around eating cakes, fried things, samosa, all those things. I don't do it. I don't drink carbonated drinks anymore. Not sodas. Everything I eat is natural". (p2)
	Substitute meals	".... instead of long grain rice I did the brown rice, instead of lots of vegetable oil I do olive oil. Instead of salad dressings I do olive oil and maybe balsamic vinegar, you know you still try to enjoy the food, but just make it a bit healthier'. (p7)
	Portion control	In Africa we eat a lot of carbohydrates. Too much carbohydrates and we eat large portions. I have realized that I'm eating a third of what I used to eat".P7
	Skip meals	"Sometimes I eat once in the day, at times I eat twice maybe, that is how it has been consistent that way.skipping night food goes a long way". (p8)
	Counting calories	" if I'm eating biscuit I will look at the calorie count and I say is it worth it"(p5)
	Avoid eating out	"What I had to stop doing was eating out". (p4)
	Many small meals	"So I had to come up with five low calorie but very filling small meals"p4
	Eat unprocessed foods	"I try not to eat packaged food everything I eat is natural" (p2)
	Low calorie meal	"I can finish half pawpaw and pawpaw is very filling. So by the time you eat pawpaw and you're full, you don't want, you can't even eat anything"(p1)
	Formal diet plan	"With the GM Diet I found that for the seven months period 1 was dedicated and recently another three weeks, it really works so"(p5) "Sorry to say, you don't need any of these diets Cambridge, you don't need it". (p2)
Fruits and Vegetables	"My food is strictly vegetables... So I'm a semi vegetarian... because I eat fish sometimes."(p2)	
Exercise strategies	Regular exercise	"I exercise every day."(p4)
	Irregular exercise	"I still skip, but it has not been consistent these days, because of nature of my job. It has not been consistent".(p8)
	Added exercise	"I did this for a month before I started exercising So I was like, let me do this for a month and see, then I'm going to gradually start exercising". (p4)
	Started with exercise	"The day I changed my diet, the next day I got a personal trainer and started working ".(p2)
	Preferred type of exercise	"I heard about this dancing ... and it was actually more fun than the exercise thing. I mean in a space of about two weeks, I think I have lost that same point five kg that took me a month or so to lose, I just decided to stick with them". (p7)
	Preferred time for exercise	"I would advise you to choose a time that you will enjoy doing it. Personally I'm not an early morning person. So if I had to do this early morning I think it would have been a lot harder

		for me. Some people prefer the early morning thing, instead of the evening thing. So just chose a time that makes you comfortable, that is what I would advise" (p7)
	Maintain with exercise	"...my dinner on Fridays is something else - that is actually what used to motivate me to walk the next Saturday morning because I know Friday night I have done some damage and then I walk it off the next morning". (p7)
Motivation to lose weight	Medical reasons	"started losing weight in. . . 2012. Where I had issues, medical issues." (p2)
	Body image	"looking at myself in the picture I was like no, this is not right." (p5)
Motivation to maintain weight loss	Weight loss	"The first time I hit the scale and I lost so much weight I was, I was shocked. I used to weigh 123 and then I was UK dress size was between 22 – 24.....and that was what led me to the weight loss"(p2)
	Positive outcome	"Mentally, my mental focus is much better, clarity of thoughts. There are so many things that are good in the way I look right now. I think that is the number one factor that's keeping me the way I am instead of going back to more weight". (p5)
	Weight loss goal	"I told myself I have to. I have a target, you know. So that is it. So you keep encouraging yourself". (p2)
	Positive thinking	"For me, the key word for me is being determined, disciplined, focused. You know these three things were the things that kept me" (p2)
	Compliments from people	Someone told me this morning, he said "my target is to be like you". That alone, so I can't afford to go back. (p2)
	Self-encouragement	"My motivation is myself". (p1)
Challenges	Work	"the biggest challenge is that it was time because you finish from work, you already feel like you've worked many hours a day. You're not with your family. Taking over to go to the gym is like more time taken off them" (p4)
	Changing location	"When you know you don't have an alternative. So I noticed that by the time I was leaving camp, I was 85kg. That was like 10kg in just six weeks". (p1)
	Cravings	"when you have those cravings,.... Doctors tell you yes, there are cravings, but you can actually fight them and they tell you your craving can die within ten minutes." (p1)
	Procrastination	"procrastinationI come back late in the night I'm like okay I'm tired,so procrastination laziness that too has been a challenge...." (p3)
	Setbacks	"....there are days you eat that 2000 calories you're not supposed to eat".(p4)
	Family	I know one or two women that started and complained that the husband was like, every time I come home you are not there, you can't continue with this or I want to see you when I'm eating, you know things like that. So combining work and family it is not usually very easy. But when you have a good support system, it makes it a lot easier". (p7)

	Peer pressure	"It affected me because they didn't want to go out with me anymore because they kept complaining I'm too thin, eat something, so I got tired of hearing that"(p2)
	Difficult feeling	"the only thing I know is that starting off the thing is difficult". (p8)
Behaviour about weight management	Monitoring weight	"... I have a digital scale in my bathroom but I tend to use is use my jeans as a guide to let me know am okay,as soon as my waist gets too tight, I know okay, it's time to push or walk it out and then when it's loose I feel good about myself" (p5)
	Discipline	"So you have those challenges and that's kept me to my present weight and all but I fight it. It's not such a big fight, it's a fight of discipline" (p 2)
	Getting back	"If you fail now, reset now". (p4)
	Cheat days	"give myself Saturdays to cheat when I recall, I mean, and even all the websites recommend have a cheat day. Have one day when you want to eat"(p4)
	Source of information	"There are all these videos ...you can get them from YouTube ... friends ...gym instructors they have all these videos or you can go buy them.they really, really good cause those people are professionals and they know what they doing and they know they can help you". (p3)
Belief about weight management	Perceived body type	"I think that probably made my metabolism a bit slow to eat the way I eat".(p4)
	Diet vs exercise	"....the main thing in weight loss is f - o - o - d".(p1)
	Diet vs exercise	"but I must say it's exercise that really worked for me" (p3)
	Diet and exercise	"To be honest, you have to do all of them. That is my honest belief". (p4)
	Ignorance	"as educated as I am, I'm very ignorant about my food and my health". (p4)
	Sustainable weight loss plan	"I wanted to do something that was more of a lifestyle change rather than a quick fix". (p4)
	Change mindset	"My son would say "oh I am not going to eat dinner today I have just had fruit. So I'd say "look the fruit is a meal." You have to start telling yourself the truth. Everything is a meal. Everything, even chewing gum, is a meal". (p4)
Other weight management experiences	Other methods	"Mm hmm. I've been trying other things, I tried to diet, I actually locked my teeth". (p1)
	Attributions for weight gain	"I used to use a lot of things to... oh, it's because of the contraceptive or because I'm married or because I have children, it's food" (p5)
	Determination	"So I don't add, I'm losing I guess I'm very determined (P2)
	Gradual weight loss	"So I was losing weight but it was very slow". (p6)
	Self-confidence	"by the time I get okay with my neck injury now I will lose 5kg off me, because I know it's not a big deal because it's what I want to do, and I can do that in 2 weeks" (p2)

Fears

“ . . . me, my only fear is maybe when I get married and I’m pregnant”.(p1)

MEAL STRATEGIES

Several dietary adjustments were made by participants (Table 1). Participants avoided and substituted meals, reduced portions, skipped meals, increased vegetable and fruit intake. They tracked their calories.

All participants avoided certain meals considered to be fattening such as carbohydrates, fats and oils, sweet drinks and sodas. If eaten at all, they were taken in very small quantities. They substituted these high calorie meals for low calorie meals. All participants reduced the quantity of food they ate per time. Some participants skipped meals intentionally or as a result of work hours. They ate once or twice a day, either skipping breakfast and/ or dinner. A participant who skipped dinner intentionally to lose weight, strongly attributed eating dinner to weight gain. Some participants practiced eating small meals five to six times a day to lose weight. However, this strategy did not work for one participant who tried it. Some participants considered the caloric content of each meal they ate. They avoided or took very small quantities of high calorie meals. In order to have control of the content of their meals, most participants ate homemade meals. They ate mainly unprocessed foods and mainly fruits and vegetables

The use of a formal diet plan such as the Cambridge and General motors diet was unpopular among the participants. The Cambridge and General motors diet are commercial weight management programs using a very low calorie diet (usually <800kcal/day). Many felt this type of formal diet plan was not sustainable in the long term. However one participant used these planned diets to lose weight and maintain her weight loss.

EXERCISE STRATEGIES

Participants added exercise to their lifestyle to lose weight and maintain their weight loss. All participants exercised but only some of them exercised regularly. They exercised either in the mornings or evenings for thirty minutes and up to 2hrs for most days of the week.

They all did a combination of exercises, jogging, walking, and dancing. Some found exercising in the morning more convenient and for others evening exercises worked better.

Most participants began their weight management program with diet and later added exercise. One participant combined both exercise and diet from the beginning. Those that started with exercise only found it ineffective for losing weight. Most participants used exercise to maintain their energy balance. When they felt they had overeaten or planned to indulge in some high calorie meal, they exercised to burn off the equivalent calories.

Most participants preferred to dance as they found this type of exercise fun to do and therefore easier to maintain.

MOTIVATION TO MAINTAIN WEIGHT LOSS

Participants identified certain factors which motivated them to maintain their weight loss as; Loss of weight, Positive Outcomes, Positive thinking, Compliments from people, setting weight loss goal and self-encouragement.

Participants described many ways that losing weight was beneficial to them. It improved their self-esteem, improved their medical conditions, they received admiration and commendation from people. They reported feeling both physically and psychologically more fit. These results motivated them to maintain their weight loss.

Many of the participants were also able to maintain their weight loss by setting weight goals. Keeping their weight goal in focus encouraged them to continue their weight management practices.

All participants were motivated to lose more weight and maintain their weight loss after a significant drop in their weight.

CHALLENGES OF WEIGHT MANAGEMENT

In their weight management journey participants experienced some challenges in maintaining the changes they made to their diet and in exercising regularly. They experienced challenges with work and family, dealing with cravings, and dealing with procrastination.

Being employed was identified as a major challenge in maintaining their new eating style and exercise. It did not permit sufficient time to prepare preferred meals and eat at preferred times. After work participants reported that they were too tired and did not have enough time to exercise. Caring for the family was also a competing need for their time especially for the married participants who had to cook for their family and meet other needs of their husbands and children. These married participants pointed out that the support of their husbands contributed to their success in losing weight.

Participants who dealt with peer pressure reported that people thought they were too thin or have now become boring company.

For many participants starting was difficult and they experienced setbacks.

BEHAVIOURS ABOUT WEIGHT MANAGEMENT

Participants reported self-monitoring of their weight using weighing scales but more often with their clothes. When participants failed to adhere to their new diet and exercise lifestyle, they did not give up on weight management. This may have contributed to their success in maintaining their weight loss. A participant commented that any time she fails, she was quick to resume her new lifestyle.

Some allowed themselves time off their eating plan to satisfy their cravings. They reported that the online resources which they used, supported this. Many found these online resources very useful for weight management. Their other sources of information were other media, the public, the dietician and medical doctor.

Most reported on the importance of exercising self-discipline in weight management.

BELIEFS ABOUT WEIGHT MANAGEMENT

Participants believed that people's body relationships with food differ. Most of the participants described their body metabolism as slow and increased their tendency to becoming overweight. They varied in their belief of what helped most to lose weight between food and exercise. Most participants believed that the main cause of their weight loss was the dietary changes they made and so they focused more on their diet than on exercise to maintain their weight loss. A participant rated food and exercise on the same level of importance to lose weight. While another depended more on exercise to manage their weight.

In choosing their weight loss strategy most of the participants considered changes they could sustain in the long term.

OTHER WEIGHT MANAGEMENT EXPERIENCES

Most participants achieved their weight loss goals gradually over months. Participants concluded that eating too much was the main cause of weight gain. A participant spoke about the need for people to change their mindset about what constitutes a meal.

Most participants had tried some other methods that failed or they could not sustain. A participant tried locking her teeth. They believe determination is a necessary ingredient for losing weight.

The only fear expressed was by the participants who were single. They were concerned about how marriage and childbearing will affect their weight control.

In the course of losing weight, participants made new discoveries and changed their thinking about what made them gain weight. Participants believed they were able to lose weight when they became determined to lose weight and they demonstrated self confidence in their ability to keep their weight under control

Discussion

Not many studies have been done on obesity in Nigeria. Participants in this study employed a combination of dietary strategies and exercise to lose weight and maintain their weight loss. This study demonstrated that a combination of dietary strategies and exercise is important for weight loss maintenance and is practiced among Nigerian women.^{1, 6, 13, 14,}

In this study, participants made various changes to their diet in order to reduce the total number of calories consumed each day. They avoided certain meals thought to be high in calories. They substituted meals, avoided eating out, reduced the portion of their meals, ate mostly fruits and vegetables and counted calories. In Nigeria where carbohydrates such as yam, rice and cassava products are commonly consumed, participants attributed weight gain to a large intake of these carbohydrate meals.²² Replacing these carbohydrate meals, sugars, fats and oil with fruits and vegetables was a practice they could maintain. From their weight loss experience, they concluded that the main cause of their weight gain was their diet. The strategies each person chose for cutting down calories was influenced by what they could sustain in the long term. These behaviours are similar to findings in other studies where participants adopted different ways to reduce their daily calorie intake.^{13,14,19} This supports a patient centered approach in weight management to improve behaviour change.²³

Most participants were able to develop a regular exercise practice, particularly dance. In maintaining weight loss, exercise has been demonstrated to help to achieve energy balance.²⁴ This study also demonstrated that a combination of diet and exercise is important for weight loss maintenance.^{1,9,24,25} When participants indulged in high calorie meals like chocolates they depended on exercise to burn off the excess calories that they might have consumed. "In losing the weight it was diet. In maintaining the weight, it's the mixture of diet and exercise".p5

Participants in this study demonstrated their understanding of weight management as a sustainable weight loss plan, a lifestyle change. They viewed the changes they made to their diet and activity level as life goals early in their weight loss journey. This may have contributed to their ability to maintain their new

lifestyle. Obesity is a chronic disease and both patients and health professionals must understand that successful treatment requires a lifelong commitment.²⁶⁻²⁸

Some participants in this study, gave allowance for a little indulgence. Some had days they referred to as cheat days when they could yield to their cravings for certain meals especially high calorie meals. A study by Teixeira PJ *et al* , suggests that a flexible eating restraint was an important strategy for weight loss maintenance.²⁹ Similar studies have compared a flexible restraint with a rigid restraint and results showed that a flexible restraint is associated with more weight loss and better weight loss maintenance.^{30,31} In a flexible eating restraint pattern, no type of food is forbidden, there is less internal pressure to diet and a more gradual understanding of the diet's impact on energy balance.²⁹

Positive attitude and ability to handle failures may also be important in weight loss maintenance.^{12,32,33} Despite the few setbacks and challenges these participants faced, they did not beat themselves up about failing. For most, at the beginning it was very difficult to give up things. They confessed that they still face challenges such as food cravings, time to prepare their meals and exercise, and at the same time care for their family and work. However, they remained committed to their new lifestyle even after a failure. They believe anybody would be able to control their weight if they use similar strategies.

In addition, people who were successful in maintaining their weight loss, were well motivated.¹⁹ In this study as well, positive outcomes and good comments from others motivated participants to maintain their weight loss. Apart from the good feeling that came with success in losing weight, they acknowledged improved self-esteem, improved physical fitness and mental alertness. They received admiration and commendation from people. These positive outcomes are commonly reported among weight losers who have succeeded in maintaining their weight loss.¹⁹ People can support weight losers to maintain their weight loss by providing regular positive feedback. This study also suggests that setting weight loss goals may be an effective motivational factor for weight loss maintenance. Setting weight goals seemed to encourage both adherence to new weight loss behaviours and encouraged self-monitoring of their body weight. Health professionals can help people losing weight to set realistic goals.

Strengths and limitations

The strength of this study lies in the fact that participants volunteered information willingly and there were no language barriers. Also all interviews were conducted by one interviewer. The study was limited by the fact that they were all female participants and weight history was self-reported. Even though findings cannot be generalized, the study elicits the behaviours of some Nigerian women towards their weight and weight loss maintenance.

Conclusion

This study has helped us understand some of the factors that doctors should bear in mind when giving advice to Nigerian women on maintenance of weight loss.

Common weight loss strategies such as reducing high calorie meals, reducing quantity of food on plate, tracking calories, increasing fruits and vegetables, increasing physical activity level, are effective for weight loss maintenance. Doctors can guide patients to choose a combination of dietary strategies and exercise that they can sustain in the long term. This study indicated that dancing could be an effective exercise for weight loss maintenance.

This study provides evidence that positive feedback, regular self-monitoring, setting weight loss goals, adopting a sustainable weight loss plan, flexible eating restraint and positive attitude may be important for weight loss maintenance. Doctors can give positive feedback, encourage regular self-monitoring of weight and guide in setting realistic weight loss goals.

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Ethical approval

Ethical approval was given by Health Research Ethics Committee at Stellenbosch University (S12/11/275), and Federal Capital Territory Health Research Ethics Committee.

Competing Interest:

The author declares that there is no competing interest.

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Appendix 1

Participants Demographic Data

Participants	Gender Male/ Female	Age in yrs.	Marital Status	Education	Height(M)	Maximum lifetime weight (Kg)	Weight at interview (Kg)
P1	Female	27	Single	Graduate	1.58	110	84
P2	Female	33	Single	Graduate	1.7	123	75
P3	Female	30	Single	Graduate	1.53	75	59
P4	Female	38	Married	Graduate	1.55	84	62
P5	Female	36	Married	Graduate	1.7	88	75
P7	Female	39	Married	Graduate	1.56	85	64
P8	Female	37	Married	Graduate	1.69	115	102

Appendix 2

Major and Minor themes

1. Motivation to lose weight

- | | |
|------------------------------------|---|
| a. Medical Reasons: | <i>Reason for losing weight is health concerns</i> |
| b. Unintentional start: | <i>Initial weight loss was unplanned</i> |
| c. Body image: | <i>Reason for losing weight is because of seeing self as overweight</i> |
| d. Peoples comments on overweight: | <i>People commenting on overweight state</i> |

2. Motivation to maintain weight loss

- | | |
|-----------------------------|---|
| a. Weight loss: | <i>Reduction in body weight was achieved</i> |
| b. Positive outcome: | <i>Other results apart from weight loss that encouraged weight loss maintenance</i> |
| c. Positive thinking: | <i>Meditating on positive words</i> |
| d. Weight loss goal: | <i>Set weight limits</i> |
| e. Compliments from people: | <i>Receiving positive feedback on weight loss</i> |
| f. Self-encouragement | <i>Encouraging oneself</i> |

3. Meal strategies

- | | |
|--------------------------|---|
| a. Avoid certain meals: | <i>Reduced or stopped kinds of food</i> |
| b. Substitute meals | <i>Replaced meals with other kind of meals</i> |
| c. Portion control | <i>Maintaining reduced quantity of food per meal and/or maintaining specific portions for different kinds of meal</i> |
| d. Skipped meals | <i>Skipped one or more meals in a day</i> |
| e. Counting calories | <i>Take note of the calorie content of each meal and /or calories expended at exercise</i> |
| f. Avoid eating out | <i>Reduced or Stopped taking meals prepared outside home</i> |
| g. Many small meals | <i>Eating five to six small meals daily</i> |
| h. Eat unprocessed foods | |
| i. Low calorie meal | <i>Selecting meals with low caloric content</i> |
| j. Formal diet plan: | <i>A prescribed diet plan</i> |
| k. Fruits and vegetables | <i>Meal is mainly fruits and vegetables</i> |
| l. Trial and error | <i>trying out various meal adjustments</i> |

4. Exercise strategies

- | | |
|---------------------------------|--|
| a. Regular exercise: | <i>Exercised weekly</i> |
| b. Irregular exercise: | <i>Did not exercise every week</i> |
| c. Types of exercise: | <i>Different planned activity methods used to expend calories</i> |
| d. Added exercise: | <i>Introduced exercise after a while on managing weight with diet only</i> |
| e. Started with exercise: | <i>From the beginning of managing weight started with both diet and exercise</i> |
| f. Preferred time for exercise: | <i>favorite/ frequently chosen time to exercise</i> |
| g. Preferred type of exercise | <i>Favorite/frequently chosen type of exercise</i> |

5. Challenges of weight management

- | | |
|-----------------------|--|
| a. Changing location: | <i>Going to another state or region</i> |
| b. Cravings | <i>Urge to consume certain food or larger quantity of food or food sighted</i> |
| c. Procrastination: | <i>Postponement of activity which was planned</i> |
| d. Setbacks: | <i>Getting off set weight management plan</i> |
| e. Family : | <i>affirming competing family needs</i> |
| f. Peer pressure | <i>influence from peers on weight and weight management</i> |
| g. Difficult feeling | <i>acknowledging challenging feelings</i> |
| h. Work: | <i>influence of work on weight and weight management</i> |

6. Behavior about weight management

- | | |
|--------------------------|---|
| a. Monitoring Weight: | <i>How weight is checked</i> |
| b. Discipline: | <i>Achieving self-restraint</i> |
| c. Getting back: | <i>Resuming weight management plan after setbacks</i> |
| d. Cheat days: | <i>Planned dieting free days</i> |
| e. Source of information | <i>Sources of information on weight management</i> |

7. Beliefs about weight management

- | | |
|----------------------------------|---|
| a. Perceived body type: | <i>Perceived relationship between food and body weight</i> |
| b. Change mindset: | <i>Change set thoughts, beliefs about weight related issues</i> |
| c. Healthy choices: | <i>Choosing what is good rather than what is liked</i> |
| d. Quick fix: | |
| e. Diet Vs Exercise: | <i>Compares diet to exercise in managing weight about weight and/or weight management</i> |
| f. Ignorance | |
| g. Sustainable weight loss plan: | <i>Lifelong weight loss plan</i> |

8. Other Weight management experience

- | | |
|----------------------------------|---|
| a. Other methods: | <i>Other methods of weight management attempted</i> |
| b. Attributions for weight gain: | <i>What was considered the cause for weight gain or that other people considered as causes of weight gain</i> |
| c. Determination | |
| d. Gradual weight loss: | <i>Slow weight loss</i> |
| e. Self-confidence: | <i>Feeling of having it under control</i> |
| f. Environment | <i>Impact of the environment of weight Management</i> |
| g. Determination | |

9. Fears

Identified concerns