

Supplemental Online Content

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This supplemental material has been provided by the authors to give readers additional information about their work.

eTable 1. Sample texts for baseline, 3 months, 6 months and 9 months

		Behavior Change Technique¹	Function	Logic model
	Texts sent at baseline			
1	Welcome to Game of Stones <name>! Over 12 months we'll send you some texts. The bad news: reading texts won't change your weight. The good news: they're low calorie. We've put these texts together with the help of men who successfully lost weight. They are based on facts and real life experience.		General communication technique	
2	The goal is to lose 5% in 12 weeks. John said the goal gave him confidence to try changing his eating knowing that he's got something to work towards. Losing more than 3% of your body weight has health benefits and helps to cut your chances of cancer, heart disease and diabetes.	1.3 Goal setting (outcome) 5.1. Information about health consequences	Motivation	Motivation (weight loss goal)
3	Ok, here's the deal. Some texts will be useful and others maybe won't. Just pick whatever works for you and ignore the rest. If you want to reply to any of the texts please do. We read every text but usually we won't be able to write back. Sorry.		General communication technique	
4	How to lose weight? Here's a simple fact: sensible eating works... but only if you stick to it. Go to our Game of Stones webpage with links to webpages full of information that our men find useful. www.gameofstonesresearch.com	15.1. Verbal persuasion about capability	Motivation, Engagement	Self-efficacy (initiate weight loss)
5	Most of our men make up their own sensible eating rules. Carl said that it's straightforward, eat less rubbish. Everybody knows it, but hard to do. Cutting down and reducing portion sizes is the main strategy that works for our men. Losing weight is about finding what works for you and your life.	4.1. Instruction on how to perform the behaviour	Self-regulation	Self-regulation (planning)

		Behavior Change Technique¹	Function	Logic model
6	You're changing what you're eating and drinking, you're not dieting. Think about it as improving your lifestyle, not being on a diet. Check out this helpful wee booklet full of tips from the Men's Health Forum. www.issuu.com/menshealthforum/docs/eat_well_final_hrnon-border	4.3. Re-attribution	Motivation, Engagement	Motivation (intention)
7	Have you made any changes this week <name>? Cut down on something or made some sensible eating changes? Let us know. Have a nice rest of the weekend.	2.3. Self-monitoring of behaviour	Self-regulation, Engagement	Self-regulation (self-monitoring)
	Texts sent at 3 months			
1	How's it going <name>? Let's talk special occasions: birthdays, weddings, and holidays. Some men tell us that they do well with their weight loss, then a special occasion comes along and things fall down.		General communication technique	
2	Carl was out for his birthday party, eating and drinking too much, so it caused him to fall back again and he's not got back into it yet. Rob says his holidays probably set him back a lot, he went a bit over the top. Do you have any words of wisdom for the Carls and Robs in this world?	13.1. Identification of self as role model	Engagement	Self-regulation (planning)
3	You should continue to have a good time on birthdays, weddings and holidays. But without feeling guilty. How can you do that?	1.2 Problem solving	Self-regulation	Self-regulation (planning)
4	Rick says that when he's got a special occasion coming up he prepares for it and makes sure he has a period where you are doing well before making loads of sensible eating choices – this way you will have earned it even more.	1.2 Problem solving 6.1 Demonstration of the behaviour	Self-regulation	Self-regulation (planning)
5	Garry's golden rule is to make the first drink a soft one. He says it's easy to get carried away with the drinks and they are quite calorific. He also has regular water breaks – you can enjoy an occasion without going completely overboard.	1.2 Problem solving 6.1 Demonstration of the behaviour	Self-regulation	Self-regulation (planning)

		Behavior Change Technique¹	Function	Logic model
6	Another way to handle your special occasion after they happened is to make up for it. Have a period after your birthday or holiday when you put effort into a sensible eating and drinking routine.	4.1. Instruction on how to perform the behaviour	Self-regulation	Self-regulation (planning)
7	It's all about balance. If your new lifestyle ruins the fun then why stick to it? If your old routines ruin your hard work, then why bother? Hope the weekend is going well...		General communication technique	
	Texts sent at 6 months			
1	That's the 6 months mark! Two things are important now: Keep off any weight lost, and have your 1 year goal in mind. How confident are you that you can manage this?		General communication technique, Motivation, Maintenance	Self-efficacy (Maintenance), Maintenance mindset
2	To keeping weight off Karl says he just walks loads now, cause he can do, anytime, anywhere. And he actually likes it and looks forward to get moving every day.	6.1 Demonstration of the behaviour	Maintenance	Maintenance mindset
3	Dave says that he's no youngster, he's heard this kinda stuff before. But he still finds it useful to remember what you know. Make sure you actually do it, not just know it.		General communication technique	
4	What are your eating plans for tomorrow? Keep staying ahead of the game.	1.4 Action planning	Engagement, Self-regulation	Self-regulation (planning)
5	Gavin says his weight stays roughly the same, but he still tries new stuff. Just because you want your weight to stay the same, doesn't mean that you have to do the same things all the time.	13.2. Framing/reframing	Maintenance	Maintenance mindset
6	Jim likes to remember IF and THEN. What is your main obstacle to sensible eating? IF you run into it, THEN what will you do?	1.2 Problem solving 1.4 Action planning	Engagement Self-regulation	Self-regulation (planning)

		Behavior Change Technique¹	Function	Logic model
7	What's been your success this week? We take anything, the smaller and more unusual the better!	2.1. Monitoring of behaviour by others without feedback	Engagement Self-regulation	
	Texts sent at 9 months			
1	Are your habits and routines working for you? Does your auto pilot work for or against you at the moment?		Engagement, Maintenance	Habits
2	Dave says that some folk need the arm round the shoulder, some folk need the boot up the backside. Do you have enough arms and boots around you when needed?	3.1. Social support	Engagement, Motivation, Self-regulation, Maintenance	Motivation, Self- efficacy, Self- regulation
3	We covered a lot of things that help with weight loss and keeping it off. They work best when used... ok, you're right, they only work when used. Which are the ones you will keep using and when?	1.4 Action planning	Engagement, General communication technique, Maintenance	Self-regulation, Maintenance mindset
4	Once every couple of weeks Carl sits down and scrolls through the messages, good reminder and some things you miss when you just read them quickly on the go.	6.1 Demonstration of the behaviour	Adjuvant behaviours, Motivation, Self-regulation, Maintenance	Self-regulation
5	Weekend coming up, finally! Remember Gavin's tip: the power of meal prep. Helps you stay ahead. Time for another batch prep session?	1.2 Problem solving	Adjuvant behaviours, Self-regulation	Self-regulation (planning)
6	Think back to 9 months ago <name>? How happy are you with the things you have achieved?	1.7 Review outcome goal(s), 15.3. Focus on past success	Engagement, Maintenance	Maintenance Motives
7	Tim says he feels like a different person now after 9 months. He cares about food, loves his walking. A year ago, he was a totally different Tim.	13.4. Valued self-identify	Maintenance	Maintenance Motives, Maintenance mindset

eTable 2. Texts sent to participants in texts within incentive group following weight measurements

Time point	Target met?	Message Template ^a
3 months	Target met	Thanks for attending the weigh-in. You lost {0} ^a kg ({1} st {2} lbs) or {3}% of your starting weight. You met the 5% target and secured £50. Congratulations! You can secure another £350 at the later weigh-ins
3 months	Target not met, but weight < baseline	Thanks for attending the weigh-in. You lost {0} kg ({1} st {2} lbs), or {3}% of your starting weight. You did not meet 5% target. You have lost £50, but still have the chance to get £350 at the later weigh-ins
3 months	Target not met, weight equal to baseline	Thanks for attending the weigh-in. Your weight did not change from your starting weight. You did not meet 5% target. You have lost £50, but still have the chance to get £350 at the later weigh-ins
3 months	Target not met, weight > baseline	Thanks for attending the weigh-in. You gained {0} kg ({1} st {2} lbs), or {3}% of your starting weight. You did not meet 5% target. You have lost £50, but still have the chance to get £350 at the later weigh-ins
3 months	Weight not taken within 23 day time window and/or on research scales	Unfortunately, as discussed, your weight did not qualify for an incentive. All weights matter to us and contribute to our research. You have lost £50, but still have the chance to get £350 at the later weigh-ins
6 months	Target met	Thanks for attending the weigh-in. You lost {0} kg ({1} st {2} lbs) or {3}% of your starting weight. You met the 10% target and secured £150. Congratulations! You can secure another £200 at the later weigh-ins
6 months	Target not met, weight loss <5% from baseline	Thanks for attending the weigh-in. You lost {0} kg ({1} st {2} lbs), or {3}% of your starting weight. You did not meet the minimum 5% target. You lost £150, but still have the chance to get £200 at the later weigh-ins
6 months	Target not met, - weight loss between 5-10% from baseline	Thanks for attending the weigh-in. You lost {0} kg ({1} st {2} lbs), or {3}% of your starting weight. You have secured £{4} and lost £{5}. You can secure another £200 at the later weigh-ins
6 months	Target not met, weight equal to baseline	Thanks for attending the weigh-in. Your weight did not change from your starting weight. You did not meet the 10% target and lost less than 5%. You lost £150, but still have the chance to get £200 at the later weigh-ins
6 months	Target not met, weight > baseline	Thanks for attending the weigh-in. You gained {0} kg ({1} st {2} lbs), or {3}% of your starting weight. You did not meet the minimum 5% target. You lost £150, but still have the chance to get £200 at the later weigh-ins
6 months	Weight not taken within 23 day time window and/or on research scales	Unfortunately, as discussed, your weight did not qualify for an incentive. All weights matter to us and contribute to our research. Look forward to seeing you in 12 months time. You lost £150, but still have the chance to get £200 at the later weigh-ins
12 months	Target met	Thanks for attending the weigh-in. You lost {0} kg ({1} st {2} lbs) or {3}% of your starting weight. You met the 10% target and secured £200. Congratulations! Your total Game of Stones payment is £{3m+6m+12m} Look forward to seeing you in 12 months time
12 months	Target not met, weight loss <5% from baseline	Thanks for attending the weigh-in. You lost {0} kg ({1} st {2} lbs), or {3}% of your starting weight. You did not meet the minimum 5% target. You lost £200. Your total Game of Stones payment is £{3m+6m+12m} Look forward to seeing you in 12 months time.
12 months	Target not met, - weight loss between 5-10% from baseline	Thanks for attending the weigh-in. You lost {0} kg ({1} st {2} lbs), or {3}% of your starting weight. You have secured £{4} and lost £{5}. Well done! Your total Game of Stones payment is £{3m+6m+12m} Look forward to seeing you in 12 months time
12 months	Target not met, weight equal to baseline	Thanks for attending the weigh-in. Your weight did not change from your starting weight. You did not meet the 10% target and lost less

		than 5%. You lost £200. Your total Game of Stones payment is £{3m+6m+12m}
12 months	Target not met, weight > baseline	Thanks for attending the weigh-in. You gained {0} kg ({1} st {2} lbs), or {3}% of your starting weight. You did not meet the minimum 5% target. You lost £200. Unfortunately you therefore do not receive any money. Look forward to seeing you in 12 months time.
12 months	Weight not taken within 23 day time window and/or on research scales	Unfortunately, as discussed, your weight did not qualify for an incentive. All weights matter to us and contribute to our research. Look forward to seeing you in 12 months time.

^a{..} represents the automated algorithm used to calculate the participant weight change from baseline in kg or stones and pounds (participant preference); and whether the 5% and 10% weight loss targets were met.

eTable 3. Weight assessment methods for men retained in the trial at 12 months

	Texts with incentives (N=146)	Texts only (N=128)	Waiting list (N=152)	Total (N=426)
Weight assessment face to face with a researcher on Game of Stones study scales within 23 days of target date	136 (93.2)	118 (92.2)	142 (93.4)	396 (93.0)
Weight assessment in person on Game of Stones study scales outside 23 days of target date	5 (3.4)	2 (1.6)	3 (2.0)	10 (2.3)
Researcher blind to group allocation	141 (96.6)	120 (93.8)	141 (92.8)	402 (94.4)
Weighed on Game of Stones scales by video call with a researcher within 23 days of target date	1 (0.7)	-	-	1 (0.2)
Self-report weight within 23 days of target date	1 (0.7)	2 (1.6)	3 (2.0)	6 (1.4)
Self-report weight outside 23 days of target date	3 (2.1)	6 (4.7)	4 (2.6)	13 (3.1)

eTable 4. Weight loss targets met by intervention groups between baseline and 12 months

Trial group	3 months.		6 months		12 months	
	Texts with incentives	Texts only	Texts with incentives	Texts only	Texts with incentives	Texts only
	N=196	N=194	N=196	N=194	N=196	N=194
<5%	87 (44.4)	82 (42.3)	48 (24.5)	55 (28.4)	49 (25.0)	54 (27.8)
≥5->6%	17 (8.7)	8 (4.1)	10 (5.1)	4 (2.1)	7 (3.6)	11 (5.7)
≥6->7%	21 (10.7)	3 (1.6)	8 (4.1)	7 (3.6)	5 (2.6)	3 (1.6)
≥7->8%	4 (2.0)	3 (1.6)	4 (2.0)	2 (1.0)	2 (1.0)	5 (2.6)
≥8->9%	6 (3.1)	1 (0.5)	6 (3.1)	4 (2.1)	6 (3.1)	2 (1.0)
≥9->10%	7 (3.6)	3 (1.6)	7 (3.6)	4 (2.1)	5 (2.6)	3 (1.6)
≥10%	5 (2.6)	6 (3.1)	39 (19.9)	10 (5.2)	40 (20.4)	8 (4.1)
Weight gain from baseline	23 (11.7)	30 (15.5)	18 (9.2)	35 (18.0)	32 (16.3)	42 (21.7)
Lost to follow-up	26 (13.3)	58 (29.9)	56 (28.6)	73 (37.6)	50 (25.5)	66 (34.0)

eTable 5. Reasons for declining follow-up.

	Texts with incentives (N=196)	Texts only (N=194)	Waiting list (N=195)
Death	-	-	1 (0.5)
Disappointed with lack of weight loss	-	1 (0.5)	-
Health and wellbeing reasons	3 (1.5)	1 (0.5)	2 (1.0)
Moved away from the area	1 (0.5)	-	1 (0.5)
No longer interested in taking part	-	-	3 (1.5)
Personal reasons (undisclosed)	3 (1.5)	2 (1.0)	-
Program or allocated group not suitable	3 (1.5)	7 (3.6)	2 (1.0)
Safeguarding issue	1 (0.5)	-	-
Work or other commitments	2 (1.0)	3 (1.6)	1 (0.5)
No reason given	10 (5.1)	15 (7.8)	4 (2.1)
Total number declining	23 (11.7)	29 (14.9)	14 (7.2)

eTable 6. Baseline characteristics by treatment allocation

	Texts with incentives (N=196)	Texts only (N=194)	Waiting list (N=195)
Age^a (yrs) - mean (SD); n	50.0 (12.7); 195	51.7 (13.3); 194	50.2 (13.9); 195
≥18-<25	2 (1.0)	1 (0.5)	3 (1.5)
≥25-<45	64 (33)	59 (30)	70 (36)
≥45-<65	104 (53)	99 (51)	90 (46)
≥65-<75	21 (11)	27 (14)	25 (13)
≥75	4 (2.1)	8 (4.1)	7 (3.6)
Deprivation Category - n (%)	N = 195	N = 192	N = 194
Most deprived	48 (25)	36 (19)	50 (26)
More deprived	28 (14)	37 (19)	28 (14)
Deprived	25 (13)	33 (17)	29 (15)
Less deprived	39 (20)	40 (21)	31 (16)
Least deprived	55 (28)	46 (24)	56 (29)
Ethnic Group^a - n (%)	N = 190	N = 186	N = 188
Asian/ Asian British	2 (1.1)	3 (1.6)	6 (3.2)
Black/ African/ Caribbean/ Black British	3 (1.6)	3 (1.6)	3 (1.6)
Mixed/ multiple ethnic groups	2 (1.1)	-	4 (2.1)
Other	3 (1.6)	3 (1.6)	2 (1.1)
Prefer not to say	1 (0.5)	3 (1.6)	1 (0.5)
White	179 (94)	174 (94)	172 (92)
Relationship status^a - n (%)	N = 193	N = 191	N = 190
Married / civil partnership	126 (64)	116 (60)	113 (56)
Co-habiting	25 (13)	34 (18)	37 (19)
Single (never married; never in a civil partnership)	30 (16)	19 (9.8)	27 (14)
Divorced	5 (2.6)	8 (4.1)	6 (3.1)
Separated	5 (2.6)	6 (3.1)	3 (1.5)
Widowed	-	3 (1.5)	3 (1.5)
Prefer not to say	2 (1.0)	5 (2.6)	1 (0.5)
Comorbidities^a - n (%)	N = 196	N = 193	N = 194
High Blood Pressure	93 (47)	83 (43)	86 (44)
Mental health condition	51 (26)	46 (24)	49 (25)
Arthritis	40 (20)	55 (28)	47 (24)
Possible Latent Mental Health Condition	50 (26)	48 (25)	44 (23)
Diabetes	37 (19)	38 (20)	29 (15)
Heart condition such as angina or atrial fibrillation	29 (15)	34 (18)	28 (14)
Stroke (including mini stroke)	9 (4.6)	3 (1.5)	8 (4.1)
Cancer	6 (3.1)	8 (4.1)	5 (2.6)
One or more co-morbidity	136 (69)	136 (70)	144 (74)

	Texts with incentives (N=196)	Texts only (N=194)	Waiting list (N=195)
Multiple Long-Term Conditions (MLTC)	82 (42)	82 (42)	71 (36)
MLTC including self-reported diabetes	33 (17)	34 (18)	23 (12)
Physical or Mental Disability^a	N = 193	N = 193	N = 192
Disability - n (%)	60 (31)	47 (24)	58 (30)
Perceived wealth^a - mean (SD); n			
Perceives to live in relatively wealthy neighbourhood (0-100, Strongly disagree)	56.1 (27.7); 191	54.8 (28.1); 177	55.4 (28.3); 182
Feels relatively wealthy compared to others (0-100, Strongly disagree)	54.1 (23.4); 191	51.1 (25.3); 174	53.6 (24.2); 179
Feels like they have enough money (0-100, Strongly disagree)	53.3 (28.5); 191	55.0 (29.4); 171	55.6 (27.4); 180
Financial Strain^a - n (%)	N = 194	N = 188	N = 190
Living comfortably	63 (32)	58 (31)	58 (31)
Doing alright	84 (43)	71 (38)	80 (42)
Just about getting by	25 (13)	39 (21)	34 (18)
Finding it quite difficult	13 (6.7)	10 (5.3)	12 (6.3)
Finding it very difficult	7 (3.6)	5 (2.7)	4 (2.1)
Prefer not to say	2 (1.0)	5 (2.7)	2 (1.1)
Household composition^a - n (%)	N = 196	N = 193	N = 195
Lives alone	25 (13)	21 (11)	22 (11)
Lives with partner	146 (75)	151 (78)	150 (77)
Lives with child/children	93 (47)	80 (41)	71 (36)
Lives with parents	13 (6.6)	7 (3.6)	17 (8.7)
Lives with friends	2 (1.0)	3 (1.5)	1 (0.5)
Other	9 (4.6)	4 (2.1)	2 (1.0)
Household size - mean (SD); n	2.8 (1.3); 192	2.7 (1.3); 190	2.6 (1.1); 187
Highest educational qualification^a - n (%)	N = 182	N = 166	N = 174
Degree level or above	92 (51)	71 (43)	86 (49)
Another kind of qualification	90 (49)	95 (57)	88 (51)
Employment Status^a - n (%)	N = 192	N = 186	N = 190
Paid job - Full time (30+ hours per week)	120 (63)	100 (54)	114 (60)
Paid job - Part time (8-29 hours per week)	9 (4.7)	13 (6.9)	11 (5.8)
Paid job - Part time (Under 8 hours per week)	1 (0.5)	2 (1.1)	-
Self-employed	14 (7.3)	21 (11)	13 (6.8)
Full time student	2 (1.0)	2 (1.1)	1 (0.5)
Unemployed and seeking work	2 (1.0)	3 (1.6)	4 (2.1)
Retired	26 (14)	35 (19)	37 (20)
Not in paid work due to illness or disability	11 (5.7)	10 (5.4)	8 (4.2)
Not in paid work for other reason	-	-	1 (0.5)
Other	6 (3.1)	-	1 (0.5)
Prefer not to say	1 (0.5)	-	-

	Texts with incentives (N=196)	Texts only (N=194)	Waiting list (N=195)
Access to self-monitoring equipment^a - n (%)	N = 195	N = 191	N = 193
Owns scales for self-weighing	166 (85)	156 (82)	165 (85)
Scales link to internet/app	29 (15)	16 (8.4)	31 (16)
Owns an activity tracker/pedometer	101 (52)	96 (50)	120 (62)
Highest weight (kg) - mean (SD); n	126.0 (21.8); 190	123.6 (20.8); 185	124.0 (23.9); 191
Lowest weight (kg) - mean (SD); n	91.4 (18.8); 185	89.7 (15.9); 184	90.2 (17.5); 189
Intended weight loss in study (kg) - mean (SD); n	23.7 (16.1); 189	23.4 (15.5); 185	21.7 (14.0); 188
Weight loss attempts - median (P25, P75); n	6.0 (3.0-10.0); 188	5.0 (3.0-10.0); 187	5.0 (3.0-10.0); 192
Measured weight and height	N = 196	N = 194	N = 195
Weight (kg) - mean (SD)	120.3 (20.1)	117.2 (17.9)	118.1 (21.6)
Height (cm) - mean (SD)	177.5 (7.1)	177.1 (6.9)	176.8 (7.7)
BMI (kg/m ²) - mean (SD)	38.2 (5.9)	37.3 (4.7)	37.8 (6.4)
≥30-<35; n (%)	66 (34)	73 (38)	82 (42)
≥35-<40; n (%)	73 (37)	69 (36)	63 (32)
≥40; n (%)	57 (29)	52 (27)	50 (26)

^aSelf-report

eTable 7. Baseline characteristics by recruitment strategy

	General practice (N=217)	Community (N=368)	Total (N=585)
Age^a (yrs) - mean (SD); n	55.8 (13.4); 217	47.6 (12.3); 367	50.7 (13.3); 584
≥18-<25	2 (0.9)	4 (1.1)	6 (1.0)
≥25-<45	47 (22)	146 (40)	193 (33)
≥45-<65	106 (49)	187 (51)	293 (50)
≥65-<75	46 (21)	27 (7.3)	73 (13)
≥75	16 (7.4)	3 (0.8)	19 (3.2)
Deprivation Category - n (%)	N = 216	N = 365	N = 581
Most deprived	50 (23)	84 (23)	134 (23)
More deprived	36 (17)	57 (16)	93 (16)
Deprived	26 (12)	61 (17)	87 (15)
Less deprived	38 (18)	72 (20)	110 (19)
Least deprived	66 (31)	91 (25)	157 (27)
Ethnic Group^a - n (%)	N = 206	N = 358	N = 564
Asian/ Asian British	3 (1.5)	8 (2.2)	11 (1.9)
Black/ African/ Caribbean/ Black British	5 (2.4)	4 (1.1)	9 (1.6)
Mixed/ multiple ethnic groups	-	6 (1.7)	6 (1.1)
Other	4 (1.9)	4 (1.1)	8 (1.4)

	General practice (N=217)	Community (N=368)	Total (N=585)
Prefer not to say	3 (1.5)	2 (0.6)	5 (0.9)
White	191 (93)	334 (93)	525 (93)
Relationship status - n (%)	N = 213	N = 361	N = 574
Married / civil partnership	140 (66)	215 (60)	355 (62)
Co-habiting	29 (14)	67 (19)	96 (17)
Single (never married; never in a civil partnership)	21 (9.9)	55 (15)	76 (13)
Divorced	9 (4.2)	10 (2.8)	19 (3.3)
Separated	4 (1.9)	10 (2.8)	14 (2.4)
Widowed	5 (2.3)	1 (0.3)	6 (1.0)
Prefer not to say	5 (2.3)	3 (0.8)	8 (1.4)
Comorbidities^a - n (%)	N = 217	N = 367	N = 584
High Blood Pressure	119 (55)	143 (39)	262 (45)
Mental health condition	44 (20)	102 (28)	146 (25)
Arthritis	71 (33)	71 (19)	142 (24)
Possible Latent Mental Health Condition	54 (25)	88 (24)	142 (24)
Diabetes	55 (25)	49 (13)	104 (18)
Heart condition such as angina or atrial fibrillation	48 (22)	43 (12)	91 (16)
Stroke (including mini stroke)	14 (6.5)	6 (1.6)	20 (3.4)
Cancer	8 (3.7)	11 (3.0)	19 (3.2)
One or more co-morbidity	171 (79)	245 (67)	416 (71)
Multiple Long-Term Conditions (MLTC)	109 (50)	126 (34)	235 (40)
MLTC including self-reported diabetes	49 (23)	41 (11)	90 (15)
Physical or Mental Disability^a	N = 214	N = 364	N = 578
Disability - n (%)	59 (28)	106 (29)	165 (29)
Perceived wealth^a - mean (SD); n			
Perceives to live in relatively wealthy neighbourhood (0-100, Strongly disagree)	55.6 (27.8); 199	55.4 (28.2); 351	55.4 (28.0); 550
Feels relatively wealthy compared to others (0-100, Strongly disagree)	51.5 (24.4); 195	53.8 (24.3); 349	53.0 (24.3); 544
Feels like they have enough money (0-100, Strongly disagree)	53.7 (28.6); 195	55.1 (28.3); 347	54.6 (28.4); 542
Financial Strain^a - n (%)	N = 211	N = 361	N = 572
Living comfortably	64 (30)	115 (32)	179 (31)
Doing alright	93 (44)	142 (39)	235 (41)
Just about getting by	32 (15)	66 (18)	98 (17)
Finding it quite difficult	13 (6.2)	22 (6.1)	35 (6.1)
Finding it very difficult	5 (2.4)	11 (3.0)	16 (2.8)
Prefer not to say	4 (1.9)	5 (1.4)	9 (1.6)
Household composition - n (%)	N = 217	N = 367	N = 584
Lives alone	20 (9.2)	48 (13)	68 (12)

	General practice (N=217)	Community (N=368)	Total (N=585)
Lives with partner	171 (79)	276 (75)	447 (77)
Lives with child/children	91 (42)	153 (42)	244 (42)
Lives with parents	13 (6.0)	24 (6.5)	37 (6.3)
Lives with friends	1 (0.5)	5 (1.4)	6 (1.0)
Other	9 (4.1)	6 (1.6)	15 (2.6)
Household size - mean (SD); n	2.7 (1.2); 209	2.7 (1.2); 360	2.7 (1.2); 569
Highest educational qualification^a - n (%)	N = 177	N = 345	N = 522
Degree level or above	66 (37)	183 (53)	249 (48)
Another kind of qualification	111 (63)	162 (47)	273 (52)
Employment Status^a - n (%)	N = 209	N = 359	N = 568
Paid job - Full time (30+ hours per week)	96 (46)	238 (66)	334 (59)
Paid job - Part time (8-29 hours per week)	14 (6.7)	19 (5.3)	33 (5.8)
Paid job - Part time (Under 8 hours per week)	3 (1.4)	-	3 (0.5)
Self-employed	22 (11)	26 (7.2)	48 (8.4)
Full time student	-	5 (1.4)	5 (0.9)
Unemployed and seeking work	2 (0.9)	7 (1.9)	9 (1.6)
Retired	53 (25)	45 (13)	98 (17)
Not in paid work due to illness or disability	13 (6.2)	16 (4.4)	29 (5.1)
Not in paid work for other reason	1 (0.5)	-	1 (0.2)
Other	4 (1.9)	3 (0.8)	7 (1.2)
Prefer not to say	1 (0.5)	-	1 (0.2)
Access to self-monitoring equipment^a - n (%)	N = 215	N = 365	N = 580
Owns scales for self-weighing	173 (81)	303 (83)	476 (82)
Scales link to internet/app	20 (9.3)	56 (15)	76 (13)
Owns an activity tracker/pedometer	85 (40)	232 (64)	317 (55)
Highest weight (kg) - mean (SD); n	123.3 (20.7); 206	125.3 (23.0); 360	124.6 (22.2); 566
Lowest weight (kg) - mean (SD); n	90.0 (16.0); 202	90.6 (18.2); 356	90.4 (17.4); 558
Intended weight loss in study (kg) - mean (SD); n	22.8 (16.9); 208	23.0 (14.2); 354	22.9 (15.2); 562
Weight loss attempts - median (P25, P75); n	5.0 (3.0-10.0); 207	6.0 (4.0-10.0); 360	6 (3-10); 567
Measured weight and height	N = 217	N = 368	N = 585
Weight (kg) - mean (SD)	116.8 (18.2)	119.6 (20.8)	118.5 (19.9)
Height (cm) - mean (SD)	177.0 (7.0)	177.2 (7.4)	177.2 (7.2)
BMI (kg/m ²) - mean (SD)	37.3 (5.3)	38.0 (5.9)	37.7 (5.7)
≥30-<35; n (%)	91 (42)	130 (35)	221 (38)
≥35-<40; n (%)	72 (33)	133 (36)	205 (35)
≥40; n (%)	54 (25)	105 (29)	159 (27)

^a Self-report

eTable 8. Text messages delivered and replied to by intervention group participants

	Texts with incentives N = 196	Texts only N = 194	Total N = 390
Texts sent - mean (SD)	332.4 (80.9)	317.3 (100.8)	324.9 (91.6)
Replying to texts, n (%)			
0 replies to texts	54 (27.6)	61 (31.4)	115 (29.5)
1-5 replies to texts	77 (39.3)	90 (46.4)	167 (42.8)
6-10 replies to texts	19 (9.7)	18 (9.3)	37 (9.5)
11-15 replies to texts	8 (4.1)	13 (6.7)	21 (5.4)
16-20 replies texts	10 (5.1)	. (.)	10 (2.6)
>20 replies to texts	28 (14.3)	12 (6.2)	40 (10.3)
Number of replies to texts, mean (SD); n	8.8 (18.9)	8.6 (33.8)	8.7 (27.3)
Stopping texts, n (%)	30 (15.3)	40 (20.6)	70 (17.9)

eTable 9. Post-randomization website engagement by all trial participants over 12 months

		Texts with incentives N=196	Texts-only N=194	Waiting list N=195
Participants logging on to participant webpages	n (%)	147 (75.0)	131 (67.5)	88 (45.1)
Number of logs per participant	Mean (SD)	14.4 (41.7),	12.3 (68.2),	2.1 (2.2)
	Median (quartile1 – quartile 3)	4 (2-9)	3 (1-7)	1 (1-2)

eTable 10. Intervention group engagement with website self-monitoring and local resources webpage over 12 months

	Texts with incentives N=196	Texts only N=194	Total N=390
Participants recording weight n (%)	26 (13.3)	19 (9.8)	45 (11.5)
Participants recording steps n (%)	17 (8.7)	12 (6.2)	29 (7.4)
Participants recording motivating pictures n (%)	4 (2.0)	. (.)	4 (1.0)
Participants recording in diary n (%)	16 (8.2)	7 (3.6)	23 (5.9)
Number of participants self-monitoring n (%)	29 (14.8)	21 (10.8)	50 (12.8)
Used no self-monitoring feature n (%)	167 (85.2)	173 (89.2)	340 (87.2)
Used one self-monitoring feature n (%)	9 (4.6)	9 (4.6)	18 (4.6)
Used two self-monitoring features n (%)	8 (4.1)	7 (3.7)	15 (3.9)
Used three self-monitoring features n (%)	10 (5.1)	5 (2.6)	15 (3.9)
Used four self-monitoring features n (%)	2 (1.0)	. (.)	2 (0.5)
Number of times participants recorded weight n (%)	13.0 (29.2), 29	4.5 (5.6), 21	9.5 (22.8), 50
Number of times participants recorded steps n (%)	14.2 (30.8), 29	22.1 (68.0), 21	17.5 (49.4), 50
Number of times participants recorded motivating pictures n (%)	0.6 (2.6), 29	0 (0), 21	0.3 (2.0), 50
Number of times participants recorded in diary n (%)	1.7 (2.4), 29	0.8 (1.4), 21	1.3 (2.1), 50
Number of participants using local resource pages; n (%)			
Did not use	152 (77.6)	165 (85.1)	317 (81.3)
Used once	28 (14.3)	18 (9.3)	46 (11.8)
Used two times or more	16 (8.2)	11 (5.7)	27 (6.9)
Number of participants using main resource page; n (%)			
Did not use	159 (81.1)	160 (82.5)	319 (81.8)
Used once	22 (11.2)	23 (11.9)	45 (11.5)
Used two times or more	15 (7.7)	11 (5.7)	26 (6.7)

eTable 11. Primary outcome: percentage weight change at 12 months from baseline

	Texts with incentives			Texts only			Control			Difference in mean change from baseline: Incentives v control (97.5% CI)	p-value	Difference in mean change from baseline: texts v control (97.5% CI)	p-value
	Baseline Weight kg	12 Month Weight kg	% Change	Baseline Weight kg	12 Month Weight kg	% Change	Baseline Weight kg	12 Month Weight kg	% Change				
12m weight % loss	120.3 (20.1); [196]	114.4 (21.0); [146]	-4.8 (6.1); [146]	117.2 (17.9); [194]	112.9 (18.6); [128]	-2.7 (6.3); [128]	118.1 (21.6); [195]	113.6 (20.9); [152]	-1.3 (5.5); [152]	-3.5 ^a (-5.1, -2.0)	<0.001	-1.5 ^a (-3.1, 0.1)	0.040
										-3.2 ^b (-4.6, -1.9)	<0.001	-1.4 ^b (-2.9, 0.0);	0.053

Cells are mean (SD) [N]. ^a Estimate from linear regression model adjusting for area and method of recruitment and using all observed outcome data. ^b Estimate from linear regression model adjusting for area and recruitment strategy and using multiple imputation, the auxiliary model used baseline weight, method of recruitment, deprivation, area, height and age to impute missing weights, imputed separately by treatment arm.

eTable 12. Weight change in kilograms at 12 months from baseline

Variable - mean (SD); n	Texts with incentives (N=196)	Texts only (N=194)	Waiting list control (N=195)
Baseline Weight (kg)	120.3 (20.1); 196	117.2 (17.9); 194	118.1 (21.6); 195
Weight Change (kg)	-5.7 (7.4); 146	-3.0 (7.5); 128	-1.5 (6.5); 152
Mean difference versus control (97.5% CI) ^a	-4.1 (-6.0, -2.3)	-1.6 (-3.5, 0.4)	

^aAll observed cases.

eTable 13. Weight change at 3 months and 6 months from baseline for intervention groups

Variables - mean (SD); n	Texts with incentive 3 months (N=196)	Texts only 3 months (N=194)	Texts with incentive 6 months (N=196)	Texts only 6 months (N=194)
Weight change (%) - mean (SD), n	-3.8 (3.3); 170	-2.5 (3.6); 136	-5.8 (5.1); 140	-3.4 (5.8); 121
Weight change (kg) - mean (SD), n	-4.5 (4.0); 170	-2.9 (4.4); 136	-6.8 (6.1); 140	-4.0 (7.2); 121

eTable 14: Secondary outcomes by trial group

Variables - mean (SD); n	Baseline			12 Months			Texts with Incentive vs Control Mean Difference / Odds Ratio (97.5% CI)	Texts only vs Control Mean Difference / Odds Ratio (97.5% CI)
	Texts with incentives (N=196)	Texts only (N=194)	Waiting list	Texts with incentives (N=196)	Texts only (N=194)	Waiting list		
WEMWBS ^a	46.9 (9.3); 192	46.7 (9.1); 191	46.9 (8.1); 192	49.1 (9.8); 143	47.2 (9.3); 125	47.2 (9.8); 151	1.85 (-0.15, 3.86)	-0.31 (-2.38, 1.76)
PHQ4 ^b	2.3 (2.5); 140	2.6 (2.7); 140	2.1 (2.3); 142	2.2 (2.8); 140	2.5 (2.8); 121	2.2 (2.5); 149	0.02 (-0.64, 0.67)	0.49 (-0.18, 1.17)
WSSQ ^c	35.7 (8.6); 193	34.9 (8.7); 192	35.5 (8.2); 191	34.1 (8.4); 142	33.1 (8.8); 127	34.8 (8.1); 152	-1.23 (-2.84, 0.38)	-0.43 (-2.08, 1.22)
EQ5D ^d	0.726 (0.229); 194	0.741 (0.230); 192	0.721 (0.207); 191	0.762 (0.240); 143	0.719 (0.258); 127	0.769 (0.192); 149	0.00 (-0.04, 0.04)	-0.05 (-0.09, 0.01)
EQ5DVAS ^e	61.6 (18.7); 194	62.9 (19.0); 186	62.3 (19.0); 193	69.9 (17.6); 142	68.8 (19.7); 121	65.7 (16.6); 148	5.00 (0.76, 9.25)	3.71 (-0.75, 8.16)
EQ5D_AD ^f	1.8 (1.0); 194	1.8 (0.9); 193	1.9 (1.0); 194	1.8 (1.0); 144	1.8 (1.0); 128	1.8 (0.9); 150	0.96 (0.56, 1.67)	1.16 (0.67, 2.01)

a Warwick-Edinburgh Mental Well-Being Score (14-70): Linear Regression b Patient Health Questionnaire (0-12): Linear regression c Weight Self-Stigma Questionnaire (12-60): Linear regression dEuroQol-5 Dimension (-0.594 – 1): Linear regression e EuroQol-5 Dimension Visual Analog Score (0-100): Linear regression f EuroQol-5 Anxiety/Depression Dimension (1-5): Ordinal logistic regression

eTable 15. Participant satisfaction with the Game of Stones trial and with weight loss progress at 12 months

Variable - mean (SD); n	Texts with incentives (N=196)	Texts only (N=194)	Waiting list (N=195)	Texts with incentives vs Waiting list Effect size (97.5% CI); p-value	Texts only vs Waiting list Effect size (97.5% CI); p-value
Programme satisfaction (Visual analogue scale: 0 is not satisfied at all; 100 is completely satisfied) ^a	84.8 (22.6); 133	76.6 (26.0); 113	66.4 (29.3); 136	18.6 (11.4, 25.8); <0.001	10.3 (2.7, 17.8); 0.002
Happy with weight loss progress Categories 1 (very unhappy) -7 (very happy) ^b	4.1 (1.9); 145	3.9 (1.6); 128	3.6 (1.5); 151	1.7 (1.0, 2.6); 0.017	1.3 (0.8, 2.1); 0.179

^aeffect size is mean difference from a linear regression; ^beffect size is an odds ration from an ordered categories logistic regression.

eTable 16. Sensitivity analyses for the primary outcome

Variable - mean (SD); n	Texts with incentives	Texts only	Waiting list
Baseline Weight kg	120.3 (20.1); 196	117.2 (17.9); 194	118.1 (21.6); 195
Percentage Change (strict weight assessment protocol ^a)	-5.0 (6.2); 137	-2.8 (6.4); 118	-1.4 (5.5); 142
Mean difference versus control (97.5% CI); p-value ^b	-3.6 (-5.2, -2.0); <0.001	-1.5 (-3.2, 0.2); 0.053	
Mean difference versus control (97.5% CI); p-value ^c	-3.2 (-4.7, -1.7); <0.001	-1.2 (-2.9, 0.4); 0.149	
Percentage Change (baseline observation carried forward ^d)	-3.6 (5.7); 196	-1.8 (5.3); 194	-1.0 (4.8); 195
Mean difference versus control (97.5% CI); p-value ^b	-2.6 (-3.8, -1.4); <0.001	-0.8 (-2.0, 0.4); 0.140	
Percentage Change (last observation carried forward ^e)	-3.8 (5.7); 196	-2.0 (5.3); 194	-1.0 (4.8); 195
Mean difference versus control (97.5% CI); p-value ^b	-2.8 (-4.0, -1.6); <0.001	-1.0 (-2.2, 0.2); 0.062	

^a Strict weight assessment protocol was weight taken within 23 days of the target date and on study scales (in person or by video) ^b All observed cases. ^c Multiple imputation. ^d Baseline observation carried forward applies to all three trial groups. ^e Last observation carried forward will be either baseline, 3 m or 6m weight for the two intervention groups. For the control group last observation carried forward will be the baseline weight

eTable 17. Use of publicly funded weight loss services, weight loss medications or meal replacements in previous 12 months

	N= total observed; n= number of cases	Texts with incentives (N=196)	Texts only (N=194)	Waiting list (N=195)
Attended a subsidised (e.g. vouchers) or paid for group-based programme such as Weight Watchers or Slimming World or similar meetings	N, n, (%)	147, 6, (4.1)	129, 5, (3.9)	151, 10, (6.6)
Attended a subsidised or paid for gym, leisure centre or local sport facility to swim or take part in other physical activity sessions?	N, n, (%)	145, 25, (17.2)	128, 33, (25.8)	149, 32, (21.5)
Attended a subsidised or paid for health trainer programme	N, n, (%)	145, 6, (4.1)	127, 6, (4.7)	150, 8, (5.3)
Attended a subsidised or paid for exercise referral scheme	N, n, (%)	145, 2, (1.4)	128, 0, (0)	149, 3, (2.0)
Attended a subsidised or paid for weight management programme at a Community Pharmacy	N, n, (%)	145, 4, (2.8)	128, 0, (0)	152, 0, (0)
Have taken weight loss pills prescribed by the GP or hospital prescribed	N, n, (%)	145, 0, (0)	128, 2, (1.6)	150, 4, (2.7)
Have had <u>daily</u> weight loss injections prescribed by the GP or hospital prescribed	N, n, (%)	145, 0, (0)	127, 0, (0)	152, 0, (0)
Have had <u>weekly</u> weight loss injections prescribed by the GP or hospital prescribed	N, n, (%)	144, 0, (0)	128, 5, (3.9)	152, 1, (0.7)
Have taken meal replacement drinks for weight loss prescribed by the GP or hospital prescribed where the NHS has paid for them (e.g. Optifast, Slim-Fast, The Cambridge Diet)	N, n, (%)	144, 2, (1.4)	129, 3, (2.3)	151, 2, (1.3)
Attended an appointment with an NHS dietician for weight management	N, n, (%)	144, 5, (3.5)	128, 2, (1.6)	149, 4, (2.7)
Any of these	N, n, (%)	145, 35, (24.1)	128, 44, (34.4)	153, 49, (32.0)
In the last 12 months I have paid for the following myself:				
		Texts with incentives	Texts only	Waiting list
Weight loss pills	N, n, (%)	144, 6, (4.2)	128, 3, (2.3)	153, 3, (1.9)
Daily weight loss injections	N, n, (%)	142, 1, (0.7)	128, 0, (0)	153, 2, (1.3)
Weekly weight loss injections	N, n, (%)	142, 0, (0)	127, 2, (1.6)	153, 0, (0)
Meal replacement drinks e.g. Optifast, Slim-Fast, The Cambridge Diet	N, n, (%)	143, 16, (11.2)	128, 10, (7.8)	153, 7, (4.6)

eTable 18. Sensitivity analyses for participants not taking weight loss medications or meal replacements

Variable - mean (SD); n	Texts with incentives (N=196)	Texts only (N=194)	Waiting list (N=195)	Texts with incentives vs Waiting list Mean difference (97.5% CI); p-value	Texts only vs Waiting list Mean difference (97.5% CI); p-value
Baseline Weight	120.3 (20.1); 196	117.2 (17.9); 194	118.1 (21.6); 195	.	.
12 Month Weight	113.6 (20.2); 128	111.7 (18.1); 109	112.1 (18.2); 138		
Percentage Change	-4.9 (6.2); 128	-2.8 (6.4); 109	-1.2 (5.5); 138	-3.6 (-5.3, -2.0); <0.001	-1.6 (-3.4, 0.1); 0.037
Multiple Imputation	.	.	.	-2.7 (-4.2, -1.1); 0.001	-1.1 (-2.7, 0.5); 0.188

eTable 19. Harms reported by participants since last seen

Assessment time point - n	Texts with incentives N= 196		Texts only N= 194		Waiting list N= 195	
	Serious adverse events	Harms	Serious adverse events	Harms	Serious adverse events	Harms
3 months	4	30	1	32	N/A	N/A
6 months	3	35	1	34	N/A	N/A
12 months	5	49	3	41	6	45

N= those randomized to each group, n=participants reporting at least one SAE or harm.

eTable 20. Participants reporting harms at one or more time point.

	Texts with incentives N= 196	Texts only N= 194	Waiting list N= 195
Reported either a serious adverse event or a harm at only one time point-n	94	77	49
Reported either a serious adverse event or a harm at two time points-n	25	28	N/A
Reported either a serious adverse event or a harm at three time points-n	4	4	N/A

n=participants reporting at least one SAE or harm.

eTable 21. MedDRA System Organ Classification of harms

3-month assessment						
MedDRA System Organ Classification	Texts with incentives N= 196		Texts only N= 194		Waiting list N= 195	
	Serious Adverse Events	Harms	Serious Adverse Events	Harms	Serious Adverse Events	Harms
					N/A	N/A
Blood and lymphatic system disorders	-	-	-	1	-	-
Cardiac disorders	-	-	-	1	-	-
Ear and labyrinth disorders	-	-	-	1	-	-
Endocrine disorders	-	1	-	1	-	-
Eye disorders	-	-	-	-	-	-
Gastrointestinal disorders	-	2	-	1	-	-
General disorders and administration site conditions	-	2	-	1	-	-
Hepatobiliary disorders	1	1	-	-	-	-
Immune system disorders	-	-	-	-	-	-
Infections and infestations	-	1	1	1	-	-
Infections and infestations (Covid)	-	11	-	8	-	-
Injury, poisoning, and procedural complications	1	2	-	3	-	-
Investigations	-	2	-	1	-	-
Metabolism and nutrition disorders	-	-	-	-	-	-
Musculoskeletal and connective tissue disorders	-	9	-	1	-	-
Neoplasms benign, malignant and unspecified	-	-	-	1	-	-
Nervous system disorders	-	-	-	1	-	-
Psychiatric disorders	-	6	-	3	-	-
Renal and urinary disorders	-	-	-	-	-	-
Reproductive system and breast disorders	-	-	-	-	-	-
Respiratory, thoracic and mediastinal disorders	-	-	-	-	-	-
Skin and subcutaneous tissue disorders	-	-	-	-	-	-
Surgical and medical procedures	1	1	-	2	-	-
Vascular disorders	1	2	-	3	-	-
Social harms	-	3	-	8	-	-
Total	4	43	1	38	N/A	N/A

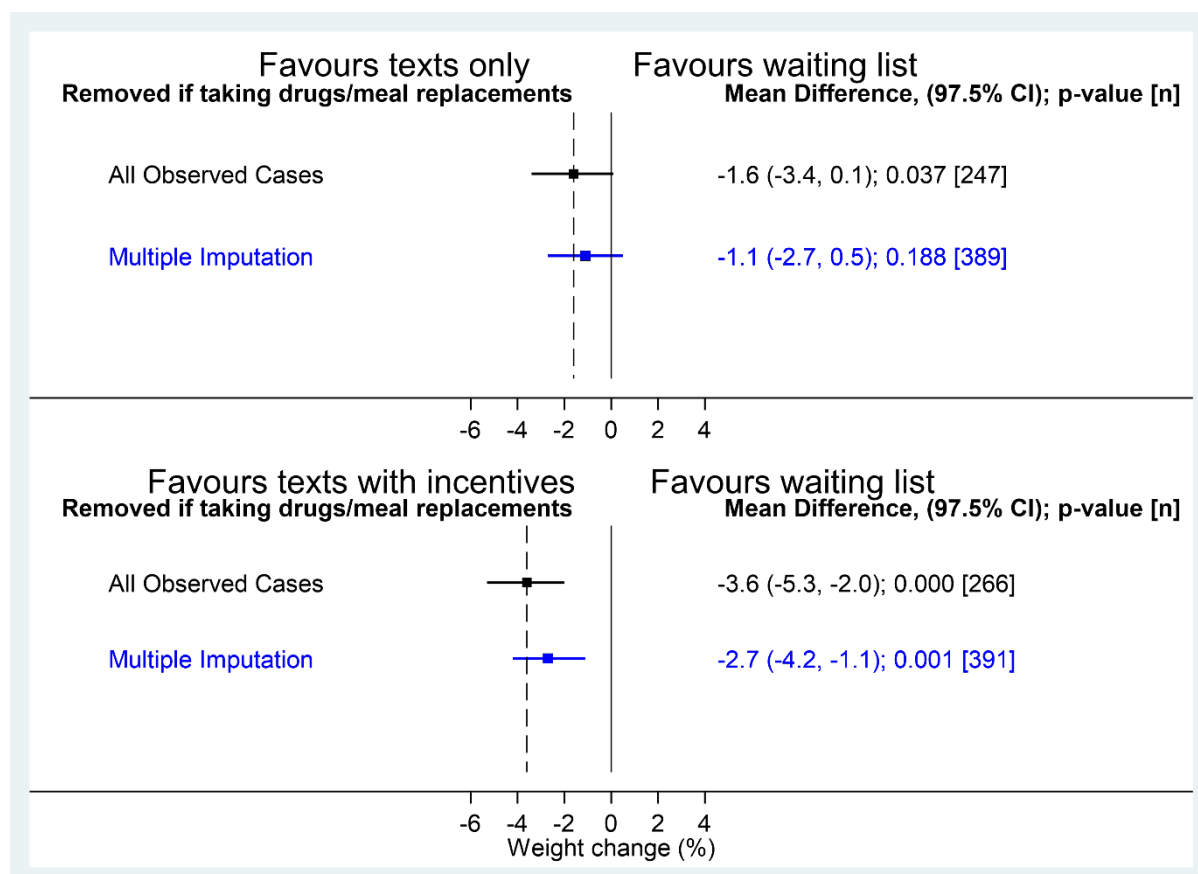
6-month assessment						
MedDRA System Organ Classification	Texts with incentives N= 196		Texts only N= 194		Waiting list N= 195	
	Serious Adverse Events	Harms	Serious Adverse Events	Harms	Serious Adverse Events	Harms
					N/A	N/A
Blood and lymphatic system disorders	-	-	-	-	-	-
Cardiac disorders	-	-	-	1	-	-
Ear and labyrinth disorders	-	-	-	-	-	-
Endocrine disorders	-	1	-	2	-	-
Eye disorders	-	-	-	1	-	-
Gastrointestinal disorders	-	1	-	3	-	-
General disorders and administration site conditions	-	2	-	-	-	-
Hepatobiliary disorders	-	1	-	1	-	-
Immune system disorders	-	1	-	1	-	-
Infections and infestations	-	2	-	3	-	-
Infections and infestations (Covid)	-	9	-	7	-	-
Injury, poisoning, and procedural complications	-	2	-	5	-	-
Investigations	-	-	-	2	-	-
Metabolism and nutrition disorders	-	-	-	-	-	-
Musculoskeletal and connective tissue disorders	-	7	-	6	-	-
Neoplasms benign, malignant and unspecified	-	-	-	3	-	-
Nervous system disorders	-	-	-	-	-	-
Psychiatric disorders	1	4	-	1	-	-
Renal and urinary disorders	-	-	1	-	-	-
Reproductive system and breast disorders	-	-	-	-	-	-
Respiratory, thoracic and mediastinal disorders	1	-	-	1	-	-
Skin and subcutaneous tissue disorders	-	-	-	1	-	-
Surgical and medical procedures	1	4	-	1	-	-
Vascular disorders	-	2	-	1	-	-
Social harms	-	7	-	3	-	-
Total	3	43	1	43	N/A	N/A

12-month assessment						
MedDRA System Organ Classification	Texts with incentives N= 196		Texts only N= 194		Waiting list N= 195	
	Serious Adverse Events	Harms	Serious Adverse Events	Harms	Serious Adverse Events	Harms
Blood and lymphatic system disorders	-	-	-	-	-	-
Cardiac disorders	-	2	-	1	1	1
Ear and labyrinth disorders	-	-	-	1	-	1
Endocrine disorders	-	2	-	-	-	4
Eye disorders	-	-	-	-	-	-
Gastrointestinal disorders	-	-	1	1	1	2
General disorders and administration site conditions	-	-	-	-	-	-
Hepatobiliary disorders	-	1	1	1	1	-
Immune system disorders	-	-	-	-	-	-
Infections and infestations	1	4	1	2	-	6
Infections and infestations (Covid)	2	9	-	5	-	10
Injury, poisoning, and procedural complications	-	8	-	2	1	3
Investigations	-	-	-	1	-	1
Metabolism and nutrition disorders	-	-	-	-	-	1
Musculoskeletal and connective tissue disorders	-	7	-	5	-	4
Neoplasms benign, malignant and unspecified	-	4	-	1	-	2
Nervous system disorders	-	1	-	-	-	2
Psychiatric disorders	1	4	-	1	-	6
Renal and urinary disorders	-	-	-	5	-	1
Reproductive system and breast disorders	-	1	-	-	-	-
Respiratory, thoracic and mediastinal disorders	-	-	-	1	-	1
Skin and subcutaneous tissue disorders	-	1	-	-	-	1
Surgical and medical procedures	1	4	-	4	-	5
Vascular disorders	-	2	-	5	2	2
Social harms	-	12	-	15	-	10
Total	5	62	3	51	6	63

eTable 22. Unexpected benefits reported by participants

	Texts with incentives N= 196	Texts only N= 194	Waiting list N= 195
Assessment time point - number of participants reporting at least one benefit.	Unexpected benefits	Unexpected benefits	Unexpected benefits
3 months	30	15	N/A
6 months	30	21	N/A
12 months	20	9	7
The number of participants (n) reporting a benefit at one or more time points			
Reported a benefit at only one time point-n	57	38	7
Reported a benefit at two time points-n	19	7	0
Reported a benefit at three time points-n	4	0	0

eFigure 1. Sensitivity analysis for participants not taking weight loss medications or meal replacements.



E-METHODS

All versions of the trial protocol are available on the funder webpage for the Game of Stones Trial:
<https://www.fundingawards.nihr.ac.uk/award/NIHR129703>

Incentive structure and payment protocol

Participants allocated to the texts with incentive group are informed that Game of Stones has put £400 into an account for them and they are given a mock-up cheque. The following text is from the participant information leaflet.

How will the financial incentives work?

£400 is already in an account for you. You will lose part of this £400 for each weight loss target you do not meet and 'secure' money for each target you do achieve. At the end of the 12 months you will receive the money you have managed to secure.

The £400 is yours if you meet the following weight loss targets:

- 5% of your starting weight at 3 months = £50
- 10% of your starting weight at 6 months = £150
- 10% of your starting weight at 12 months = £200

Please Note – For weight loss of between 5% and 10% of your starting weight at 6 and 12 months you can secure some, but not all of the money – see tables below. At 12 months you must weigh less than your starting weight to receive any of the money.

The researcher will give you a card with your target number of lbs/kgs to lose.

3 months: 5% weight loss target for £50

If you do not lose at least 5% of your starting weight by 3 months, you will lose the £50 at this time point.

	Money secured	Money lost
Less than 5%	£0	£50
5% or more	£50	£0

6 months: 10% weight loss target for £150

- If you do not lose at least 5% of your starting weight by 6 months, you will lose the £150 at this time point.
- If you lose 5% of your starting weight by 6 months you will secure £75. For every 1% of weight lost between 5% and the 10% target you will secure an additional £15.
- If you lose 10% of your starting weight at 6 months you will secure the full £150.

	Money secured	Money lost
Less than 5%	£0	£150
5%	£75	£75
6%	£90	£60
7%	£105	£45
8%	£120	£30
9%	£135	£15
10% or more	£150	£0

12 months: 10% weight loss or maintenance target for £200

- If you do not lose at least 5% of your starting weight by 12 months, you will lose the £200 at this time point.
- If you lose 5% of your starting weight by 12 months you will secure £100. For every 1% of weight lost between 5% and the 10% target you will secure an additional £20.
- If you lose 10% of your starting weight by 12 months you will secure the full £200.

	Money secured	Money lost
Less than 5%	£0	£200
5%	£100	£100
6%	£120	£80
7%	£140	£60
8%	£160	£40
9%	£180	£20
10% or more	£200	£0

To secure your money, you must be weighed by a researcher on the Game of Stones scales within 3 weeks of your weight loss target date.

There was one protocol deviation by a researcher at the weight assessment. A participant's six month weight visit was not arranged within the 23 day window due to researcher error. As per protocol in cases of researcher error, the automated incentive calculation was over-ruled and the six-month incentive amount was awarded to the participant for his weight loss.

Website resources provided to participants

Website resources provided to ALL GROUPS:

General weight management advice on main information webpage

Looking After Yourself

Where can I find some general advice on getting fitter and healthier?

Men's Health Forum: <https://www.menshealthforum.org.uk/>. This booklet can be downloaded for free: <https://www.mhfi.org/challenges2020.pdf>

Where can I find out more about weight loss?

NHS: <http://www.nhs.uk/livewell/weight-loss-guide/Pages/weight-loss-guide.aspx> - OR the British Dietetic Association: <https://www.bda.uk.com/resource/weight-loss.html>

Can I just be more active or exercise more to lose weight?

Physical activity will get you part of the way and will benefit your health BUT research shows that it is very difficult for men to lose weight through exercise alone. The good news is that being active can help prevent the weight creeping up again. This link gives more information: <https://www.nhs.uk/better-health/get-active/>

How can I find out more about losing weight and food facts for particular health conditions?

The British Dietetic Association: <https://www.bda.uk.com/food-health/food-facts/all-food-fact-sheets.html>

I have diabetes where can I find information on health and weight?

Diabetes UK: <https://www.diabetes.org.uk/guide-to-diabetes/enjoy-food/eating-with-diabetes/whats-your-healthy-weight/lose-weight>

I'm on a budget where can I find out about eating well for less?

British Dietetic Association: <https://www.bda.uk.com/resource/food-facts-eat-well-spend-less.html>

I'm finding it hard to cope with how I feel, where can I find help?

Men's Health Forum <https://www.menshealthforum.org.uk/howru-hub> OR Living Life to the Full <https://l1ttf.com>. **If you need help right now** please contact the Samaritans: T:116 123; E: jo@samaritans.org. Its free and available 24 hours a day.

DISCLAIMER – Food is not regulated to the same standards as medicines. Not all information is trustworthy. These websites are some of the most reliable science we have found BUT we can't guarantee they are up to date

Website resources provided to TEXTS ONLY AND TEXTS WITH INCENTIVE GROUPS:

- Function to add weight to website and track against target given at baseline.
- Function to monitor steps and enter step count on website.
- Function to keep a diary of progress.
- Function to upload self-motivating photographs.
- Access to information on managing text messages e.g. how to stop or change frequency.

Website resources provided to TEXTS WITH INCENTIVES GROUP:

- Video explanation of how the incentives process works.
- Function to monitor progress toward incentive target.

Local information provided to TEXTS ONLY AND TEXTS WITH INCENTIVES GROUPS:

Local help with weight loss? You can follow these links

Belfast

Public Health Agency <https://www.publichealth.hscni.net>

Public Health Agency links to other useful websites <https://www.publichealth.hscni.net/links>

Choose to Live Better (Public Health Agency) <https://www.choosetolivebetter.com/>

Safe Food (Department of Health) <https://www.safefood.net/healthy-eating>

Glasgow

Public Health Scotland <http://www.healthscotland.scot/health-topics/diet-and-healthy-weight/obesity>

Take life on, one step at a time (Scottish Government) <http://www.takelifeon.co.uk/>

Bristol

One You (South Gloucestershire Council) <https://oneyou.southglos.gov.uk/for-your-body/eat-well/weight-management/>

NHS Bristol, North Somerset, South Gloucestershire Clinical Commissioning Group

<https://bnssgccg.nhs.uk/health-advice-and-support/obesity-and-weight-management/>

Go4Life (North Somerset Council) www.go4life.org

Harms and benefits

Background

Reporting of harms and benefits in behavioral and lifestyle trials is often incomplete², leading to problems with conclusions drawn from systematic reviews about harms caused by interventions.³ Reporting adverse events and unintended consequences are core outcomes for in person weight management programmes.⁴ Guidance specifically mentions eating disorders, worsening of a pre-existing condition and injuries sustained during a physical activity session as part of a weight management program. This is an underexplored area in self-care and digital behavioural weight management trials.

Data collection

Section 8 of the trial protocol was adhered to for definitions, which specified expected, related and unintended consequences for trial participants. Harm and benefit data were collected in the Case Report Form below for all randomized participants at weight assessments: 3 months, 6 months and 12 months for intervention groups; and at 12 months only for the waiting list control group.

Data collection sections of the case report form used in Game of Stones

	No <input type="checkbox"/>	Yes <input type="checkbox"/> →
Has anything unexpected happened since your last appointment as a result of taking part in the study (these can be either helpful or harmful consequences). Please tick NO or YES. If you tick 'yes' please describe what happened below.		
IMPORTANT: Details of adverse events/ serious adverse events must be recorded in the reporting form below AND reported to the Trial Managers (Lisa Macaulay and Catriona O'Dolan) on gameofstones@stir.ac.uk .		

			Assessment of AE – to be completed by PI			
Adverse event – detailed description	Dates	Outcome of AE	Serious Adverse Event?	Relationship to study intervention	Expected?	Initials & date of assessment
	Notified:	Recovered <input type="checkbox"/>	Serious <input type="checkbox"/> Not serious <input type="checkbox"/>	Related <input type="checkbox"/> Not related <input type="checkbox"/>	Expected <input type="checkbox"/> Not expected <input type="checkbox"/>	
	Onset:	Not recovered <input type="checkbox"/>				
	End:	Fatal <input type="checkbox"/>				

Fieldworkers knew that participants attending the 3- and 6- month assessments were allocated to one of the two intervention groups and were often unblinded when collecting this data. Continual assessment of fieldworker documented adverse events was undertaken throughout the trial by PH and AA who are medical practitioners and who were blind to group allocation. Assessors categorising and analysing data were blind to group allocation. The challenges of attribution and centre inconsistencies in the documentation of harms and benefits were discussed with the Trial Management Group and the Trial Steering Group.

Analysis

The complete dataset was cleaned with any possible coding inconsistencies discussed and resolved by PH, LM, SC and, where necessary, discussion with the fieldworker who collected data. After data-lock, MedDRA (v26.1) (<https://www.meddra.org/>) classification was used by a trial manager (LM) blind to group allocation to categorise harms. Any uncertainties about classification were discussed between members of the harms and benefits team, blinded to group allocation (LM, SC, AA and PH).

Participants’ accounts interpreted the question “has anything unexpected happened?” very broadly. There was considerable uncertainty from participant accounts about the timing of the onset of the event in relation to the trial start to meet the protocol definition of an adverse event. This was particularly problematic for musculoskeletal and mental health conditions where participant accounts described fluctuating illness trajectories over time. Attribution to the trial interventions or trial processes was often not possible, particularly for participants living with pre-existing obesity related co-morbidities.

The CONSORT extension for harms⁵ became available at the data cleaning stage. Due to the attribution and interpretation issues, a decision was made to not report adverse events according to whether they were expected and related to the trial or not. Serious adverse events are reported as described in the trial protocol V7.0. All adverse events or unexpected events coded as harmful are descriptively reported as “harms”. For anything unexpected reported a qualitative analysis decision was made by LM and PH about whether this was a harm; a benefit or a neutral statement where a decision could not be made. Only one benefit could be documented per participant per time point. However, more than one SAE and/or harm could be documented per participant per time point if the descriptions were medically unrelated. Neutral statements were made by six participants and are not included in the harms and benefits analysis (e.g., ‘*Now at the top of the list for an operation on his ankle and went for his pre-op assessment. This has been planned for several years but has been put off twice due to COVID*’). The social harms code in the MedDRA in the System Organ Classification was used for example when participants described bereavements, work, carer, relationship or pet related problems.

The descriptive statistical analysis of the frequency of harms and benefits by trial group was conducted by JS who was blind to group allocation. There was no interim analysis. Results are reported descriptively with the denominator for each time point.

Adjusting index of multiple deprivation scores across UK countries

Each of the three UK countries participating in the Game of Stones Trial calculates an Index of Multiple Deprivations (IMD) for geographical small areas by postcode of residence. The methodology used to calculate the IMD differs by country and therefore it is not considered valid to simply combine IMD scores when analysing trial data for the purpose of exploring socio-demographic inequalities.

In the Statistical Analysis Plan V1.0 we proposed using Abel et al. 2016 methodology⁶ to combine scores. In March 2023 in discussion with Gary Abel and Rupert Payne, and our Trial Steering Group it was agreed to use IMD scores for the most recent country specific databases, as randomization would balance any misclassification. This was updated in the Statistical Analysis Plan V2.0.

The databases used by co-author JS to look up participant postcodes of residence and assign an index of multiple deprivation quintile for an, who was blind to group allocation were:

Scotland: <https://www.gov.scot/publications/scottish-index-of-multiple-deprivation-2020v2-postcode-look-up/>

England: <https://imd-by-postcode.opendatacommunities.org/imd/2019>

Northern Ireland: <https://www.nisra.gov.uk/publications/central-postcode-directory-jul-2023-downloads>

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