

1 **Abstract**

2 Background: The COVID-19 pandemic has had a significant adverse impact on the  
3 delivery of weight management programmes (WMPs), in order to ensure the safety of  
4 patients and healthcare professionals. Videoconferencing could provide safe remote  
5 access to group WMPs during the COVID-19 pandemic. The objectives of this study  
6 were to determine the uptake of a virtual group WMP and its predictors.

7

8 Materials and methods: All patients enrolled on a face-to-face group WMP, which  
9 constitutes part of a Tier 3 WMP delivered by the NHS, at the time of the COVID-19  
10 pandemic lockdown were invited to transfer to a virtual format of the group WMP.  
11 Baseline data included weight, BMI, age, gender, ethnicity and Index of Multiple  
12 Deprivation (IMD) quintile score. The outcomes were accept/decline transfer to the  
13 virtual group WMP. Logistic regression was performed to assess for predictors of  
14 uptake.

15

16 Results: 315 participants were included, of which 72.1% (n= 227) accepted. After  
17 adjusting for gender, deprivation and BMI; older patients (OR 0.966, [95% CI 0.944,  
18 0.989]; p=0.003) and Black, Asian and Minority Ethnicity (BAME) patients (OR 0.460  
19 [95% 0.248, 0.851]; p=0.023) were less likely to accept the virtual group WMP.

20

21 Conclusion: Strategies aimed at improving uptake of group WMP among BAME and  
22 older adult groups are needed, particularly considering the increased risk of severe  
23 COVID-19 in these two groups, and the links between obesity and poor COVID-19  
24 outcomes.

25 **Introduction**

26 The outbreak of novel severe acute respiratory syndrome coronavirus 2 (SARS-CoV-  
27 2) was declared a global pandemic by the World Health Organisation on 11 March  
28 2020 <sup>1</sup>. On the 23 March 2020, the United Kingdom (UK) government released  
29 guidelines on social distancing to reduce the spread of COVID-19 <sup>2</sup>.

30

31 A survey of UK adults <sup>3</sup> found that the COVID-19 lockdown has had a negative impact  
32 on eating and physical activity behaviours, with this impact being more pronounced  
33 among adults with a higher Body Mass Index (BMI). During the COVID-19 lockdown,  
34 a higher BMI was associated with lower levels of physical activity and dietary quality,  
35 and a greater reported frequency of overeating <sup>3</sup>.

36

37 Therefore, the COVID-19 pandemic may have had a disproportionately large and  
38 negative influence on weight-related behaviours among adults with a higher BMI. This,  
39 combined with the evidence that patients with obesity remain at an increased risk of  
40 severe COVID-19 leading to hospitalisation and mortality <sup>4-7</sup>, means that remote  
41 approaches to WMPs that were previously delivered face-to-face are urgently needed.

42

43 Weight management programmes (WMPs) for obesity management across the UK  
44 and internationally were reduced or suspended due to the mobilisation of outpatient  
45 and community healthcare professionals to the front-line. A survey commissioned by  
46 Public Health England revealed that 25% of adult weight management services in  
47 England reduced to a 'skeleton service' during the COVID-19 pandemic <sup>8</sup>.

48

49

50 One solution to enabling people with obesity to access group WMPs safely is via virtual  
51 videoconferencing. While some weight management services in England have  
52 adapted to providing some form of remote support, only 23% of adult weight  
53 management services report using virtual group support during the COVID-19  
54 pandemic <sup>8</sup>.

55

56 However, access to virtual group WMPs may be influenced by digital exclusion,  
57 defined as the lack of digital skills, lack of internet connectivity and/or lack of  
58 accessibility to assistive technology <sup>9</sup>. Digital exclusion has been a reality long before  
59 the COVID-19 pandemic whereby 22% of the UK population lack basic digital skills for  
60 everyday life <sup>10</sup>. Digital exclusion is most prominent among some sociodemographic  
61 groups; such as among adults aged  $\geq 65$  years old, minority ethnic groups and those  
62 not in employment <sup>11</sup>.

63

64 Most research to date has investigated the use of videoconferencing software for one-  
65 to-one weight management interventions and research published on the application of  
66 videoconferencing for remote participation in weight management in the group setting  
67 has been limited to a few studies <sup>12-18</sup>. The available evidence suggests that virtual  
68 group WMPs may be an effective means of allowing face-to-face group interaction,  
69 while overcoming barriers to access. However, none of these studies investigated the  
70 uptake of a videoconferencing group WMP intervention and were all published prior to  
71 the COVID-19 pandemic.

72

73 Hence, we conducted a study which aimed to assess the uptake of transfer from a  
74 face-to-face to a virtual group WMP during the COVID-19 pandemic. Our secondary  
75 aim was to investigate predictors of uptake of a virtual group WMP, including  
76 sociodemographic predictors.

77

## 78 **Materials and Methods**

79 Our centre is a Tier 3 medical WMP, for adults with obesity with a BMI  $\geq 40$  kg/m<sup>2</sup>, or  
80  $\geq 35$  kg/m<sup>2</sup> with comorbidities <sup>19</sup> situated in a tertiary centre in the UK. Our Tier 3 WMP  
81 is multi-disciplinary including physicians, dietitians, specialist nurses and a clinical  
82 psychologist <sup>19</sup>. Our centre is located within the ethnically diverse city of Birmingham  
83 (UK), where 42.1% of residents identify as Black, Asian or Minority Ethnicity (BAME)  
84 <sup>20</sup>.

85

86 Within our Tier 3 WMP, we run a course of structured patient education and self-  
87 management group sessions, comprising of six one-hour sessions which run monthly  
88 over a 6-month period and are led by a Specialist Weight Management Dietitian and a  
89 Dietetic Assistant Practitioner. We have previously published the outcomes of our face-  
90 to-face group WMP <sup>21</sup>. Our face-to-face group WMP had a 56% completion rate with  
91 the majority (78.6%) achieving weight loss and nearly a third (32.3%) achieved a  $\geq 5\%$   
92 weight loss.

93

94 On the 13<sup>th</sup> March 2020, all face-to-face weight management clinics at our centre,  
95 including our group WMP, were suspended due to the COVID-19 pandemic. Hence,  
96 we designed a virtual format of our group WMP using the real-time videoconferencing

97 software 'VidyoConnect' <sup>22</sup>, which allows patients with obesity to attend the group WMP  
98 remotely.

99

100 We conducted a prospective cross-sectional study to determine the uptake of the  
101 virtual group WMP during the COVID-19 pandemic. All patients who were enrolled on  
102 the face-to-face format of the group WMP on 13<sup>th</sup> March 2020 were contacted via  
103 telephone and invited to transfer to the virtual group WMP.

104

105 Baseline data were collected from electronic patients records and included  
106 anthropometrics (weight and BMI), demographics (age, gender, ethnicity) and patients'  
107 home address postcodes, which were used to obtain Index of Multiple Deprivation  
108 (IMD) quintile scores using the English Indices of Deprivation (2019) dataset <sup>23</sup>.  
109 Outcome data included a binary outcome of acceptance or declination of transfer to  
110 the virtual group WMP and were asked an open-ended question about their reason for  
111 declination. Reasons for declination were then categorised as either barriers to access  
112 (i.e. lack of internet access or poor digital skills) or due to a personal preference to wait  
113 for face-to-face services to resume.

114

115 All analyses were performed using IBM SPSS Statistics 25.0. Data were presented as  
116 frequencies and mean ( $\pm$ SD). Differences between groups were assessed using the  
117 Independent Student's t-test and the chi-squared test for continuous and categorical  
118 variables, respectively. To assess for predictors of uptake of a virtual group WMP,  
119 binary logistic regression analysis (using the "Enter" method) was performed. Logistic  
120 regression assumptions of multicollinearity were assessed and not violated. The

121 dependent variable was accepting invitation to transfer to the virtual format.  
122 Independent variables included in the model were age, gender, ethnicity, BMI and IMD  
123 quintile. Variables were chosen for the model based upon epidemiological plausibility.  
124 A p-value of <0.05 was considered significant.

125

## 126 **Results**

127 A total of 330 patients were enrolled on the face-to-face group WMP at the time of the  
128 COVID-19 lockdown. After excluding participants who could not be contacted (n= 15,  
129 4.5%), 315 patients were invited to attend the virtual format and were included in the  
130 analyses. Overall, 27.9% (n= 88) declined and 72.1% (n= 227) accepted the invitation  
131 to transfer to the virtual group WMP. The most frequent reason for declining was lack  
132 of internet access and/or lack of digital skills (89.8%, n= 79), while 10.2% (n=9) patients  
133 declined as they only wished to partake in face-to-face sessions.

134

135 The baseline characteristics of patients who accepted transfer to the virtual group  
136 WMP versus those who declined are summarised in Table 1. Data on age, gender,  
137 weight, BMI and IMD quintile score were available for all patients, while ethnicity data  
138 were available for 86.3% (n= 272) of patients. Most patients were from postcodes  
139 associated with quintile 1 of IMD.

140

141 Patients who accepted the virtual group WMP were younger (mean -4.0 years, 95% CI  
142 -7.6 to -0.4; p=0.032) than those who declined. A greater proportion of those aged ≥60  
143 year olds declined the virtual group WMP compared to other age groups: 48% (n=23)  
144 of ≥60 year olds declined the virtual group WMP, compared to 22.8% (n=34) of 40-59

145 year olds and 26.3% (n=31) of <40 year olds (p=0.003). There were also significant  
146 differences in the uptake of the virtual group WMP by ethnicity, whereby 35% (n=27)  
147 of all BAME patients compared to 22.8% (n=45) of all Caucasian patients declined  
148 uptake of the virtual group WMP (p=0.002). There was no statistical difference between  
149 genders, weight, BMI or level of deprivation of those who accepted compared with  
150 those who declined the virtual group WMP.

151  
152 A logistic regression was performed to ascertain the associations of age, gender,  
153 ethnicity, deprivation and BMI with acceptance of transfer to the virtual group WMP.  
154 The logistic regression model was statistically significant,  $\chi^2(4) = 18.427$ , p=0.018.  
155 Older age (OR 0.966, [95% CI 0.944, 0.989]; p=0.003) and identifying as BAME  
156 compared to Caucasian (OR 0.460 [95% CI 0.248, 0.851]; p=0.023) were associated  
157 with a decreased likelihood of uptake of the virtual group WMP (Table 2).

158

## 159 **Discussion**

160 To our knowledge this is the first study to examine the uptake of a virtual group WMP  
161 during the COVID-19 pandemic and found that the uptake was high, with nearly three  
162 quarters of patients with obesity transferring to the virtual group WMP.

163

164 However, the invitation to transfer to a virtual group WMP was declined by over a  
165 quarter of patients in our study. Our findings suggest that older patients and patients  
166 identifying as BAME were less likely to accept transfer to the virtual group WMP. This  
167 may provide evidence of inequity of access to virtual obesity treatments among  
168 vulnerable patient groups, which is particularly worrisome considering that older age

169 <sup>24-26</sup>, BAME <sup>27,28</sup> and obesity <sup>4-7</sup> are shown to increase risk of severe illness from  
170 COVID-19. Therefore, it would be important to explore this further in future research.

171

172 It is plausible that poorer uptake of a virtual group WMP may be attributed to digital  
173 exclusion. In the UK, digital exclusion is most prominent among adults aged  $\geq 65$  years  
174 old, minority ethnic groups and those not in employment <sup>11</sup>. Most of our patients were  
175 living in quintile 1 IMD which is consistent with the data showing the association  
176 between obesity and social deprivation <sup>29,30</sup>. Despite that, the uptake of the virtual  
177 group WMP was high overall in our study. However, digital exclusion may explain our  
178 findings that patients who are older or identify as BAME are less likely to access a  
179 virtual group WMP. However, we did not have the data granularity to differentiate  
180 between patients who did not have physical access to the internet compared to those  
181 that do not have the digital skills to utilise the internet.

182

183 There is concern that the increasing use of digital health tools during the COVID-19  
184 pandemic might exacerbate health inequalities if patient are unable to use or access  
185 digital interventions <sup>31</sup>. Our data demonstrate a need to engage with people with  
186 obesity of older age and BAME communities in order to understand how we can  
187 improve the uptake of virtual group WMPs, including how we can enhance digital  
188 literacy skills to allow participation. Weight management services may benefit from  
189 being able to refer patients with poor digital literacy to 'Digital Health Champions' <sup>32</sup>,  
190 who could engage with patients to learn basic digital skills; thereby enabling access to  
191 virtual group WMPs.

192



193 The main limitation of our study is that it is a single centre analysis. Our findings  
194 suggest that wider examinations of variations of virtual group WMP uptake by age and  
195 ethnicity need to be explored in larger multi-centre studies to confirm where there is a  
196 national inequity of access to virtual group WMPs among older and BAME populations.  
197 Our study collated quantitative categorical data on reasons for declining uptake of the  
198 virtual group WMP. However, future research should explore patient's reasons for  
199 declining transfer to a virtual group WMP through qualitative data, in order to gain a  
200 deeper understanding of barriers to participation.

201

202 In conclusion, most patients opted to transfer to a virtual format of our group WMP in  
203 our Tier 3 weight management service. However, older age and identifying as BAME  
204 were associated with reduced likelihood of uptake of a virtual group WMP. There is a  
205 need address factors such as improving digital literacy to ensure safe and equitable  
206 access to virtual group WMPs during the COVID-19 pandemic and beyond, particularly  
207 considering the links between obesity and COVID-19, and the increased risk of severe  
208 COVID-19 among older patients and BAME groups.

209

210 **Transparency:** The lead author affirms that this manuscript is an honest, accurate,  
211 and transparent account of the study being reported. The reporting of this work is  
212 compliant with STROBE guidelines. The lead author affirms that no important aspects  
213 of the study have been omitted and that there are no discrepancies from the study as  
214 planned.

215

216 **Competing interests:** The authors declare that they have no conflicts of interest.

217

## 218 **References**

- 219 1. World Health Organisation. WHO Director-General's opening remarks at the  
220 media briefing on COVID-19 - 11 March 2020. Published 2020. Accessed June  
221 16, 2020. [https://www.who.int/dg/speeches/detail/who-director-general-s-](https://www.who.int/dg/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020)  
222 [opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020](https://www.who.int/dg/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020)
- 223 2. Public Health England. *Coronavirus (COVID-19) Keeping Away from Other*  
224 *People: New Rules to Follow from 23 March 2020* .; 2020. Accessed June 16,  
225 2020.  
226 [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/at](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/876699/COVID-19_Keeping_away_from_other_people_20200328.pdf)  
227 [tachment\\_data/file/876699/COVID-](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/876699/COVID-19_Keeping_away_from_other_people_20200328.pdf)  
228 [19\\_Keeping\\_away\\_from\\_other\\_people\\_20200328.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/876699/COVID-19_Keeping_away_from_other_people_20200328.pdf)
- 229 3. Robinson E, Boyland E, Chisholm A, et al. Obesity, eating behavior and  
230 physical activity during COVID-19 lockdown: A study of UK adults. *Appetite*.  
231 Published online October 7, 2020:104853. doi:10.1016/j.appet.2020.104853
- 232 4. Kass DA, Duggal P, Cingolani O. Obesity could shift severe COVID-19 disease  
233 to younger ages. *Lancet*. 2020;395(10236):1544-1545. doi:10.1016/S0140-  
234 6736(20)31024-2
- 235 5. Caussy C, Pattou F, Wallet F, et al. Prevalence of obesity among adult  
236 inpatients with COVID-19 in France. *Lancet Diabetes Endocrinol*.  
237 2020;8(7):562-564. doi:10.1016/S2213-8587(20)30160-1
- 238 6. Williamson E, Walker AJ, Bhaskaran KJ, et al. OpenSAFELY: factors  
239 associated with COVID-19-related hospital death in the linked electronic health  
240 records of 17 million adult NHS patients. *medRxiv*. Published online May 7,

- 241 2020:06.20092999. doi:10.1101/2020.05.06.20092999
- 242 7. Ho FK, Celis-Morales CA, Gray SR, et al. Modifiable and non-modifiable risk  
243 factors for COVID-19: results from UK Biobank. *medRxiv*. Published online  
244 May 2, 2020:28.20083295. doi:10.1101/2020.04.28.20083295
- 245 8. Public Health England. Weight management services during COVID-19: phase  
246 1 insights. Published 2020. Accessed September 9, 2020.  
247 [https://www.gov.uk/government/publications/weight-management-services-](https://www.gov.uk/government/publications/weight-management-services-during-covid-19-phase-1-insights)  
248 [during-covid-19-phase-1-insights](https://www.gov.uk/government/publications/weight-management-services-during-covid-19-phase-1-insights)
- 249 9. NHS Digital. What we mean by digital inclusion. Published 2020. Accessed  
250 September 9, 2020. [https://digital.nhs.uk/about-nhs-digital/our-work/digital-](https://digital.nhs.uk/about-nhs-digital/our-work/digital-inclusion/what-digital-inclusion-is)  
251 [inclusion/what-digital-inclusion-is](https://digital.nhs.uk/about-nhs-digital/our-work/digital-inclusion/what-digital-inclusion-is)
- 252 10. Lloyds Bank. UK Consumer Digital Index 2020. Published 2020. Accessed  
253 September 9, 2020. [https://www.lloydsbank.com/banking-with-us/whats-](https://www.lloydsbank.com/banking-with-us/whats-happening/consumer-digital-index.html)  
254 [happening/consumer-digital-index.html](https://www.lloydsbank.com/banking-with-us/whats-happening/consumer-digital-index.html)
- 255 11. Office for National Statistics. Internet users, UK: 2019. Office for National  
256 Statistics. Published May 24, 2019. Accessed June 19, 2020.  
257 [https://www.ons.gov.uk/businessindustryandtrade/itandinternetindustry/bulletin](https://www.ons.gov.uk/businessindustryandtrade/itandinternetindustry/bulletins/internetusers/2019)  
258 [s/internetusers/2019](https://www.ons.gov.uk/businessindustryandtrade/itandinternetindustry/bulletins/internetusers/2019)
- 259 12. Azar KMJ, Aurora M, Wang EJ, Muzaffar A, Pressman A, Palaniappan LP.  
260 Virtual small groups for weight management: an innovative delivery mechanism  
261 for evidence-based lifestyle interventions among obese men. *Transl Behav*  
262 *Med*. 2015;5(1):37-44. doi:10.1007/s13142-014-0296-6
- 263 13. Ahrendt AD, Kattelman KK, Rector TS, Maddox DA. The Effectiveness of  
264 Telemedicine for Weight Management in the *MOVE!* Program. *J Rural Heal*.

- 265 2014;30(1):113-119. doi:10.1111/jrh.12049
- 266 14. Das SK, Brown C, Urban LE, et al. Weight loss in videoconference and in-  
267 person iDiet weight loss programs in worksites and community groups.  
268 *Obesity*. 2017;25(6):1033-1041. doi:10.1002/oby.21854
- 269 15. Clark DO, Keith N, Weiner M, Xu H. Outcomes of an RCT of videoconference  
270 vs. in-person or in-clinic nutrition and exercise in midlife adults with obesity.  
271 *Obes Sci Pract*. 2019;5(2):111-119. doi:10.1002/osp4.318
- 272 16. van Beurden SB, Simmons SI, Tang JCH, Mewse AJ, Abraham C, Greaves  
273 CJ. Informing the development of online weight management interventions: A  
274 qualitative investigation of primary care patient perceptions. *BMC Obes*.  
275 2018;5(1). doi:10.1186/s40608-018-0184-6
- 276 17. Little P, Stuart B, Richard Hobbs FD, et al. Randomised controlled trial and  
277 economic analysis of an internet-based weight management programme:  
278 POWeR+ (Positive Online Weight Reduction). *Health Technol Assess (Rockv)*.  
279 2017;21(4):1-61. doi:10.3310/hta21040
- 280 18. Vakil RM, Doshi RS, Mehta AK, et al. Direct comparisons of commercial  
281 weight-loss programs on weight, waist circumference, and blood pressure: a  
282 systematic review. *BMC Public Health*. 2016;16:460. doi:10.1186/s12889-016-  
283 3112-z
- 284 19. Anderson B, Attwood B, Baird G, et al. *Obesity: Clinical Assessment and*  
285 *Management Quality Standard*.; 2016. Accessed June 15, 2020.  
286 [www.nice.org.uk/guidance/qs127](http://www.nice.org.uk/guidance/qs127)
- 287 20. Office for National Statistics. *2011 Census*.; 2011. Accessed March 31, 2019.  
288 <https://www.ons.gov.uk/census/2011census>

- 289 21. Brown A, Gouldstone A, Fox E, et al. Description and preliminary results from a  
290 structured specialist behavioural weight management group intervention:  
291 Specialist Lifestyle Management (SLiM) programme. *BMJ Open*.  
292 2015;5(4):e007217. doi:10.1136/bmjopen-2014-007217
- 293 22. Enghouse Systems Limited. VidyoConnect. Published online 2020.
- 294 23. Ministry of Housing Communities and Local Government. *English Indices of*  
295 *Deprivation 2019*.; 2019. Accessed May 4, 2020.  
296 <https://www.gov.uk/government/statistics/english-indices-of-deprivation-2019>
- 297 24. Dowd JB, Andriano L, Brazel DM, et al. Demographic science aids in  
298 understanding the spread and fatality rates of COVID-19. *Proc Natl Acad Sci U*  
299 *S A*. 2020;117(18):9696-9698. doi:10.1073/pnas.2004911117
- 300 25. Zhou F, Yu T, Du R, et al. Clinical course and risk factors for mortality of adult  
301 inpatients with COVID-19 in Wuhan, China: a retrospective cohort study.  
302 *Lancet*. 2020;395(10229):1054-1062. doi:10.1016/S0140-6736(20)30566-3
- 303 26. Davies NG, Klepac P, Liu Y, Prem K, Jit M, Eggo RM. Age-dependent effects  
304 in the transmission and control of COVID-19 epidemics. *Nat Med*. Published  
305 online June 16, 2020:1-7. doi:10.1038/s41591-020-0962-9
- 306 27. Public Health England. *Beyond the Data: Understanding the Impact of COVID-*  
307 *19 on BAME Communities*.; 2020. Accessed June 17, 2020.  
308 [www.facebook.com/PublicHealthEngland](http://www.facebook.com/PublicHealthEngland)
- 309 28. Harrison EM, Docherty AB, Barr B, et al. Ethnicity and Outcomes from COVID-  
310 19: The ISARIC CCP-UK Prospective Observational Cohort Study of  
311 Hospitalised Patients. *SSRN Electron J* . Published online May 31, 2020.  
312 doi:10.2139/ssrn.3618215

- 313 29. NHS Digital. *Statistics on Obesity, Physical Activity and Diet, England, 2019 -*  
314 *NHS Digital.*; 2019. [https://digital.nhs.uk/data-and-](https://digital.nhs.uk/data-and-information/publications/statistical/statistics-on-obesity-physical-activity-and-diet/statistics-on-obesity-physical-activity-and-diet-england-2019)  
315 [information/publications/statistical/statistics-on-obesity-physical-activity-and-](https://digital.nhs.uk/data-and-information/publications/statistical/statistics-on-obesity-physical-activity-and-diet/statistics-on-obesity-physical-activity-and-diet-england-2019)  
316 [diet/statistics-on-obesity-physical-activity-and-diet-england-2019](https://digital.nhs.uk/data-and-information/publications/statistical/statistics-on-obesity-physical-activity-and-diet/statistics-on-obesity-physical-activity-and-diet-england-2019)
- 317 30. El-Sayed AM, Scarborough P, Galea S. Unevenly distributed: A systematic  
318 review of the health literature about socioeconomic inequalities in adult obesity  
319 in the United Kingdom. *BMC Public Health*. 2012;12(1):1-12. doi:10.1186/1471-  
320 2458-12-18
- 321 31. Watts G. COVID-19 and the digital divide in the UK. *Lancet Digit Heal*.  
322 2020;2(8):e395-e396. doi:10.1016/s2589-7500(20)30169-2
- 323 32. NHS Digital. *Digital Champions for Health: A Blueprint for Success.*; 2020.  
324 Accessed November 1, 2020. [https://digital.nhs.uk/about-nhs-digital/our-](https://digital.nhs.uk/about-nhs-digital/our-work/transforming-health-and-care-through-technology/empower-the-person-formerly-domain-a/widening-digital-participation/digital-champions-for-health)  
325 [work/transforming-health-and-care-through-technology/empower-the-person-](https://digital.nhs.uk/about-nhs-digital/our-work/transforming-health-and-care-through-technology/empower-the-person-formerly-domain-a/widening-digital-participation/digital-champions-for-health)  
326 [formerly-domain-a/widening-digital-participation/digital-champions-for-health](https://digital.nhs.uk/about-nhs-digital/our-work/transforming-health-and-care-through-technology/empower-the-person-formerly-domain-a/widening-digital-participation/digital-champions-for-health)  
327

328 **Table legends**

329 Table 1: Baseline Characteristics. Data presented as mean (SD) or n= (%)

330 Table 2: Binary logistic regression analysis of uptake of virtual group weight

331 management programme

