

Knowledge of results during vertical jump testing: an effective method to increase the performance but not the consistency of vertical jumps

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Title: Individual vs. Group-based Strategies for Weight Loss and Management in Adults: Pen Profile Perceptions

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Abstract

Aims

The aim of this study was to explore perceptions of barriers, facilitators, strategies and successes in individual vs. group-based weight management programmes.

Methods

Forty-two, overweight (Body Mass Index ≥ 25 -kg·m²) participants (aged 32-63y) volunteered to take part in this study. All participants completed a 3-month weight loss programme, randomised to a group-based (n=21), or self-monitoring only (n=21) approach, respectively. Participants subsequently participated in a semi-structured interview (60±7 mins) to explore individual and collective perceptions of barriers, facilitators, strategies and successes.

Results

Convergent themes were found for individual and group strategies for facilitators, strategies and successes. Divergent themes were found between groups for barriers, group participants highlighted expense of commercial products, and knowledge of nutrition and dieting, whilst individual participants reported (lack of) social support from peers, (lack of) motivation, and occupation.

Conclusion

Key stakeholders, facilitators, and individuals must consider these factors prior to the advocacy any weight loss strategy.

Key words: Obesity; Overweight; Weight-loss; Management; Strategy

32 **Introduction**

33 Obesity, broadly speaking, is characterised by having a body-mass index above 30 kg·m², and
34 described as a non-communicable risk factor (Atay & Bereket, 2016). The proportion of adults in the United
35 Kingdom (UK) that are overweight or obese has risen from 57.6% to 68% in men, and from 48.6% to 58%
36 in women between 1993 and 2018; representing an estimated total economic burden of £27 billion (Clark,
37 2018). Indeed, obesity in the UK (and worldwide) is acknowledged as to be an epidemic (Clark, 2018);
38 whilst physical activity has been identified as an integral contributor to a healthy lifestyle (Saunders et al,
39 2016) and can provide immediate and future health benefits (Telema et al, 2013; Shiri et al, 2013), physical
40 inactivity is the largest contributor to risk factors for non-communicable diseases worldwide (WHO, 2010),
41 exacerbating the prevalence of obesity. Strong relationships exist between physical activity and health, with
42 higher physical activity levels leading to reduced risks of coronary heart disease (Li et al, 2012),
43 hypertension (Peters et al, 2006), non-insulin dependent diabetes mellitus (LaMonte, Blair & Church, 2005),
44 stroke (Goldstein, 2010), colon cancer (Wolin et al, 2009), osteoporotic fractures (de Kam et al, 2009) and
45 depression (Martinsen, 2008). Notwithstanding, weight loss and maintenance is multi-factorial, and it has
46 become increasingly apparent that nutrition, support and encouragement, among other facilitators, are
47 pivotal tenets of any weight loss strategy.

48
49 The benefits of regular physical activity and a healthy lifestyle have been clearly set out across the
50 life course (WHO, 2010). As such, it has become common practice to promote and encourage overweight
51 and obese individuals towards weight loss strategies and groups, yet there remains no consensus on the most
52 efficacious weight loss strategy. Weight loss or maintenance strategies can be broadly dichotomised into
53 self-monitoring or group-based. Self-monitoring is a common, very easy method of weight loss. Originally,
54 this method was observed using paper records of an individual's diet (Sperduto, Thompson and O'Brien,
55 1986). Such self-monitoring techniques have further expanded to include the addition of physical activity
56 and how individuals pair both factors as a method of behaviour change to lose weight (Wadden, Butryn and
57 Wilson, 2007). Additionally, self-monitoring in terms of self-weighing to track progress has also been

58 identified (Linde et al. 2005). The self-reliant nature of this strategy is asserted to make the individual more
59 aware of their current behaviours; making goal setting easier, enabling them to track progress and then put
60 a number to this progress with the weighing (Foster, Makris and Bailer, 2005).

61
62 Group-based interventions comprise an alternative to self-monitoring that is equally popular as a
63 method of weight loss. For example, the commercially prevalent Weight Watchers (WW) or Slimming
64 World (SW), which are often referrals from primary health care practitioners. These are commercial weight-
65 loss programmes that individuals can sign up to of their own volition or are often referrals from primary
66 health care practitioners (Jolly et al., 2007). Individuals sign up with this programme and attend sociable
67 meetings to have a weigh in once a week; and are also able to purchase food, drinks and snacks sold by
68 these companies all in aid of losing weight.

69
70 Empirical evidence has shown the structure and intensity of contact within a weight loss method
71 are significantly correlated with success (Jensen *et al.*, 2013; Wadden *et al.*, 2011); however, inter-
72 individual interpretation of such key terms is equivocal. Metzgar *et al.* (2014) reported that accountability
73 and support, exercise, motivation, total lifestyle change and eating patterns majorly influenced weight loss
74 maintenance. Additionally, Elfhag and Rossner (2005) identified factors associated with successful weight
75 loss included; a high amount of initial weight loss, goal setting, physical activity, regular eating patterns and
76 controlled eating habits. Furthermore, to enhance weight maintenance specifically Elfhag and Rossner
77 (2005) asserted that individuals look for an internal motivation to lose weight, high self-efficacy, coping
78 strategies, social support and strong psychological strength. To ensure this, they suggested that a weight
79 loss method requires an appropriate amount of guidance and support to ensure weight maintenance, which
80 is of high importance within the first three months.

81
82 Recently, Lemstra and colleagues (2016) observed that self-monitoring weight loss programs have
83 lower adherence than group-based programmes, 41.5% vs. 68.6%, respectively. There are innumerable

84 tenets of a successful and sustained weight loss and management programme, yet inter-individual
85 preferences and perceptions of weight-management strategies are less well known; where if such
86 perceptions of weight-management strategies might be best elucidated via qualitative research methodology
87 as it provides more in depth understanding of inter-individual factors that may predispose a weight
88 management strategy to be more or less effective. Therefore, the aim of this study was to explore perceptions
89 of barriers, facilitators, strategies and successes in individual versus group-based weight loss programmes.

90

91 **Methods**

92 *Overview*

93 This study drew on data collected via interviews conducted with forty-two overweight (Body Mass
94 Index ≥ 25 kg.m²) participants (aged 32-63 years) at the conclusion of a 3-month weight loss programme,
95 randomised to a commercially prevalent group-based (n=21), or self-monitoring only (n=21) approach,
96 respectively. The project received institutional ethical approval and conformed to the Declaration of
97 Helsinki.

98

99 *Participants and Settings*

100 Forty-two overweight (Body Mass Index ≥ 25 -kg.m²) participants (aged 32-63y) volunteered to take
101 part in this study. Following anamnesis questioning; all participants verbally confirmed no prior experience
102 of formally taking part in a weight-loss plan, group, or strategy, so to avoid prior personal experiences
103 influencing opinions and beliefs, *a priori*. Participants were randomized into either 3-months of self-
104 monitoring weight-loss only, or a commercial weight-loss group.

105

106 Demographic information (age and sex) were collected via Web-based survey, completed during
107 the first week of the study. At the conclusion of the 3-month period, all individuals participated in a semi-
108 structured interview. A qualitative approach was used to respect the expert knowledge of the participants
109 and to enable them to provide insights into their experiences (Ridgers et al, 2012). The interviews followed

110 a semi-structured format and were designed to address individual perceptions of barriers, facilitators,
111 strategies and successes; related to respective weight loss strategies. In total, 42 semi-structured interviews
112 (60±7 mins) were conducted in participants' home environment by two of the authors, and digitally
113 recorded. Interviews were subsequently transcribed verbatim, resulting in 210 pages of raw transcription for
114 further analyses.

115

116 *Data Analyses*

117 Pen profiles were constructed from verbatim transcripts using a manual protocol (see; Mackintosh
118 et al, 2011; Ridgers et al, 2012). Pen profiles are an increasingly utilized technique that are used to present
119 analysis outcomes via diagrams of composite key emergent themes, and is considered appropriate and
120 accessible to researchers with an affinity for both qualitative and quantitative backgrounds. Example,
121 representative, verbatim quotations were extracted directly from the transcripts to further contextualize the
122 theme. To provide an indication of the prevalence of the themes, the number of times a specific theme was
123 mentioned across all interview data is also presented (Ridgers et al, 2012). Consistent with recommended
124 approaches (Burnard, 1991) one researcher (AC) initially read and analysed the transcripts. These findings
125 were then presented to another researcher, by means of cooperative triangulation. Having independently
126 analysed the transcripts, CC then critically questioned the presented thematic analyses and challenged
127 differing interpretations. A third researcher (RP) subsequently analysed the data in reverse from the pen
128 profiles back to the transcripts. This process assured the reliability of the data obtained (Ridgers et al, 2012).
129 Finally, the pen profiles were re-presented to the lead author, who further critically challenged the data. This
130 process allowed authors to offer alternative interpretations and interrogate the data until a consensus was
131 reached. Overall, methodological rigor (i.e., credibility and transferability) was demonstrated through
132 verbatim transcription of data and triangular consensus procedures. Moreover, dependability was
133 demonstrated through the comparison of pen profiles with verbatim citations and the triangular consensus
134 processes.

135

136 **Results**

137

138 *Barriers to weight loss success*

139 Perceptions of barriers to weight loss success were found to be divergent between strategies, where
140 only time constraints was found as a shared theme. Expense of commercial products, and knowledge of
141 nutrition and dieting were attributed to the group-based strategy. Less common barriers were weight
142 maintenance, laziness, the influence of not liking cooking (Figure 1). Exemplar views around barriers
143 include; “I wasn’t bought up with the understanding of healthy food” (F32), and, “My eating pattern was
144 very up and down because of my job” (M34). Within the self-monitoring approach, the themes identified
145 were different to the group intervention participants. However, there were also two common barriers specific
146 to the weight-loss method; lack of freedom self-monitoring provides, and a lack of social support from
147 peers. Lesser referred to barriers identified were lack of motivation, the influence of the participants’
148 occupation (Figure 1).

149

150 *****Figure 1 about here*****

151

152 *Contributors to weight loss success*

153 Convergent overarching themes were noted for individual and group strategies; including exercise, diet and
154 personal factors. The group intervention participants identified enjoyment and improving health as
155 successors to exercise (Figure 2). With respect to diet, reflection, organisation and prior dieting experience
156 were considered to be important to success (Figure 2). Finally, the personal skills identified were increasing
157 self-confidence, improving health, being self-motivated, mental state, making the appropriate changes and
158 self-awareness (Figure 2). The self-monitors observed were improving health, enjoyment, meeting physique
159 goals and the influence of their occupation to be important to successors to exercise (Figure 3). Convergent
160 themes were established between the two groups, for diet: organisation, influence of cooking skills,
161 conscious decision making and reflection; for personal factors: making appropriate changes, self-control,

162 mental state, the influence of their knowledge, time management, influence of their occupation and
163 improving health; for exercise: health improvement, enjoyment and physique goals were reported (Figure
164 3). For instance, the self-monitoring group highlighted that their social support comes from friends and
165 family, “Friends and family are support” (F 41), whilst the group intervention participants stated that their
166 social support came from the group itself, for example “My support is in the group” (F 44).

167

168

169 *** **Figure 2 about here** ***

170

171 *** **Figure 3 about here** ***

172

173 *Strategy choice influences*

174 Views on strategy choice influences were convergent as overarching themes, where; freedom,
175 enjoyment, ease, structure and consistent weight loss were evident. For example; “It’s just so easy for me
176 with the baby” (F34). For the group-based strategy, peer support, weekly schedule and guidance of
177 improving knowledge were additionally found. Whilst, for the self-monitoring strategy, social support from
178 friends was additionally referred to (Figure 4).

179

180 *** **Figure 4 about here** ***

181 **Discussion**

182

183 The aim of this study was to explore perceptions of barriers, facilitators, strategies and successes in
184 individual only vs. group-based weight management programmes. In accord with our aim, divergent themes
185 were found between groups for barriers, whilst convergent overarching themes were noted for individual
186 and group strategies for facilitators, strategies and successes; including exercise, diet and personal factors.
187 The data presented here offer unique insight into the facets of individual or group-based weight loss

188 strategies which may predispose individuals to be more or less successful when undertaking a weight loss
189 programme. Such information has yet to be provided by prior work and, as such, the research presented here
190 extends knowledge in the area/constitutes a novel addition to the area. The following topics will be discussed
191 as result of the themes found; strategy choice influences, the importance of social support, maintenance of
192 motivation, organisation, contributors to weight-loss success, guidance, personal factors, exercise, diet,
193 barriers to weight-loss success, lifestyle and personal factors, and, disadvantages of weight-loss methods.

194

195 *Strategy choice influences*

196 *The importance of social support*

197 Social support was deemed to be an important factor for both weight management programmes,
198 concomitant with previous research, which highlights social support to be a key positive factor contributing
199 adherence (Lemstra et al. 2016). Whilst comparable, in an overarching view, the present work suggests that
200 the two groups found social support from different places. Karfopoulou et al. (2016) asserts that although
201 social support is important, the type of support received can affect weight maintenance. That is, when
202 comparing individuals who had lost or maintained weight for a year to those who re-gained it, those who
203 maintained weight loss had received compliments, in comparison to the re-gainers, who had received verbal
204 instructions. This highlights that the support from peers needs to be positive for the individual to maintain
205 motivation. This could explain why the self-monitors sought social support within a weight loss method,
206 given it is not as readily available compared to group intervention.

207

208 *Maintenance of motivation*

209 Other factors relating to maintaining motivation were found through the thematic analyses, where
210 both the groups acknowledged that a pattern of constant weight loss each week will keep them motivated.
211 Participants also highlighted their goals in terms of numbers i.e. the importance of monitoring their weight,
212 to succeed. This could suggest that if the individuals had stopped achieving this weekly weight goal they
213 may have given up, albeit this does require follow-up work to substantiate. Both self-monitoring and group

214 interventions facilitate participants to track this progress by integrating a weekly weighing/tracking progress
215 system; although there is a dearth of empirical evidence that specifically identifies this as a mechanism to
216 motivation maintenance, there is evidence for the underlying principles. For example, Elfhag and Rossner
217 (2005) support the concept of meeting weight loss goals to be important to participants alongside identifying
218 that individuals who have a high initial weight loss are more likely to maintain their weight lost. Whilst
219 Wing and Hill (2001) assert that regular self-monitoring of weight is crucial for weight maintenance,
220 inferring that if individuals are to choose a weight loss method that incorporates tracking, they are more
221 likely to maintain their weight; however, how this system is operationalized is somewhat unequivocal.

222
223 Within the present study, the participants from both groups also conveyed that the weight loss method
224 they choose needs to provide enjoyment, freedom and ease for them. It is plausible, from the themes
225 highlighted in this study, that participants seek these from a weight loss method to maintain motivation. The
226 ease of a weight loss method is crucial, because if it is complicated, or too restrictive and difficult to fit in
227 to an individuals' lifestyle, it is not conducive to programme maintenance or adherence. Classic empirical
228 evidence, from Schifter and Ajzen (1985), highlights that idiosyncratic preferences of freedom must be
229 evident, thereby facilitating enjoyment; without such affordances, motivation will be deleteriously affected.

230

231 *Organisation*

232 A further theme identified from both groups constituted the need for a structured eating pattern. This
233 highlights the importance of self-organisation, which has previously been deemed an important factor to
234 weight loss success (Elfhag and Rossner, 2005; Kruger, Blanck and Gillespie, 2006). Many of the
235 participants highlighted how their meal patterns had changed due to the weight loss method they had
236 adopted. One practical difference between the two groups is that the group intervention, integrated this
237 structured eating pattern approach from their teachings, for example, using a points-based system (as in
238 Weight Watchers) to control their intake. Conversely, those that self-monitor are required to organise their
239 eating patterns for themselves.

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Guidance

Within this study, the group intervention participants identified an additional need within their weight loss method, compared to the self-monitors. That is, they highlighted the importance of the organisation of the point-based systems enabling them to control eating habits, in conjunction with the knowledge the leaders or facilitators impart and the provision of educational materials, for example the booklets and recipes. To the authors' knowledge, there exists no research to definitively support that the aforementioned are common influences as to why individuals choose a group-based weight loss intervention. However, within this research, 'guidance' is the difference that dichotomizes the two groups. Notwithstanding, it was evident that self-monitors look for the same core principles within a weight loss method, they are happy volitionally organising their behaviour changes compared to group intervention participants whom seek extra guidance to make appropriate changes.

Contributors to weight loss success

Personal factors

There are innumerable personality traits and qualities that could influence an individual's likelihood to succeed with weight loss (Montesi et al., 2015), however, within this work, both groups identified similar qualities they deemed important in relation to their weight loss success. Firstly, both groups identified the need to make appropriate changes; whether this be to diet or exercise. Self-control was also identified as an important aspect alongside needing a strong mental state. Finally, both groups identified the importance of improving health, suggesting that if an individual feels intrinsically better, they can see the positive impacts of the weight loss, thereby facilitating increased motivation; a finding which has been affirmed previously (Metzgar et al. 2014). Both groups in the present study also identified other personal factors, albeit in smaller numbers, suggesting the importance of assessing idiosyncratic traits preceding recommendation of a weight loss strategy.

266 *Exercise*

267 The importance of exercise has repeatedly been highlighted for positive health trajectories, whilst
268 concomitantly being an effective strategy for weight loss; where it is frequently shown to be a predictor of
269 success in long term healthy weight management (Donnelly et al. 2004; Haus et al. 1994; Ross et al. 2000;
270 Lejeune et al. 2003; Kahkoska et al. 2018). Empirical evidence is equivocal as to the veracity of diet versus
271 exercise for weight-loss or maintenance, given they are *two-sides of the same coin*, but increased
272 effectiveness of using both in combination is globally advocated. In a comprehensive meta-analysis,
273 Anderson et al. (2001) investigated long-term weight maintenance of participants within structured weight-
274 loss programmes; six constituent studies concluded that participants who exercised more frequently, had a
275 significantly greater weight-loss maintenance compared to those who exercised less. Additionally, Wu et
276 al. (2009) showed that whilst lifestyle interventions with a dietary component result in weight loss,
277 interventions combining a dietary and physical activity component result in a greater magnitude of weight
278 loss.

279
280 Irrespective of weight-loss strategy, those participants engaging in physical activity reported
281 homogenous themes, highlighting the importance of improving health. Concurrently, participants stated
282 they enjoyed the forms of exercise they did. Previous research demonstrates adherence rates in exercise to
283 be increased synchronously with enjoyment (Ryan et al. 1997; Hagberg et al. 2008). There was a range of
284 physical activities reported, from aqua aerobics, yoga and horse riding to gym-going. Evidently, numerous
285 forms of exercise appeal to various individuals, suggesting that a symbiotic relationship between weight
286 loss interventions and proximity to facilities that enable physical activity (e.g. sports and leisure centres)
287 may be conducive to physical activity engagement; notwithstanding, this is conjecture and necessitates
288 further investigation. In addition, many self-monitors highlighted that they perceived themselves as having
289 active jobs, which influenced their decision to exercise or not. Whilst many self-monitors highlight specific
290 physique goals they wanted to meet in addition to losing weight, such as increasing musculature.

291 *Diet*

292 Diet, concomitant to energy balance, has a major influence on an individuals' weight, thus playing
293 a key role in weight loss (Bish et al. 2005; Kruger et al. 2004), concomitant to physical activity (referred to
294 above). Both groups identified the importance of organisation and reflection to their weight loss journey.
295 There is currently limited empirical data exonerating the concept of self-reflection within weight loss
296 specifically. However, the concept of self-reflection has been asserted an important skill, which enables an
297 individual to critically look at what they are doing and make appropriate changes (Baird *et al.* 1991), and
298 by extension within weight-loss.

299 A stark contrast between the weight loss groups was that the self-monitors identified their cooking
300 skills as a positive influence. Whilst the group intervention participants highlighted this as a barrier. Kruger
301 and colleagues (2006) also reported on the importance of organization and meal planning, alongside the
302 positive influence of liking cooking, as factors relating to successful weight maintenance. This may reveal
303 a tenet for improvement in group-based strategies, notwithstanding, cooking preference/ability should be
304 investigated as a potential correlate or determinant of successful weight loss and maintenance.

305

306 ***Barriers to weight loss success***

307 Barriers are an acknowledgedly important aspect to consider for potential weight loss; whilst there
308 are factors individuals cannot control, for example developmental determinants, age and sex, many other,
309 controllable or changeable, environmental and social factors can heavily influence weight loss and
310 maintenance, ultimately becoming barriers to success (Weight Management, 2003). Both weight loss groups
311 identified a range of barriers to weight loss success, however, there were few similarities noted between the
312 two groups.

313

314 *Lifestyle and personal factors*

315

316 Both groups identified time as a perceived barrier, for example, in response to questions referring to
317 preparation of food and participating in exercise. In particular, the self-monitors also stated that their

318 occupation was a major time barrier for exercise participation. Much empirical data exists in support of the
319 current findings (that time was a major barrier), particularly with reference to exercise (Troost et al. 2002;
320 Andajani-Sutjahjo et al. 2004). Welch et al. (2008) found that 40% of 1,580 women stated time is a barrier
321 to achieving dietary goals, and 70% of 1,521 women asserted time as a barrier to achieving physical activity
322 goals.

323
324 Intrinsic motivation is very common theme across weight loss research, where self-motivation paired
325 with an internal motivation to lose weight have been identified as predictors of weight loss success (Elfhag
326 and Rossner, 2005; Teixeira et al. 2005). Within the present study, self-monitors identified (lack of) intrinsic
327 motivation as a barrier with much greater prevalence than the group intervention, in fact, among group
328 intervention participants, this was not found as a universal theme. Given the lack of motivation experienced
329 by only one intervention in the present study, further investigations into this phenomenon should be
330 encouraged.

331
332 In the current study, the group intervention participants asserted weight maintenance as an importance
333 aspect. Highlighting the importance of sustained weight loss or management, and linked to a further
334 perceived barrier, mental state, which, in a likely cyclical relationship, is exacerbated by reverting towards
335 starting weight. This relationship warrants deeper investigation to facilitate our understanding of mental
336 state and weight management.

337
338 *Disadvantages of weight loss methods*

339
340 Due to the self-monitoring participants having greater perceived control over their approach/strategy to
341 weight loss, the barriers they identified were generally not related to the weight loss method itself, rather
342 the inverse, the abundant freedom was perceived as a potential drawback, whilst paradoxically positively
343 influencing their choice of strategy. This paradox demonstrates the intricacies of individual weight loss

344 method selection, opposed to a one size fits all approach. Freedom within a weight loss method might
345 facilitate the participant's control over their physical activity regime, food portions and calorie restrictions.
346 Whilst these are fundamental tenets of any weight loss programme, it likely necessitates self-control and
347 understanding (Klem *et al.* 1997; Leahey *et al.* 2014). Conversely, the group intervention participants did
348 not identify freedom as a barrier, only a strategy choice influence, inferring that the group-based sessions
349 provide adequate education and support to facilitate better understanding and self-control in their
350 participants. The group intervention participants highlighted two barriers to success relating to their method
351 choice. Firstly, the expense of the commercial group products, and, secondly, prior knowledge of nutrition
352 and dieting. Klohe-Lehman *et al.* (2006) support the importance of knowledge for weight loss success,
353 highlighting that the amount of weight the participants lost after the intervention, significantly, positively
354 correlated with the amount of knowledge they gained, albeit subjectively ascertained, this suggests that
355 greater [perception of] knowledge, is associated with greater weight loss success.

356

357 *Limitations*

358

359 This study evaluated participants views in response to 3-months following a weight loss programme,
360 however, given the importance of weight management, in addition to weight loss, a longer follow up period
361 could be implemented to assess the changing views, as an individuals' weight loss journey continues. The
362 interventions employed in this study were 3-months in duration, however, were a longer intervention
363 implemented, participant views may have differed, and as such, should be considered in further research.
364 Of importance is that this study did not distinguish between those who were successful or unsuccessful on
365 their weight loss programme; but assert the information gleaned from this work are equally as important on
366 ones' weight-loss or maintenance journey, where 3-months is only the beginning. We therefore recommend
367 that a comprehensive, longitudinal investigation of perceptions and actual weight loss be conducted. Finally,
368 the participants represented quite a broad age range, it would be advantageous to explore age specific groups
369 to investigate the intricacies of how views related to weight loss evolve with age.

370

371 **Conclusion**

372

373 Whilst facilitators, strategies and successes related to individual only vs group weight-loss approaches
374 were comparable between groups, divergent perceived barriers were found, highlighting that there is not
375 one panacea strategy for weight loss or management. Therefore, it is recommended that key stakeholders,
376 facilitators and individuals must consider these factors prior to the advocacy of any one-particular weight
377 loss strategy, and use individual/patient experience to facilitate the abatement of perceived barriers.

378 **Data Availability**

379 The data used to support the findings of this study are available from the corresponding author upon request

380 **Conflicts of Interest**

381 The authors do hereby declare that they have no conflicts of interest relevant to the content of this
382 manuscript.

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1 **Figure captions**

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3 FIGURE 1. Barriers to weight loss success for group and individual strategies

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5 FIGURE 2. Contributors to weight loss for group strategies

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7 FIGURE 3. Contributors to weight loss success for individual strategies

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9 FIGURE 4. Strategy choice influences for group and individual weight loss

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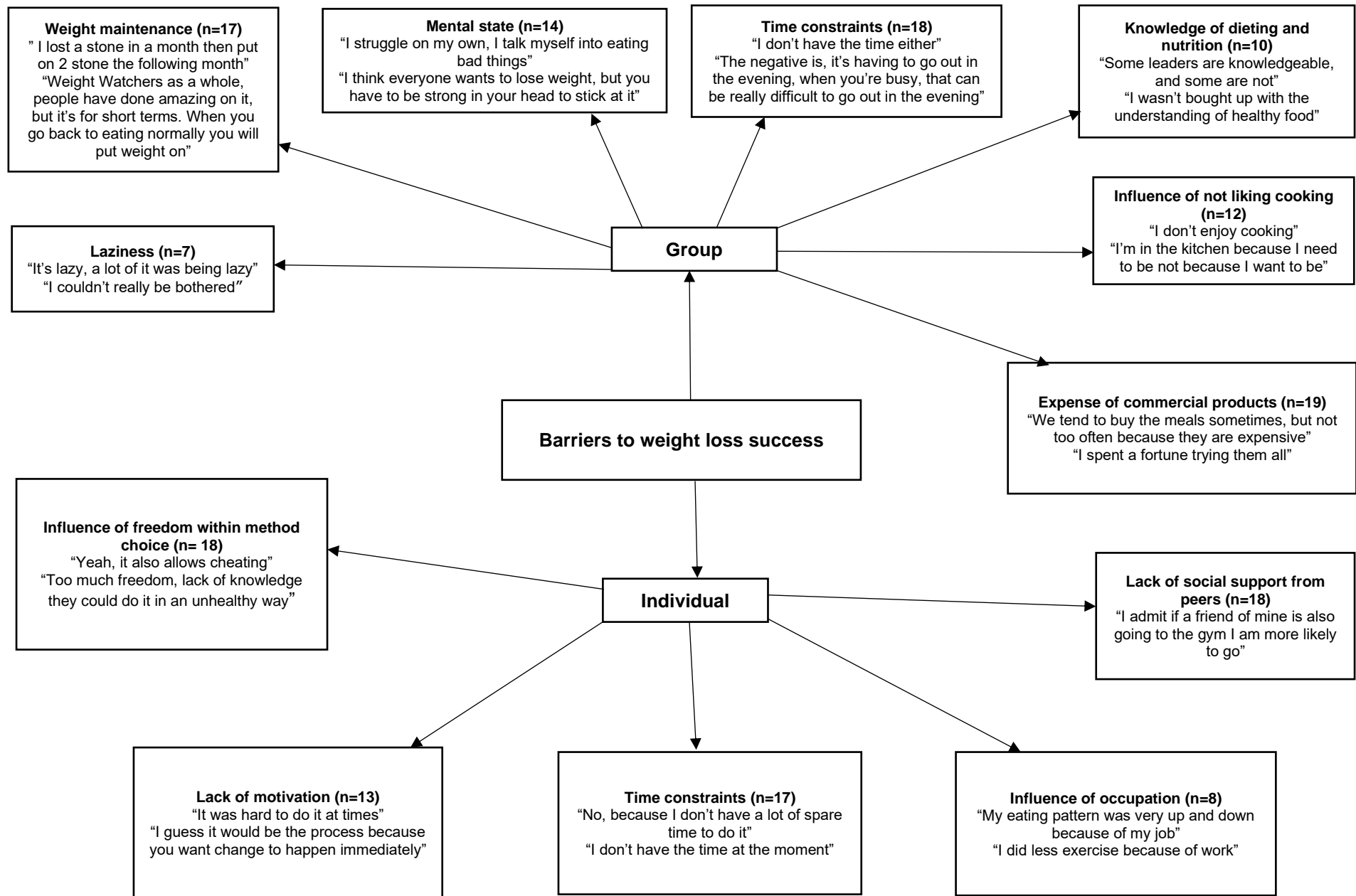


FIGURE 1. Barriers to weight loss success for group and individual strategies

FIGURE 2.
Contributors to weight loss for group strategies

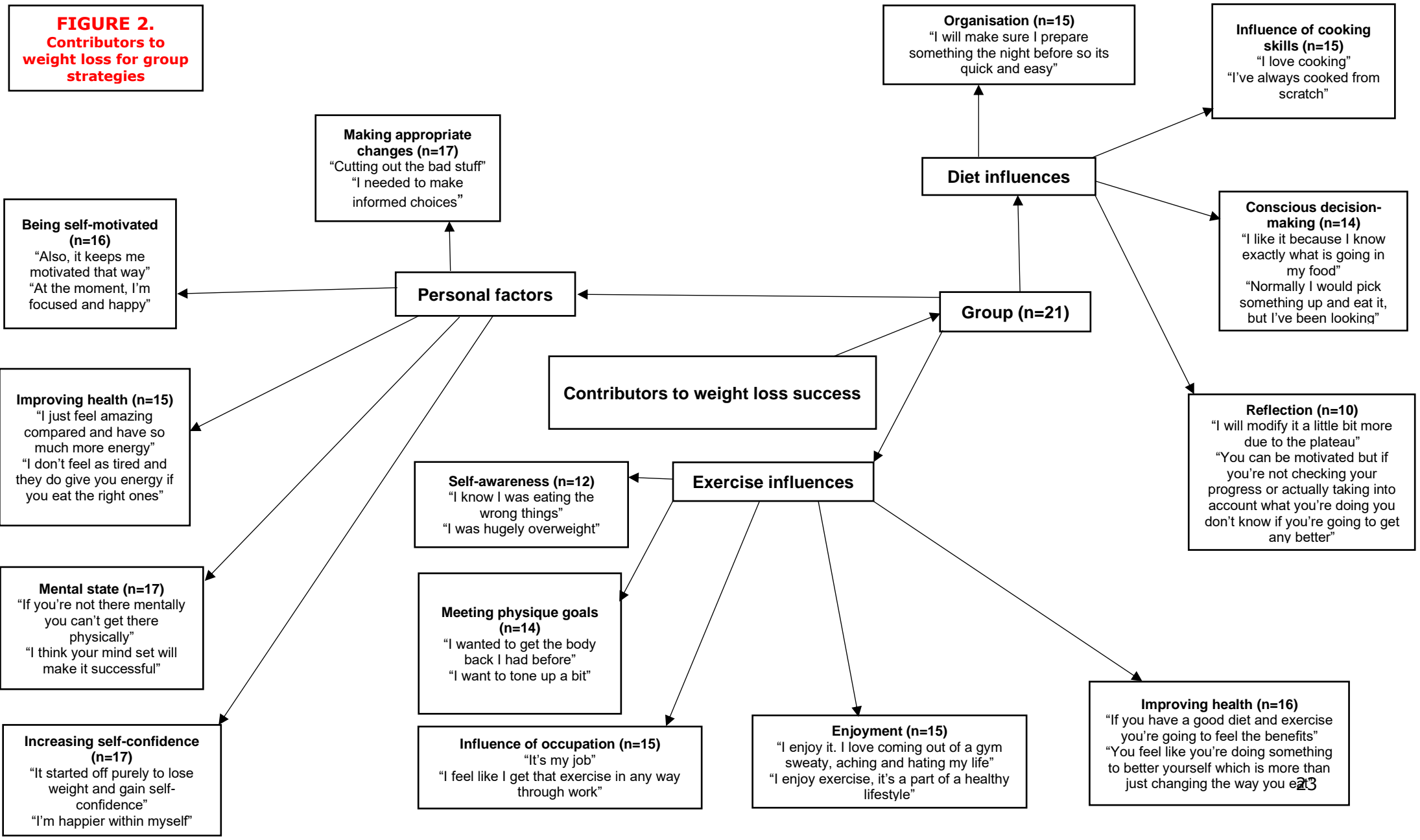
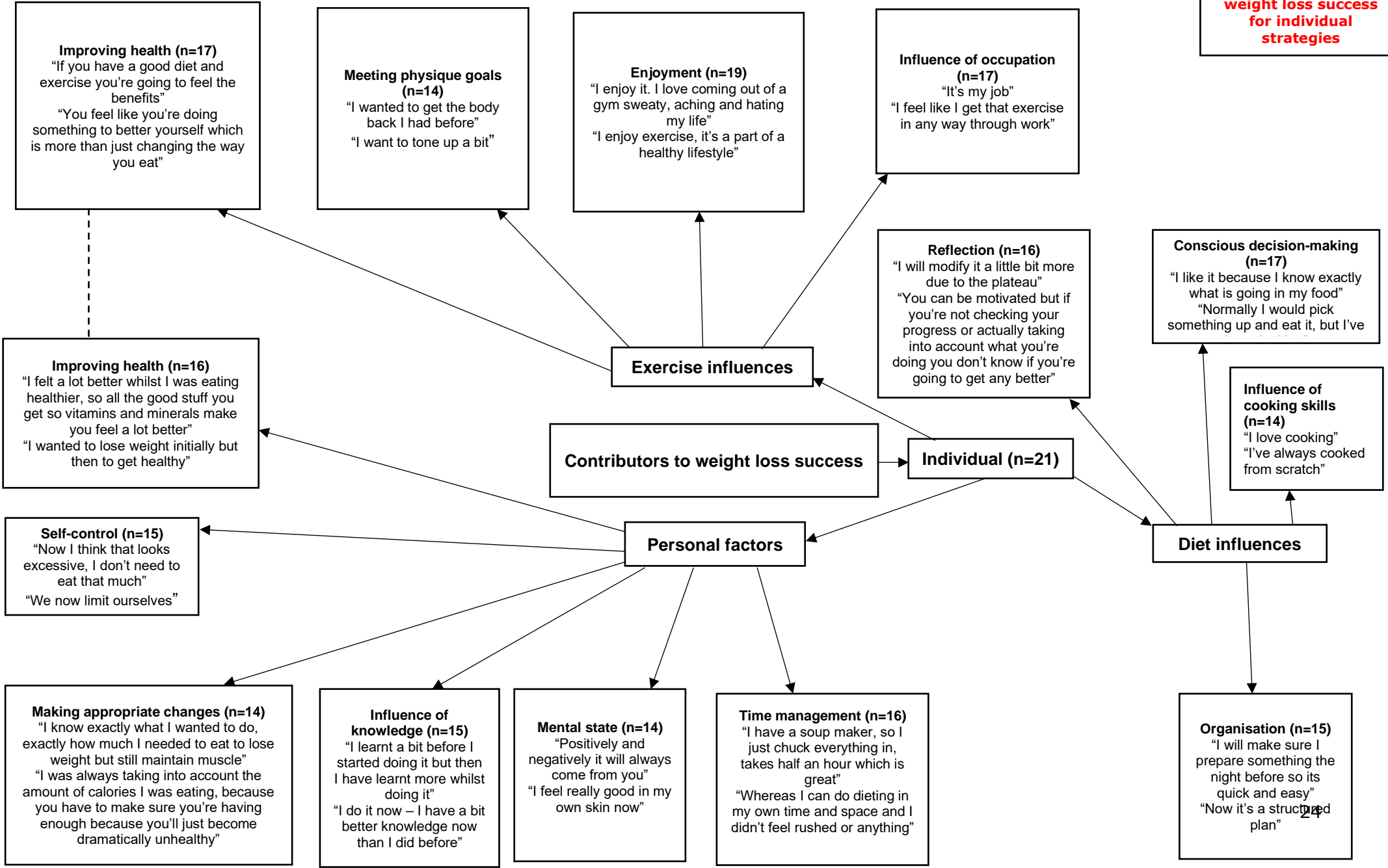


FIGURE 3.
Contributors to weight loss success for individual strategies



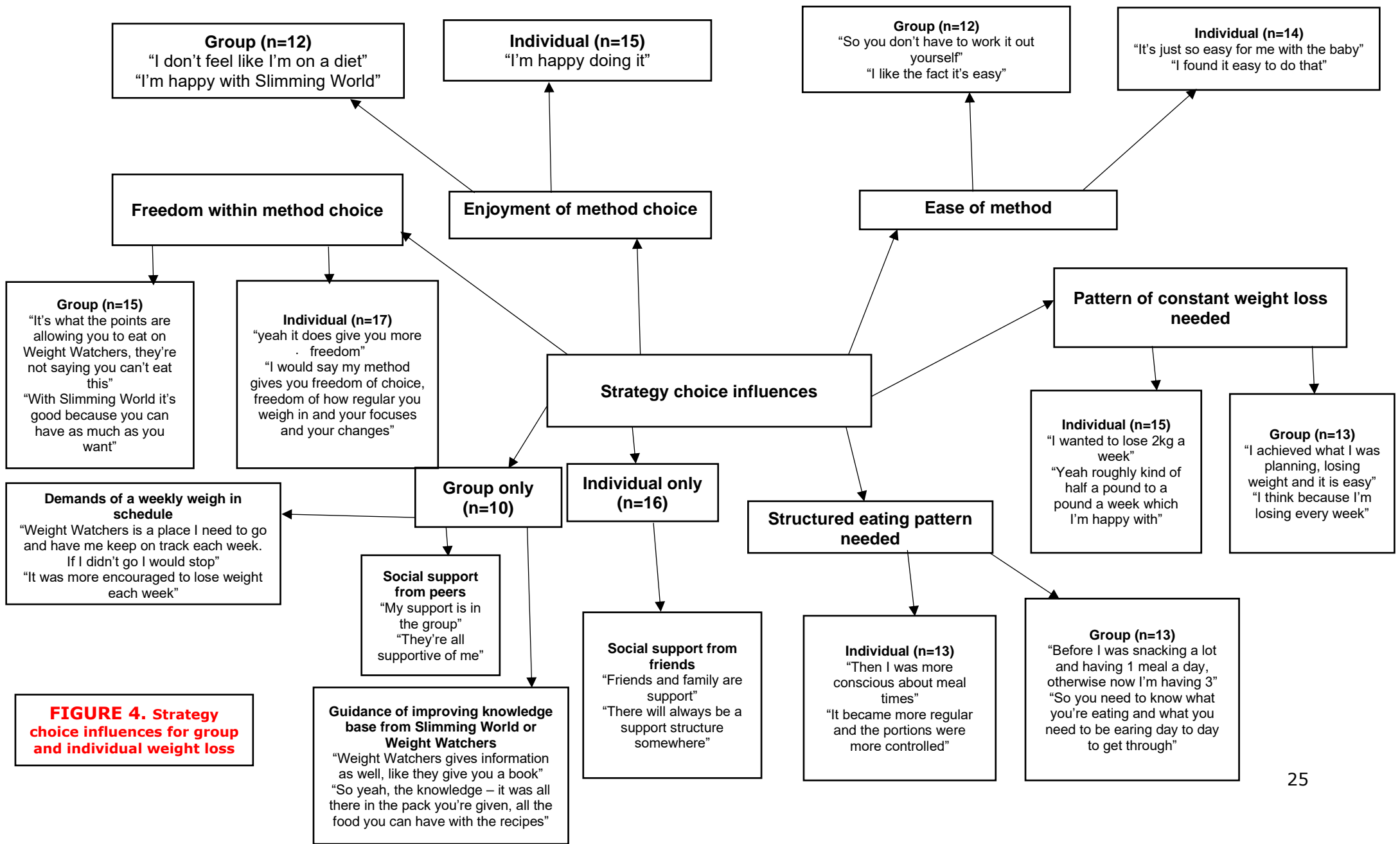


FIGURE 4. Strategy choice influences for group and individual weight loss

