

An investigation of consumers' use of 'dessert-only' food retail outlets; A mixed-methods
study

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Running title: Consumers' use of 'dessert-only' restaurants

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26 **Abstract**

27 **Objective:** To understand how consumers use ‘dessert-only’ retail food outlets which represent
28 one the UK’s top 10 growing retail business categories and a high-street source of energy-
29 dense, low nutrient foods.

30 **Design:** Responses to open-ended questions about dessert-only restaurant usage and closed-
31 ended questions about demographic information including frequency of use and BMI were
32 collected.

33 **Setting:** Online questionnaire launched from the U.K.

34 **Participants:** 203 participants (Female = 153; Mean age = 33.5 years ($SD = 14.2$); Mean BMI
35 = 25.05 kg/m² ($SD = 5.29$)) assisted with the study.

36 **Results:** Quantitative results showed that participants used dessert-only restaurants
37 infrequently and qualitative results showed that they regarded a visit as a treat. Many
38 participants also described ways that they modified their eating pattern to accommodate a visit.
39 Thematic analysis also showed that consumer visits were influenced by properties of the foods
40 on offer, opportunities for socialisation (especially with children) as well as convenience, price
41 and a perceived relaxation of meal-time ‘rules’.

42 **Conclusions:** Despite some media opinion, this type of food retail outlet is being used
43 somewhat judiciously by consumers. A fruitful public health focus may be on the management
44 of treats within the broader context of the diet as opposed to targeting the treat itself, this may
45 be especially helpful for parents/ caregivers taking their children out for a treat to a dessert-
46 only restaurant.

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49 **Keywords:** Retail food outlet; dessert-only restaurants; mixed methods; food environment;
50 foodscapes.

51 **Introduction**

52 The World Health Organisation reported that in 2016, globally, 1.9 billion adults were
53 overweight, of whom 650 million had obesity (1). They also reported that in 2016 there were
54 41 million children under 5 and 340 million aged 5 – 19 with overweight or obesity (1). Obesity
55 and overweight are associated with a plethora of co-morbidities including cardio-vascular
56 disease (2), type 2 diabetes (3) and some cancers (4). Given this, research into understanding
57 obesity with a view to developing efficacious interventions is of high priority (5).

58 The factors affecting the incidence of obesity are complex and multifactorial (6). One
59 such factor that has garnered considerable interest is the relationship between ‘neighbourhood’
60 food environments and obesity (7). The overarching hypothesis is that the greater the number
61 of food outlets that provide energy-dense low nutrient food, the greater the likelihood of the
62 local population being overweight or obese. Some studies have provided evidence in support
63 of this hypothesis (8). However, overall evidence has been mixed with studies showing
64 contradictory findings (9) or failing to find any significant associations between individual food
65 outlet availability and obesity (10). Indeed, a systematic review of studies examining the
66 relationship between the food environment and obesity showed that most associations between
67 these factors were null (11). However, the authors of this review did highlight some “noteworthy
68 patterns” between supermarket availability and obesity (negative association) and fast food
69 availability and obesity (positive association).

70 In order to make sense of these mixed findings, it is likely that there is a need for studies
71 that account for the potential nuances of the relationship between obesity and the food
72 environment. For example, *how* are individuals using these outlets that are available to them
73 and might this explain why their availability does not consistently predict obesity in the local
74 area (11). Penney, Almiron-Roig, Shearer, McIsaac and Kirk (12) make a similar point,
75 suggesting that the external eating environment requires more specific investigations with a

76 particular focus on “how people and environments interact”. Notably, Penney and colleagues
77 (12) highlight the ‘model of community nutrition environments’ (13) as a useful starting point for
78 investigations on this topic. The model was specifically developed to understand environments
79 that provide opportunities for people to eat outside of the home. It indicates that policy,
80 environmental (including the information environment) and individual level variables interact
81 in order to influence behaviour (eating patterns). Of particular relevance is the suggestion that
82 individual level variables, namely sociodemographic, psychosocial factors and the perceived
83 nutrition environment may mediate the relationship between the environmental variables and
84 behaviour (eating patterns).

85 One approach to investigate the relationships between the factors outlined in the model
86 of community nutrition environments (13) and notably suggested by Cobb et al. (11), is to gain a
87 rich and nuanced understanding of consumers’ use of particular food retail outlets using
88 qualitative methodologies. In a recent example, Blow, Patel, Davies and Gregg (14), conducted
89 interviews with adults regarding their use of takeaway food outlets. They highlighted the
90 importance of a number of variables that affected how individuals interacted with hot food
91 takeaway outlets, including social factors (e.g., opportunity to bond with others), personal
92 factors (e.g., values around importance of healthy eating) and resources (e.g., lacking time for
93 cooking). This kind of understanding is important because it can help to evidence a more
94 complex relationship between the local food environment and obesity and inform potential
95 interventions targeting this relationship.

96 Another type of retail food outlet, the dessert-only restaurant, has grown in prominence
97 in the local UK food environment; the most recent UK business report from the Local Data
98 Company (15) indicated that whilst leisure sectors suffered the highest overall closure rates in
99 2018, dessert-only restaurant franchises displayed growth. This placed dessert-only retail food
100 outlets in the top 10 growing retail categories (15). Whilst establishments such as ice cream

101 parlours and cafes serving cake have long existed, ‘dessert-bars’ follow a unique format that
102 likens them more to formal restaurants (but without the main courses). They are also
103 characterised by somewhat exaggerated features that set them apart, such as, very large portion
104 sizes, complicated recipes, high quality ingredients and an extensive menu. Such outlets are
105 also present in the United States and Europe. In addition, the growing ubiquity of dessert-only
106 restaurants on the UK high street has attracted the attention of the media, with some
107 documenting this trend ⁽¹⁶⁾ and some demonising it ⁽¹⁷⁾. Yet there is little formal research on
108 the topic to inform a position, public health or otherwise.

109 Therefore, the aim of the current study was to gain a richer understanding of adults’ use
110 of ‘dessert-only’ restaurants. Given the novelty of our research question, a mixed methods
111 study was undertaken with a primary focus on a data-driven qualitative approach ^(18, 19) and a
112 secondary focus on quantitative factors that can provide additional context (e.g., demographic
113 factors and information about visits to dessert-only restaurants). We used an online
114 questionnaire to present open-response and closed-response questions to participants. Open
115 questions allowed for qualitative textual data to be collected, which explored how and why
116 dessert-only food outlets are visited. Closed (quantitative) questions were used to collect
117 participant demographic and usage information (including prior use of a dessert-only
118 restaurant).

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Method

122 Participants

123 An initial 388 responses were recorded, 203 of which exceeded 98% completion and
124 were included in the final data analysis. This sample size exceeded the suggested minimum by
125 Braun and Clarke ⁽¹⁹⁾ of 80 -100 respondents for a qualitative questionnaire study. The number
126 of responses was monitored at regular intervals following the study start date, and the study
127 was stopped at the earliest opportunity after the minimum number of responses had been

128 collected. We note that this well exceeded the minimum due to the rapid nature of our online
129 convenience sampling strategy. The sample consisted of 151 females and 47 males. The
130 remaining four participants preferred to describe their own gender identity with two responding
131 'female', one responding 'male' and one response that suggested a misunderstanding of the
132 question. One participant chose not to disclose their gender. The mean age of the participants
133 was 33.5 years old ($SD = 14.2$).

134 Participants were recruited online on social media (via authors' personal and
135 institutional accounts) and the internal student participant pool at Swansea University.
136 Participants recruited through the participant pool were offered one 'credit' on this system (that
137 can then be redeemed within the system for students' own study recruitment) and all other
138 participants were offered the opportunity to be entered into a prize draw for a £10 Amazon gift
139 voucher. Participants were reassured that their anonymity would remain if they chose to enter
140 because their personal information (email address/ student number) was unlinked from their
141 data. The participants were told that the aim of the study was to investigate how people use
142 dessert-only restaurants. The consent form advised those with either a current or previously
143 diagnosed eating disorders and those under the age of 18 to refrain from participation. Ethical
144 approval was granted by XXXX University Department of Psychology Research Ethics
145 Committee.

146 **Measures**

147 Open-ended questions explored overall context of adults' use of dessert-only restaurants and
148 opinion regarding their popularity in general. These questions were broadly guided by the
149 model of community nutrition environments ⁽¹³⁾ with questions attempting to guide
150 participants to think about individual-level variables (question 1) and behaviour - eating
151 patterns (questions 2 and 3). As well as broader influences within the model including policy,
152 environmental and informational variables (question 4). Due to the nature of our online

153 convenience sampling approach, we did not design questions to target any particular
154 individuals or topics that might be pertinent to a particular participant group. We also
155 acknowledge that our questions were relatively structured given the novelty of our research
156 area, this is because the online questionnaire methodology does not give the researchers an
157 opportunity to clarify, guide or probe responses from participants. Therefore, questions must
158 be comprehensive from the outset. Full question text can be in Table 1.

159

160 <<Table 1>>

161

162

163 Closed ended questions were used to collect demographic information (gender, age, height
164 and weight) and basic dessert-restaurant usage information (frequency of visits, duration of a
165 typical visit and use of takeaway facility).

166 **Procedure**

167 Participants took part in the study by clicking on an anonymous questionnaire (Qualtrics,
168 Provo, UT) link posted online (see details of recruitment strategy above). Once the link had
169 been clicked, participants were provided with an information screen followed by an informed
170 consent screen. Following the provision of informed consent, participants were asked to
171 provide demographic information (age, gender, height and weight) and responses to the open-
172 ended questions. Once completed, participants were given the opportunity to provide their
173 email address for entry into the prize draw and were then debriefed.

174

175 **Data Analysis**

176 Responses to the open-ended questions provided a qualitative dataset that was analysed
177 using inductive thematic analysis (18). Though, as recommended by Braun and Clarke (19) we
178 acknowledge that our approach is influenced by our perspective as psychologists with an
179 interest in obesity.

180 Two researchers (TR & PW) conducted the thematic analyses independently and then
181 compared results for agreement (investigator triangulation) (20, 21). Any discrepancies were
182 discussed and resolved by the researchers in the first instance, otherwise a third researcher
183 (LW) was consulted. Responses to open questions were read repeatedly and recurring patterns
184 were identified and coded. Codes were grouped into overarching themes and sub-themes. The
185 original text responses were continuously referred to during theme formation.

186 Finally, self-reported height and weight were used to calculate body mass index (BMI)
187 for each participant.

188

189 **Results**

190 **Participant characteristics**

191 Demographic information collected included age, gender, height and weight, with the latter
192 used to calculate participant BMI (see table 2).

193

194 <<Table 2>>

195

196

197 Quantitative information about the nature of visits to dessert-only restaurants was collected
198 including frequency of visits, duration of visits and use of takeaway facilities (see table 3).
199 Notably, 82% had visited a dessert-only restaurant at least once. Those participants who had
200 never visited a dessert-only restaurant were retained for the study but did not respond to open-
201 ended questions about their own reasons for visiting (some left the question blank, some wrote
202 ‘not applicable or similar) and only responded to the open-ended question asking why they
203 thought that such outlets might be popular.

204

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<<Table 3>>

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210 **Thematic analysis of open-ended questions**

211 Major themes and sub-themes were identified (Table 4) and interconnections were
212 explored within a thematic map (Figure 1).

213

214

215

<<Table 4>>

216 **Theme 1: Food-focused**

217 Many of our participants suggested that features of the foods available to them at a
218 dessert-only restaurant were why they visited and why they thought such outlets were popular.

219 We explore these ideas under four sub-themes below, (1) taste of desserts, (2) quality of

220 desserts, (3) portion size of dishes and (4) the variety on offer.

221

222 **Sub-theme: Taste**

223 Many of our participants mentioned the taste of the food provided at a dessert-only restaurant
224 as a reason for their visit, some simply stating “*Nice taste*” (F, 39 years old (yo)) or “*Because*
225 *desserts taste nice.*” (M, 19 yo). Other participants said that they thought that dessert-only
226 restaurants are popular because the foods are tastier than elsewhere, particularly because they
227 are dessert-based, “*A lot of food is so bland these days and desserts are still tasty*” (M, 50 yo)
228 and “*Desserts are a more tasty option to regular meals*” (M, 22 yo). Other participants
229 mentioned their popularity in terms of individual’s taste preferences, with particular reference
230 to sweet taste, being met by the food offered at a dessert-only restaurant, “*People’s taste’s are*
231 *changing they like sweet things*” (F, 74 yo) and “*Everyone loves sweet stuff don’t they?*” (F, 28
232 yo).

233

234 **Sub-theme: Quality**

235 Participants also referred to the food provided by dessert-only restaurants in terms of its quality
236 when asked why they visited, “*better quality desserts*” (F, 20 yo) and one participant suggested
237 that this quality was because of the focus of these outlets on desserts, “*because they specify*
238 *[sic] in desserts, making it better quality*” (F, 20 yo).

239

240 **Sub-theme: Portion-size**

241 Many of our participants said that the reason they visited a dessert-only restaurant was for the
242 larger portion sizes that were available by comparison to other restaurants, “*I enjoy having a*
243 *dessert as a treat and dessert only restaurants usually have a bigger portion size than a dessert*
244 *from a normal restaurant*” (F, 21 yo). Some participants also suggested that this was a reason

245 why they were popular, responding to this question saying, “*Big portions*” (F, 30 yo) and “*Over*
246 *sized portions, sweet treats*” (F, 33 yo). Another participant offered greater elaboration in
247 answer to the same question by benchmarking the size of dessert against a regular main course,
248 “*When you don’t want a main meal because you favour sweet food. You can get a meal size*
249 *dessert rather than a small dessert with a main meal at a restaurant serving different courses.*”
250 (F, 60 yo).

251

252 **Sub-theme: Variety/ choice of desserts**

253 Many participants suggested a reason why they visited a dessert-only restaurant was
254 the “*wide variety of choice*” (F, 24 yo). Indeed, a key comparison was with the variety available
255 at a regular restaurant, one participant suggested that the reason that they visited a dessert only
256 restaurant was the “*Variety of different deserts [sic] they don’t usually do in all restaurants*”
257 (F, 20 yo) and another participant offered a similar reason “*There’s also lots of choice of*
258 *dessert, unlike most restaurants*” (F, 21 yo). Our participants also mentioned choice and variety
259 when asked why they thought that dessert-restaurants were popular, echoing the comparison
260 with regular restaurants mentioned, “*Because of the range of products available to you that*
261 *you cant [sic] usually get when you go to a conventional restaurant. For example, not many*
262 *convential [sic] restaurant's will offer such desserts as waffles topped with your favourite*
263 *chocolate...*” (M, 24 yo). One participant also mentioned that they may be popular because of
264 the nature of choice available, “*The choice of desserts they serve and also they serve different*
265 *desserts from anouther [sic] country*” (declined to provide gender, 22 yo). In addition, a few
266 participants highlighted that they visited for a “*dessert that I wouldn’t usually make for myself*”
267 (F, 22 yo) and that dessert-only restaurants are popular “*As you can’t really make them easily*
268 *at home*” (F, 27 yo).

269 **Theme 2: A treat and its management**

270 Participants frequently described visits to dessert-only food retail outlets in terms of a ‘treat’
271 and described ways that they justified or compensated for that treat in terms of both physical
272 activity and eating behaviour. This theme is explored below under two sub-themes, firstly,
273 visits as treats and secondly, compensation for treat.

274 **Sub-theme: Visits as treats**

275 The idea of a visit to a dessert-restaurant as a ‘treat’ was ubiquitous across responses from our
276 participants. When asked how their visits might fit into their day, a key theme was as a treat,
277 for example, it might be a treat following another activity “*After the cinema for a treat with the*
278 *kids*” (F, 31 yo) or as part of a broader treat “*As part of a shopping trip treat*” (F, 48 yo). When
279 asked why they use dessert-only restaurant, “*As a treat*” was a phrase often repeated. Some
280 participants elaborated suggesting that a visit was “*My children’s choice for a treat*” (M, 38
281 yo) and “*Me and my friends go for a treat*” (F, 18 yo). More broadly participants recognised
282 people’s desire for a treat as a reason why dessert-only restaurants are popular, “*Sometimes*
283 *people just want a treat and not a meal as well*” (F, 30 yo) and “*People like to indulge. And it*
284 *feels naughty and decadent*” (F, 49 yo).

285

286 **Sub-theme: Compensation for treat**

287 Whilst a large proportion (42%) of our participants simply said “*No*” when asked if they had
288 ever made changes to other meals in response to a visit to a dessert-restaurant, many of them
289 described doing so when asked how a visit to a dessert-restaurant fitted into their day. Many
290 participants said that they had “*dessert instead of a meal*”, one participant described in more
291 detail, “*Normally would have a dessert instead of a meal in the evenings*” (F, 18 yo) whilst
292 other participants described a slightly different approach “*I’d have something small to eat like*

293 *a sandwich or wrap*” (F, 20 yo) and “*Usually have a small meal followed by the dessert*” (F,
294 20 yo).

295 For those participants who responded to the question regarding making changes to other
296 meals in response to their visit to a dessert-only restaurant, the approach of replacing a meal
297 with the dessert and/ or modifying another meal recurred, “*I will have dessert instead of my*
298 *evening meal and probably not have breakfast the next day either*” (F, 21 yo). Another
299 participant explained that they engaged in this kind of behaviour because they felt guilty
300 following their visit, “*yes, if I have eaten desserts usually try to eat healthier day after because*
301 *I feel guilty for the bad choices*” (F, 21 yo).

302 Participants also made reference to physical activity in responses. When asked about
303 making changes to meals in response to a visit, one participant said that not only would they
304 make a change to their food intake but also their physical activity, “*Sometimes I will eat well*
305 *the following day and make sure I go to the gym more frequently that week*” (F, 20 yo). Some
306 participants also mentioned physical activity as part of their response to how their visit fitted
307 into their day, “*As part of a day out, after a long walk*” (F, 56 yo) and for another, “*once as a*
308 *treat after training*” (M, 22 yo).

309

310 **Theme 3: Social opportunities:**

311 Many participants described dessert-only restaurants in terms of the social opportunities that
312 they provide. In particular, social opportunities for families with young children were
313 mentioned and opportunities for larger groups of friends, with particular reference adolescents.
314 We explore these two themes below.

315

316 **Sub-theme: Visiting with children**

317 When asked about why they visited a dessert-only restaurant, a group of participants said their
318 visits focussed around a visit for the enjoyment of children, “*Fun for the children*” (F, 25 yo)
319 and a treat for children “*My children’s choice for a treat*” (M, 38 yo) and family “*We use these*
320 *places as family treat, after a day out*” (F, 29 yo). Other participants mentioned children’s
321 preferences for desserts as a reason why dessert-only restaurants might be popular, “*Children*
322 *love sweet things and would probably prefer to get a cake or an ice cream rather than a*
323 *meal.*” (F, 21 yo) Finally, one participant mentioned a social pressure as the reason for a visit
324 “*Just so the kids can say they have been!*” (F, 31 yo).

325

326 **Sub-theme: Visiting with friends**

327 Many of our participants mentioned that the reason that they visited was to socialise with
328 friends, for example comments such as, “*To catch up with friends...*” (F, 44 yo). On the one-
329 hand some participants mentioned that the format of a dessert-restaurant made them popular
330 because they facilitated social interaction, “*If you just want a dessert but whoever you go to a*
331 *restaurant with wants a full meal it might be awkward. With dessert restaurants everyone can*
332 *just grab a dessert without having to feel like they need to eat a meal beforehand*” (M, 21 yo)
333 but on the other hand, some participants found that social influence was a reason for visiting
334 “*Other people like them so might as well go with*” (M, 22 yo), “*Usually other people I’m with*
335 *want to go in.*” (F, 20 yo). Finally, one participant suggested that dessert-only restaurants were
336 popular because they provide an alcohol-free environment, “*somewhere for kids to go without*
337 *the pressure to consume alcohol.*” (F, 61 yo).

338

339 **Theme 4: Culture**

340 Participants discussed a number of broader cultural influences that motivated their use of
341 dessert-only restaurants or that they recognised as reasons why they might be popular. These

342 are explored in the following sub-themes; relaxation of conventional mealtimes, social media,
343 TV and film, and atmosphere.

344

345 **Sub-theme: Relaxation of mealtimes**

346 Many of the participants discussed the rising popularity of dessert-only restaurants because of
347 a relaxation of mealtime norms, suggesting that there are “*less conventional rules on eating*
348 *meals*” (M, 24 yo) and, in what might be considered a slightly facetious response, one
349 participant mentioned the notion of a ‘real’ meal and a reduction in pressure to follow this,
350 “*People have seen sense and don't make you eat "real" meals anymore.*” (F, 27 yo).

351

352 **Sub-theme: Social media**

353 A key reason why participants thought that dessert-only restaurants were popular was
354 social media. Some participants simply wrote “*Instagram*” (F, 24 yo) or “*Social Media*” (F, 18
355 yo) in answer to our question. Whilst others elaborated and specified how social media and
356 dessert restaurants were tied together through feeling like social media exerts a pressure to
357 visit, “*Social media, they are often seen on Instagram and Snapchat so people feel they should*
358 *go too*” (F, 20 yo), formal advertising on social media “*Because of social media advertisement*”
359 (F, 20 yo) and the desire to share the experience, “*they look quite good(the food and the*
360 *decor)so good for people who like to post on social media*” (F, 26 yo).

361

362 **Sub-theme: TV and film**

363 Some participants mentioned an influence of TV and film when asked why they thought
364 that dessert-only restaurants were popular. For one participant the influence of TV was about
365 people emulating what they see, “*These have been made popular from being TV programme*
366 *and people like doing what their favourite stars are doing*” (F, 48 yo), for another participant

367 the influence of television was about the foods that are seen, “*Increase in cooking programmes*
368 *on TV and social media raising awareness/desire for more extravagant desserts.*” (F, 23 yo)
369 and for another participant there was a broader cultural influence and the suggestion of an
370 opportunity to socialise, “*We are becoming more Americanised. We see them in movies as a*
371 *good place to socialise*” (F, 24 yo).

372

373 **Sub-theme: Atmosphere**

374 Some of our participants reported that the atmosphere and environment of a dessert-
375 only restaurant was a reason why they are popular. In particular by comparison to regular
376 restaurants, “*A more relaxed feel than a busy main meal restaurant*” (F, 44 yo) and “*... and*
377 *more relaxed than a formal restaurant but nicer surroundings than [popular fast food*
378 *restaurant]*” (F, 26 yo).

379

380 **Theme 4: Accessibility**

381 Participants tended to mention two aspects of accessibility, favourable prices and
382 convenience, as reasons why they used dessert-only restaurants and why they might be
383 popular more generally. These two sub-themes are explored below.

384

385 **Sub-theme: Price**

386 When participants were asked why they visited a dessert-restaurant, price and the idea of value
387 for money were mentioned, specifically by comparison to other restaurants, “*Because the*
388 *desserts taste amazing and they are worth your money more than in a restaurant*” (F, 20 yo)
389 and “*... cheaper than a full meal at a restaurant, easy and quick*” (F, 26 yo). This theme
390 recurred when participants were asked why they thought that dessert-only restaurants were
391 popular, aside from simply stating “*cheap*” as part of a list of reasons, some participants

392 specifically mentioned that one way that value was achieved was because there isn't the need
393 to purchase a main meal as well as a dessert, "*Because it's a treat and keeps costs down by*
394 *providing dessert only*" (F, 48 yo). Furthermore, one participant suggested that this might
395 allow people to eat out, "*Cheap way to eat out, all family can enjoy*" (F, 41 yo) and that this
396 might be particularly the case for young people, "*Cheap for teenagers and a place to meet up*"
397 (F, 39 yo).

398

399 **Sub-theme: Convenience**

400 Many participants mentioned that they found dessert-only restaurants convenient to visit. As a
401 reason for why they visit a dessert-restaurant, one participant mentioned the convenience of
402 the location, simply saying that they "*have one close to where they live*" (F, 57 yo), whilst
403 another participant talked about the benefit of no waiting times, "*Sometimes they're more*
404 *convenient to use rather than a normal restaurant, as with normal restaurants there are a lot*
405 *of waiting times. Whereas a dessert restaurant usually there are seats readily available*" (F,
406 22 yo) and other participants mentioned the "*Quicker service*" (F, 51 yo). This latter point was
407 echoed by another participant responding to why they thought that dessert-restaurants are
408 popular, "*Quick service, cheaper & easily accessible*" (F, 41 yo). Indeed, one participant
409 highlighted the importance of convenience by suggesting that the reason they did not visit often
410 was because of a lack of convenience, "*...we don't frequently visit probably just because they*
411 *aren't conveniently situated near anywhere we usually go*" (F, 27 yo).

412

413 **Theme 5: Novelty**

414 Many of our participants mentioned the importance of novelty as a reason for visiting a dessert-
415 only restaurant, one participant said that it was a "*Novelty and unique experience*" (F, 21 yo),
416 while another participant made a direct comparison to other restaurants, "*Something different*

417 *compared to other restaurants*” (F, 20 yo) and there is a desire to *“To try it out”* (M, 25yo).
418 When asked why they thought dessert-only restaurants were popular, one participant discussed
419 the appeal of something new and suggested it was a trend for a particular age group, *“Prior to*
420 *now, we didn’t have access to places which focus solely on desserts only, therefore the*
421 *exclusively of having that option became very appealing to start a trend amongst millenniums*
422 *mainly”* (F, 21 yo). Another participant also suggested that visits represented a part of a trend,
423 *“New trend, something different, reminds me of American foods”* (F, 20 yo) whilst another also
424 suggested that the novelty appealed to a younger age group, *“It’s a new concept and I feel*
425 *appeals to younger people”* (F, 53 yo).

426

427 **Discussion**

428 The aim of this mixed methods study was to understand the influences on consumer-
429 use of dessert-only restaurants. As a result of our qualitative analyses we identified six broad
430 themes and associated sub-themes. Participants described the importance of food-specific
431 factors, indulgence and its management, social opportunities, culture, accessibility and novelty.
432 These analyses were supplemented by quantitative data about participants’ frequency and
433 duration of visit, use of takeaway facilities and preferred dish. Notably, this showed that the
434 majority of participants visited a dessert-only restaurant either very rarely, rarely or
435 occasionally and tended to spend less than an hour on the premises.

436 A visit to a dessert-only restaurant as a treat was a key theme within our dataset and
437 participants mentioned the notion of a treat in conjunction with the portion sizes served, the
438 variety of foods available and novelty-value (which in turn was also mentioned in conjunction
439 with portion size). This focus on a visit as a treat may be a feature that is distinct to dessert-
440 only food retail outlets by comparison to other types of outlets, such as ‘hot food takeaways’.
441 Whilst Blow et al. (14) mention the notion of an ‘indulgence’ in the context of using takeaway

442 outlets, inferred because participants discussed engaging in compensatory behaviours
443 suggesting some health concern, they also note an absence in their data of a desire to consume
444 unhealthy foods. Indeed, there lacks an explicit theme on consumption as a treat with respect
445 to takeaway food consumption ⁽¹⁴⁾. Broadly, the potential differential use of food retail outlets
446 based on *type* suggested here, supports the model of community nutrition environments ⁽¹³⁾
447 which includes types of food outlets (under the category of community nutrition environments)
448 as a potential direct and indirect influence on eating patterns. Though this model highlights
449 ‘stores’ compared to ‘restaurants’ and it may be appropriate to include the influence of different
450 types of restaurants as well.

451 Whilst the focus on a visit as a treat in our data seemed to contrast with findings relating
452 to hot food takeaway consumption in the study by Blow et al. ⁽¹⁴⁾, this finding is more consistent
453 with McGuffin et al. ⁽²²⁾ who found that ‘a treat’ was a key reason (and dominant theme) for
454 why families chose to eat outside of the home. Indeed, we observed that those participants who
455 mentioned that children were the reason that they visited a dessert-only restaurant (under the
456 social opportunities theme) often discussed this in terms of a treat. This highlights a visit to a
457 dessert-only restaurant in the context of a family activity and a feature of a child’s food
458 environment, and suggests that this setting may merit attention in the context of childhood
459 obesity interventions targeting the external food environment ⁽¹²⁾.

460 Alongside discussion of a visit to a dessert-only restaurant as a treat, there were clear
461 descriptions from participants of the active management of their food consumption. Again,
462 themes that were unique to the specific dessert-only context were observed; the purposeful
463 replacement/ skipping of a main meal with a large dessert or compensation with either dietary
464 restriction or exercise. Notably, the strategies mentioned here contrasted with the types of
465 ‘damage control’ reported by Blow et al ⁽¹⁴⁾ regarding hot food takeaway consumption – in
466 their study they found that participants would choose the least unhealthy option and order

467 smaller dishes. The strategies mentioned in the current study are more consistent with those
468 reported in a recent study investigating consumer's everyday strategies for the everyday
469 management of tempting foods (23).

470 Interestingly, there seemed to be some convergence between the eating patterns and
471 behaviours mentioned as compensatory (e.g., replacing a main meal with a dessert) and those
472 that are facilitated by a relaxation of mealtimes. The latter theme highlighted participants' view
473 that one of the reasons why dessert-only restaurants are popular is because of "less
474 conventional rules on eating meals" and that these outlets facilitate consuming a dessert
475 without the need to consume a main meal first. This supports the view that 'social norms' (an
476 unspoken rule-book that guides ideas about what is appropriate behaviour) is an important
477 driver of eating behaviour (24). In this context, it seems to be suggested that it is socially
478 acceptable to consume a dessert as a main meal and we note that the practicalities of consuming
479 a dessert without a main meal are facilitated by the existence and format of dessert-only
480 restaurants (e.g., the desserts provided are large enough to replace a main meal; see 'portion-
481 size' sub-theme). This may also enable meal replacement as a compensatory approach. One
482 possibility is that historic changes in conventions around meals (see Meiselman (25) for relevant
483 discussion of the 'meal' from a historic perspective) have influenced the popularity of dessert-
484 only restaurants *and* the existence of dessert-only restaurants have influenced conventions
485 around meals.

486 As in other studies concerned with the out of home food environment (26), our
487 participants suggested that dessert-only restaurants offered an eating opportunity that was
488 attractive because of convenience and affordable pricing. The importance of this influence on
489 food choice and eating behaviour is consistent with findings on takeaway consumption (14) and
490 the model of community nutrition environments (13) which includes both convenience (part of
491 the model's 'community nutrition environment' section) and price (part of the model's

492 ‘consumer nutrition environment’ section) as direct and indirect influences on eating patterns.
493 However, with respect to price, one notable factor that may be unique to the context of dessert-
494 only restaurants is that the cost of a visit was made more accessible *because* you don’t have to
495 purchase a main course in addition to a dessert.

496 Overall the importance of convenience as an influence on visits to a dessert-only
497 restaurant shown in our dataset support the assumption that underpins why neighbourhood food
498 environments may be an important influence on both adult and childhood obesity (for more
499 detail see introduction section). However, our dataset may also offer some insight into why the
500 mere presence of outlets offering high energy density foods may not consistently predict local
501 incidence of overweight and obesity (11). Firstly, our quantitative results showed that the
502 overwhelming majority of our sample reported only visiting such outlets very rarely, rarely and
503 occasionally. Moreover, the importance in our dataset of a visit as a ‘treat’ (which as a term
504 implies an infrequent but pleasurable occurrence) seems to support the notion that whilst these
505 outlets may be an everyday sight in our local food environments, a visit may not be an everyday
506 event. One possibility is that this limits the influence of outlet presence on overweight and
507 obesity.

508 Consistent with the model of community nutrition environments (13) an influence of the
509 ‘information environment’ including media and advertising was evident. In particular, we
510 observed an emphasis on social media and the importance of (1) seeing posts on social media
511 as a reason to visit a dessert-only restaurant and (2) the opportunity to ‘post’ on social media
512 that a visit provided. This finding supports research by Holmberg, Chaplin, Hillman and Berg
513 (27) who showed that many adolescent users of social media were posting food items and the
514 majority of these were high in calories and low in nutrients. A concern has been raised that
515 these sorts of behaviours might be associated with the promotion of unhealthy relationships
516 with food (28). Our data suggest that a nuanced approach is required because the context of

517 social media posts (which may or may not be communicated in these posts) is that a visit is a
518 treat. A treat can be part of an overall healthy diet when consumed ‘less often and in smaller
519 amounts’ (29) and evidence has suggested that strict restriction can have ironic effects (30).
520 Whilst recent work has highlighted a positive influence of healthy food posts on social media
521 (31), in the case of posting dessert photographs, future research might explore the context of
522 such social media posts and investigate a role for communicating the ‘treat’ context.

523 This work has a number of limitations, most notably, the questionnaire-based approach
524 meant that participants could not be probed for elaboration on points in the way that would be
525 possible in a focus group or interview. Therefore, many of our quotes are relatively short and
526 lack nuance. A further limitation is the lack of information about participant ethnicity and
527 socio-economic status. Future studies should consider including these measures in order to
528 reflect the differential experiences of the external eating environment (including dessert-only
529 restaurants) that people might experience. For example, Janssen et al. (26) found that both of
530 these factors affected the determinants of out-of-home food consumption. Finally, this study
531 collected information on frequency of visit, however, we note that participants may have
532 differed in their interpretation of options such as ‘rare’ or ‘frequently’. A future study could
533 use a less subjective measure, for example, ‘one visit a month’ or ‘one visit a year’.

534 Nevertheless, this is the first study of its kind to explore factors influencing dessert-
535 only retail food outlet usage and included a large sample with a wide age and BMI range. This
536 adds to a growing literature on the factors influencing people’s use of different types of food
537 outlets that exist in the neighbourhood food environment. This work suggests that, despite
538 some media opinion, this type of food retail outlet is being used somewhat judiciously by
539 consumers; visits were infrequent for the majority of our participants, many participants
540 referred to a visit as a ‘treat’ and many described managing their intake in response to an
541 upcoming or previous visit. The status of a visit to a dessert-only restaurant as a ‘treat’ may

542 limit the efficacy of potential public health interventions as a treat is by definition a departure
543 from an overall approach (Blow et al. (14) make a similar point regarding treats and the provision
544 of healthier alternative foods). A fruitful focus may be on the management of treats within the
545 broader context of the diet as opposed to targeting the treat itself, this may be especially helpful
546 for parents/ caregivers taking their children out for a treat to a dessert-only restaurant. This
547 approach may also offer an opportunity to discuss compensatory behaviours and the nuance
548 that exists between sensible ways to incorporate a treat into your broader diet and less healthy
549 compensatory behaviours that may become a risk factor for eating psychopathology and
550 distress (32). These types of insights must inform policy decisions around the management of
551 food retail outlets in local environments, for example, the increasingly popular use of exclusion
552 zones for particular types of outlets (33). Taking into account *how* outlets are used may help to
553 avoid failed approaches or potential unintended consequences.

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 631 **Figure reference:**

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633 Figure 1. Thematic map showing themes, sub-themes and interconnections between them.
 634 Quotes associated with each interconnection can be found in the supplementary information
 635 file. The figure was created using MindNode software.

636

637 **Table 1.** Question-text for open-ended questions

No.	Question text
1	If you use them, why do you use dessert-only restaurants?

- 2 If you have used a dessert-only restaurant, how do your visits tend to fit into your day?
- 3 If you have used a dessert-only restaurant, do you ever make changes to the other meals in your day (or next day) because of the food you have eaten at a dessert bar?
- 4 Why do you think dessert-only restaurants have become so popular in recent years?

638

639 **Table 2.** Demographic variables that were categorical (gender and BMI range) are shown
 640 with frequency and percentage of total and demographic variables that were continuous (age,
 641 height, current weight and BMI) are shown with mean and standard deviation (SD).

Demographic variables (categorical) and responses	Frequency	Percentage
Gender		
Female	153	75.4%
Male	48	23.6%
I prefer to describe my gender identity myself (response other than female/ male)	0	0%
Prefer not to say	1	0.5%
No response/ misunderstood question	1	0.5%
Total	203	100%
BMI classification		
Underweight range	2	1%
‘Healthy’ weight range	90	44%
Overweight range	62	31%

Obese range	47	23%
Unknown	2	1%
Total	203	100%

Demographic variables (continuous)	Mean	SD
Age (years)	33.5	14.2
Height (m)	1.68	0.08
Current weight (kg)	74.88	15.36
BMI (kg/m ²)	25.05	5.29

642

643

644 **Table 3.** Frequency and percentage of responses to quantitative questions assessing aspects
645 of dessert-only restaurant usage including frequency of use, duration of visit, preferred
646 dessert and use of takeaway facilities.

647

Questions and responses	Frequency	Percentage
In the last year, approximately, how often have you used dessert only restaurants?		
I have never used a dessert-only restaurant	37	18%
Very rarely	80	39%
Rarely	39	19%
Occasionally	40	20%

Frequently	7	3%
Total	203	100%

How long would you usually spend in a dessert-only restaurant?

I get a takeaway dessert	10	5%
Less than 30 minutes	42	21%
Less than an hour	94	46%
Between 1 - 2 hours	34	17%
More than 2 hours	0	0%
No response	23	11%
Total	203	100%

Do you use the takeaway facility at dessert only restaurants?

Yes	51	25%
No	138	68%
No response	14	7%
Total	203	100%

What is your preferred dessert to eat at a dessert-only restaurant?

Brownie	12	6%
Cake	10	5%

Cheesecake	20	10%
Cookie dough	5	2%
Crepe	30	15%
Fruit	2	1%
Milkshake	6	3%
Pie	1	0%
Sundaes/Ice cream	46	23%
Waffle	46	23%
No response	25	12%
Total	203	100%

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649

650 **Table 4.** Themes and sub-themes

Theme	Sub-theme
Food-focused	Quality
	Taste

	Portion-size
	Variety
Indulgence and its management	Visits as treats
	Compensation for treat
Social opportunities	Visiting with children
	Large groups of friends and adolescents
Culture	Relaxation of conventional mealtimes
	Social media
	TV and film
	Atmosphere
Accessibility	Price
	Convenience
Novelty	-

