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Mensah, FZ, Lane, KE and Richardson, LD

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### Article

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1       **Title: Determinants of eating behaviour in Black, Asian and Minority**  
2       **Ethnic (BAME) university students when living at and away from home:**  
3       **With a focus on the influence of food enculturation and food acculturation.**

4

5                   **Fiona Z. Mensah, Katie E. Lane and Lucinda D. Richardson**

6                   **Research Institute for Sport and Exercise Sciences, School of Sport and Exercise**  
7                   **Sciences, Liverpool John Moores University, Liverpool, United Kingdom**

8       Katie E. Lane <https://orcid.org/0000-0002-9092-2927>

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10       Correspondence concerning this article should be addressed to Dr Katie E. Lane, School of  
11       Sport and Exercise Sciences, Liverpool John Moores University, Student Life Building,  
12       Copperas Hill, Liverpool, L3 1AA. Email: K.E.lane@ljmu.ac.uk

13

## 14 Abstract

15 For some students, university, can be a period of increased autonomy in food choice and for  
16 black, Asian and minority ethnic (BAME) and international students, the addition of culture  
17 may be a governing factor. This study aimed to examine the extent of dietary acculturation and  
18 dietary enculturation on the influence of student's food choices using a phenomenological  
19 approach. *Sixty* participants (*forty-one* home students and *nineteen* international students)  
20 recruited by purposive sampling, were included in the study. Data collection involved self-  
21 administered multiple choice and short answer questionnaires and semi structured interviews.  
22 The results were analysed using thematic analysis. When living away from home, *six* major  
23 themes influenced the eating behaviour of the studied population: social environment,  
24 individual factors, physical environment, university life, enculturation and acculturation. When  
25 at home, five major themes were influential: social environment, individual factors, physical  
26 environment, enculturation and acculturation. The main findings suggest dietary enculturation  
27 is a factor which influences the dietary behaviour of both international students and BAME  
28 home students.

29 **Key words:** Acculturation, Food choice, Enculturation, Food neophobia, BAME students,  
30 international students.

31

32

## 33 **1.1 Introduction**

34 The rise in black, Asian and minority ethnic (BAME) and international students can be  
35 attributed to the globalisation phenomenon (Triandafyllidou, 2018). The last few decades have  
36 seen an increase in migration, particularly an increase in immigration to European countries  
37 (Delavari, S nderlund, Swinburn, Mellor, & Renzaho, 2013; Katwala & Somerville, 2016),  
38 which in turn has created a growth in diversity in the population of university students.

39 The ethnic profile of UK universities respectively equates to BAME students accounting for  
40 22.6% of the student population; which previously was 19.3% , in 2011 (Education and Skills  
41 Funding Agency, 2020). The numbers of international students attending universities in the  
42 UK have also increased over the past years. Data collated by the Higher Education Statistics  
43 Agency (HESA, 2020) found an 11% increase between the years 2014 (436,600 students) and  
44 2019 (485,645 students). International students contribute greatly to the economy of the host  
45 country, this is through general expenditure and paying tuition fees (Lillyman & Bennett, 2014;  
46 Ramachandran, 2011). Data collected by Kelly et al. (2014) found international students  
47 contributed  7.37 billion in general off-campus expenditure and  3.6 billion in tuition fees in  
48 the academic year of 2011 to 2012.

49 Both international students and BAME students are becoming growing contributors to the  
50 student population in the UK, however the community remains invisible (Findlay, 2011).  
51 BAME students and international students contribute positively to higher education by  
52 providing a mixed cultural environment and offer a different perspective which enriches the  
53 local knowledge economy (Lillyman & Bennett, 2014; Ramachandran, 2011; Tange & Jensen,  
54 2012; Vahed & Rodriguez, 2020).

55 The university experience is seen as an important aspect of an individual's life as it represents  
56 a period of autonomy and increased responsibility, which simultaneously affects food choice

57 and general healthy lifestyle choices (Holdsworth, 2009; Ingoglia, Inguglia, Liga, & Coco,  
58 2016; Small, Bailey-Davis, Morgan, & Maggs, 2013; Tanton, Dodd, Woodfield, & Mabhala,  
59 2015).

60 Eating behaviour and an individual's personal food system (Shepherd & Raats, 2006) is  
61 multidimensional and is influenced by a myriad of factors including intrinsic characteristics,  
62 physiology, psychology, socialisation and environment (Ferreira et al., 2019; Grimm & Steinle,  
63 2011; le Roux & Bueter, 2014; Leng et al., 2017; Monteleone et al., 2017; Robinson, Thomas,  
64 Aveyard, & Higgs, 2014; Russell, Worsley, & Liem, 2015; Teixeira, Patrick, & Mata, 2011).  
65 Alongside this, culture is another added factor (Leung & Stanner, 2011; Osei-Kwasi et al.,  
66 2016). Ethnic minorities have the added factor of maintaining cultural traditions through the  
67 use of food, this is known as *dietary enculturation*, which is whereby an individual does not  
68 fully assimilate to the cultural values and norms of the dominant society and maintains their  
69 ascribed cultural traditions, norms and eating habits (Delavari et al., 2013). The study of  
70 Earland, Campbell, & Srivastava, (2010) exemplifies this as the study showed that that freshly-  
71 cooked traditional food was an important part of the diets of African-Caribbean adults.  
72 However, in some cases food acculturation is exhibited in the eating behaviours of ethnic  
73 minorities, particularly in second-generation migrants (Leung & Stanner, 2011) - this is  
74 because they may possess a *hybrid identity*, their identity may be shaped by their cultural  
75 socialisation, which promotes their ethnic heritage, as well as be shaped by their nationality  
76 and country of birth (Wagner, 2016).

77 Currently, the literature available on influence of *dietary acculturation* - the process to which  
78 immigrants adopt the dietary practices and customs of the dominant culture/ host country - on  
79 the dietary behaviour of students is abundant for international students attending English  
80 speaking universities (A. A. Alakaam, Castellanos, Bodzio, & Harrison, 2015; Almohanna,  
81 Conforti, Eigel, & Barbeau, 2015; Li et al., 2017; Mustafa, 2016; Nwaugochi & Kennedy, 2019;

82 Wu & Smith, 2016). For example, the study conducted by O’Sullivan & Amirabdollahian,  
83 (2016), examined the influence of students sojourning to the UK and its impact on dietary  
84 habits. The study included interviewing 10 international students attending any University in  
85 the Northwest of England and found that cultural adaption was a common theme. On the  
86 contrary, BAME home students remain invisible and underrepresented in the current literature  
87 available and there is limited literature available on the influence of enculturation on eating  
88 behaviour and food choice.

89 Therefore, this study aimed to 1) bring visibility to the eating behaviours of both BAME home  
90 students, and international students; 2) establish whether food enculturation is a contributing  
91 factor to the dietary habits of the studied population given the increased autonomy associated  
92 with university life, 3) compare whether food enculturation was more influential on eating  
93 behaviour and food choice of international students, juxtaposed to BAME home students.

94

## 95 **2.1 Methodology**

96 Qualitative research was opted for and phenomenology was used to explore the meanings  
97 behind people’s lived experiences (Hennink, Hutter, & Bailey, 2020). Before any research was  
98 conducted, ethical approval was granted by the School of Sport and Exercise Sciences Ethics  
99 committee in Liverpool John Moores University (study reference number: 20/SPS\_Marsh/  
100 NU/012). Following approval data collection commenced for three months from November  
101 2020 to January 2021.

## 102 **2.2 Participants**

103 Following approval, purposive sampling was used to gain the identified sample population:  
104 BAME home students and international students. The inclusion criterion was not limited to age

105 and only required the participants to be currently studying either an undergraduate,  
106 postgraduate, masters or PhD degree (in any subject) in the United Kingdom at any University.  
107 As the study aimed to examine the eating behaviours of BAME students and international  
108 students; the study excluded White British students. Students residing at home during  
109 university term time were also excluded from the study as the study aimed to compare the diets  
110 of the students when living at home against their dietary behaviour when living away from  
111 home.

112 Contact was made with university societies which were culture focused such as the Afro-  
113 Caribbean society, Bangladeshi society, Spanish society, Malay society etc. A total of 460  
114 societies were contacted, which derived from 32 different UK universities; the universities  
115 included in the study were selected randomly.

116 An invitation email was directed to all 460 societies, which provided details of the study  
117 including the title and participation information: potential participants could opt to either  
118 complete the attached online questionnaire or contact the researcher to schedule the interview  
119 alternative. The email also emphasised that participation was voluntary, no incentives would  
120 be offered and that consent would be obtained before participating in either the questionnaire  
121 or interview.

122 Chain referral sampling, a method which yielded more participants by one subject contacting  
123 acquaintances to take part in the study was the method used to increase the number of interview  
124 participants who were international students (Etikan, Alkassim, & Abubakar, 2016;  
125 Heckathorn, 2011).

### 126 **2.3 The Eating Behaviour Questionnaire**

127 The eating behaviour questionnaire included three sections. The first section included obtaining  
128 written consent and confirmation that the participants had fully read and understood the

129 participation information sheet. The second section then progressed to asking a series of socio-  
130 demographic questions (this included: age; university attended, university programme and year  
131 of study; whether the participants were home students or international students; country of birth;  
132 ethnicity; country associated with cultural identify; time period residing in the UK; and finally,  
133 nature of term-time residence). The socio-demographic questions were to help filter out any  
134 participants who did not meet the inclusion criteria, for example for respondents who answered  
135 'live at home' during university term time then the questionnaire would automatically  
136 terminate.

137 The third section included 6 open-ended questions (see Table 1) - inspired by the study  
138 conducted by Kabir, Miah, & Islam, (2018) - which sought to gather details regarding the  
139 student's dietary habits at home, during university term time (away from home) and whether  
140 culture was influential. Each question was also accompanied by several probing questions,  
141 which aimed to improve the quality and length of the respondent's answers (Behr, Bandilla,  
142 Kaczmirek, & Braun, 2014; Behr, Kaczmirek, Bandilla, & Braun, 2012; Holland & Christian,  
143 2009).

#### 144 **2.4 Interviews**

145 Due to the COVID-19 pandemic interviews were virtual using Microsoft Teams. Each  
146 interview was recorded using the recording feature on the software. The interviews were semi-  
147 structured and used the same questions that formed the basis of the questionnaire (see Table 1),  
148 with the addition of probing questions to increase the detail and amount of information gathered  
149 from each participant (Weller et al., 2018). The interviews were conducted by the same  
150 researcher (the first author), who received training in qualitative research as part of a final year  
151 research methods module delivered at the university.

152

153

154 **Table 1: Questions that Formed Basis of Questionnaire and Interviews**

Question type	Question
Introduction	Age, University, year of study, international student or home student, Country of birth, ethnic background, cultural identity ( <i>what country they identify with</i> ), length of residence in UK, residence type during University term time.
Key questions	<p data-bbox="464 557 1398 629">Say something about your food selection during UNIVERSITY term time.</p> <p data-bbox="464 685 1398 757">Please say something about your food selection when at residing HOME.</p> <p data-bbox="464 813 1398 884">What are the important elements/aspects/ issues that affect your food choices in and around your UNIVERSITY residence?</p> <p data-bbox="464 940 1398 1012">How influential is culture on your food intake in and around UNIVERSITY term time?</p> <p data-bbox="464 1068 1398 1140">What elements / aspects / issues affect you eating traditional foods at your UNIVERSITY residence?</p> <p data-bbox="464 1196 1398 1263">What elements / aspects / issues affect you eating traditional foods when residing at HOME?</p>

155

156

157 **2.5 Data Analysis**

158 IBM SPSS Statistics 27 was used to analyse the descriptive statistics of the sample population.

159 The data obtained from the recorded interviews were transcribed verbatim using Windows

160 Media Player and Microsoft Word. All the textual data collated from both the questionnaires

161 and interviews underwent thematic analysis, a widely used method in health research that is

162 especially relevant to applied research settings (Clarke &amp; Braun, 2014). Repeated reading was

163 used to generate codes to help stratify the major themes and sub themes of the participants

164 answers (Clarke &amp; Braun, 2014). Author 1 and Author 3 conducted the repeated readings and

165 coding independently and a general consensus was reached following discussions between all  
166 authors; this was to ensure the validity of the data interpretations.

### 167 **3.1 Results**

168 A total of 55 questionnaires were submitted (BAME home students n= 42 respondents;  
169 international students n= 13 respondents). However, 12 participants were excluded from the  
170 study for submitting uncompleted questionnaires. Following exclusion, the final questionnaire  
171 sample included 32 home students and 11 international students.

172 Alongside this 17 interviews were conducted (BAME home students n = 10 interviewees;  
173 international students n = 7 interviewees). The final sample size included 42 home students  
174 and 18 international students currently studying either an undergraduate, postgraduate, masters  
175 or PhD degree (in any subject) in the United Kingdom, totalling 60 participants.

176

### 177 **3.2 Sociodemographic Characteristics**

178 The mean participant age was  $21.73 \pm 5.14$  years (range = 18 – 50 years, Table 2). The  
179 ethnicities of the participants included Black or Black British (n = 39), Asian or Asian British  
180 (n = 11), Mixed Heritage (n = 1), White Non-British (n =1), Kurdish (n = 2), Latino and  
181 Hispanic (n = 5), and Jewish (n= 1). The total number universities included in the study was  
182 17 with the majority of participants coming from The University of Manchester (Table 2). As  
183 residing at home during university term time was an exclusion factor the results of the study  
184 showed that 56 participants lived either in student halls (n = 23) or in private student housing  
185 (n = 33). Three participants lived in a professional house share and one participant lived with  
186 their partner's extended family in UK.

187

188 **Table 2: Sociodemographic Characteristics of Participants**

<i>Sociodemographic characteristics</i>	Number of participants	
	Questionnaire (Q)	Interview (I)
Age in years (mean $\pm$ SD)	21.73 $\pm$ 5.14	
<b>Ethnicity</b>		
Black or Black British (n)	30	9
Asian or Asian British (n)	6	5
Mixed Heritage (n)	0	1
White Non-British (n)	1	0
Kurdish (n)	2	0
Latino and Hispanic (n)	3	2
Jewish (n)	1	0
<b>Academic year of study</b>		
First Year (n)	9	0
Second year (n)	13	3
Final / Third Year (n)	14	11
Masters (n)	7	2
PhD (n)	0	1
<b>University</b>		
University of Hull	2	0
Hull and York Medical School	2	0

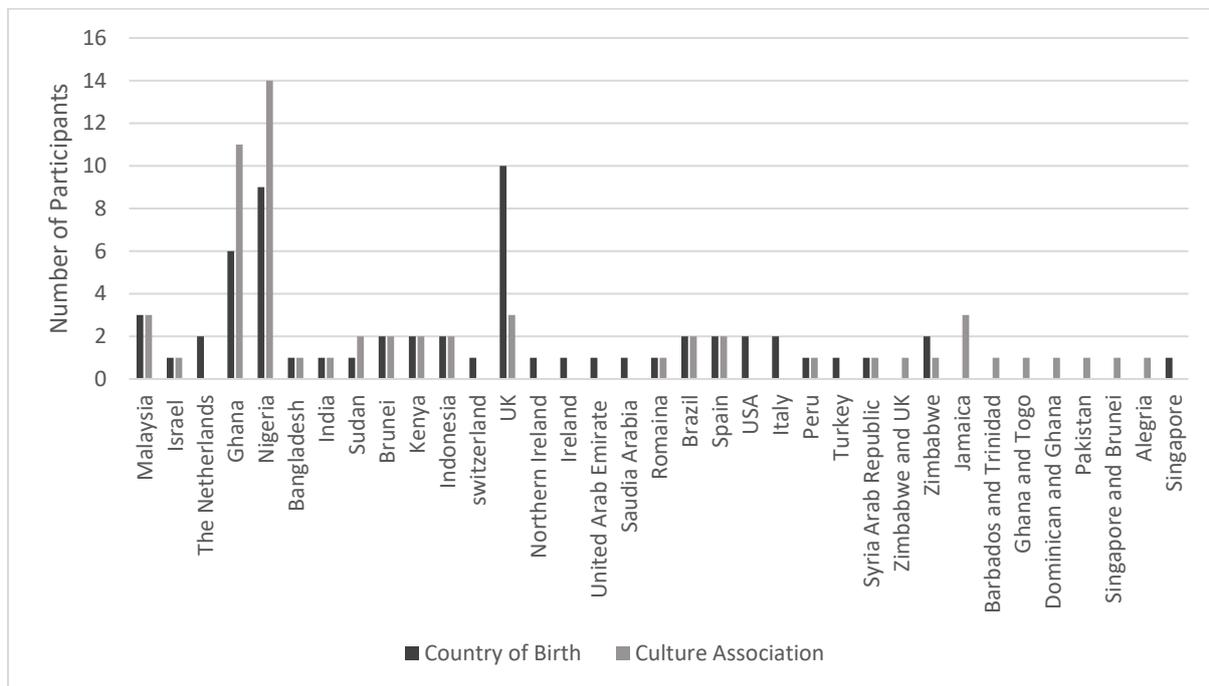
Liverpool John Moores University	5	3
University of Liverpool	5	5
University of Oxford	4	0
University of Manchester	13	3
Warwick University	1	0
Liverpool Hope University	4	1
Sheffield Hallam University	1	0
University of Leeds	1	0
London school of Economics	2	0
University of Law	0	1
Coventry University	0	1
Birmingham City University	0	1
University of Huddersfield	0	2
University of Nottingham	1	0
University of York	2	0
<b>Time Period residing in UK</b>		
Born in the UK	8	2
Less than 1 year	2	0
1 - 2 years	4	0
3 – 5 years	9	7
More than 5 years	20	8

189

190 The cultural background of the participants of the study was varied and covered Europe,

191 Asia, the Caribbean, and America. The results of the study also show the idea of hybrid

192 identity as a few participants listed dual countries when answering what country they identify  
 193 with culturally (See Fig 1).



194

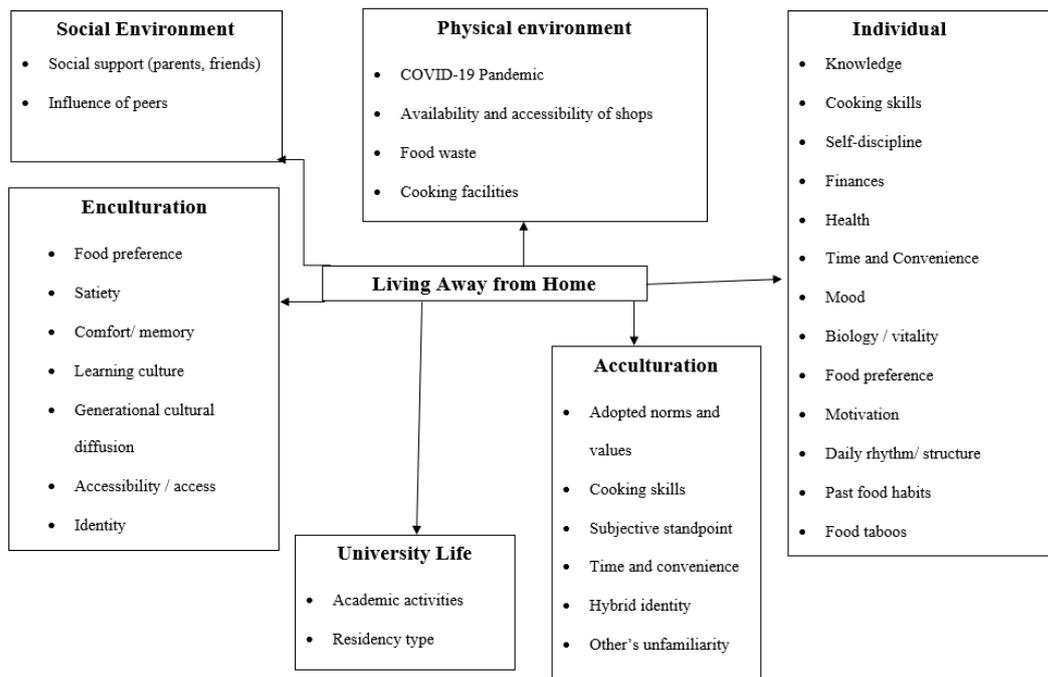
195 **Fig 1:** Country of birth of the participants and the country of cultural identity association of  
 196 each participant.

197

### 198 3.3 Textual Data

199 Six major themes were found to determine the eating behaviours of BAME home students and  
 200 international students when living away from home; these included social environment,  
 201 individual (intrapersonal factors), physical environment, university life, enculturation and  
 202 acculturation, see Fig 2. *Five* major themes were found when residing at home (Social  
 203 environment, Individual (intrapersonal factors), physical environment, enculturation and  
 204 acculturation) – see Fig 3. University life was the only additional factor found when residing  
 205 away from home compared to when living at home. Each of the major themes also further  
 206 differentiated into sub-themes.

207 **Fig 2: A schematic diagram of the themes and sub-themes found in the textual data regarding**  
 208 **living away from home: during university term time**



209

## 210 **Living Away from Home: Social Environment**

211 Social environment was a common theme observed in the comments of the respondents. This  
 212 included factors such as having a social support network in terms of sharing cooking meals  
 213 with housemates and practicing commensality. *“I live with 2 other British Asians, and we all  
 214 share the cooking and eat dinner together. We eat a variety of cuisines but primarily Indian”*  
 215 *(participant Q-36, home student,)*

216 *“Us as housemates we take turns in cooking, so I’m pretty lucky to have my housemates, that  
 217 we take turn” (participant I-2, international student)*

218 The influence of peers also determined what the students would consume, particularly in regard  
 219 to opting to eat out. *“I cook, and basically never eat out unless my housemates want to do a  
 220 dinner together” (participant Q-24, home student)*

221

## 222 **Living Away from Home: Individual Factors**

223 As seen in Fig 2, the greatest determining theme, which influenced the students' eating habits  
 224 were individual factors, including factors such as cooking skills, mood, finance, motivation,  
 225 vitality and time and convenience to cook foods. It was apparent that the sense of allocating  
 226 time to cook less time-consuming foods was the most favoured practices; this was to allow for  
 227 the students to complete their schoolwork.

228 *"I think it goes back to quick and easy, because as a uni student, if you have so much work*  
 229 *and like your food is going to take 2 hours to cook, you're probably gonna be like I haven't got*  
 230 *time for that. If its pasta, pasta is quick... I can do that and then do my work."* (participant I-  
 231 *I: home student)*

232 *"My classes, club activities and assignments; The more I have to do, the more likely it is for*  
 233 *me to chug down a breakfast drink or eat cereal or instant food"* (participant Q-42,  
 234 *international student)*

235 Finance was also the second most prominent answer given. Some participants justified  
 236 avoiding eating out as it is expensive in comparison to eating home cooked meals. *"I tend to*  
 237 *only eat food that I have cooked at University, as I like to save money, so majority of the food*  
 238 *I eat is from my culture and it is my favourite type of food"* (participant Q-41, home student).

### 239 **Living Away from Home: University Life**

240 A common pattern observed was that the students would compromise their dietary habits to  
 241 accommodate the demands of university life *"My classes, club activities and assignments; The*  
 242 *more I have to do, the more likely it is for me to chug down a breakfast drink or eat cereal or*  
 243 *instant food"* (participant Q-42, international student).

244 For some, their residency type influenced what foods were consumed. Those who resided in  
 245 catered student halls had less dietary autonomy *"I don't have access to a kitchen so I can't*  
 246 *cook properly and the food they serve in the Hall has limited choice and doesn't taste that good.*

247 *Also due to covid you can't eat in Hall normally so the social aspect of it is gone” (participant*  
248 *Q-27, home student)*

249

### 250 **Living Away from Home: Physical Environment**

251 The interviews took place during the COVID-19 pandemic and thus the influence of the  
252 pandemic was found to be an influencing factor on the eating habits of the students. *“I just feel*  
253 *like in final year, in this pandemic, of course my diet has changed... Ermm I think from, like...*  
254 *October to January, it changed to the worst but now, I feel like it's changed for the better. I*  
255 *also ordered quite a bit due to covid” (participant I-9, home student).*

256 The locality and accessibility of shops was also a determining factor on the eating behaviours  
257 of the students, this was particularly the case in respect to the consumption of cultural food.  
258 *“The only cultural foods that I make on my own time is because of the easy access to the*  
259 *ingredients I can find in close shops like Lidl. For example, jollof rice ingredients aren't hard*  
260 *to get versus getting ingredients for Egusi” (participant I-6, international student)*

### 261 **Living Away from Home: Acculturation**

262 Acculturative dietary practices were observed in both the BAME home students and  
263 international students. The main justifications for their acculturative practices were factors  
264 included accessibility to particular foods/ ingredients, time and convenience and the limited  
265 cooking skills.

266 *“I don't eat much cultural food because it is not convenient. Most cultural food from home is*  
267 *highly labour intensive” (participant Q-17, home student)*

268 *“Traditional food is important to me as it keeps me grounded to my roots and background*  
 269 *when I feel out of touch with my culture. If I had the time, I would prefer cultural dishes.*  
 270 *However, my diet consists more of non-cultural dishes.” (Participant Q-5, home student).*

271 *“I don’t really eat cultural food, I don’t know how to make it.” (Participant Q-9, international*  
 272 *student)*

273 However, it can be noted that peer scrutiny was also a determinant. For some participants  
 274 acculturative stress was placed from housemates who were not accustomed to ethnic food as  
 275 thus the fear of judgement would influence the participants to present dietary acculturative  
 276 eating habits.

277 *“Yeah, I used to put my plantain like by the cooker and then I don’t know, my housemates*  
 278 *must’ve thought it was a rotten banana. And I saw it in the bin the next day... so, I feel like that*  
 279 *as well, stopped me from making my cultural food” (participant I-9, home student)*

280 *“I had some flatmates where yeah, I felt judged, like I’d be cooking my Indian curries, and like*  
 281 *they wouldn’t say anything, but they’d come and like open the window and then walk back out*  
 282 *again \*laugh\*, so I would try and avoid cooking when they were in the kitchen” (participant*  
 283 *I-15, home student)*

#### 284 **Living Away from Home: Enculturation**

285 On the contrary, some students mentioned the practice of both enculturation and acculturation.  
 286 For some, enculturation was practiced when the cooking was shared between housemates, *“The*  
 287 *dishes I mentioned do take time to cook... the reason why me and my housemates sort of take*  
 288 *turns cooking is sort of because like all of the Bruneian dishes that I mentioned, they’re very*  
 289 *family dishes, it’s not something that’s meant to be eaten alone, so that’s why it takes time to*  
 290 *cook and that’s why usually we cook it in very big amounts” (participant I-11, international*  
 291 *student).*

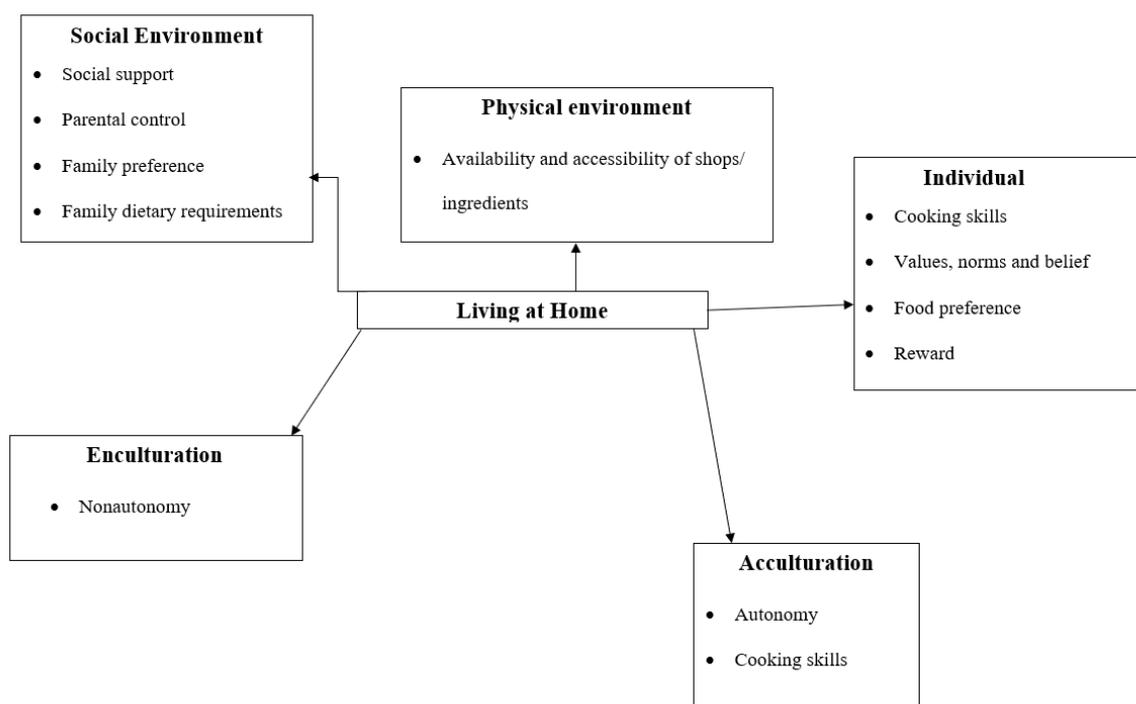
292 Discussions around comfort and the sense of home were also brought up as a reason for  
 293 practising enculturation.

294 *“My diet is mainly a lot of cultural food because at uni it is many different types of rice like*  
 295 *jollof and chicken. I think it is important to eat cultural food because it brings good memories*  
 296 *of our childhood and also reflects who we are.” (Participant Q-18, home student).*

297 *“My culture does influence a lot because I reach for the comfort flavours” (participant I-16,*  
 298 *international student).*

299

300 **Fig 3: Themes and Sub-themes Found in the Textual Data Regarding Living at Home**



301

302

303 **Living at Home: Social Environment**

304 When residing at home the greatest determinant on the eating behaviours of the students was  
 305 parental support. For many their meals were prepared by their parents and thus the students  
 306 presented more dietary enculturation in comparison to when living away from home.

307 *“At home my mother takes care of the cooking for the most part, so it’s pretty much cultural*  
 308 *food always.” (Participant Q-2, home student)*

309 *“Out of term-time, I stay with my sister who lives in the UK as well. She is more used to cooking*  
 310 *traditional foods, so I tend to eat cultural foods like egusi soup, beans porridge, yam porridge,*  
 311 *jollof rice etc. My sister and her husband cook all the meals I eat in their home” (participant*  
 312 *Q-23, international student)*

### 313 **Living at Home: Individual Factors**

314 Individual factors were less prominent when the student’s discussed their eating habits at home.  
 315 Themes addressed included, personal norms and values such as practicing vegetarianism; and  
 316 an element of reward in terms of home much the individuals ate.

317 *“My family are meat eaters so I am the one who usually cooks since I have voluntary diet*  
 318 *restrictions (I’m vegetarian) and can keep track of what is in meals when I make them”*  
 319 *(participant Q-15, home student).*

320 *“I tend to go HAM because it’s the holidays and thus I deviate from my normal or typical meal*  
 321 *portions and food types or choices” (participant Q-23, International student).*

### 322 **Living at Home: Physical Environment and Enculturation**

323 Throughout the data, there was great interlinks between the different underlying themes/  
 324 determinants which influenced the dietary habits of the students. Notably, a reoccurring pattern  
 325 observed, was that the students relayed that they had fewer physical barriers such as  
 326 accessibility to shops to gain the ingredients to consume their native foods.

327 *“Since time is not a problem and there's lots of cultural food stores around me at home, I eat*  
328 *traditional foods all the time” (participant Q-23, International student).*

### 329 **Living at Home: Acculturation**

330 Acculturative eating habits was present in the answers of the students, when discussing their  
331 eating habits at home. However, there was no general consensus on the degree of acculturation.  
332 For some acculturation was commonly practiced and for some, acculturation was rarely  
333 practiced.

334 *“The only time there is non-cultural food per se, is when me and my siblings cook, and yeah....*  
335 *So, like we'd make like a shrimp alfredo, or like a str-fry, or like my sister likes to make Mexican*  
336 *food like burritos, quesadillas” (participant I-9, home student)*

337 *“Ermm I'm not gonna lie, as a Zim person, there's not much to really go on, like there's not*  
338 *really much food that we have, its literally just like meat, so at home its mainly western apart*  
339 *from sadza” (participant I-12, home student)*

340 *At home it's probably like a 90:10 situation like eating more traditional food.... I think for me*  
341 *if I come home and cook something that's not traditional, my parents will eat it, but they will*  
342 *never go out of their way to make it themselves.” (Participant I-15, home student)*

343

344

## 345 **4.1 Discussion**

### 346 **4.2 Determinants of Eating Behaviour: Living Away from Home**

347 The main aim of this study was to determine the key contributing factors which drive the eating  
348 behaviours of BAME students and international students. This study also intended to examine

349 whether enculturation was a determining factor, which contributed to the personal food system  
350 of BAME home students and international students. This is important because the BAME  
351 community have remained as an underrepresented population in current available literature and  
352 according to Alexander (2015), literature and universities are a long way from exemplifying  
353 ethnic equality and diversity. Moreover, previous studies have sought to examine dietary  
354 acculturation, however, there are limited studies on the influence of dietary enculturation. In  
355 this study of BAME students both home and international students were included; however,  
356 the study was voluntary and the respondents were predominantly from the black community.

357 As addressed by several literature, the process of establishing one's food choice and eating  
358 behaviour is highly complex and governed by a multitude of factors (Chen & Antonelli, 2020;  
359 Leng et al., 2017; Osei-Kwasi et al., 2016; Sobal, Bisogni, & Jastran, 2014). The results of this  
360 study aligned with previous research as many contributing factors were found to influence the  
361 eating behaviour of the students included in this study (A. Alakaam & Willyard, 2020; A. A.  
362 Alakaam et al., 2015; O'Sullivan & Amirabdollahian, 2016).

363 As seen in Fig 2, during university term time six main themes were identified, these included  
364 social factors, Individual (intrapersonal) factors, one's physical environment, university life,  
365 enculturation and acculturation. Each theme also further differentiated into sub-categories.  
366 From the results of this study, it can be deduced that individual factors was the key determinant.  
367 The emerging themes found in this study following thematic analysis reflect similarly to the  
368 results of existing research, for example, the study conducted by Kabir et al. (2018), which  
369 measured the eating behaviours of students in a Bangladesh public university. The concordant  
370 themes include individual factors, university related factors, societal factors and environmental  
371 factors. Additionally, the drivers of eating behaviour observed in this study also corroborate  
372 with the findings of Deliens, Clarys, De Bourdeaudhuij, & Deforche (2014), the overlapping

373 major themes between the studies include individual, social environment, physical  
374 environment and the influence of university life.

375 The transition to university for many students includes the addition of adapting new life skills  
376 to accommodate the increased autonomy. According to Glik and Martinez (2017), these skills  
377 include time management and food related skills. Notably, within this study, time and  
378 convenience was the most prominent factor. Inferences from the answers given by the  
379 participants suggests an element of compromise is made between university life and deciding  
380 what to cook and what to eat.

381 The effect of time and convenience on dietary behaviour has been a common finding in several  
382 studies (Hilger, Loerbroks, & Diehl, 2017; Musaiger et al., 2014; Pelletier & Laska, 2012) and  
383 according to Pelletier & Laska (2012), universities should consider strategies such as  
384 establishing a curriculum or providing courses, which factors in life skills such as time  
385 management. Notably, for both BAME home students and international students, time and  
386 convenience was the ultimate justification for dietary acculturation. Time was deemed the main  
387 barrier to dietary enculturation, in terms of preparing ethnic food or sourcing particular  
388 ingredients needed to make the ethnic food. In the study of Verbeke & Lopez (2005), similar  
389 results were found when studying Hispanics living in Belgium, 57.5% of the participants stated  
390 that cooking their cultural food was much more time-consuming than cooking the Belgium  
391 alternatives and this was reflected in the findings of this study.

392 Upon analysis, the second most reoccurring factor was the influence of finances. In the study  
393 by Deliens et al. (2014), which examined the eating behaviours of students fast-food and  
394 takeaway was considered a cheaper alternative to home cooked meals, however in the case of  
395 this study the opposite result was found, the participants were more reluctant to spend on fast  
396 food than to prepare home cooked meals as cooking was seen as the cheaper alternative.

397 Finance was also observed to influence changes in fruit and vegetable consumption. Previous  
398 research has suggested that the increased autonomy in students leads to unhealthy eating  
399 behaviour and is characterised by low intakes of fruit and vegetables (de Visser, Conroy,  
400 Davies, & Cooke, 2021; Kongsbak et al., 2016). The findings of de Visser et al. (2021), showed  
401 that the students failed to meet the recommended five portions of fruit and vegetables a day,  
402 which is a fundamental part of a healthy diet (World Health Organisation, 2016). In the case  
403 of this study, there was no general consensus with regards to fruit and vegetable intake,  
404 however this may be due to the fact that the participants were not asked to quantify the amount  
405 of fruit and vegetables they consumed. Discussion on fruit and vegetables was not provoked  
406 however, the participants included the topic of fruit and vegetables into their answers. For  
407 international students, a common factor included finance and accessibility to fruits and  
408 vegetables, the participants noted that some fruits and vegetables were more accessible and  
409 cheaper in the UK, when compared to their country of origin and this was the reason for  
410 differences in foods consumed, when residing away from home compared to when residing at  
411 home. However, in some cases the opposite result was observed, access to particular fruits and  
412 vegetables were more feasible in their country of origin and this in turn would lead to changes  
413 in the variation and amounts of fruit and vegetables consumed when living away from home.

414 Similar to the findings of previous literature, the multi-dimensional nature of eating behaviour  
415 creates a complex framework to the eating behaviours of students (Llanaj, Ádány, Lachat, &  
416 D'Haese, 2018; Neslişah & Emine, 2011) and in the case of this study, one's eating behaviour  
417 cannot be attributed to one specific factor, the factors operate simultaneously. A common  
418 finding when analysing the textual data was that factors within the themes of social,  
419 environmental, individual and university life, all influenced the student's food choice regarding  
420 cooking and consuming cultural food. Dietary enculturation was more apparent in students who  
421 reported having a social support network, in terms of cooking. This was because ethnic food

422 was deemed too time demanding, therefore by sharing the load ethnic foods could be consumed  
423 without significantly influencing university life.

424 Food preference and palatability is suggested to be instilled from childhood (Russell et al.,  
425 2015) and progresses into adolescents and adulthood (Oemichen & Smith, 2016). The results  
426 of this study did suggest that food preferences and palatability was a determining factor in the  
427 students eating behaviour particularly with regards to cultural food. In the case of dietary  
428 enculturation, the students showed a preference towards foods consumed at home, however,  
429 for some students, culinary skills and accessibility served as a barrier to making and consuming  
430 ethnic food whilst at university. Notably, Engler-Stringer (2010), discussed the influence of  
431 culinary skills and food knowledge and how this can greatly influence food choice.

432 Secondly, food preference was tied to the feeling of comfort; the students often referenced  
433 comfort when discussing the reasons for practicing dietary enculturation. This element reflects  
434 the knowledge in current literature, as research has established a relationship between food and  
435 drink and how food can evoke emotional, cognitive and physical recollections (Stone, Soulard,  
436 Migacz, & Wolf, 2017).

437 Essentially, the diets of BAME home students and International are complex and the influence  
438 of culture is prominent despite increased autonomy. However, for the majority, the student's  
439 food choice was skewed more towards dietary acculturation. In some cases the participants  
440 quantified their subjective standpoint with regards to whether their food habits reflected more  
441 dietary enculturation or dietary acculturation.

442

443

### 444 **4.3 Determinants of Eating Behaviour: Living at Home.**

445 A comparison between Fig 2 and Fig 3, suggests the students have more determinants  
446 influencing their eating behaviours when living away from home compared to when living at  
447 home and this may be due to the increased autonomy associated with student life. The greatest  
448 difference between factors influencing the dietary behaviour of the students observed when  
449 living away from home juxtaposed to when living at home was that the determinants of eating  
450 behaviour was skewed towards intrapersonal factors, such as culinary skills, mood, motivation  
451 to cook, self-discipline and compromising with university life. However, when living at home,  
452 the most dominant influencer was social factors, which includes having a social support  
453 network (parental influence). Similar to previous literature, studies have reported that food  
454 provisions, for young adults who live at home are primarily governed by parental control  
455 (Papadaki, Hondros, Scott, & Kapsokefalou, 2007; Riddell, Ang, Keast, & Hunter, 2011) .  
456 Moreover, the findings showed that living at home was also characterised by presenting more  
457 dietary enculturation eating habits; the participants suggested that ethnic food was more  
458 commonly eaten as result of parental influence.

459 The term food neophobia has gained popularity in literature, particularly in association with  
460 the dietary behaviours of international students (Edwards, Hartwell, & Brown, 2010; Schnettler  
461 et al., 2017), however no studies have been conducted regarding food neophobia and BAME  
462 students. The term food neophobia addresses the reluctance or avoidance of novel food  
463 (Mascarello et al., 2020) and in the study by Edwards et al. (2010), Asian students were  
464 significantly more food neophobic when compared to their European peers, however,  
465 interestingly over time both groups were found to become more neophobic. In the case of this  
466 study, participants were asked about their dietary habits on one occasion. Therefore, the results  
467 of this study only address a snapshot in time and mainly address the student's dietary habits  
468 during the breaks from university. Our results also showed a tendency of food neophilia - the

469 willingness to try new food (Okumus, Dedeoğlu, & Shi, 2021) – particularly when living away  
470 from home, students reported more opportunity to try new foods as they were only cooking for  
471 themselves; this was applicable to both BAME home students and international students.

472 However, when living at home food neophobia was more common as food consumption was  
473 practiced in commensality. Therefore, parental food neophobia would influence the dietary  
474 habits of the students. Previous literature has associated age with acculturation; older  
475 immigrants are less likely to practice acculturation to the same degree as the younger  
476 generation, who arguably experience greater acculturative stress leading to greater intercultural  
477 competence (Gebregergis, Huang, & Hong, 2019).

#### 478 **4.4 Dietary Acculturation and Dietary Enculturation**

479 As stated by Sobal et al. (2014), food choice is arguably as diverse as humans are individualistic  
480 and the variation in upbringing, prior knowledge, life experiences, physiology and culture all  
481 contribute to one's personal food system. In the case of BAME home students and International  
482 students, upbringing and childhood cultural socialisation plays a crucial role in shaping one's  
483 eating behaviour and instilling the child's heritage and cultural norms and values (Umaña-  
484 Taylor, Zeiders, & Updegraff, 2013). However, research has concluded that migration results  
485 in cultural change in the form of acculturation (Terragni, Garnweidner, Pettersen, & Mosdøl,  
486 2014). Moreover, Sam & Berry (1997), suggested that acculturation was more of a multi-  
487 directional process; it involves both cultural acquisition and heritage retention (Alidu &  
488 Grunfeld, 2018; Berry, 2017). The results of this study reaffirmed this theory, that acculturation  
489 involves combining both cultural acquisition and heritage retention. In terms of the dietary  
490 behaviours of the students included in this study combining both cultural acquisition and heritage  
491 retention was a common finding.

492 Research on dietary enculturation and the influence of culture on diets of students is limited,  
493 however the results of this study found that culture, particularly retaining culture was a key  
494 aspect for BAME home students and international students. Dietary enculturation was more  
495 than just food preference, rather identity was a common sub-theme which arose when  
496 discussing consuming cultural and ethnic food. The study by Romo & Gil (2012), which  
497 examined ethnic identity and food consumption in Latin Americans that migrated to Spain,  
498 showed that consuming ethnic food played a role in culture expression and helped solidify  
499 one's identity as cultural food was affiliated with a collective conscience and a sense of  
500 belonging.

501 Essentially, both dietary enculturation and dietary acculturation were observed in BAME home  
502 students and international students. The general consensus between the participants was that  
503 more dietary acculturations practices were observed when living away from home. This was  
504 predominantly due to individual factors such a time and convenience, autonomy and  
505 accessibility. However, it can be noted that peer scrutiny was also a determinant. For some  
506 participants acculturative stress was placed from housemates who were not accustomed to  
507 ethnic food as thus the fear of judgement would influence the participants to present dietary  
508 acculturative eating habits.

509 Essentially this study, reaffirms the findings that dietary behaviour is highly complex and  
510 influenced by a plethora of factors. Moreover, with regards to culture, the influence of culture  
511 on diet is also a product of both cultural acquisition and heritage retention despite the  
512 increased autonomy during university term time. Both BAME and international students  
513 exhibit both dietary acculturation and alongside dietary enculturation. It can be deduced that  
514 food is heavily linked to the identity of ethnic minority students (Kittler, Sucher, & Nelms,  
515 2016) and thus maintaining eating habits of one's cultural heritage is inevitable.

516

#### 517 **4.5 Strengths and Limitations**

518 The use of a qualitative research methodology was advantageous because, as suggested by Sallis  
519 et al, (2006) qualitative research enables the researcher to understand more than just ‘what’ but  
520 also the ‘how’ and ‘why’ of the studied topic. In this case, the use of qualitative research  
521 enabled the participants to speak freely and in-depth regarding the factors that affect their  
522 eating behaviour, which in turn provides higher validity in the textual data obtained (Castell,  
523 Serra-Majem, & Ribas-Barba, 2015).

524 Given the current COVID-19 pandemic the use of qualitative research methods in the form of  
525 an online questionnaire and online interviews was advantageous as this created a scope to gain  
526 a larger study population; it enabled a study on a national scale. Moreover, by providing two  
527 forms of participation, either completing a questionnaire, or taking part in an online interview;  
528 this helped reduce the practical limitations of just using one method of data collection.

529 A limitation of this study was that due the participants being volunteers attention must be  
530 brought to the fact that the participants were interested in the studied area and the inclusion of  
531 the word culture in the title may have resulted in bias and the respondents may have  
532 exaggerated the weight, attached with the influence of culture on their eating behaviour.

533 Another limitation of this study was the cross-sectional nature of the study, conclusions on the  
534 dietary behaviour of the students were made on the basis of one interview or completing one  
535 questionnaire, which only reflects the participants current status of dietary enculturation and  
536 dietary acculturation. Participants were not asked specific questions on barriers of the  
537 challenges of eating healthfully based on their living conditions. Participants were not asked  
538 for additional details relating to where they lived or whether they lived by themselves or with  
539 room mates

## 540 **5.1 Conclusions and Future Research**

541 The intention of this study was to explore the factors influencing the dietary behaviour of  
542 BAME home students and international students using a qualitative approach. A broad range  
543 factors were found to influence the eating behaviours of the students including, social factors,  
544 individual (intrapersonal) factors, physical environmental factors, university life, enculturation  
545 and acculturation. In terms of living away from home, the main dominant factors derived from  
546 intrapersonal factors and university life, factors such as time, accessibility and finance were the  
547 most reoccurring sub-themes discussed. However, in the case of living at home, social factors  
548 (such as social support, parental control, family preference) became the most determining  
549 factor influencing the dietary behaviours of the students.

550 The findings of this study suggest that dietary enculturation is a factor which influences the  
551 dietary behaviour of both international students and BAME home students. Ethnic food plays  
552 a fundamental role in affirming one's identity and despite increased autonomy during  
553 university term time, some students still practiced eating habits which reflect cultural  
554 acquisition. However, the overall practice with regards to culture was that both international  
555 students and BAME students were more accustomed to adopting western eating behaviours.  
556 Perhaps future research could involve a longitudinal study measuring the dietary habits of the  
557 BAME students across their academic journey to see whether dietary acculturation decreases  
558 or increases alongside the time spent with an increased amount of autonomy.

559 The study also reaffirms that food choice is arguably diverse as humans are individualistic and  
560 the variation in upbringing, knowledge, life experiences, physiology and culture all contribute  
561 to one's personal food system; therefore, the findings of this qualitative research cannot be  
562 projected to the general population. However, the results of this study should be considered as  
563 a contribution to understanding the underlying contributors which influence the eating

564 behaviours of minority ethnic groups and sojourning students, which can help educators and  
565 health professionals cater to the needs of minority groups and help them make healthier food  
566 choices.

567

568

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771 **Supplementary Material S1**772 **Eating Behaviour Questionnaire**

773 The aim of this questionnaire is to find out about your eating behaviour and habits when residing at  
774 home versus, your eating behaviour during university term time.

775 By completing this questionnaire you are consenting that you have read the participant information  
776 sheet and that you are happy for the research to include your answers anonymously in the study.

777 IF YOU WOULD LIKE TO PARTICIPATE IN AN INTERVIEW INSTEAD, OR TO FURTHER  
778 DEVELOP YOUR ANSWERS, please contact me on [f.mensah@2018.ljmu.ac.uk](mailto:f.mensah@2018.ljmu.ac.uk)

779 This questionnaire is split into 2 sections, Section A and B. Please can you answer ALL question  
780 as honestly as possible and in as much detail as possible. **\*Required**

781 

Please answer all the questions.

782 **Section A**

783 1. Please specify your age \*

784 \_\_\_\_\_

785 2. Which university do you go to ? \*

786 \_\_\_\_\_

787 3. What is your year of study ? \*

788 *Mark only one oval.*

789 First year

790 Second Year

791 Final year

792 Post graduate

793 Masters

794 PhD

795 4. Are you an international student or a home student ? \*

796 *Mark only one oval.*

797 Home Student

798 International Student

799 5. In what country were you born ? \*

800 \_\_\_\_\_

801 6. Ethnic Background \*

802 *Mark only one oval.*

803 Mixed heritage

804 Asian or Asian British

805 Black or Black British

806 Arab

807  White

808 Other:

809 \_\_\_\_\_

810 7. What country do you identify with, with regards to ethnicity ? \*

811 \_\_\_\_\_

812 8. How long have you lived in the UK? \*

813 *Mark only one oval.*

814 Born in the UK

815 less than 1 year

816 1 - 2 years 3 -

817 5 years more

818 than 5 years

819 9. During university term time, where do you reside ? \*

820 *Mark only one oval.*

821  With immediate family

822  With extended family

823  Student accommodation

824  Private accommodation

825 Other:

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826 Section B

Please complete this section in as much detail as possible

827 10. Please say something about your food selection during UNIVERSITY term time. \*

828 What type of food / meals do you eat ( please include names of meals for breakfast lunch and dinner )?

829 Who cooks ? Eat out often ? Make new meals? Eat cultural food? Please discuss elaborately

830 

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835 11. Please say something about your food selection when at residing HOME. \*

836 What type of food / meals do you eat ( please include names of meals for breakfast lunch and dinner )? Who cooks ?

837 Eat out often ? Make new meals? Eat cultural food? Please discuss elaborately

838 \_\_\_\_\_

839 \_\_\_\_\_

840 \_\_\_\_\_

841 \_\_\_\_\_

842 \_\_\_\_\_

843 12. What are the important elements/aspects/ issues that affect your food choices in and

844 around your UNIVERSITY residence? \*

845 e.g. access to shops / time / ability to cook / culture / your food preferences / . Please discuss elaborately.

846 \_\_\_\_\_

847 \_\_\_\_\_

848 \_\_\_\_\_

849 \_\_\_\_\_

850 \_\_\_\_\_

851 13. How influential is culture on your food intake in and around UNIVERSITY term

852 time ? \*

853 Do you eat cultural food often/ not often / not at all ? Is it important to eat cultural food or not ? Prefer different

854 foods or your cultural food? Does your diet include more NON-CULTURAL or CULTURAL foods ? Please

855 discuss elaborately

856 \_\_\_\_\_

857 \_\_\_\_\_

858 \_\_\_\_\_

859 \_\_\_\_\_

860 \_\_\_\_\_

861 14. What elements / aspects / issues affect you eating traditional foods at your

862 UNIVERSITY residence ? \*

863 Please discuss elaborately

864 \_\_\_\_\_

865 \_\_\_\_\_

866 \_\_\_\_\_

867 \_\_\_\_\_

868 \_\_\_\_\_

869 15. What elements / aspects / issues affect you eating traditional foods when residing at

870 HOME ? \*

871 Please discuss elaborately

872 \_\_\_\_\_

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881 **Author Contributions:**

882 FZM designed and conducted the study and prepared the manuscript drafts. KEL  
883 contributed to study and manuscript scrutiny and formatting. LDR contributed to study  
884 design and scrutiny.

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