



## Burnout, Eating Behaviour Traits and Dietary Patterns

Journal:	<i>British Food Journal</i>
Manuscript ID	BFJ-04-2019-0300.R2
Manuscript Type:	Research Paper
Keywords:	Burnout, Eating Traits, Food choice, Dietary patterns, Survey

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## Burnout, Eating Behaviour Traits and Dietary Patterns

### 2 Abstract

3 **Purpose:** This exploratory research investigated whether burnout and eating behaviour  
4 traits were associated with food intake.

5 **Design:** Participants (N=109) 78% female, mean age 39 years, were recruited from  
6 various occupations within a United Kingdom (UK) university to complete an on-line  
7 survey. Dietary habits were measured using Food Frequency Questionnaire (FFQ),  
8 burnout using the Maslach Burnout Inventory (MBI) and eating behaviour traits using  
9 the Three Factor Eating Questionnaire R18 (TFEQ).

10 **Findings:** Principal Component Analyses of FFQ responses revealed four dietary  
11 patterns: 1. Fast/Junk Food (+ chicken and low fruit/vegetables); 2. Meat/Fish; 3.  
12 Dairy/Grains; 4. Beans/Nuts. Dietary patterns were examined using multiple regression  
13 analysis as outcome variables with age, gender, burnout and eating behaviour traits as  
14 explanatory variables. More frequent consumption of 'junk/fast food' was associated  
15 with lower TFEQ-Cognitive Restraint, higher TFEQ-Uncontrolled Eating, lower MBI-  
16 Emotional Exhaustion and higher MBI-Depersonalisation. More frequent consumption  
17 of beans/nuts was associated with higher TFEQ-Uncontrolled Eating and higher MBI-  
18 Emotional Exhaustion. Models for meat/fish and grains/dairy dietary patterns were not  
19 significant.

20 **Limitations/Implications:** Burnout may need to be considered to reduce junk food  
21 consumption in higher education employees. Causality between burnout, eating  
22 behaviour traits and food consumption requires further investigation on larger samples.

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5 23 **Originality:** This appears the first study to have explored associations between burnout,  
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7 24 eating behaviour traits and dietary patterns.  
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10 25 **Paper type:** Research article.  
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13 26 **Keywords:** Burnout; Eating Traits; Food Choice; Dietary Patterns; Survey.  
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British Food Journal

## 28 **Burnout, Eating Behaviour Traits and Food Choice**

### 29 **Introduction**

30 Occupation-related factors contribute substantially to health and well-being (Shuck *et*  
31 *al.*, 2017) and this is reflected in rising incidence of chronic illness among academics  
32 (Brown and Leigh, 2018). University staff experience relatively high workload demands  
33 (Ahsan *et al.*, 2009) which may adversely affect job performance and produce *burnout*  
34 (Maslach and Leiter, 2014). Burnout is “a syndrome of emotional exhaustion,  
35 depersonalisation and reduced accomplishment which is a special risk for individuals  
36 who work with other people in some capacity” (Leiter and Maslach, 1998: pp 347). The  
37 Job Demand Resources Model (Demerouti *et al.*, 2001) holds that greater effort is  
38 required to do a job where demands are high (eg. time constraints; role conflict;  
39 workload etc), leading to exhaustion and if resources are scarce, leading to  
40 disengagement. Occupational burnout occurs, therefore, when job demands exceed  
41 employees’ resources for managing tasks (Schaufeli, 2017) and is common in  
42 occupations involving numerous direct interactions with people, such as those who  
43 work in education (Schaufeli and Salanova, 2014; Childs and Stoeber, 2012). Whereas  
44 resources are associated with greater commitment to the job and less burnout (Bakker *et*  
45 *al.*, 2003), high job demands lead to burnout and associated detriment to health  
46 (Schaufeli, 2017). Recent meta-analysis (Lesener *et al.*, 2018) has implied that the  
47 relationship between job demands or resources and burnout is reciprocal. Whilst job  
48 demands lead to reduced work engagement, which increases job demands, resources  
49 improve well-being, which leads to further investment into work. Burnout may  
50 encourage less healthy eating behaviours (Alexandrova-Karamanova *et al.*, 2016;

51 Stewart-Knox, 2014; Gortler *et al.*, 2000) and has been linked to overeating  
52 (Mikalauskas *et al.*, 2018; Armenta-Hernandez *et al.*, 2018; Warren *et al.*, 2013).

53 Eating behaviour traits can modulate food intake and could influence how  
54 individuals' eating patterns respond to burnout. Eating behaviour traits are individual  
55 differences assumed to be associated with appetite control (Drapeau *et al.*, 2019).  
56 Disinhibition is an eating trait associated with poor appetite control characterized by  
57 'Uncontrolled Eating' (UE) and Emotional Eating (EE). UE refers to the tendency to  
58 overeat in response to external food cues and food palatability while EE refers to the  
59 tendency to overeat in response to mood. Both EE and UE can be associated with  
60 weight gain (Bryant *et al.*, 2008). Cognitive Restraint in contrast, is characterized by  
61 controlled eating, cognitively restricting food intake to control body weight (Bryant *et*  
62 *al.*, 2008). Emotional Eating, Uncontrolled Eating and Cognitive Restraint are measured  
63 by the Three Factor Eating Questionnaire (Stunkard and Messick, 1985). Emotional  
64 states can increase food intake in restrained/emotional eaters and decrease in non-  
65 restrained/non-emotional eaters (Kristanto *et al.*, 2016; Aldao and Nolen-Hoeksema,  
66 2010). One form of Disinhibition is Emotional Eating (EE) and is measured by the  
67 TFEQ revised TFEQr18 (Cappelleri *et al.*, 2009; Karlsson *et al.*, 2000). Individuals with  
68 a high level of Disinhibition (uncontrolled eating) and Restraint (controlled eating) may  
69 be vulnerable to overeating in response to negative emotion (Kozak *et al.*, 2017;  
70 Järvelä-Reijonen *et al.*, 2016; Bryant *et al.*, 2010; and, 2008). Evidence for the impact  
71 of Cognitive Restraint on food intake, however, is mixed. On the one hand, Cognitive  
72 Restraint has been related to increased consumption of more healthful, and lower fat,  
73 low energy foods (e.g. Aguirre *et al.*, 2017; Bernstein *et al.*, 2015; French *et al.*, 2014;

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5 74 Cornelis *et al.*, 2014), supporting a behavioural profile which favours weight regulation.  
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7 75 Whilst on the other hand, high Cognitive Restraint has been associated with poorer diet  
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9 76 quality, poor dietary regulation and larger portion size (e.g. Guillocheau *et al.*, 2018;  
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11 77 Lewis *et al.*, 2015; Jones *et al.*, 2013). The disparate response of those with high  
12  
13 78 Restraint, could at least in part, be a consequence of other eating behaviours an  
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15 79 individual processes, along with their emotional response (Bryant *et al.*, in press). More  
16  
17 80 consistently, individuals who score highly on EE, show a tendency to consume high-fat  
18  
19 81 and sweet foods (Järvelä-Reijonen *et al.*, 2016; Camilleri *et al.*, 2014). Emotional  
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21 82 eaters, therefore, may be more likely to seek solace from food in the presence of  
22  
23 83 burnout (Bond *et al.*, 2001). In keeping with this theory, periods of high workloads have  
24  
25 84 been associated with greater energy and fat intake (Wang and Le, 2015; Ng and Jeffery,  
26  
27 85 2003), particularly in people with high Disinhibition (Habhab *et al.*, 2009; Wardle *et al.*,  
28  
29 86 2000). Evidence for an association between burnout (MBI) and EE (TFEQr18)  
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31 87 (Kristanto *et al.*, 2016; Nevanperä *et al.*, 2012) and uncontrolled eating (Nevanperä *et*  
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33 88 *al.*, 2012), suggests Disinhibition and Cognitive Restraint could be important when  
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35 89 explaining eating patterns under conditions of burnout.  
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42 90 Research on burnout and health has mainly focussed upon health professionals  
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44 91 (Mikalauskas *et al.*, 2018; Alexandrova-Karamanova *et al.*, 2016; Cecil *et al.*, 2014;  
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46 92 Warren *et al.*, 2013; Gorter *et al.*, 2000). Most existing studies on burnout and eating  
47  
48 93 have not assessed actual dietary habits and/or dietary patterns (eg. Mikalauskas *et al.*,  
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50 94 2018; Kristanto *et al.*, 2016; Nevanpera *et al.*, 2012; Gorter *et al.*, 2000). This  
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52 95 exploratory study, therefore, has explored associations between burnout, eating traits  
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54 96 and dietary patterns in employees within higher education with a view to intervention. It  
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5 97 was hypothesized that burnout, emotional eating, uncontrolled eating and Cognitive  
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7 98 Restraint would be associated with eating patterns.  
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## 13 100 **Method**

### 16 101 **Sampling**

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20 102 Recruitment was via email and newsletter from among University employee groups  
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22 103 (academic; administrative; ancillary) and all grades. Those with a dietary-related health  
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24 104 condition (eg. Diabetes; Coeliac's disease; food allergy) or on a prescribed diet (eg. low  
25  
26 105 cholesterol; gluten free) were excluded. Otherwise any employee was free to volunteer  
27  
28 106 and be included. Respondents (N=109) were 78% female, average age 39.50 years, 79%  
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30 107 of whom had a degree and/or higher degree. A majority (64.5%) were in administrative  
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32 108 roles, one third (34%) held academic posts and a small proportion (1.5%) unclassified.  
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### 39 110 **Materials**

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43 111 The design was cross-sectional using self-administered questionnaire. Questions were  
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45 112 on demographics, Perceived Stress, Emotion Regulation, Burnout, Eating Behaviour  
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47 113 Traits and dietary habits. Emotion Regulation data were omitted as incomplete.  
48  
49 114 Perceived Stress was removed from this analysis because of its low Cronbach's alpha  
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51 115 (0.547).  
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55 116 The Maslach Burnout Inventory (MBI) (Maslach and Leiter, 2014; Maslach and  
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57 117 Jackson, 1986) is a 22-item scale that assesses burnout on three subscales: 1) Emotional  
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5 118 exhaustion (EE) (9 items) - feelings of being emotionally overextended and exhausted  
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7 119 by work eg. 'I feel emotionally drained/used up/fatigued at the end of the day'; 2)  
8  
9 120 Depersonalisation (DP) (5 items) - an unfeeling and impersonal response toward  
11 121 recipients of services eg. 'I can easily understand how my recipients feel about things/I  
12 122 feel I treat some recipients as if they were impersonal objects'/'working with people all  
13  
14 123 day is a strain for me'; 3) Personal accomplishment (PA) (8 items) competence and  
15  
16 124 achievement in one's work eg. 'I feel I am positively influencing other people's lives  
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18 125 through my work'/'I feel exhilarated after working closely with my recipients'/'I have  
19  
20 126 accomplished many worthwhile things in this job'. Responses were on a 7-point Likert  
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22 127 scale ranging from "never" (= 0) to "daily" (= 6). Scores, one for each subscale, were  
23  
24 128 entered separately into analyses as independent variables. The MBI has been shown to  
25  
26 129 have good validity across different studies (Lesener *et al.*, 2019) and high internal  
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28 130 consistency for the EE and DP scales across EU countries (Alexandrova-Karamanova *et*  
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30 131 *al.*, 2016). Internal consistency of the reported data was high. Cronbach's  $\alpha = 0.91$   
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33 132 (EE); 0.78 (DP); 0.83 (PA).  
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40 133 Three Factor Eating Questionnaire Revised 18 (TFEQr18) (Karlsson, *et al.*,  
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42 134 2000) measures eating traits and is a shortened and revised version of the 51-item  
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44 135 original (Stunkard and Messick, 1985).. Responses were on a four-point scale (1-4),  
45  
46 136 with higher values indicating greater levels of the eating behaviour trait. Item scores  
47  
48 137 were summated into scale scores for three factors: "Cognitive Restraint" (CR) 6 items;  
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50 138 "Uncontrolled Eating" (UE) 9 items; "Emotional Eating" (EE) 3 items. Raw scores were  
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52 139 transformed to a 0–100 scale [(lowest possible raw score/possible raw score range) x  
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54 140 100]. Scores, one for each subscale, were entered separately into the analyses as  
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5 141 independent variables. Internal consistency of the subscales was good. Cronbach's  $\alpha$  =  
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7 142 0.83 (CR); 0.89 (UE); 0.89 (EE).  
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10 143 Food Frequency Questionnaire (FFQ) (Adapted from Tresserra-Rimbau, *et al.*,  
11  
12 144 2013) was employed to measure how often 19 food groups (Table 1) were consumed  
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14 145 during the previous three months. Responses were on a Likert scale: never; less than 1  
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16 146 time per week; 1-6 times per week; 1-3 times per day; 4 or more times per day.  
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### 22 23 148 **Procedure**

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26 149 Ethical approval was granted by the University ethical committee. Volunteers were  
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28 150 given an information sheet and required to give prior, written consent. Data were  
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30 151 collected on-line during April–August 2015.  
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### 36 37 153 **Data analysis**

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40 154 Data were analysed using Jamovi (version 0.9.5.12) and R (version 3.5.1). Principal  
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42 155 Component Analysis (PCA) with Varimax rotation using R library “psych” (Revelle,  
43  
44 156 2018) was used to determine dietary patterns from FFQ data. Taking factor loadings of  
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46 157 0.5 or above and Eigenvalues  $>1$ , initial results indicated 6 components. Given two  
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48 158 components that explained the least variances were not interpretable, the PCA was re-  
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50 159 run assuming 4 components which together accounted for 55.7 % of the total variance  
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52 160 in frequency of consumption. Taking factor loadings of 0.5 as cut-off, there were 4  
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54 161 factors (Table 1), each representing a distinct dietary pattern: 1. Junk/Fast Food +  
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5 162 Chicken and Low Fruit/Vegetables; 2. Meat/Fish; 3. Grains/Dairy; 4. Beans/Nuts.  
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7 163 Neither eggs nor sweets loaded onto any factor. The 4 component scores (dietary  
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9 164 patterns) were entered into multiple regression analyses as dependent variables.  
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11 165 Multiple linear regression analyses were then undertaken to determine associations  
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13 166 between gender, age, burnout (MBI) and eating behaviour traits (TFEQ) (independent  
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15 167 variables) and the four dietary patterns dependent variables). Significance was assumed  
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17 168 at  $p < 0.05$ . See Table 2 for the descriptive statistics of the independent variables.  
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22 169 For all four models, the assumptions of linearity, homoscedasticity, and  
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24 170 normality were acceptable based on results of normal Q-Q plots, residual plots, the  
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26 171 score test for non-constant error variance (Cook and Weisberg, 1983), and the global  
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28 172 validation of linear model assumption test (Peña and Slate, 2006). Independence was  
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30 173 assumed by design. Results of VIF indicated no problem of multicollinearity ( $< 10$ ).  
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32 174 Outliers and influential cases were examined using Cook's distance, hat statistic, added-  
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34 175 variable plots, and influence plots. Although there were outliers based on Cook's  
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36 176 distance, these data points were included in the analyses because the largest absolute  
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38 177 studentised residual test showed that these outliers were not significant using the  
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40 178 Bonferroni  $p < .05$  criterion. The added-variable plots and influence plots indicated  
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42 179 these outliers did not have a disproportionate impact on the model parameters.  
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51 181 **Insert Table 1 and 2**

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57 183 **Results**

## 184 **Determinants of dietary patterns**

### 185 *1. Fast/Junk Food*

186 More frequent consumption of the 'junk/fast food' (+ chicken and less-frequent fruit  
187 and veg) pattern was associated with lower TFEQ-Restrained Eating ( $b = -0.012$ ;  $SE =$   
188  $0.004$ ;  $t = -2.975$ ;  $p = 0.004$ ), higher TFEQ-Uncontrolled Eating ( $b = 0.014$ ;  $SE = 0.005$ ;  
189  $t = 2.656$ ;  $p = 0.010$ ), lower MBI-Exhaustion ( $b = -0.024$ ;  $SE = 0.010$ ;  $t = -2.516$ ;  $p =$   
190  $0.014$ ) and higher MBI-Depersonalisation ( $b = 0.049$ ;  $SE = 0.020$ ;  $t = 2.437$ ;  $p = 0.017$ )  
191 (Table 3). This model explained 44.1% of variance (adjusted  $R^2 = 0.38$ ) in junk/fast  
192 food consumption ( $F(8, 77) = 7.597$ ;  $SE = 0.80$ ,  $p < 0.001$ ).

### 193 *2. Meat/Fish*

194 More frequent consumption of the meat/fish dietary pattern was associated with being  
195 male ( $b = -0.665$ ;  $SE = 0.269$ ;  $t = -2.475$ ;  $p = 0.016$ ) (Table 3). This model explained  
196 11% of variance (adjusted  $R^2 = 0.03$ ) in meat consumption and was not significant ( $F$   
197  $(8, 77) = 1.28$ ;  $SE = 0.964$ ;  $p = 0.266$ ).

### 198 *3. Grains/Dairy*

199 More frequent consumption of the grains/dairy dietary pattern was associated with  
200 being male ( $b = -0.671$ ;  $SE = 0.272$ ;  $t = -2.468$ ;  $p = 0.016$ ) (Table 3). This model  
201 explained 9% of variance (adjusted  $R^2 = -0.001$ ) in grains and dairy consumption and  
202 was not significant ( $F(8, 77) = 0.987$ ;  $SE = 0.974$ ;  $p = 0.453$ ).

### 203 *4. Beans/Nuts*

204 More frequent consumption of beans/nuts was associated with higher TFEQ-  
205 Uncontrolled Eating ( $b = 0.015$ ;  $SE = 0.006$ ;  $t = 2.463$ ;  $p = 0.016$ ) and higher MB-

206 Exhaustion ( $b = 0.027$ ;  $SE = 0.011$ ;  $t = 2.460$ ;  $p = 0.016$ ) (Table 3). This model was  
207 significant and predicted 22% of the variance (adjusted  $R^2 = 0.14$ ) in the frequency of  
208 bean and nut consumption ( $F(8, 77) = 2.697$ ;  $SE = 0.916$ ;  $p = 0.011$ ).

209 Further analyses examined the Fast/Junk Food and Beans/Nuts dietary pattern  
210 models that indicated overall significance for relative importance of the significant  
211 predictors using relative weights (Groemping, 2006). Relative weight estimates the  
212 contribution each predictor makes to  $R^2$ . For the Fast/Junk Food model, TFEQ-  
213 Uncontrolled Eating had the highest relative weight (27.44%), followed by TFEQ-  
214 Cognitive Restraint (23.41%), MBI-Depersonalisation (15.24%), and MBI-Exhaustion  
215 (6.02%). For the Beans/Nuts model, TFEQ-Uncontrolled Eating again had the highest  
216 relative weight (31.94%), followed by MB-Exhaustion (29.31%).

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218 **Insert Table 3**

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220 **Discussion**

221 As predicted, given previous research which has identified associations between  
222 burnout and less healthy eating (Alexandrova-Karamanova *et al.*, 2016; Lallukka *et al.*,  
223 2008; Gorter *et al.*, 2000) burnout (depersonalisation) was associated with more  
224 frequent fast/junk (+ chicken and less-frequent fruit and veg) food consumption.  
225 Contrary to expectation, more frequent consumption of fast food was associated with  
226 less burnout (exhaustion). This variable explained a relatively small proportion (6%) of  
227 the model. A possible explanation for this finding is that the relationship between

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5 228 burnout (exhaustion) and fast-food intake is circular. Exhaustion leads to fast-food  
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7 229 consumption which serves to counter exhaustion and in doing so, reinforces further  
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9 230 intake of fast-food and so on. Contrary to previous research which has found that males  
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11 231 consume more fast-food than females (Daniuseviciute-Brazaite and Abromaitiene,  
12  
13 232 2018; Jansen *et al.*, 2017; Saquib *et al.*, 2016; Black and Billette, 2015; Morse and  
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15 233 Driskell, 2009), our data showed no sex differences in the fast food intake pattern. That  
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17 234 our sample was 78% female, however, may have rendered this null finding less reliable.

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21 235 Frequent 'junk/fast food' (+ chicken and less-frequent fruit and veg)  
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23 236 consumption pattern was strongly associated with lower restrained eating and higher  
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25 237 uncontrolled eating. This finding agrees with previous studies that have linked  
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27 238 emotional eating to with job stress (Okumus *et al.*, 2019) or uncontrolled eating to  
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29 239 intake of high-energy-containing foods (Camilleri *et al.*, 2014) and implies that such  
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31 240 individuals may be less able to change eating behaviour. The result, however,  
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33 241 contradicts other studies that have found no association between eating traits and food  
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35 242 intake (Brogan and Hevey, 2013; Adriaanse *et al.*, 2011; Anschutz *et al.*, 2009)  
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37 243 suggesting that further research is required.

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43 244 That more frequent consumption of beans/nuts was also associated with higher  
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45 245 uncontrolled eating in the presence of burnout (exhaustion), suggests that some  
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47 246 uncontrolled eaters target urges at healthier food, which could be a result of individual  
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49 247 differences that moderate the relationship between burnout and eating and could explain  
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51 248 inconsistencies in results between studies. Uncontrolled eaters may eat more regardless  
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53 249 of healthiness. There may have been an interaction amongst eating behaviour traits,  
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55 250 whereby level of Cognitive Restraint may have affected the expression of Uncontrolled  
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5 251 Eating (Bryant *et al.*, 2010). Where there is high Uncontrolled Eating with high  
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7 252 Cognitive Restraint, a more disturbed eating style can develop with overeating of less  
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9 253 healthy foods. Those with low Cognitive Restraint and high Uncontrolled Eating,  
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11 254 however, may overeat all food, healthy or otherwise.

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15 255 Among limitations inherent in this study is that the workplace context may have  
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17 256 rendered work-related matters salient and biased responses toward burnout (Schaufeli *et*  
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19 257 *al.*, 2009). The sample, although adequate for an exploratory study, was small and  
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21 258 biased toward females. Although all are contracted to a 37-hour working week,  
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23 259 academics can work longer. Future research on larger and more representative samples,  
24  
25 260 therefore, should be conducted in order for findings to be generalised to other higher  
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27 261 education employees. Future research may compare burnout and food intake between  
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29 262 academics and administrative staff and different job roles as well as between full and  
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31 263 part-time workers and taking the wider context into account.

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36 264 The FFQ will have contained inaccuracies common to any self-reported, recall  
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38 265 approach to dietary assessment (MacDiarmid and Blundell, 1998). The FFQ used in the  
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40 266 current study did not distinguish between fresh and processed foods which would have  
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42 267 strengthened extraction of the dietary patterns. Given previous studies have reported  
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44 268 overeating in response to burnout (Armenta-Hernandez *et al.*, 2018; Mikalauskas *et al.*,  
45  
46 269 2018; Warren *et al.*, 2013), it would have been useful to have assessed portion size and  
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48 270 included anthropometric measures. That the FFQ covered a reference period of three  
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50 271 months, rendered it difficult to assess portion size, however, this is not a problem given  
51  
52 272 the focus of the current study was on dietary quality not quantity. A strength of the  
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54 273 current analysis is that unlike previous studies of burnout and eating (Okumus *et al.*,

2019; Alexandrova-Karamanova *et al.*, 2016; Kristanto *et al.*, 2016; Nevanpera *et al.*, 2012), the present study measured intake and has analysed dietary patterns.

Another omission given previous research which has found associations between burnout and higher alcohol intake (Mikalauskas *et al.*, 2018; Alexandrova-Karamanova *et al.*, 2016; Cecil *et al.*, 2016; Gorter *et al.*, 2000; Nowack and Pentkowski, 1994), is that the questionnaire did not enquire of alcohol intake. Assessment of physical activity may also have strengthened the models.

Like much research into occupational wellbeing (Lesener *et al.*, 2019), our study has been cross-sectional, meaning further research on larger samples comprising a range of job roles is required to ascertain direction of causation between burnout, eating traits and food choice. Meanwhile, these results suggest that different types of burnout (Emotional Exhaustion and Depersonalisation) and eating behaviour traits (Uncontrolled Eating and Cognitive Restraint) are differentially associated with junk/fast food consumption. These results have implications on workplace wellbeing interventions to promote healthier food choices.

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1 **Table 1.**  
 2 *Component Loadings for Principle Components Analysis for Dietary Patterns with*  
 3 *Varimax Rotation*  
 4

FFQ	Components			
	1. Junk/Fast food	2. Meat/Fish	3. Grains/Dairy	4. Beans/Nuts
Dairy	.04	.03	<b>.62</b>	.00
Fruit	<b>-.58</b>	-.15	.11	.30
Chicken	<b>.56</b>	.41	.07	-.07
F/Veg	<b>-.76</b>	-.03	.10	.25
Legumes	<b>-.63</b>	.17	.20	.17
Beans	-.16	.22	.14	<b>.65</b>
Nuts	-.05	.11	-.13	<b>.72</b>
Fish	.04	<b>.74</b>	.13	.17
Pork	-.01	<b>.80</b>	.06	.02
Beef	.12	<b>.83</b>	.13	.09
Other Meat	.17	<b>.72</b>	.07	.04
Grains	-.05	.09	<b>.76</b>	.21
Eggs	.30	.33	.48	.29
Bread	.26	.09	<b>.71</b>	-.05
Sweets	.48	-.21	.31	.43
Snacks	<b>.67</b>	-.02	.31	.20
Soft Drinks	<b>.54</b>	.19	.16	.07
Coffee/Tea	-.31	.19	<b>.68</b>	-.16
Fast/Food	<b>.63</b>	.36	.11	.17

5 *Note.*  $N = 109$ . Loadings  $> |.50|$  are in boldface. FFQ = Food Frequency Questionnaire.

6 F/Veg = Fruit/Vegetables.

**Table 2.**

*Summary of Intercorrelations, Means, and Standard Deviations for Scores on Burnout and Eating Behaviour Traits*

	1	2	3	4	5	6	<i>M</i>	<i>SD</i>
1. Emotional Exhaustion	--	.59***	-.14	.01	.28**	.30**	19.9	11.8
2. Depersonalisation		--	-.18	-.06	.36***	.14	6.5	6.2
3. Personal Accomplishment			--	-.10	.03	-.06	32.7	9.2
4. Cognitive Restraint				--	-.03	.25*	41.8	23.0
5. Uncontrolled Eating					--	.48***	37.7	22.0
6. Emotional Eating						--	36.4	28.7

*Note.*  $N = 109$ . \*  $p < .5$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

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**Table 3.**  
Multiple Regression Analyses: Associations between Gender, Age, Burnout (MBI), Eating Traits, and Dietary Pattern

Variables	Dietary patterns			
	Junk/Fast food	Meat/Fish	Dairy/Grains	Beans/Nuts
Intercept	.813	-.320	.202	-1.403*
Age	-.001	.009	.003	.006
Gender	-.381	-.665*	-.671*	-.443
<u>MBI-EE</u>	-.024*	.009	.004	.027*
<u>MBI-DP</u>	.049*	-.011	-.024	-.032
<u>MBI-PA</u>	-.001	.015	.002	.013
<u>TFEQ-CR</u>	-.012**	-.002	.005	.005
<u>TFEQ-UE</u>	.014**	.001	.003	.015*
<u>TFEQ-EE</u>	.002	-.001	-.002	-.002
$R^2$	.44	.12	.09	.22
Adjusted $R^2$	.38	.03	-.001	.14
$F$	7.597***	1.28	.987	2.697*

Note.  $N = 86$ . Gender was dummy-coded (Men = 0 and Women = 1). MBI = Maslach Burnout Inventory. TFEQ = Three Factor Eating Questionnaire. EE = Emotional Exhaustion. DP = Depersonalisation. PA = Personal Accomplishment. CR = Cognitive Restraint. UE = Uncontrolled Eating. EE = Emotional Eating.  
\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .