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1 **Obesity discrimination in the recruitment process: “You’re not Hired!”**

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31

32 **Abstract**

33 Previous literature reports that obese persons are discriminated in the workplace.
34 Evidence suggests that obese people are perceived as having less leadership potential,
35 and in comparison to normal weight peers, are expected to be less successful. This
36 study examined whether obese people are discriminated against when applying for
37 employment. Three hypotheses were offered in line with previous research: 1) obese
38 people are less likely to be assessed positively on personnel suitability than
39 normal weight people; 2) obese people in active employment are more likely to be
40 discriminated against than people in non-active employment; and 3) obese women are
41 more likely to be discriminated against than obese men. 181 Participants were
42 sampled from sedentary, standing, manual and heavy manual occupations.
43 Participants rated hypothetical candidates on their suitability for employment.
44 Employees also completed measures of implicit and explicit attitudes towards obesity.
45 MANOVA was conducted to examine if obese candidates were discriminated against
46 during the recruitment procedure. Results demonstrated that participants rated obese
47 candidates as less suitable compared with normal weight candidates and when the
48 weight status of the candidate was not revealed for work across the four workplace
49 groups. Participant gender and weight status also impacted perceptions of candidates'
50 suitability for work and discrimination towards obese candidates was higher in
51 participants from more physically demanding occupations. The study findings
52 contribute to evidence that obese people are discriminated against in the hiring
53 process and support calls for policy development.

54 *Keywords:* obesity, discrimination, workplace, implicit, explicit

55 **Introduction**

56 Worldwide prevalence of obesity has increased with approximately half a
57 billion people currently classed as obese (Body Mass Index $\geq 30\text{kg.m}^2$; World Health
58 Organisation, 2015). Concurrently, there has been an increase in the stigmatisation
59 and discrimination of obesity (Latner & Stunkard, 2003). A number of institutions
60 contribute to the development and maintenance of anti-fat attitudes in particular the
61 media, such as television or written press (Flint, Hudson and Lavellee, In Press;
62 Latner, Rosewall & Simmonds, 2007). The discourse used in the media when
63 reporting on obesity represents an attempt to create concern and a ‘moral panic’ and
64 in doing so leads to an emotional response in the recipient (Rich & Evans, 2005;
65 Tischner & Malson, 2008). Indeed, the reach and influence of these institutions is
66 wide and as such, obesity stigmatisation has been reported in various population
67 groups: jurors (Schvey et al., 2013), healthcare professionals (Carr & Friedman, 2005;
68 Brown et al., 2007), educational professionals (Puhl & Heuer, 2009), and obesity
69 researchers (Flint & Reale, 2014). Consequently, research has identified that there are
70 settings where obesity stigmatisation and discrimination may occur such as in schools
71 (Puhl & Luedicke, 2012), public spaces including waiting rooms and public transport
72 (Puhl & Brownell, 2001), and in the workplace (Flint & Snooke, 2014).

73 Research investigating obesity discrimination in the workplace has examined
74 the stereotypes reported about obese employees and how these may translate to
75 discriminative behaviours. Both experimental and survey research suggest that
76 employment discrimination against overweight individuals is substantial in Western
77 cultures (see Roehling, 1999, for an extensive review). More specifically, Levine and
78 Schweitzer (2015) found that people with obesity were associated with low
79 competence, whilst Schulte and colleagues (2007) reported that obese people receive
80 lower starting salaries, are ranked as less qualified, and work longer hours than
81 normal weight employees. Similarly, Ball and colleagues (2002) suggested that
82 obesity and high BMI are associated with employment in jobs associated with lower
83 socioeconomic status. There are also reports of discrimination at the hiring stage,
84 where obese candidates are assessed having less leadership potential, are less likely to
85 be employed, and are expected to be less successful compared to normal weight peers
86 (Flint & Snooke, 2014). Moreover, Agerstrom and Rooth (2011) reported that
87 managers held negative automatic stereotypes about obese people and were less likely
88 to invite an obese applicant for an interview.

89 In the hiring process, a number of additional factors have been reported to
90 have an impact on obesity discrimination, such as the candidate's gender and the
91 requirements of the job. Specifically, obese women were almost three times more
92 likely to report discrimination than obese men (Roehling, Roehling, & Pichler, 2007).
93 Bartels and Nordstrom (2013) suggested that obese women are more likely to be
94 discriminated against than obese men when applying for a job, especially if the job
95 requires high visibility and physical demands. Previous research and theory, such as
96 the Objectification Theory (Fredrickson & Roberts, 1997) suggests that unlike men,
97 women are subjected to sexual objectification and assessment against beauty
98 standards. Fredrickson and Roberts argue that the objectification of women is harmful
99 to women and this explains why women are judged more harshly compared to men in
100 many spheres of life including employment discrimination. It is suggested that people
101 are socialised into objectifying women based on beauty standards with a plethora of
102 examples evident in current society such as in the media.

103 Bartels and Nordstrom (2013) provide the most recent evidence regarding
104 obesity discrimination in the hiring process whilst assessing gender and the physical
105 requirements of employment. However, there were methodological shortcomings of
106 Bartels and Nordstrom's (2013) study that the current study aimed to improve on.
107 First, Bartels and Nordstrom's (2013) study only examined perceived suitability of a
108 hypothetical candidate when weight status was revealed. Thus, the weight status of
109 candidates was always revealed in their study which is not always the case when
110 applying for employment and unlikely in countries where a picture of the candidate is
111 not a required element of a CV. The current study aimed to compare the perceived
112 suitability of candidates whose weight status was not revealed. Second, as
113 acknowledged by Bartels and Nordstrom (2013), in their study participants rated only
114 one potential candidate per position which is also unlikely in a real hiring process,
115 where typically a range of candidates are assessed. Third, Bartels and Nordstrom
116 (2013) only examined explicit anti-fat attitudes, despite previous research (e.g., Flint
117 et al., 2015) suggesting implicit measures are a strong predictor of anti-fat attitudes.
118 Finally, only 44% of participants were employed and 45% had experience of
119 recruiting employees in Bartels and Nordstrom's (2013) study.

120 Unemployment is a longstanding topic of concern across the world, with
121 research linking unemployment with poorer outcomes such as increased likelihood of
122 health disparities (Adler & Newman, 2002). Reports of obesity discrimination in the

123 hiring process have led to calls for the development and review of legislation to
124 protect obese people from discrimination (Flint & Snooke, 2015).

125 In 2014, the European Court of Justice ruled that being severely overweight
126 could be considered a disability if it significantly disrupted an employee's ability to
127 work. In the US, there are states that have laws to protect against height and weight
128 discrimination, whilst UK and EU employment law is lagging and is yet to include
129 discrimination towards overweight and obese people. The main problem with the
130 existing anti-discrimination laws is that they require interpretation of an individual's
131 (dis)ability to work, as well as of the necessary adjustments that may be required to
132 accommodate a person's needs (Flint & Snooke, 2014). Anti-discrimination laws are
133 included in legislation such as the UK Equality Act (2010) and EU laws in The
134 Employment Equality Directive (2000/78). For example, the Equality Act (2010)
135 specifically prohibits discrimination on the grounds of age, disability, gender re-
136 assignment, marriage and civil partnership, pregnancy, maternity, race, ethnicity,
137 religion, belief, sex, and sexual orientation. In considering current anti-discrimination
138 legislation and thus protection for obese people from discrimination, whether obesity
139 is defined as a disability is the key consideration. For example, obesity is not
140 specified as a disabling condition in the UK Equality Act (2010). Thus, through
141 interpretation, an obese person who experiences discrimination in recruitment or in
142 the workplace such as being overlooked for a job or promotion may not be protected
143 by current legislation. Consequently, misunderstandings and misinterpretations of
144 obesity may lead to stereotyping and discriminative behaviours in the workplace.

145 The hiring process in employment is clearly an area that warrants further
146 examination given that previous research suggests obese people experience
147 discrimination when applying for work, and the implications of unemployment which
148 continues to be a global concern. Thus the aim of the present study was to identify
149 whether obese people are discriminated against when applying for employment and
150 by doing so improve on the methodological limitation of previous research. In line
151 with previous research identified above, three hypotheses were formulated: (1) obese
152 candidates will be assessed as less suitable for employment than normal weight
153 candidates; (2) obese candidates are more likely to be discriminated against when
154 applying for employment in active working environments compared to non-active
155 environments; and (3) obese women are more likely to be discriminated against than
156 obese men.

157

158 **Method**

159 *Participants*

160 181 employees (107 male, 74 female) in employment varying in levels of
161 physical demand (sedentary, standing, manual work and heavy manual work) took
162 part in the study. All participants were fluent in English and sampled from three
163 European countries: Czech Republic, Slovenia and the UK. There was no
164 compensation or incentives for participating in the experiment. Using a convenience
165 sample of workplaces, employees responded to requests received via email for
166 participation to take part in the study. Workplaces were selected that corresponded to
167 the activity levels as stated in European Prospective Investigation into Cancer and
168 Nutrition physical activity questionnaire (EPIC, Wareham et al., 2003). Participants
169 had to have had previous experience of recruiting employees to the workplace.

170

171 *Materials*

172 A range of implicit and explicit measures were used to assess anti-fat attitudes
173 and beliefs about the controllability of obesity: Implicit Association Test (IAT;
174 Greenwald, McGhee & Schwartz, 1998), Attitudes Towards Obese Persons scale
175 (ATOP; Allison, Basile & Yucker, 1991), Beliefs About Obese Persons Scale (BAOP;
176 Allison, Basile & Yucker, 1991) and F-Scale (Bacon, Scheltema, Robinson, 2001).

177 The IAT (Greenwald et al., 1998) is a computer-based measure of implicit
178 attitudes which was modified in this study to assess attitudes towards fatness and
179 thinness. Scores range between -2 and 2 with positive scores indicative of implicit
180 anti-fat or pro-thin preference. The seven block IAT will be employed as described by
181 Greenwald, Nosek, and Banaji (2003, See Table 1). The quicker participants assign
182 stimuli to the grouping categories in blocks 4 and 7, the stronger implicit attitude
183 towards the pairings. Previous research (e.g., Greenwald et al., 1998) has reported
184 satisfactory internal consistency with Cronbach's alpha ranging from of .7 to .9.

185 The ATOP (Allison et al., 1991) measures both positive and negative attitudes
186 towards obese people. The scale has 20 items that are measured on a six-point Likert
187 scale (+3 to -3) for each statement. Scores range from 0-120 with higher scores
188 indicative of more positive attitudes towards obese persons. Previous research (e.g.,
189 Allison et al., 1991) has reported satisfactory internal consistency with Cronbach's
190 alpha scores ranging between .65-.83.

191 The BAOP (Allison et al., 1991) measures the extent that an individual
192 believes that obesity is under an individual's control. The scale contains eight items
193 that are measured on a six-point Likert scale (-3 to +3) for each statement. Overall
194 scores range from 0-48 with lower scores indicative of a stronger belief obesity is
195 controllable. Previous research (e.g., Allison et al., 1991) has reported satisfactory
196 internal consistency with Cronbach's alpha scores ranging from .80 to .84.

197 The F-Scale (Bacon et al., 2001) measures the extent that respondents
198 associate negative characteristics with being fat. The 14 item scale is measured on a 5
199 point Likert scale where two opposing attributes are presented together (e.g., 1 =
200 Active to 5 = Lazy). Previous research (Bacon et al., 2001) has reported satisfactory
201 internal consistency with Cronbach's alpha scores ranging from .87 to .91 in different
202 samples.

203 Six hypothetical candidate CVs were developed (a male and female normal
204 weight, obese, and no photo CV) that were modified for the four physical activity
205 levels of the workplace as identified in the European Prospective Investigation into
206 Cancer and Nutrition physical activity questionnaire (EPIC; Riboli, Hunt, Slimani,
207 Ferrari, Norat, Fahey et al, 2002). Thus, the hypothetical candidates were applying to
208 four different employment offers (one for each physical activity level). For the
209 sedentary workplace the advertised job offer was an administrative assistant, for the
210 standing workplace a university lecturer, for the manual workplace a retail
211 salesperson and for the heavy manual workplace a labourer. The advertised jobs were
212 at early career level and thus CVs were a maximum of two pages in length to
213 standardise across workplace.

214 All CV were developed to match the requirements of existing employment
215 opportunities resulting in highly competent candidates. Thus, none of the hypothetical
216 candidates could be rejected based on insufficient professional experience or skills.
217 The content of the CVs was standardised including basic contact information,
218 education, personal and professional experience with variation across four workplaces
219 (e.g., academic CV had list of selected publication). CVs were randomly allocated
220 and counterbalanced for gender and weight status such that each participant rated two
221 normal weight CVs (one male, one female), two obese CVs (one male, one female)
222 and two CVs without a photo (one male, one female). The sex of the participants was
223 indicated by the name of the applicant. Common British male or female only names

224 were used (i.e. no unisex names) to avoid any confusion regarding the gender of the
225 CVs without a picture.

226 A Personnel Suitability scale was developed for the study comprised of seven
227 items that aimed to measure the participants' evaluation of the hypothetical
228 candidates. Qualities assessed on a 7 point Likert scale included: team-work ability,
229 social competence, job efficiency, intelligence, motivation and leadership skills. One
230 question explicitly inquired whether the candidate was considered to be suitable for
231 the job. A cumulative score of all items was calculated, thus scores for the scale range
232 from 0-42.

233

234 *Procedure*

235 This study received institutional ethical approval from the Faculty of Health
236 and Wellbeing, Sheffield Hallam University; Department of Psychology, Charles
237 University; Department of Psychology University of Bath; and Department of
238 Psychology, University of Maribor. All participants provided written informed
239 consent in accordance with the Declaration of Helsinki.

240 Participants were recruited from four workplace environments that require
241 different levels of activity (sedentary, standing, manual work and heavy manual work)
242 as measured by the EPIC (Riboli, Hunt, Slimani, Ferrari, Norat, Fahey et al, 2002).
243 Each participant evaluated the job suitability of six hypothetical candidates based on
244 their CV, before completing the IAT (Greenwald et al., 1998), the ATOP and BAOP
245 (Allison et al., 1991), and the F-Scale (Bacon et al., 2001). Participants only rated
246 hypothetical candidates who were applying for employment in a workplace that
247 corresponded with their own workplace. Demographic data about the participants was
248 also collected. All participants rated the suitability of each CV prior to the implicit
249 and explicit measures in order to avoid revealing the topic of enquiry to participants.
250 The implicit and explicit measures were completed in a counter-balanced order. On
251 completion of the test, all participants were debriefed regarding the full aim of the
252 experiment.

253 *Analysis*

254 A repeated measures Multivariate Analyses of Variance with Within-Subject
255 gender (male, female) and photo (normal, obese, no photo) and between subject
256 workplaces (sedentary, standing, manual and heavy manual) was conducted. Where
257 significant interactions were found, follow-up ANOVAs were conducted. The model

258 was a composite of Photo x Gender x Workplace. Repeated measures ANOVA was
259 conducted to assess whether obese candidates were less likely to be assessed
260 positively on personnel suitability scales than normal weight candidates. The test
261 compared suitability scores of the photo condition (obese, normal and no photo) as a
262 within subject variable, and whether obese women are more likely to be discriminated
263 against than obese men a repeated measures ANOVA was conducted.

264

265 **Results**

266 **Descriptive statistics**

267 Participants were aged 24-60 years ($M = 38.25$, $SD = 8.99$) with a mean BMI
268 of 25.9 kg.m^2 ($SD = 3.39$). Age distribution was slightly left skewed with higher
269 frequency of younger participants. Distribution across level of physical activity in the
270 workplace was 43 in sedentary occupation (19 males), 56 in standing occupation (35
271 males), 47 in manual work occupation (24 males), and 35 in heavy manual work
272 occupation (29 males). Mean scores on for the hypothetical candidates' suitability for
273 work demonstrated that both males and females perceived the normal weight male as
274 the most suitable for employment (39.73 and 38.38 out of 42 respectively) and the
275 obese female as the least suitable for employment (22.39 and 24.65 out of 42
276 respectively) (See Table 1). Overall, participants reported negative implicit and
277 explicit attitudes towards obesity and a belief that obesity is controllable. Male
278 participants from the heavy manual workforce reported the most negative implicit and
279 explicit attitudes towards obesity with lower ATOP and BAOP scores, higher IAT
280 and F-Scale scores (See Table 1). Participants sampled from the heavy manual
281 workplace also reported the strongest beliefs that obesity is controllable than the other
282 types of workplace (See Table 1).

Running Head: OBESITY DISCRIMINATION IN THE WORKPLACE

Table 1: Job suitability, implicit and explicit attitudes towards obesity for gender and workplace activity level (mean & standard deviation)

Measure	Gender			Workplace Activity Level			
	Overall	Male	Female	Sedentary	Standing	Manual	Heavy Manu
<i>n</i> = 181 (107/74)		107	74	43 (19/24)	56 (35/21)	47 (24/23)	35 (29/6)
Male normal weight CV	39.14 (2.80)	39.73 (2.44)	38.28 (3.06)	38.88 (3.33)	38.29 (2.85)	38.83 (1.94)	41.23 (1.91)
Female normal weight CV	34.65 (2.93)	34.19 (2.86)	35.32 (2.93)	37.47 (2.96)	34.34 (2.14)	34.81 (1.60)	31.49 (1.82)
Male obese CV	25.38 (4.12)	24.63 (3.95)	26.47 (4.14)	29.88 (3.39)	26.00 (2.82)	24.21 (1.96)	20.43 (2.05)
Female obese CV	23.31 (5.26)	22.39 (5.24)	24.65 (5.04)	29.51 (3.33)	24.89 (3.06)	20.51 (2.18)	16.94 (2.44)
Male no photo CV	30.42 (2.89)	30.35 (2.53)	30.53 (3.36)	32.98 (3.35)	30.18 (2.87)	29.17 (1.74)	29.34 (1.14)
Female no photo CV	28.27 (3.73)	27.75 (3.93)	29.03 (3.29)	31.88 (3.02)	29.02 (3.11)	27.45 (1.32)	23.74 (2.17)
IAT	0.76 (0.33)	0.79 (0.34)	0.71 (0.31)	0.60 (0.32)	0.61 (0.24)	0.86 (0.24)	1.05 (0.31)
ATOP	65.72 (10.52)	63.98 (10.45)	68.24 (10.18)	73.77 (9.50)	70.09 (9.06)	62.28 (5.65)	53.49 (3.86)
BAOP	22.79 (6.69)	21.35 (6.69)	24.88 (6.17)	28.37 (5.14)	25.48 (4.51)	20.68 (4.17)	14.46 (4.38)
F-Scale	3.52 (0.37)	3.60 (0.34)	3.42 (0.39)	3.25 (0.40)	3.35 (0.29)	3.72 (0.21)	3.88 (0.12)

IAT: Implicit Association Test scores range from -1 to 1 with positive scores indicative implicit anti-fat/pro-thin bias; ATOP: Attitudes About Obese Persons Scale. Scores range from 0-120 with lower scores indicative of negative attitudes towards obese persons; BAOP: Beliefs About Obese Persons Scale scores range from 0-48 with lower

scores indicative of stronger beliefs that obesity is controllable; F-Scale: The Fat Phobia Scale short form scores range from 1-5 with higher scores indicative of higher fat phobia

A number of correlations were apparent among the explicit measures (See Figure 1). A positive correlation was found between ATOP and BAOP scales indicating that more negative attitudes towards obese persons were associated with a stronger belief that obesity is controllable. A negative correlation was found between the ATOP and F-Scale and the BAOP and F-Scale meaning that stronger beliefs about the controllability of obesity and negative attitudes towards obese people are associated with greater fat phobia. There was also a positive correlation between the IAT and F-Scale indicating an association between negative implicit anti-fat or pro-thin bias and greater fat phobia. Finally, negative correlations were observed between the IAT and ATOP, and IAT and BAOP, suggesting that more negative implicit anti-fat or pro-thin bias are associated with more negative attitudes towards obese people and stronger beliefs that obesity is controllable.

Figure 1: Correlations between implicit and explicit measures

	ATOP	BAOP	F-Scale	IAT
ATOP		0.75	-0.64	-0.57
BAOP			-0.60	-0.49
F-Scale				0.57
IAT				

ATOP, BAOP: Attitudes About Obese Persons Scale and Beliefs About Obese Persons Scale; F-Scale: The Fat Phobia Scale short form; IAT: Implicit Association Test

Main effects

Three statistically significant main effects and no statistically non-significant effects resulted from initial MANOVA. The largest effect size was measured for Photo ($F(2, 176) = 1950.97, p < .001, \eta_p^2 = .957$), followed by Gender ($F(1, 177) = 381.82, p < .001, \eta_p^2 = .683$) condition. Both of former variables are Within-Subject. Main effect was also observed among Between-Subject Workplace Setting variable ($F(3, 177) = 115.33, p < .001, \eta_p^2 = .662$).

Interactions

A significant three-way interaction was observed between Gender x Photo x Workplace ($F(6, 354) = 12.39, p < .001, \eta_p^2 = .17$ see Figures 1 and 2). There was also a significant two-way interactions of Gender x Photo ($F(2, 176) = 59.50, p < .001, \eta_p^2 = .40$), Photo x Workplace ($F(6,354) = 25.24, p < .001, \eta_p^2 = .30$) and Gender x Workplace ($F(3, 177) = 44.90, p < .001, \eta_p^2 = .43$). These results demonstrate that the factors in the model interact significantly.

The three-way interaction shows that participants judged the personnel suitability of the CVs with significantly different scores depending on gender. Furthermore, the score was significantly different across each of the workplaces with heavy manual workplace interacting with the other workplaces. Hence, as the activity level of the workplace increased, stigma towards obese female candidates increased while normal weight male candidates were perceived as more suitable. The two-way interactions further confirm that male and female CVs were judged significantly different when photo conditions were manipulated, and that the CVs were judged differently based on the photo conditions across workplace settings. Finally, personnel suitability of the candidate was judged significantly different across all workplaces based on gender. These results also indicate that the manipulation has been effective (See Figures 2 and 3).

Figure 2: Three Way Interaction of Gender x Photo x Workplace (male)

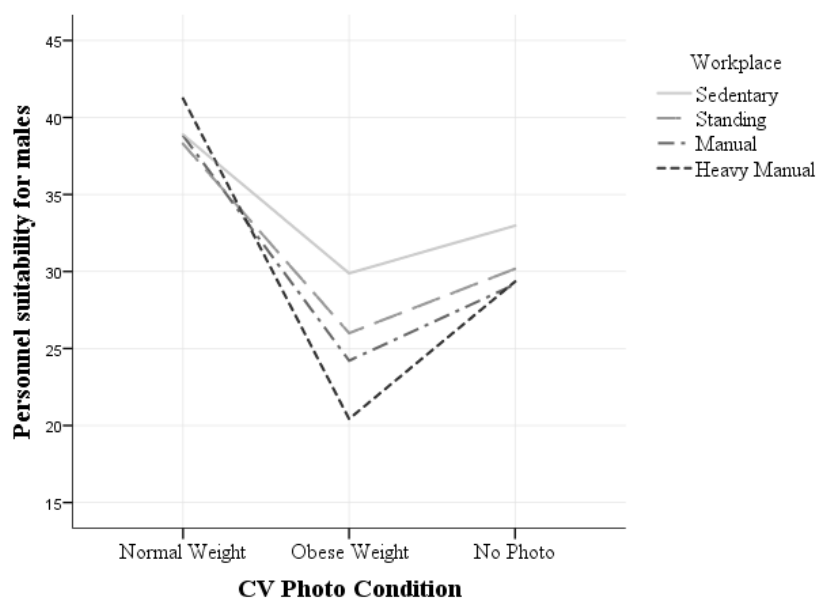
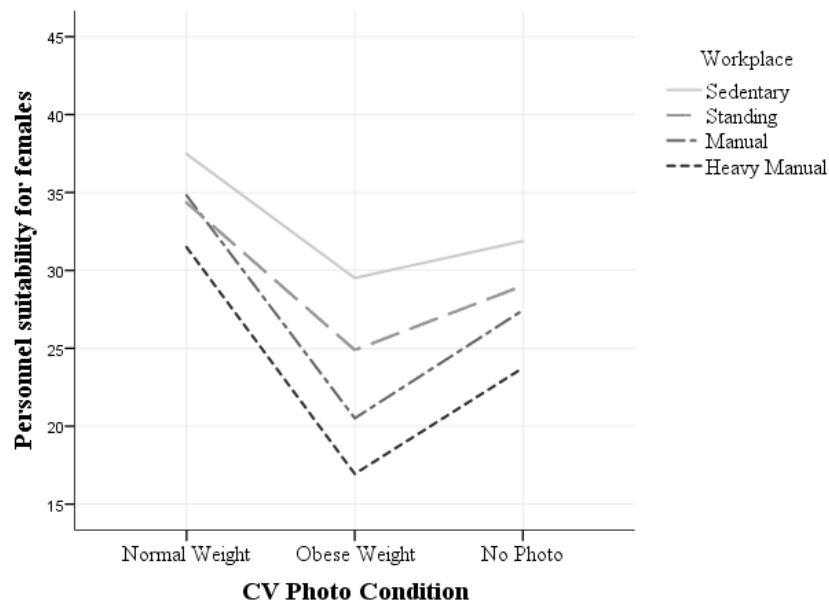


Figure 3: Three Way Interaction of Gender x Photo x Workplace (female)



Personnel suitability

To test Hypothesis 1, follow up repeated measures ANOVA demonstrated that personnel suitability was judged significantly different across Photo condition ($F(1.49, 268.57) = 1249.40, p < .001, \eta_p^2 = .87$). Follow up pair-wise t-tests confirm that obese candidates are judged significantly less suitable than normal weight candidates ($t(180) = 39.47, p < .001, \text{Cohen's } d_z = 2.94$) and the No Photo condition ($t(180) = 22.95, p < .001, \text{Cohen's } d_z = 1.71$). Also, normal weight candidates were judged significantly more positive than the No Photo condition ($t(180) = 36.35, p < .001, \text{Cohen's } d_z = 2.70$). These results are in lines of Hypothesis 1 as obese candidates were assessed as less suitable for employment compared to normal weight candidates. A significant interaction between Gender and Photo was also evident ($F(2, 360) = 47.11, p < .001, \eta_p^2 = .21$) and is further interpreted below in relation to Hypothesis 3.

Workplace activity level

To assess whether obese people applying to active working environments are more likely to be discriminated against than in non-active working environment

(Hypothesis 2), a repeated measures ANOVA using the averaged personnel suitability score (See Table 1) of gender between Photo conditions as within-subject factor and workplace as a between subject factor was conducted.

There was a significant interaction between Workplace and Photo ($F(6, 354) = 52.95$ at $p < .001$, $\eta_p^2 = .47$). Main effects were found for Photo ($F(2, 354) = 2380.55$, $p < .001$, $\eta_p^2 = .93$) and Workplace ($F(3, 177) = 115.33$, $p < .001$, $\eta_p^2 = .662$). To further analyse the interactions, a one-way ANOVA was conducted for each workplace to examine differences between photo conditions. Significantly different judgements of suitability were reported for all four workplace activity levels, between Photo conditions: obese ($F(3, 177) = 171.971$, $p < .001$, $\eta^2 = 0.74$); normal weight ($F(3, 93.39) = 5.82$, $p < .001$, $\eta^2 = 0.16$); and No Photo ($F(3, 91.94) = 58.46$, $p < .001$, $\eta^2 = 0.66$) (See Table 1). A Tukey post-hoc test revealed significant differences across all workplace groups in the obese and No Photo conditions ($p < .05$). A significant difference in the normal weight condition was found between the sedentary workplace group compared to the standing, manual and heavy manual workplaces ($p < .001$).

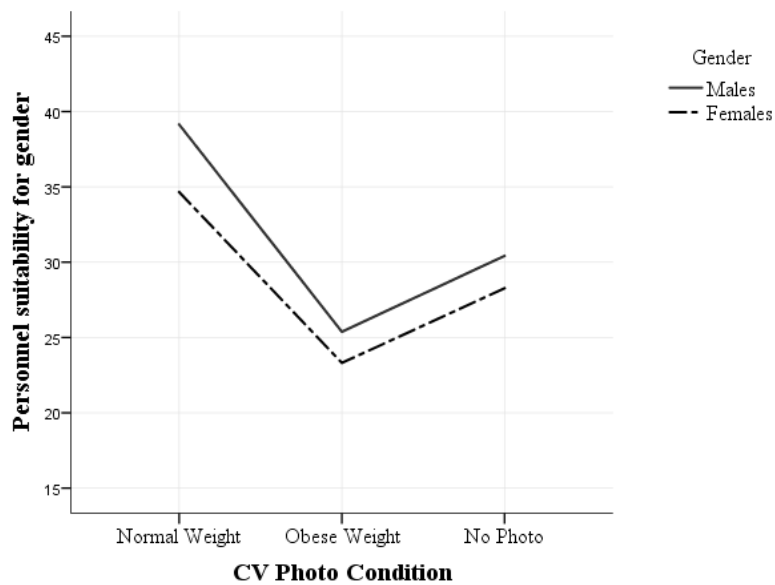
The lowest average suitability score across all the groups was received by obese candidates, which decreased as the physical demands of the workplace increased. Candidates without a photo received higher suitability scores than obese candidates, however a similar trend in the obese photo condition was observed. Finally, normal weight candidates profited from including their photo in their CVs. Such candidates were rated significantly more suitable for heavy manual workplace. Their scores across the rest of workplaces were similar and on average, higher than the No Photo and obese conditions. These results are in support of Hypothesis 2; hence obese candidates applying for employment in active environments were discriminated more than in non-active environment.

Gender discrimination

To test Hypothesis 3, repeated measures ANOVA demonstrated that there was a significant interaction between Gender and Photo ($F(2, 360) = 47.11$, $p < .001$, $\eta_p^2 = .21$). A main effect for Gender and Photo was found ($F(1, 180) = 196.79$, $p < .001$, $\eta_p^2 = .52$; $F(1.49, 268.57) = 1249.40$, $p < .001$, $\eta_p^2 = .87$, respectively). Pairwise comparisons revealed that males were assessed as more suitable than females ($M_{diff} = 2.90$, $p < .001$, 95% CI [2.49, 3.31]) (See Figure 4). These results support Hypothesis

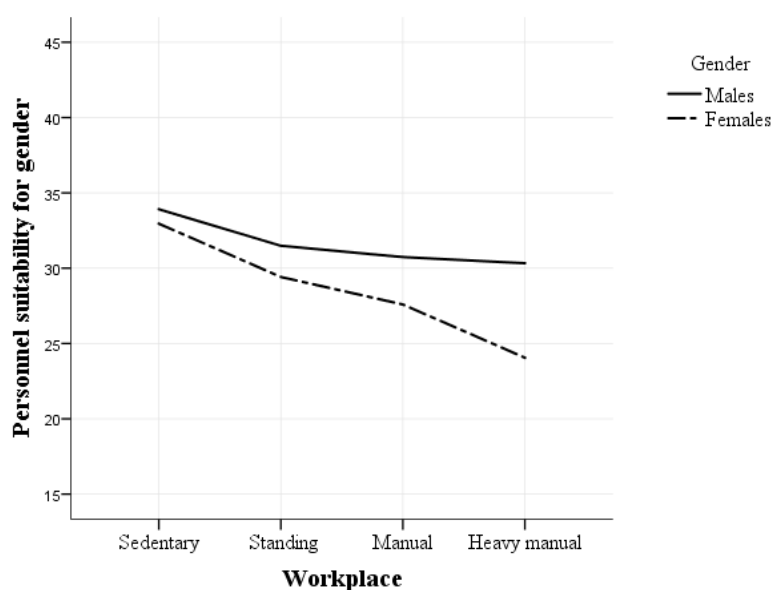
3 that obese women are more likely to be discriminated against than obese men (See Figure 4).

Figure 4: Gender difference across obese, normal weight and No Photo conditions



An significant interaction was evident between Workplace and Gender ($F(3, 177) = 44.90, p < .001, \eta_p^2 = .43$). The results are captured in Figure 5, where both males and females suitability scores reduce as the activity level of workplace increases. Figure 5 demonstrates that this is more profound for females compared to males.

Figure 5: Gender difference across workplace activity level



To assess the any gender difference in the gap between obese weight, normal weight and no photo conditions, paired sample t-tests was conducted. Significant differences were observed between normal weight and obese candidates ($t(180) = 7.97, p < .001, \text{Cohen's } d_z = 0.59, 95\% \text{ CI } [1.82, 3.02]$) and normal weight and No Photo candidates ($t(180) = 8.60, p < .001, \text{Cohen's } d_z = 0.64, 95\% \text{ CI } [1.80, 2.87]$). No difference was observed between the No Photo and obese candidates ($t(180) = 0.30, p > .05, \text{Cohen's } d_z = 0.02, 95\% \text{ CI } [-0.46, 0.62]$). These results indicate that there is a normal weight bias compared to obese candidates or when the weight of the candidate is ambiguous.

Finally, to examine whether the suitability scores were predicted by the participants' attitudes and beliefs about obesity (i.e., scores from the ATOP, BAOP, F-Scale and IAT). Multivariate multiple regression demonstrated that BAOP ($F(6, 171) = 5.57, p < .001, \eta^2 = .164$) and F-Scale ($F(6, 171) = 3.82, p = .001, \eta^2 = .118$) scores had a statistically significant relationship with the joint distribution of the suitability scores. Non-significant findings were evident for both the IAT ($F(6, 171) = 1.61, p > .05, \eta^2 = .053$) and ATOP ($F(6, 171) = 1.23, p > .05, \eta^2 = .041$). Scores on the BAOP (belief that obesity is controllable) significantly predicted perceived suitability of the Normal Weight Male, Normal Weight Female, Obese Weight Male, Obese Weight Female and Female candidate without a photo ($B = -.117, 95\% \text{ CI } [-.207, -.27], p = 0.01, \text{adjusted } R^2 = 0.101, \eta^2 = .036; B = .177, 95\% \text{ CI } [.090, .264],$

$p < 0.001$, adjusted $R^2 = 0.245$, $\eta^2 = .085$; $B = .166$, 95% CI [.060, .272], $p < 0.01$, adjusted $R^2 = 0.423$, $\eta^2 = .051$; $B = .273$, 95% CI [.148, .398], $p < 0.001$, adjusted $R^2 = 0.525$, $\eta^2 = .096$; and $B = .217$, 95% CI [.113, .320], $p < 0.001$, adjusted $R^2 = 0.101$, $\eta^2 = .088$ respectively). The F-Scale (extent that respondents associate negative characteristics with being fat) significantly predicted the perceived suitability of the Normal Weight Male, Obese Weight Male and Obese Weight Female ($B = -1.60$, 95% CI [-3.1, -.132], $p < 0.05$, adjusted $R^2 = 0.101$, $\eta^2 = .026$; $B = -3.53$, 95% CI [-5.26, -1.80], $p < 0.001$, adjusted $R^2 = 0.51$, $\eta^2 = .033$; $B = -2.50$, 95% CI [-4.53, -.48], $p < 0.05$, adjusted $R^2 = 0.51$, $\eta^2 = .033$ respectively).

Discussion

The current study examined whether obese people are discriminated against when applying for employment. Overall, the current study findings provide further evidence of obesity discrimination in the hiring process for employment. First the findings demonstrated that obese candidates were discriminated against when applying for work compared to normal weight candidates and when the weight status of the candidate was not revealed. These findings are in line with previous reports of obesity discrimination in the hiring process of employment (e.g., Bartels & Nordstrom, 2013; Flint, Codreanu, Gomoiu et al., 2015; Flint & Snooke, 2014). This study goes beyond previous work investigating the impact of weight status on recruitment (e.g., Bartels & Nordstrom, 2013) by examining differences in perceived suitability between candidates whose weight status is revealed compared to when it is not revealed. In doing so the current study has demonstrated that when weight status is not revealed, candidates are perceived as more suitable for employment than obese candidates. This effect was observed for both males and females.

Second, the findings demonstrated that obese candidates were evaluated as less suitable across all four workplaces of different physical demand, in particular by participants from heavy manual workforces. This finding demonstrates that irrespective of the physical demand of a job, obese candidates are perceived as less suitable for employment compared with normal weight candidates and when the weight status of the candidate is not revealed. It is likely that stereotypes of obese people as less physically capable and slothfulness (Puhl, Moss-Racusin, Schwartz, & Brownell, 2008; Sawbridge & Fitzgerald, 2009) have contributed to this finding.

Third, the current study findings demonstrate that when examining whether the gender of the candidate impacts perceived suitability for work, female candidates

were perceived as less suitable across all photo conditions compared to male candidates. Previous research has reported gender differences in perceptions of obesity (e.g., Flint, Hudson & Lavalley, 2015) and that obese female candidates are assessed less favourably than obese males. For example, in a study examining the impact of a defendant's weight status on perceptions of guilt, Schvey, Puhl, Levandoski and Brownell (2013) reported that obese females were more likely to be adjudged as guilty compared to obese males. In addition to demonstrating that overall females compare less favourably to males when applying for work, the current study demonstrates that obese females are perceived as less suitable than obese males across workforces of differing physical demand. For example, obese female candidates were perceived as less suitable for the heavy manual job compared to obese male candidates.

More generally, the current study adds to increasing evidence of obesity discrimination. Given the increasing prevalence of obesity, and thus, greater numbers of overweight and obese candidates, the current study findings require consideration at policy level to ensure all candidates, irrespective of weight status, have equal opportunities for employment. The findings suggest that guidelines for workplace recruitment where weight status is not revealed is warranted. Obesity discrimination needs to be recognised as a rising issue and appropriate legislation has to be regulated, and thus, modification to current UK and EU legislation is required. The current study also demonstrates that irrespective of weight status, females are assessed as less suitable for work across all four workforce groupings based on the physical demands of the job. As such, it might also be suggested that policy development might also consider the removal of gender identification from workplace recruitment. Thus, workplace applications and CVs where gender and appearance are not identified appear to be an appropriate step that leads to a less discriminative process of employment. These results are of particular importance for countries where a photo is required on a CV, such as Spain (Recruitment Spain, 2015) and China (Job Era, 2015).

Finally, in comparison previous research (Bartels & Nordstrom, 2013) examining obesity discrimination in recruitment for work, it might be argued that the current study provides a more realistic design to that of real workplace recruitment. The current study required participants to assess a range of candidates for employment rather than assessing only one candidate's suitability, and thus more

synonymous with real recruitment selection. Furthermore, all participants in the current study had previous experience of recruitment, compared to only 45% of participants in Bartels and Nordstrom's study.

The current study is not without limitations. One limitation was the sampling strategy which did not account for gender and BMI. This resulted in uneven amounts of males and females across the four workforce groups, particularly in the heavy manual workplace. There was also a left skew of BMI where overall the sample was slightly overweight. Previous research (e.g., Flint et al., 2015) has reported differences in anti-fat attitudes based on gender and BMI. Another potential limitation of the study is that whilst all participants were fluent English speakers, the stimuli words used in the IAT might not have been familiar words for all participants impacting response latency. However, IAT scores in the current study are similar to those reported in previous research (e.g., Flint et al. 2015). Despite this, future cross country research examining implicit attitudes could examine familiarity with stimuli to ensure this potential limitation is avoided. Finally, the construct validity of the IATs has been questioned. For example, Oswald et al. (2013) conducted a meta-analysis to examine the predictive validity of the IAT and explicit measures as measures of discrimination. Oswald and Colleagues questioned the performance of the IATs suggesting that they were no stronger than explicit measures. Whilst further research is required that sheds light on the validity of IATs, our findings show that anti-fat attitudes are evident on an implicit and explicit level, and that obese candidates are significantly discriminated in recruitment for employment compared to normal weight candidates and when the weight status of the candidate is not revealed. Despite the potential limitations identified, this research has raised some important questions and areas for future research. The workplace environment has a number of impacts such as work satisfaction and productivity. With increasing reports of obesity discrimination in the workplace, future research examining why and in what ways obese people are discriminated whilst in the workplace is warranted. This research should aim to identify both verbal and non-verbal behaviour that to the authors' knowledge is yet to be understood.

Conclusion

The current study provides evidence of obesity discrimination in the hiring process for employment, where across four workplaces that vary based on the

physical demands of the job, obese candidates were perceived as less suitable compared with normal weight candidates and when the weight status of the candidate was not revealed. The study goes beyond previous research examining perceived suitability of obese candidates, using a more valid design whilst addressing methodological shortcomings of previous research. The study demonstrates that gender and weight status impact judgments of suitability for work and that the more physically demanding the job, the more likely it is that obese candidates compared to normal weight or candidates where weight status is not revealed are to less favourable assessments of suitability, and that females compared to males are judged as less suitable for work. Obese female candidates were judged as the least suitable for work, and thus, hold implications for the success rate in the hiring process and therefore unemployment of obese females. The findings contribute to growing calls for policy development to address this growing concern.

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