

An Empirical Investigation of Discrimination Against Overweight Female Job Applicants in New Zealand

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Significant discrimination against overweight people has been shown to occur in a variety of settings, including employee selection. Negative personality characteristics attributed to overweight job applicants because of their body size are thought to result in inaccurate perceptions of a mismatch between a job and a candidate, resulting in unfair discrimination. This study, the first of its kind in a New Zealand setting, investigated the presence of discrimination against overweight female job applicants. A balanced design was used in which 56 human resource/recruitment consultants in Auckland, New Zealand, ranked fictitious CVs on suitability for a specified position. Two weight conditions, normal and overweight, were created by the rotation, on the CVs, of photographs of the same four women before and after weight loss. Each consultant ranked a set of six CVs, including two normal weight male distracter CVs. Analyses of the rankings confirmed a general bias against overweight applicants. Further analysis revealed that this outcome was mainly attributable to the rankings given to the poorest quality CV. Contrary to expectations; consultants' years of experience did not significantly influence the effect of weight on rankings.

It goes without saying that personnel in an organisation are vital to its success, so that the selection of suitable employees is of paramount importance. Within the process by which some individuals are selected and others rejected, discrimination is necessary (Arvey & Faley, 1992). However, there is a clear distinction between discrimination that is considered to be fair and necessary, and that which is unfair or biased. Arvey and Faley (1992) claim:

Unfair discrimination exists when members of a minority group have lower probabilities of being selected for a job when, in fact, if they had been selected, their probabilities of performing successfully in a job would have been equal to those of non-minority group members. (p.7)

There are two broad reasons why unfair discrimination needs to be identified and addressed. Firstly, it results in ineffective utilisation of human resources for organisations, who may miss out on acquiring effective employees because of discrimination against a job-irrelevant characteristic or attribute (Arvey & Faley, 1992). Secondly, for the targets of unfair discrimination, the economic, social, and psychological effects are detrimental, unfounded, and can be severe (Gortmaker, Must, Perrin, Sobal & Dietz 1993).

One factor known to promote unfair discrimination is being overweight (Roehling, 1999). Approximately fifty-three percent of New Zealanders are considered overweight or obese, and this figure appears to be climbing every

year (Ministry of Health, 2003). The increasing occurrence of overweight individuals in the population is considered a significant problem because the consequences of obesity include negative health outcomes, as well as detrimental economic (Loh, 1993), social (Benson, Severs, Tatgenhorst & Loggengaard, 1980), and psychological (Friedman & Brownell, 1995), effects for the affected individuals. Among the consequences of being overweight that have an economic, social, and psychological impact, is weight-based discrimination in employee selection (Rothblum, 1992).

The prevalence of overweight individuals is greater in lower socio-economic groups (Sobal & Jeffery, 1989). This is generally assumed to be a result of lack of education about healthy eating, or lack of money to buy healthy foods (Rothblum, 1992). However, it is quite conceivable that it is attributable in part, to other factors such as the inability of overweight individuals to progress as far, or as fast, in their careers as their normal weight counterparts (Gortmaker, Must, Perrin, Sobal, & Dietz, 1993). Gortmaker et al. (1993) found that, compared to normal weight counterparts, overweight people completed fewer years of education, were less likely to marry, had lower household incomes, and higher rates of household poverty. Furthermore, in that study these observations were more significant for overweight women than men. It appears that, at least in part, these realities for the

overweight population are the result of a general social stigma attached to being overweight (Cahnman, 1968).

Being overweight may result in poorer self esteem, due in part to the stigmatisation endured (Crocker, & Major, 1989). Goffman (1963), proposed three types of social stigmas: tribal stigmas, abominations of the body, and blemishes of individual character. Stigmatisation of overweight individuals fits into both the abomination of body, and blemish of individual character categories. The overweight body often elicits immediate negative responses from others because it is aesthetically displeasing, and elicits further negative responses because of character flaws that are presumed to exist in the overweight individual (Crocker, Cornwell and Major, 1993; Cossrow, Jeffrey & McGuire, 2001).

Stigmatising conditions are generally viewed as differing on two fundamental dimensions – level of visibility and level of controllability. When a condition is viewed as being controllable, the stigmatised group is thought of as being the way it is because of a lack of personal effort or will (Weiner, Perry & Magnusson, 1988). Most people are thought to view overweight individuals as being in control of their weight, in that they are responsible for their condition, having created it through excessive eating (Weiner et al., 1988). However, there is evidence that biological and genetic factors play a large part in the control of body weight, rendering maintenance of a 'healthy weight' more difficult for predisposed individuals (Campfield, 1999). That some individuals are predisposed to being overweight is implied in a review by Wooley, Wooley, & Dyrenforth (1980) of 19 studies. Only one of these studies recorded significant differences in the actual caloric intake between overweight and normal weight individuals. An adoption study (Stunkard, Sorensen, Hanis, Teasdale, Chakraborty & Schull, 1986) found a significantly high correlation between biological parent and child body fat, but no correlation between adoptive parent and child body fat, suggesting a strong biological, rather than environmental, aetiology of obesity, (see also Bouchard, 1996; Levine, Eberhardt & Jensen,

1999; Sørensen, 1996). Despite the wealth of evidence that weight is out of the direct control of an individual, it appears that people remain convinced that overweight people are responsible for their condition (DeJong, 1980).

The second important aspect of a stigmatising condition is its visibility. Because being overweight is defined by a physical body size that deviates from what is considered ideal or normal, it is clearly visible, rendering it more susceptible to negative evaluations by others than non-visible conditions.

The stigma attached to being overweight can be thought of generally as the manifestation of an overweight stereotype. The essence of this overweight stereotype can be summarised as the attribution of negative personality characteristics that, importantly, but not solely, are to do with self-control and discipline. Many of these characteristics are directly relevant to job performance. Therefore, the stereotype quite conceivably forms the basis of discrimination against overweight job applicants.

Many minority groups are subjects of stigmatisation, for example, various ethnic groups, the physically unattractive, and disabled people. However, it is the overweight who, as a result of the prejudice and discrimination they face, have consistently been shown to experience the most significantly lowered self esteem compared to the non-stigmatised (Crocker & Major, 1989). Lowered self-esteem could also be contributing to the previously mentioned employment disadvantages, through self-selection out of applicant pools for desirable jobs, attributable to a belief that such positions are unattainable for them (Gortmaker et al., 1993).

Although a complex causal model exists for the prevalence of obesity in lower social classes, the evidence suggests that social and employment discrimination against the overweight is a strong contributing factor (Sobal & Stunkard, 1989) through the downward social mobility of the overweight population, particularly females (Rothblum, 1992). In fact, unfair discrimination has been shown to exist against all females, particularly for managerial jobs (Eagly, 1999).

Discrimination against women in employment is illegal, and therefore tends not to occur in an explicit manner. The outcome of this gender discriminatory practice is known as the "glass ceiling", which constitutes an invisible barrier to females' career progression; due to the lack of fit between the stereotype of managerial jobs and the female stereotype (Eagly, 1999). The glass ceiling often ensures that career progression is especially difficult for the overweight female whose gender and body size renders her a target for two separate types of unfair discrimination.

For these reasons, and because of consistent evidence that the negative effects of being overweight are more pronounced for females (Gortmaker et al., 1993; Rothblum, 1992; Rothblum, Brand, Miller & Oetjen, 1990), particularly in terms of reduced self confidence (Rothblum et al., 1990), the current study focuses exclusively on weight-based employment discrimination against females.

Current evidence of weight-based employment discrimination has been obtained principally from studies conducted in America. There is no formal record of any such studies having been conducted in a New Zealand setting. However, the topic appears somewhat salient in New Zealand. Several news items in recent years have centred on such issues, and a submission is currently being drawn up for the Human Rights Commission, arguing for protection of overweight people from societal discrimination (S. Crutch, personal communication, July 12, 2003). In 2003, a New Zealand-wide attitudinal survey was conducted (Human Rights Commission, 2003), examining people's perceptions of groups who are discriminated against in today's society. Twenty percent of New Zealanders perceived that people who are overweight are discriminated against a great deal, and a further 45% believed there is some discrimination against the overweight. These figures put the overweight in the top five groups perceived as being discriminated against, ahead of people with disabilities, homosexuals, older people, and women.

One factor that might promote

a difference in weight-based discrimination between New Zealand and other Western countries is the high proportion of Polynesian and Maori people in New Zealand. People of Polynesian origin are, in general, more susceptible to being overweight (Ministry of Health, 2003). Higher exposure to overweight individuals could mean that the tolerance for, or acceptance of, overweight people is higher in New Zealand than in other countries. For this reason, generalisations to a New Zealand population from overseas laboratory research must be made with caution. In a similar vein, cultural differences in weight-based discrimination between Black American and Caucasian females were noted by Roehling, (1999) who suggested this was because of the higher prevalence of obesity in Black American women than Caucasian women. Specifically, significant wage penalties were observed in a survey of wages for overweight Caucasian females versus their normal weight counterparts, whereas the same penalties were not observed for African American females (Maranto & Stenoien, 1998, as cited in Roehling, 1999). Further research is required in order to establish the effect of race on weight-based discrimination.

Methodological problems provide additional reasons to regard the results of some studies with caution. For example, the participants in most laboratory-based research are university students (for example, Brink, 1988; Larkin & Pines, 1979; Sype, 1993). In reality, those who evaluate job candidates tend to be a somewhat older, more highly trained population, which is likely to differ from students on a variety of dimensions, including stereotypical attitudes towards the overweight. In a review of 32 industrial/organisational research studies using both student and non-student participants, Gordon, Slade and Schmitt (1986) reported that significantly different results were obtained for the two samples on tests of between-group differences. This suggests student samples may not be appropriate for applied industrial/organisational research.

A further methodological problem with published research is the way in

which weight has been manipulated. Some studies (e.g. Brink, 1988) used simple verbal manipulations of the physique of potential job applicants, who were rated on a variety of characteristics to create a normal and an overweight condition, and others (e.g. Hiller, 1981) used drawings to represent the two conditions. These methods may not be sufficiently powerful to elicit the common stereotype produced by the observation of an overweight person. More commonly photographs or videos of different people are used (Cates, 1999; Sype, 1993). This may open the research to a range of confounding factors, such as differences in skin colour, facial attractiveness, body language, hair, age etc, all of which could be contributing to any observed effect, over and above the difference in weight. Another way in which weight is manipulated is by means of the computer morphing of photographs of normal weight persons to make them appear overweight (Polinko & Popovich, 2001). This allows the representation of an individual in a normal and an overweight condition to be based on a single photograph. Unfortunately, computer morphing often distorts an image, potentially making it appear unnatural or unattractive, independent of the fact that it appears overweight. Similar problems may have attended the use of actors wearing prosthetic devices and special effects makeup in a study by Pingatore, Dugoni, Tindale, & Spring, (1994). This method was intended to control for body language and other confounding factors mentioned above. However, the actors may have acted, moved, or come across differently in the suit and make-up than they did in the normal weight condition without those devices.

The current study investigated discrimination against overweight females in employment selection specifically in New Zealand. It also aimed to overcome some of the previous studies' methodological flaws by utilizing practicing human resource/recruitment consultants as participants, and by employing photographs of the same people, before and after a major weight loss, to create the two weight conditions in a unique and natural manner.

Hypotheses

Three hypotheses were proposed, as follows:

In line with the conclusions of Roehlings' (1999) review of the research, it was hypothesised that New Zealand human resource professionals would show some discrimination against overweight female job applicants. Therefore the ranking of a CV paired with a normal weight photograph was expected to be significantly higher than when it was paired with an overweight photograph of the same individual.

The use of biased stereotypes, and thus discrimination in selection decisions, has been found to decrease as the experience of managers increases (Marlowe, Schneider, & Nelson, 1996), therefore it was hypothesised that more experienced human resource professionals would exhibit less weight-based discrimination than less experienced professionals.

Reliance on stereotypes in selection decisions has been found to be more common when the qualifications of the applicant are poor, than when they are excellent (Chung & Leung, 1987; Dipboye et al., 1977). This finding is in line with the view that the amount and quality of job-relevant information available to selectors influences the use of stereotypes and subsequent discrimination (Chung & Leung, 1987; Dipboye et al., 1977; Fiske & Taylor, 1991). Specifically, the lower the amount or quality of job-relevant information in a given CV, the more likely it is that reliance on stereotypical beliefs about a candidate will influence selection decisions. Therefore it was hypothesised that any difference in rankings would be greater for the lowest quality CV than for the highest quality CV.

Method

Participants

The participants were 56 practicing human resource and recruitment consultants enlisted from 16 different human resource consultancies in Auckland, New Zealand. Human resource and recruitment consultants were chosen as participants because of their expertise in employment selection. It is they who make selection decisions

in the real-world labour market.

A list of consultancies was compiled from the Auckland Yellow Pages telephone directory. The consultancies participating in the research comprised those 16 of the 22 companies approached whose directors responded positively to an initial telephone call. In turn, the participating consultants were those who responded to an invitation by their director to participate.

The final sample of consultants consisted of 31 (55.3%) females, and 25 (44.7%) males. The mean age of participants was 36.1 years ($SD = 8.8$). The mean number of years of experience in recruitment/human resource work was 7.84 years ($SD = 5.94$). Auckland is the largest centre of population in New Zealand, and it is unlikely that consultants in other cities will differ markedly with respect to attitudes and experience. Because approximately 73% of the companies approached agreed to participate in the research, the sample is likely to be representative of human resource/recruitment consultants in New Zealand.

All participants were treated according to Massey University Human Ethics Committee guidelines, and ethical approval was obtained through a peer-review process.

Materials

A fictitious position description was formulated based on an actual job description for a business development manager in a pharmaceutical company in New Zealand. The position description contained information about the company, the position, the responsibilities of the position holder, and the person specification for the position. Six job candidate CVs were created and labelled A to F. Each was based on the type of information given in CVs of real candidates who might apply for the model position represented in the fictitious research position description. The position description and CVs can be obtained from the authors on request. The model position description, and typical applicant information, was made available to the researchers by a director of a human resource consultancy not

participating directly in the research, who assisted with the creation of the stimulus material, in order to ensure face validity of the information used in the position description and CVs.

The CVs consisted of 4 main sections – personal statement, qualifications, employment history, and interests. They differed with respect to the specific content of the sections, but were designed to be broadly similar in their suitability for the position described. Four of the CVs (A, B, C, D) would subsequently be paired with various photographs of normal weight and overweight female candidates, while two of the CVs (E and F) were distracter CVs, each of which was consistently paired with the same photograph of one of two normal weight males.

In order to control for facial attractiveness, the four normal-weight and four overweight photographs comprised alternative photographs of the same four women. In order to be selected for use in the study, the women were required to have lost a significant amount of weight. Criteria for selection were a Body Mass Index (BMI) of at least 25 at the time of the overweight photograph, and a BMI of no more than 25 at the time of the normal weight photograph. In addition a difference of at least 7 was required between the before and after BMI values. The BMI is a widely accepted index of body fatness which is calculated by dividing a persons weight in kilograms by their height in meters squared (Wt/Ht^2), giving a height-weight ratio that allows categorisation of an individual into a range of weight groups as follows: under 20 = underweight, 20-24 = normal weight, 25-29 = overweight, 30-39 = obese, greater than 40 = morbidly obese (WHO, 1987). In this study, therefore, the term overweight represents the overweight, the obese, and the morbidly obese. The term 'normal weight' represents persons with a BMI of less than 25.

Four women whose photographs met these criteria consented in writing to the use of their photographs in the research. All of the women were Caucasian. The photographs showed head and shoulders only. The background colours of the two

photographs for each person were matched digitally using a computer, to avoid any differential influence of the photographic backgrounds. Each of the eight photographs was attached to each of the four CVs, creating $4 \times 8 = 32$ different CV/photograph combinations, utilising every possible combination of CV and photograph. Note that, for brevity in this report, the expressions "normal weight (overweight) photograph (or CV)" will usually be substituted for the more correct "CV containing a photograph of a normal (over) weight individual." The 32 CVs were partitioned into eight sets of four, comprising two overweight and two normal weight CVs. Overweight and normal weight photographs of the same individual were never combined within a set. In order to make the consultants' assessments more natural, the same two male distracter CV/photograph combinations were included in each set. This avoided an all-female applicant pool, and disguised the overweight/normal weight allocations within the set. Each of the eight sets was ranked by seven participants to create a balanced design, requiring the use of exactly 56 participating consultants. The sets thus created were put in envelopes along with a job description, and a response form, which asked participants for demographic information about their age, gender, and years of experience in human resources/recruitment.

Design and Procedure

Rankings of suitability for the job were used as opposed to ratings, because rankings are thought to be more sensitive in detecting bias than ratings (Arvey, 1979), as was shown to be the case in Dipboye, Fromkin and Wibacks' (1975) examination of attractiveness and sex bias in resume evaluations. The use of rankings forced the participants to make explicit discriminations, because although equal ratings are possible, equal rankings are not.

A completely balanced design was employed, in which each consultant ranked the same set of CVs, but the pairings of the photographs with each of the four experimental CVs varied. All possible combinations of CV and photograph were employed, and each

combination was judged the same number of times.

Appointments were made for the first author to go to each participating company and conduct the research in a single sitting with whomever of the company's consultants were both willing and able to participate at that time. The number of participating consultants at each company ranged from 1 to 8.

Each consultant was given an enveloped CV set and asked to read the job description and CVs inside, and to rank the candidates in order of their perceived suitability for the job. A ranking of one identified the most suitable candidate and a ranking of six the least suitable candidate. Consultants were permitted to take as much time as required to complete their rankings. Participants took between 8 and 25 minutes to complete the task. When there was more than one participant at a sitting, or where participants could not be sufficiently separated from each other's view, identical CV sets were given to members of the group, to prevent participants noticing that identical CVs were not always associated with identical photographs. Care was taken, nevertheless, to ensure that each set was rated seven times.

The participants were informed that the research was investigating factors that affect the perceived suitability of job applicants. However, because most people prefer not to demonstrate biases or stereotypes explicitly (Crocker, Cornwell, & Major, 1993), and stereotypes that result in discrimination are often implicit (Carr, 2002), the participants were not made aware of the salience of being overweight to the research. If questions were asked about the nature of the factors thought to influence candidate suitability, participants were told that the factors would not be disclosed until completion of the research, when they would be provided with a written summary of the outcome.

Manipulation check. A check was performed to ensure that the alternative overweight and normal weight versions of photographs were eliciting the desired weight perceptions in participants. A four-point visual inspection rating scale of adiposity (extent of body

fat), developed by Marshall, Hazlett, Spady and Quinney (1990) was used for this task which, on a sample of 75 participants, had been shown to have high inter-rater reliability, 0.95, (Marshall et al., 1990), indicating that there is strong consistency in weight perceptions across raters using the scale. On the rating scale, 1 corresponded to *slim* (thin, anorexic-like), 2 to *ideal* (optimal weight to height), 3 to *overweight* (pleasantly plump) and 4 to *obese* (grossly overweight). The term 'optimal weight to height' used on the scale, was changed to 'optimal weight/size' in the current study, because the photographs used gave no indication of a person's height. For this check, nine individuals not involved in other aspects of the research were shown a Microsoft PowerPoint slide show containing 17 photographs, eight of which were the two versions of the four individuals used in the research, and two were the distracters. The remaining seven photographs were of individuals who had agreed to their use for this purpose, and served as fill-ins so that the two versions of each person were sufficiently separated that they were unlikely to be recognized as the same person. Each photograph appeared for 10 seconds and participants were asked to rate the photographs on the described rating scale.

Baseline information. Because each photograph was paired equally often with each CV, variations in the CVs themselves were not considered to be confounds in the research. However, as noted by several participants, CVs often do not have photographs attached. Therefore, seven human resource consultants who were not participating in other aspects of the research were asked to rank the suitability of the six applicants on the basis of their CVs, and in the absence of photographs.

Results

Non-parametric analyses were used because the dependent measure, rankings on a scale of one (most suitable candidate) to six (least suitable candidate), comprised ordinal data. The analyses, together with descriptive statistics, were obtained using SPSS for Windows. A significance level of .05 was employed throughout. Each hypothesis was initially tested using a Wilcoxon Signed Ranks paired difference test. One-tailed tests were used in the light of the a priori expectation that CVs accompanied by photographs of overweight applicants would be ranked less favourably than those accompanied by photographs of normal weight applicants. Subsequently a decision tree algorithm was used to explore the combined effects of each of the independent variables on the ranking of the CVs. AnswerTree software was employed for this purpose. The outcomes of the various analyses are recorded below.

Baseline information

The median suitability rankings of the four experimental CVs (labelled A, B, C, and D), in the absence of photographs, were as follows: A=1, B=5, C=4, D=5. Thus there was a clear separation between CVA, and the three remaining CVs. C was the second highest ranked, closely followed by B and D with equal rankings.

Manipulation Check

The manipulation check was conducted to ensure that the alternative photographs of each model elicited the desired weight perceptions. Mean ratings of each version of the four photograph models are given in Table 1. The numerical values correspond to ratings on the 4 point visual inspection scale of adiposity, where 1 = slim, 2 = ideal, 3 = overweight, 4 = obese.

Table 1. Mean perceived weight rating on scale of adiposity for each photograph version of the four photograph models.

Model	Overweight	Normal weight
1	3.8	1.9
2	3.5	2.1
3	2.9	1.8
4	3.0	2.3
Average	3.4	2.0

Due to the small sample size ($n=12$), a chi-square test of significance was used to confirm that overall, for all models, the two versions were perceived as significantly different, $\chi^2 = 41.4$, $p = .000$.

Rankings

Wilcoxon Signed Ranks tests. The first hypothesis was that the ranking of the CVs would be significantly higher when paired with normal weight photographs, than when paired with overweight photographs. The analysis confirmed that the rankings of CVs paired with normal weight photographs ($n = 112$, $Mdn = 3.0$) were significantly higher than those paired with overweight photographs ($n = 112$, $Mdn = 4.0$), $z = -1.962$, $p = .025$.

The second hypothesis was that more experienced human resource professionals would exhibit less weight-based discrimination than less experienced professionals. To test this, the ranking data were partitioned at the consultants mean number of years of experience (7.8 years). The outcomes of separate Wilcoxon Signed Ranks tests are given in Table 2, which shows no significant difference between the median rankings for CVs paired with normal and overweight photographs for either group.

To explore the third hypothesis, that any difference in rankings would be more pronounced for the lowest quality than the highest quality CV, the median ranks for each of the non-distracter CVs was determined, irrespective of which photograph it was paired with. These were: A=2.0, C=3.0, D=4.0, and B=5.0. Consequently the CVs with the highest and lowest rankings overall (CVs A and B), were subjected to separate Wilcoxon Signed-Ranks tests. The difference between the versions was not significant for CV A, the highest overall ranked CV, however, the difference between the versions was significant for CV B, the lowest ranked CV. Details are given in Table 3.

CHAID Decision Tree Analysis. AnswerTree is a data mining software application, which identifies patterns and segments in data. One of the algorithms available is CHAID (Chi-square-Automatic-Interaction-Detection). First developed by Kass

(1980), CHAID determines splits at any node, by merging pairs of categories of the predictor variable if the difference within the pair (with respect to the target variable) is not statistically significant. The process is repeated until no non-significant pair is found. The resulting set of categories of the predictor variable is the best split with respect to that variable. AnswerTree repeats this process recursively for all predictor variables until a stopping rule is met. Two trees were created; the first used ranking as the target variable, and type of photograph as the only predictor. The result of the first analysis, including statistical information, is displayed in Figure 1. Within each node, percentage of the total rankings allocated to each possible value is given, and the most common ranking for each predictor group is indicated using an asterisk. Photograph type was identified in this tree as a significant predictor of CV ranking. In particular, the ranking given most frequently to CVs paired with an overweight photograph was six, the lowest on the scale (25.89% of rankings), whereas the ranking given most frequently to CVs paired with a normal weight photograph was one, the highest on the scale (23.21% of rankings).

Finally a comprehensive tree was created to examine the all three hypotheses simultaneously. This latter tree used rank as the target variable, and photograph type, CV, and years of experience as predictors. The resulting tree, displayed in Figure 2, constitutes a model of the data as a whole. In this tree, CV was the most important predictor of ranking, however there was no statistical difference between CVs C and D. The most frequently assigned rankings were: CV A = 1; CV B = 6, and CVs C and D = 3. Photograph version was shown to be a significant predictor of ranking only for CV B. No division of the data by years of consultant experience occurred. Statistical details are included in the Figure.

Discussion and Conclusions

The fundamental question addressed in this study was whether the finding of weight-based discrimination against female job applicants, obtained in studies conducted elsewhere (for a review see Roehling, 1999), is applicable to a New Zealand setting. Such discrimination is predicted by a number of theories addressing stereotyping in selection (Larkin & Pines, 1979; Roehling, 1999). For the stimulus materials used here, the primary hypothesis was

Table 2. Wilcoxon Signed Ranks tests of the difference in CV rankings between the two weight conditions for participants with more, or less, years of experience than the mean number of years of experience.

	n	Normal weight Median (IQ range)	Overweight Median (IQ range)	z	p
<7.8 years	136	4.0(3.0)	4.0(4.0)	-1.33	.09
>7.8 years	84	3.0(4.0)	3.5(3.25)	-1.18	.12

Table 3. Wilcoxon Signed Ranks tests of the difference in CV rankings between the two weight conditions, for the CVs ranked highest and lowest overall.

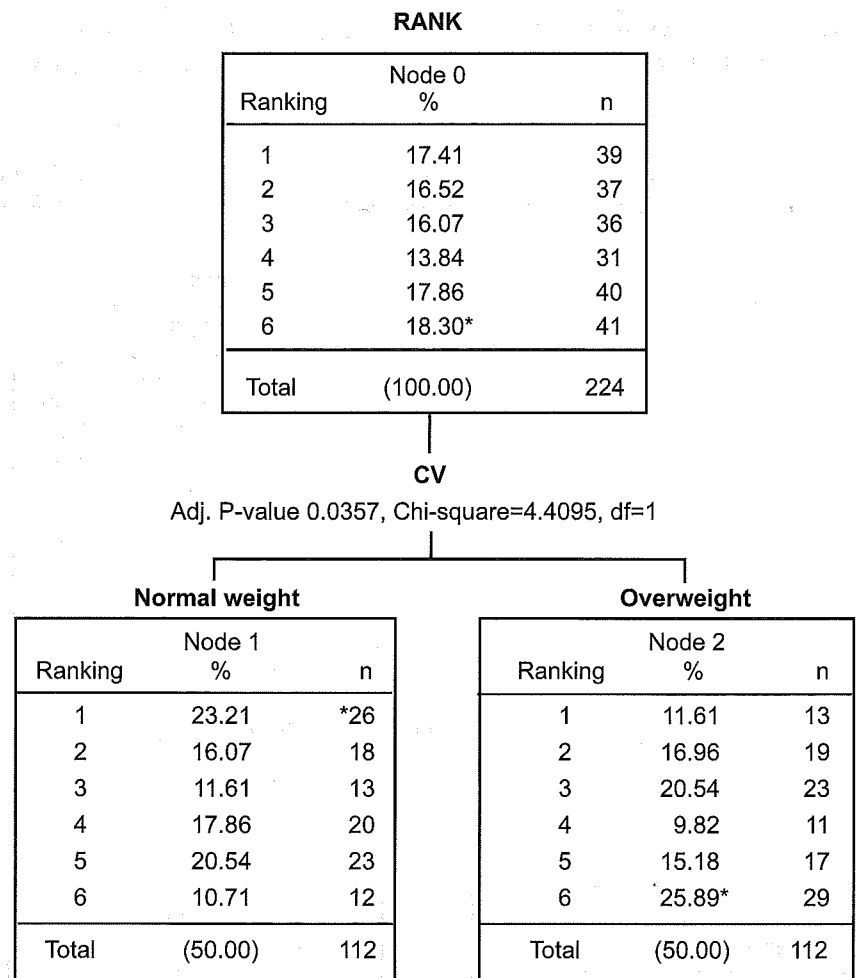
	n	Normal weight Median (IQ range)	Overweight Median (IQ range)	z	p
CV A	56	2.0 (2.75)	3.0 (2.0)	-1.41	.08
CV B	56	4.5 (2.0)	5.5 (1.75)	-2.40	.01

that applicants' CVs would achieve higher rankings when paired with normal weight photographs than when paired with overweight photographs. A Wilcoxon Signed Ranks test, as well as the decision tree analysis shown in Figure 1, confirmed this expectation. An interesting observation from Figure 1 is that the ranking assigned most frequently within the set of normal weight CVs was one, the highest rank possible, whereas the ranking assigned most frequently within the set of overweight CVs was six – the lowest rank possible. This suggests that weight was a factor that affected the perceived suitability of job applicants. This conclusion is especially robust given that the sets of CVs were identical apart from the photographs.

It must be acknowledged that, in normal selection processes, employment decisions are rarely based on CVs alone, and that the addition of a photograph to a CV is not common. Thus the possibility remains that the photographs influenced perceptions of the CVs in a manner not related to weight. However such influences are unlikely to adequately explain the findings reported here, because the research design ensured that any influencing factors were spread equally across all of the CVs, and the same individuals comprised the normal and overweight sets. Thus only minor details such as clothing and facial expressions remain as possibilities for an influence over and above that of weight status, and there is no reason to suppose these would adversely affect the overweight rather than the normal weight photographs.

Employers may reasonably argue that statistics relating health consequences to obesity are relevant to their selection preferences, since they would prefer not to select employees who are likely to require more sick leave than others. Nevertheless, statistics are summaries that do not apply to any particular individual. Information on lifestyle factors that impact upon a potential employee's general health cannot be ascertained from a photograph. Campos (2004) reviewed extensive research in the USA and elsewhere, much of it longitudinal, and argued that the role of fitness is ignored in assumptions concerning the connection between weight and health.

Figure 1. CHIAD decision tree with assigned rank as the target variable, and photograph (normal weight or overweight) as the predictor.



He argues convincingly that levels of activity are better predictors of health than body mass. We note that the BMI of many undoubtedly fit New Zealand representative rugby players would place them in the overweight, if not the obese, range. The CVs used in this study mentioned interests that varied from sedentary (e.g. movies, reading) to physically active (e.g. swimming, tennis). Therefore differences in rankings occasioned only by the pairing of a CV and a normal or overweight photograph do constitute evidence of a degree of unfair discrimination. The inclusion of a post-experiment questionnaire to check what information consultants considered when making their selections might have shed light on which factors were influential, and whether health was among them.

A comparison between the baseline suitability rankings of the individuals depicted in the CVs, and

the distribution of rankings within the CV nodes in the second, more fine-grained, tree analysis (Figure 2), suggests that the overall ordering of the CVs changed little as a result of the addition of a photograph. CVs A and B were ranked most and least preferred at baseline and, even after the addition of photographs, received a majority of their rankings from the top and the bottom of the scale respectively. For CVs C and D (D was rated at the same baseline level as B) each of the ranks, from one to six, attracted fairly comparable percentages of the total ratings allocated. Given the subject-expert status of the participants, it is assumed that CV A contained the highest amount and quality of information pertinent to the particular job description provided. Likewise, a lack of quality job-relevant information compared with the other CVs was assumed to underlie CV B's low ranking. CV B described the

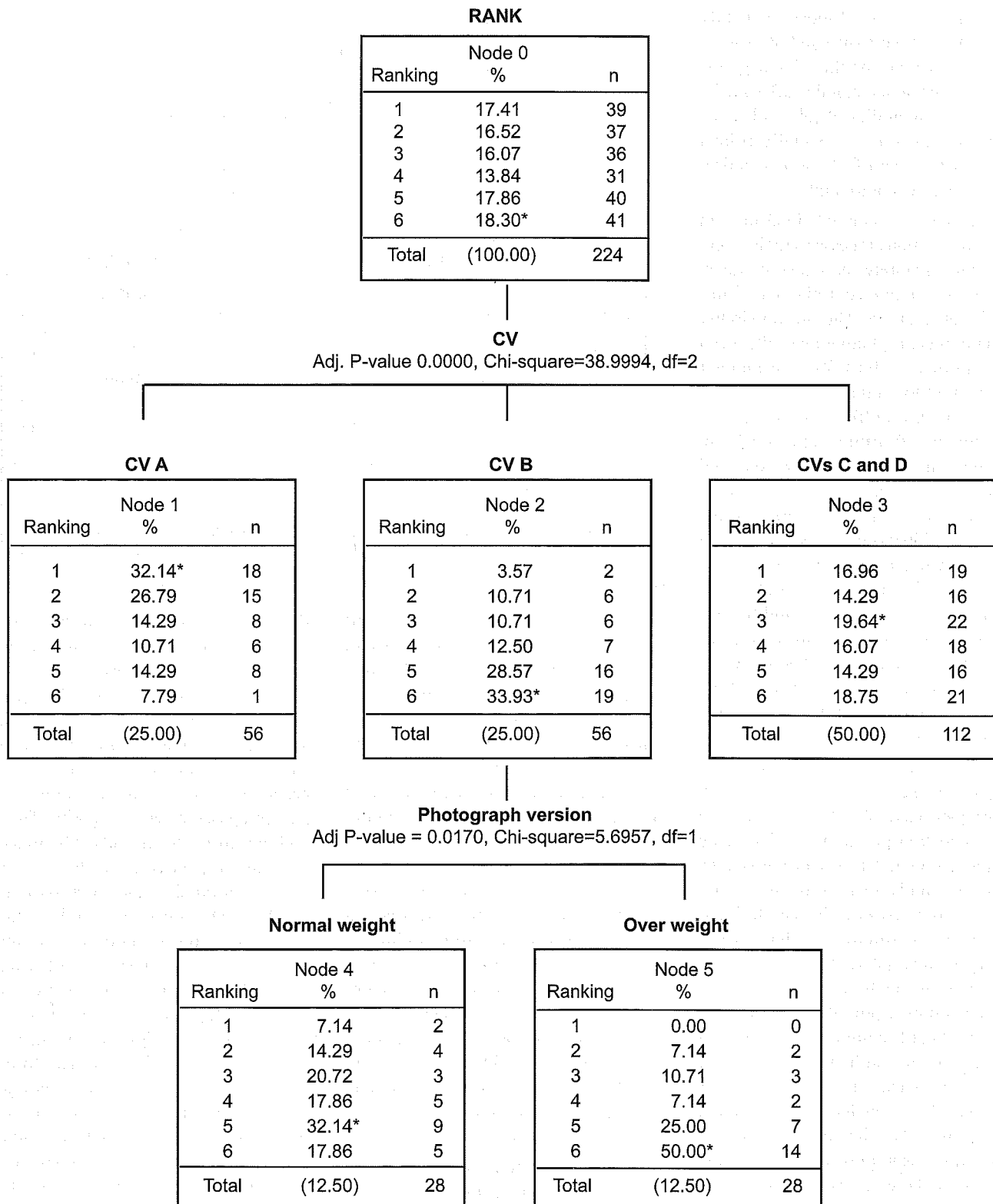
only applicant without a postgraduate qualification, and whose job experience was from a different industry (sporting versus pharmaceutical industry). CV A documented relevant industry

experience, two relevant degrees, and overseas experience.

In keeping with previous research findings (e.g. Chung & Leung, 1987) indicating that more discrimination is

shown towards candidates with lower quality CVs than towards well-qualified candidates, the lowest ranked CV was revealed as the principle instigator of discriminatory responses (see Figure

Figure 2. CHIAD decision tree with assigned rank as the target variable, and photograph version (normal weight or overweight), CV, and years of experience, as the predictors. No node attributable to years of experience emerged.



2). When paired with photographs of individuals before weight loss it attracted only 17.85% of its rankings from the top three categories (rankings 1-3), but when paired with photographs of the same individuals after weight loss, this CV attracted 32.14% of its rankings from the top three categories.

In the light of Marlowe et al.'s (1996) findings it was thought that more experienced consultants might exhibit less discriminatory behaviour than others. However, neither consultants with more, nor consultants with less, than the mean number of years of experience, exhibited significant discrimination against overweight applicants in either Wilcoxon signed-rank tests, or when years of experience was included as an independent variable in a comprehensive decision tree analysis. Nevertheless, Table 2 suggests a trend in the expected direction.

The finding that recruitment consultant years of experience was not a significant factor in the current study, although not consistent with Marlowe et al.'s (1996) findings, provides support for Cates' (1999) finding of lack of moderation by demographic rater variables, of the effect of weight on selection decisions. However, Cates' (1999) doctoral research focussed exclusively on weight, whereas Marlowe et al., (1996) focused instead on gender and physical attractiveness. It may be that the underlying mechanisms linking stereotyping to behavioural discrimination are different for physically unattractive individuals, than for overweight individuals. This is theoretically feasible, given the common perception of controllability of overweight, and subtle differences in personality characterisation existing between the two stigmatising conditions (Dion, Berscheid, & Walster, 1972; Larkin & Pines, 1979). The absence of a perception of controllability for physically unattractive people may allow more experienced consultants to reduce their bias because of exposure to people who challenge their stereotype of physically unattractive people. However, despite exposure to high performers who are overweight, an attitude change in society is likely to be needed to challenge perceptions of controllability, and the negative

personality attributes that come with it. Therefore, although more experienced managers have been found to show less discrimination towards physically unattractive people, it appears that this pattern is not extended to the evaluation of overweight job applicants.

In summary, the New Zealand human resource professionals in this study did discriminate to some extent against overweight female job applicants. However, it is heartening that significant discrimination did not occur towards the most qualified applicants. It is of concern, nevertheless, although perhaps unsurprising, that discrimination appeared to be more marked towards job applicants with low qualifications. This implies, in line with earlier speculations, that the prevalence of the overweight in low socio-economic populations may be at least partly attributable to the fact that individuals already disadvantaged in their ability to afford appropriate education and training, are more likely to be affected by discriminatory attitudes towards to their weight than are their better off and frequently better-qualified sisters. For this reason, among others, they may find it difficult to improve their financial circumstances.

All of the potential job applicants who met our criteria, and who were able to supply before and after weight loss photographs, were Caucasian. A question yet to be answered is whether higher exposure in New Zealand to people of Maori and Polynesian origin, who are in general more susceptible to being overweight, leads to a greater acceptance of overweight persons than would otherwise be the case.

This study is the first of its kind to be conducted in a New Zealand setting, and the results of it are highly relevant to human resource practice in New Zealand. The validity and generalisability of the study is presumed to be good, because the participants were practising human resource professionals drawn from a variety of consultancies across Auckland, the largest city in New Zealand. Thus, the demographics of the sample are likely to be fairly representative of the consultant population of New Zealand, so that the results should generalise to other New Zealand cities and perhaps, because of its close cultural proximity, to the

Australian human resource profession as well.

In view of the implicit nature of many stereotypes and the discrimination that follows from them (Carr, 2002), heightening the awareness of human resource and recruitment consultants is a first step to eliminating or reducing the presence of this type of work place discrimination. It is hoped that this study will provide an early argument for the extension of discrimination laws in New Zealand, and a sound basis for addressing the problem of unfair discrimination against overweight job applicants in New Zealand and elsewhere.

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