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THE THREE-FACTOR EATING QUESTIONNAIRE: A BETTER DIFFERENTATION BETWEEN NORMAL WEIGHT AND OVERWEIGHT WOMEN

By

Karen Beryl Kiemel

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ABSTRACT

THE THREE-FACTOR EATING QUESTIONNAIRE: A BETTER DIFFERENTIATION BETWEEN NORMAL WEIGHT AND OVERWEIGHT WOMEN

By

Karen Beryl Kiemel

The restraint and disinhibition factor of Stunkard and Messick's (1985) Three-Factor Eating Questionnaire (TFEQ) is a better measure than the Restraint Scale (Herman & Polivy, 1980) to assess differences between normal weight and overweight individuals based on their restrained eating and its disinhibition. Using a random selection procedure, 198 women of the Lansing, MI area were surveyed over the telephone to assess these differences. The hypothesis that the frequency of overweight and normal weight Unrestrained Eaters will be significantly greater than the frequency of overweight and normal weight women in the entire study was not supported ($\underline{X}^2$ . .77, $\underline{p} < .05$). However, a significant positive correlation ($\underline{r}_{\underline{n}=83} = .45$, $\underline{p} < .01$) supported the hypothesis of a positive correlation between percent overweight and the TFEQ disinhibition factor for Restrained Eaters. Finally, there was a significant positive correlation between the TFEQ combined restraint and disinhibition factor with the Restraint Scale for normal weight women ($\underline{r}_{\underline{n}=127} = .78$, $\underline{p} < .01$); this suggests that these two measures are assessing similar constructs.

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INTRODUCTION

Exposure to palatable foods is one factor which might influence weight gain. There is substantial evidence that rats are unable to regulate their food consumption when they are offered a palatable diet, consisting of sugars and fats (Mandenoff, Lenoir, & Apfelbaum, 1982; Rolls, Van Duijvenvoorde & Rowe, 1983; Rolls, Rowe, & Turner, 1980); rats will increase their food intake and an increase in their body weight results. Whether this increased consumption is due to the foods' hedonistic flavors or is only a by-product of the uncontrolled changes in nutritional composition remains undetermined (Moore, 1987). Either way, humans may also be reactive to this same phenomenon.

Several studies have shown that during a laboratory meal, humans will eat more when presented with a variety of palatable foods (Rolls, Rolls, & Rowe, 1982; Rolls, Rowe, Rolls, Kingston, Megson, & Gunary, 1981). Yet, these studies are unable to demonstrate whether or not this effect endures to induce weight gain; it is even possible that a variety of palatable foods might be necessary to maintain a sufficient weight (Cabanac & Rabe, 1976; Rolls, Rolls, & Rowe, 1982). However, Porikos (1981) found that normal weight men increased in both food intake and weight when presented with a variety of palatable foods for several days

(three to six days). Accordingly, other authors suggest that the overabundance of available palatable foods accompanied by a decrease in required physical activity in urbanized countries might induce obesity for some people (Apfelbaum, 1987; Lara-Pantin, 1986).

Not all individuals are overweight in the United States even though most are exposed to palatable foods. One explanation for this might be that some people learn to regulate their food consumption by restraining their eating, a concept introduced in 1975 by Herman and Mack. In other words, people may use cognitive controls to prevent themselves from eating foods that they would have otherwise eaten. Conversely, some people may unsuccessfully restrain their eating, producing the disinhibition of the restrained eating--another concept first suggested by Herman and Mack--which undermines their weight-loss efforts (Hibscher & Herman, 1977).

Other factors may be affecting the regulation of food consumption in conjunction with, or independent of, restrained eating. These factors include the following: genetic/physiological make-up (George et al., 1989; Poehlman et al., 1986; Stunkard, Foch, & Hrubec, 1986); level of activity (a review by Pi-Sunyer & Woo, 1985); and learning (Booth, 1982).

The purpose of this study was to provide evidence as to whether restrained eating and its disinhibition might affect body weight. The only measure which is designed to assess this inquiry is the newly developed Three-Factor Eating

Questionnaire (TFEQ) (Stunkard and Messick, 1985). However, other studies have often measured restrained eating (in conjunction with its disinhibition) by using the Revised Restraint Scale (Herman & Polivy, 1980). A further purpose of this study was to indirectly see whether the TFEQ and the Restraint Scale measure similar constructs by determining the correlation between them.

Herman and Mack (1975) originated the concept of restrained eating. They believed that in an attempt to keep weight lower than its set point (Nisbett, 1972), some people may restrain their eating. So if this restraint is removed--disinhibited--these restrained eaters should eat more than unrestrained eaters because they are physiologically inclined to reach their set point weight. Herman and Mack initially tried to disinhibit restrained eaters by requiring that they drink one or two milkshakes, an obligatory consumption of a food termed preloading. This preload was thought to disinhibit the subject's restrained eating, since restrained eaters either abstain from the food offered as the preload, or they eat a smaller amount than required. Regardless of consuming one or two milkshakes, the restrained eaters ate more ice cream after the preload than restrained eaters who received no preload. This overeating appears to be a manifestation of the disinhibition and contrasts with the expected regulation of food intake by unrestrained eaters. Unrestrained eaters who had not receive a preload ate more ice cream than those who had received preloads. Similarly designed studies have

replicated these findings (Heatherton, 1986; Hibscher & Herman, 1977).

For restrained eaters, negative emotional states were also found to have a disinhibiting effect similar to the milkshakes. Herman and Polivy (1975) showed that when anxious, unrestrained eaters decreased their food consumption, while anxious restrained eaters increased their food consumption, perhaps due to disinhibition of the restrained eating. Furthermore, Ruderman (1985) found that, when in a dysphoric mood, restrained eaters consumed more crackers than when in a nondysphoric mood.

To identify restrained eaters, Herman and Mack (1975) had used a five item scale to which Herman and Polivy (1975) added six items to create the Restraint Scale. The current Restraint Scale (revised) consists of ten questions which reflect the construct of restrained eating and its disinhibition (Herman & Polivy, 1980). Based on the previously cited studies, the Restraint Scale appears to measure this construct with normal weight college women (the type of subjects that were typically used). In laboratory settings, high cut-off scores on the scale identify who will restrain their eating and overeat under certain circumstances. Proponents of the Restraint Scale believe that this disinhibition of restrained eating is an inherent consequence of restrained eating, therefore its existence is intrinsic to the concept of restrained eating (Heatherton, Herman, Polivy, King, & McGree, 1988).

However, to assume that all people will uniformly

restrain and disinhibit in relation to the same Restraint Scale score seems improbable. Furthermore, it is possible that some restrained eaters may never be prone to disinhibit their restrained eating (Lowe & Kleifield, 1988). Consequently, the Restraint Scale seems limited in that it is unable to distinctively measure restrained eating or its disinhibition; instead, a Restraint Scale score measures some unknown proportion of both of these concepts. And unless this score reflects the observed construct for normal weight college women, the construct behind the score remains obscure.

For example, distinct concepts of restrained eating and its disinhibition might be useful in studying differences between bulimic, anorexic, and overweight groups. The parallel between binging and disinhibiting has been noted (Polivy, 1976; Spencer & Fremouw, 1979) and each of these groups contain some individuals who restrain their eating and occasionally disinhibit it by binging (Beaumont, George, & Smart, 1976; Hamburger, 1951; Russell, 1979). Therefore, differences in these groups' tendency to restrain and disinhibit might prove to be critical to better understand and treat these individuals. However, these differences would go undetected by the Restraint Scale, as would their constructs.

The possibility that the Restraint Scale measures a different construct in overweight individuals than in normal weight college women might explain the following. Ruderman and Wilson (1979) reanalyzed the data of two studies which

used overweight participants (Hibscher & Herman, 1977; Spencer & Fremouw, 1979). In conjuction with their own data, they concluded that overweight individuals identified as restrained eaters do not behave like typical restrained eaters in that they do not overeat after being fed a preload. Another study replicated this finding (Ruderman and Christensen, 1983).

It is also possible that these overweight participants did not overeat because they were artificially identified as restrained eaters; the Restraint Scale might create a confound when measuring overweight individuals. There is some psychometric evidence which supports this supposition. Factor analytic studies show that the Restraint Scale consists of at least two factors (Blanchard & Frost, 1983; Drewnowski, Riskey, & Desor, 1982). One factor was labeled Concern with Dieting (CD) and the other factor was labeled Weight Fluctuation (WF). The CD factor reflects Herman and Polivy's (1975) concept of restrained eating including its disinhibition, while the WF factor consists of questions which inquire about the "amount of weight change". Due to their possible greater weight fluctuations, overweight individuals might score higher on these WF question than normal weight individuals; this in turn, would inflate the Restraint Scale score for overweight persons and falsely identify them as restrained eaters (Ruderman & Christensen, 1983). Blanchard and Frost's (1983) results reflect this; they found that the WF factor correlated more highly with overweight than the CD factor. In accordance with Blanchard

and Frost's (1983) findings, Drewnoski et al.(1982) found higher WF scores for overweight restrained eaters than for normal weight restrained eaters, while CD scores remained constant. Furthermore, Ruderman (1985) showed that there was no correlation between overweight and the CD factor when the WF factor was partialled out, but there was a correlation between overweight and the WF factor when CD scores were partialled out.

However, it has also been maintained that the Restraint Scale is properly identifying overweight restrained eaters. Heatherton et al. (1988) contended that only overweight individuals who are concerned with dieting will show a weight fluctuation. Lowe (1984) found evidence for this: he reported that the CD factor correlated more highly with overweight than the WF factor, while there was no correlation between overweight and the WF factor when the CD factor was partialled out.

In order to differentiate between overweight and normal weight individuals in relation to restrained eating, an alternative questionnaire is needed that overcomes the Restraint Scale's limitations. A possible measure for this is part of a questionnaire that was created by Stunkard and Messick (1985) entitled the Three-Factor Eating Questionnaire (TFEQ). The TFEQ seems to be an improvement and an extension of the Restraint Scale in that it measures restrained eating and its disinhibition separately, without the weight related confounds. Developed using factor analysis, the TFEQ extensively measures three factors of

eating: restrained eating; its disinhibition; and hunger. A combination of the first two factors should reflect the construct of the Restraint Scale.

The TFEQ restraint factor consists of items which reflect the concept of using cognitive control to successfully restrain from eating. Stunkard and Messick reported that the alpha reliability coefficient of this factor was .93. The TFEQ disinhibition factor had an alpha reliability coefficient of .91 and it includes questions relating to excessive eating and weight fluctuation. These questions are similar to those in the Restraint Scale, but since the weight fluctuation items do not assess the amount of weight change, they are not confounded by the degree which a person is overweight. The disinhibition factor also goes a step further than the Restraint Scale in that some of its questions concern conditions that might cause disinhibition such as emotional states and palatable foods (as were discussed earlier).

Another proposed measure of restraint (and disinhibition) is the Dutch Eating Behavior Questionnaire (DEBQ) (Van Strien, Frijters, Bergers, & Defares, 1986). The DEBQ consists of three factors: restrained eating; emotional eating; and external eating (e.g., palatable foods). The latter two factors reflect a desire to disinhibit the restrained eating with only a few questions reflecting the actual act of disinhibiting the restrained eating. Consequently, the DEBQ is more unlike the Restraint Scale than is the TFEQ, making comparisons between the DEBQ

and Restraint Scale less informative. Whether the TFEQ combined restraint and disinhibition factor does indeed measure the same construct as the Restraint Scale still needs to be determined. Heatherton et al. (1988) have questioned the predictive validity of the TFEQ disinhibition factor. Using the TFEQ to identify people who scored high on the disinhibition factor, Heatherton (1986) found that there was no difference in the amount of ice cream consumed between women who had received a preload and those who had not. However, Heatherton might have created a confound by clumping together all the subjects who scored high on the disinhibition factor regardless of their scores on the other factors.

This confound is a function of the TFEQ's construction. In developing the TFEQ, Stunkard and Messick used dieters and free eaters. For free eaters, they found a positive correlation between the hunger and disinhibition factor (r = .73), which was independent of the restraint factor. Consequently, the disinhibition factor might reflect a different concept for those who score high on the hunger factor and low on the restraint factor: free eaters, instead of disinhibiting, as they had no restraint to disinhibit from, might be satisfying their need to eat. In Heatherton's (1986) study, it is possible that high scorers on the disinhibition factor consisted of both free eaters and restrained eaters (high scorers on the TFEQ restraint factor); therefore only the restrained eaters, not the free eaters, would be expected to counterregulate. Consequently,

it is possible that this specific combination of the TFEQ restraint and disinhibition factor measures the same construct as the Restraint scale, that is identified in normal weight women.

Unlike past studies using the Restraint Scale, this study assessed a random sample of women from the community. Men were excluded due to the possible confound that their restrained eating characterstics might reflect a totally different subgroup than the restrained eating characteristics of women (Wardle, 1980; Wooley & Wooley, 1984). To provide some evidence as to whether the combined TFEQ restraint and disinhibition factor might adequately replace the Restraint Scale for this sample, in that it measures the same construct, the convergent validity of the TFEQ combined restraint and disinhibition factor was determined by testing the first hypothesis.

Hypothesis one: For normal weight women, the TFEQ combined restraint and disinhibition factor will significantly correlate with the Restraint Scale.

To determine whether this correlation was dependent on both the restraint and disinhibition factor of the TFEQ, the following was hypothesized.

Hypothesis two: For normal weight women, the correlation between the Restraint Scale and the TFEQ combined restraint and disinhibition factor will be significantly higher than

both the correlation between the Restraint Scale and the TFEQ restraint factor and the correlation between the Restraint Scale and the TFEQ disinhibition factor.

As previously discussed, an advantage of the TFEQ over the Restraint Scale is that the TFEQ restraint factor claims to assess pure restraint. Another advantage of the TFEQ is that it does not have the psychometric problems of the Restraint Scale when applied to overweight individuals. Therefore, the TFEQ restraint factor may be used in providing some evidence as to whether restrained eating is a way of regulating food consumption. Lack of food regulation results in an overweight individual, therefore an individual who does not restrain her eating should be more likely to be overweight than of normal weight. Consequently, it was proposed that the following hypothesis should be rejected.

Hypothesis three: The frequency of overweight and normal weight women who are classified as Unrestrained Eaters by the TFEQ restraint factor will not differ significantly from the frequency of overweight and normal weight women in the entire sample.

Just because an individual restrains her eating does not necessarily mean that she is of normal weight. One possible key in affecting whether an individual is overweight might be her level of disinhibition of the restrained eating. The TFEQ restraint and disinhibition factor were used to test the fourth hypothesis.

Hypothesis four: There will be a positive correlation between percent overweight and scores on the TFEQ disinhibition factor for Restrained Eaters as identified by the TFEQ restraint factor.

METHOD

Sample

200 women from randomly selected households were interviewed over the telephone. The high reliability and validity of telephone surveys have been established by several studies (Bush & Parasurman, 1985; Hochstim, 1967).

Participants were classified as Restrained Eaters if they scored above 12 on the TFEQ restraint factor and as Unrestrained Eaters if they scored less than 7 on this measure. A participant's percent overweight was calculated by subtracting their ideal weight as determined by the Metropolitan Life Insurance Company (1983) (the middle weight for medium framed women) from their self-reported weight, and then dividing the resulting number by their ideal weight; the final number was then multiplied by 100. If a respondent was at least 15 percent overweight, then she was classified as overweight. If her percent overweight was not greater than 10, then she was classified as normal weight. Although the accuracy of participants' self-reported weights was not tested, several studies suggest the validity of self-reported weights (Coates, Jeffery, & Wing, 1978; Stunkard & Albaum, 1981).

Procedure

200 households were randomly selected from the residence section of the June 1988 Ameritech Pages Plus for the Lansing Area, MI.

The random selection procedure was based on a description by Dillman (1978) and consisted of the following. The number of listings per page was averaged by dividing the total number of listings over ten pages by ten. Then the total number of residential listings was estimated by multiplying the number of listings per page by the total number of pages in the residence section. The total number of residential listings was divided by 200 in order to determine the sample interval (N households). Using a random numbers' table, a number within the sample interval was picked. Beginning with the first household listed in the residence section, the telephone numbers were counted until this random number was reached. This was the first household chosen to be interviewed. N households after the first chosen household, was the second chosen household; N households after the second household was the third chosen household, and so forth until the 200th household was assigned.

If the designated household was not able to complete an interview, then a substitute was found. It was chosen by alternating between selecting the household one inch above and one inch below the household of the unsuccessful interview until a participating household was reached.

The telephone interview consisted of the Three-Factor Eating Questionnaire (Stunkard & Messick, 1985), the Restraint Scale (Herman & Polivy, 1980), and demographic questions (see Appendix A for the complete interview). To save time, factual questions (46-49) from the Restraint

Scale were modified to be open-ended rather than multiple-choice.

The interviews were given by the author of this study. They took place from Sundays through Thursdays between six and nine o'clock in the evening. Interviews were also given at other times based on the interviewee's schedule.

RESULTS

Of 390 households telephoned over a nine week period, 198 (51 percent) completed the present survey. The remainder did not participate for one of the following reasons: (a) 98 declined; (b) 38 had no female occupants who were at least 18 years-old; (c) 31 did not answer when telephoned on four different evenings; (d) 5 agreed to participate at another time, yet could not be reached again; and (e) 20 were unable to participate for other reasons. This last set included four households that attempted to participate. One participant's hearing difficulties resulted in her stopping after trying to answer the first few questions. Another's completed survey was not used, because she was currently receiving chemotherapy. A third was not given the entire survey due to an error. Scheduled to be the 10th interviewee, the fourth woman was unable to answer two of the weight fluctuation questions. Consequently, for all the subsequent surveys, the interviewer would read the weight ranges if a participant was unable to offer a specific weight.

After approximately 34 surveys, the interviewer also began to read the weight ranges when weight fluctuation responses fell right on category borders. For example, if a person answered "two pounds", then the interviewer would ask if the range 1.1 to 2 pounds, or the range 2.1 to 3 pounds best reflected her weight change. This query might better insure response accuracy and would better simulate a

written response to these questions. Most respondents remained with their original range; therefore, the unqueried participant's answers were retained unchanged.

A few additional comments are also necessary regarding the survey instructions. If a participant remarked that she was expecting a baby, she was instructed to answer the questions based on how she eats when she is not pregnant. If a respondent asked the meaning of a question, the interviewer apologized for the ambiguity and told the woman that it was her choice as to how she wanted to interpret the question. Finally, if a participant independently inquired as to whether a weight fluctuation item included changes in weight due to an illness or water gain, then the interviewer would ask for her weight change excluding these circumstancces; otherwise, the interviewer accepted the given answer.

Scale Reliabilities and Intercorrelation Among Factors:

The internal consistency of the Restraint Scale was .80 alpha. The internal consistencies of the TFEQ restraint and disinhibition factor were as follows: .88 alpha coefficients for the restraint factor and .83 for the disinhibition factor. A Pearson product-moment correlation based on a two-tailed test of significance revealed that there was a -.09 correlation between these two factors (n = 198, $p > .05$).

Demographics:

The mean age of the 198 respondents was 40.5 years (SD = 14.5 years). The average participant was a high school graduate who had received some college education but no bachelor degree. Their weight classifications were: (a) normal = 64.1% (n = 127); (b) overweight = 26.3% (n = 52) (c) unclassified = 9.6% (n = 19). The mean percent overweight = 7.7 (SD = 23.2).

The mean score on the TFEQ restraint factor was 10.82 (SD = 5.33) and 21 was the maximum. The mean score of the TFEQ disinhibition factor was 6.20 (SD = 3.89) where 16 was the maximum. Of all participants, 41.9% (n = 83) were classified as Restrained Eaters (restraint factor score $\geq$ 13); 28.3% (n = 56) were Unrestrained Eaters (restraint factor score $\leq$ 6); while the remaining 29.8% (n = 59) were Midrestrained Eaters (scores of 7 to 12).

Pearson product-moment correlations that were based on a two-tailed test of significance were used in all analyses.

Hypothesis One:

The results supported the hypothesis that there is significant positive correlation between the TFEQ combined restraint and disinhibition factor with the Restraint Scale for normal weight women ($r_{n=127} = .78$, $p < .01$).

Hypothesis Two:

For the 127 normal weight women, the correlation between the Restraint Scale and the TFEQ combined restraint and disinhibition factors was significantly higher than the correlation between the Restraint Scale and the TFEQ restraint factor. A Fisher *r* to *z* transformation, $z_{n=127}$ = 2.06, *p* <.04, revealed that the .78 correlation cited above significantly exceeded the .66 correlation between the Restraint Scale and the TFEQ restraint factor (see Table 1).

It had been further hypothesized that the correlation in hypothesis one would significantly exceed the correlation between the Restraint Scale and the disinhibition factor. A Fisher *r* to *z* transformation, $z_{n=127}$ = 4.16, *p* < .01, revealed that the .78 correlation did significantly exceed the .47 correlation found between the Restraint Scale and the TFEQ disinhibition factor.

Hypothesis Three:

The hypothesis that the frequency of overweight and normal weight women classified as Unrestrained Eaters will be significantly different from the frequency of overweight and normal weight women in the entire study was not supported (X^2 = .77, *p* > .05).

Hypothesis Four:

A significant positive correlation ($r_{n=83}$ = .45, *p* < .01) supported the hypothesis of a positive correlation between percent overweight and the TFEQ disinhibition factor for Restrained Eaters.

POST HOC ANALYSES

The main aim of this study was to determine if the TFEQ was a viable and superior alternative to the Restraint Scale in differentiating overweight and normal weight women. Post hoc analyses were made to clarify the results.

Firstly, the TFEQ might be a better measure than the Restraint Scale, because, as noted earlier, it does not have the possible psychometric problems of the Restraint Scale when assessing overweight individuals. To determine whether, in this study, the Restraint Scale scores of overweight women were inflated by large weight fluctuations, an analysis was done to see whether the correlation between the Weight Fluctuation (WF) factor and percent overweight ($\underline{r}_{\underline{n}=198} = .57$, $\underline{p} < .01$), was significantly higher than the correlation between the Concern with Dieting (CD) factor and percent overweight, ($\underline{r}_{\underline{n}=198} = .29$, $\underline{p} < .01$). A Fisher $\underline{r}$ to $\underline{z}$ transformation, $\underline{z}_{\underline{n}=198} = 3.45$, $\underline{p} < .01$, revealed that this was the case.

Another potential advantage of the TFEQ over the Restraint Scale was the former's capacity to measure restrained eating separately from the disinhibition of the restrained eating. Therefore, this study also addressed differences between normal and overweight individuals based on their separate restraint and disinhibition factor scores of the TFEQ.

Extension of Hypothesis Three - Overweight as Related to the TFEQ Restraint Factor:

It was premised that restrained eating might be a contributing factor to an individual's percent overweight, in that restraining one's eating may be a way of maintaining a normal body weight. The hypothesis that the frequency of overweight Unrestrained Eaters would be greater than the frequency of overweight individuals in the entire study was not supported.

Further analyses were conducted to find out whether there was support for the supposition that restrained eating is connected with the existence and degree to which an individual is overweight. The correlation between TFEQ restraint factor and percent overweight was determined to see whether scores on the TFEQ restraint factor correlated negatively with percent overweight. Although this correlation was negative, $r_{n=198} = -.09$, it was nonsignificant. To see whether this negative correlation was higher among Restrained, Unrestrained, or Midrestrained Eaters, it was computed separately for each group. The nonsignificant correlation between percent overweight and the TFEQ restraint factor among Unrestrained Eaters, $r_{n=56} = .11$, $p > .05$, and Midrestrained Eaters, $r_{n=59} = .02$, $p > .05$ were not even negative. While the correlation between the TFEQ restraint factor and percent overweight for Restrained Eaters was negative and approached significance, $r_{n=83} = -.21$, $p = .054$. A Fisher r to z transformation, $z = -1.80$, $p > .05$, revealed that the correlation between

percent overweight and the restraint factor did not significantly exceed this correlation among Restrained Eaters.

Beyond these correlations, another way to view factors affecting the amount that an individual is overweight was to separate overweight and normal weight women into groups and compare their means on different variables. The overweight group's TFEQ restraint factor mean was 9.56 (*SD* = 4.90), while the normal weight group's parallel mean was 11.37 (*SD* = 5.62), a difference that was significant by the two-tailed *t*-test ($t = -2.03$, $p < .05$).

It was then of interest to see whether this difference was higher among Restrained, Unrestrained, or Midrestrained Eaters. Based on a two-tailed *t*-test for Unrestrained Eaters, there was no significant difference between the overweight group's TFEQ restraint factor mean of 4.17 (*SD* = 1.54) and the normal weight group's parallel mean of 4.03 (*SD* = 1.53), $t = .31$, $p > .05$. For Midrestrained Eaters, a two-tailed *t*-test revealed that there was also no significant difference between the overweight group's TFEQ restraint factor mean of 9.59 (*SD* = 1.84) and the normal weight group's TFEQ restraint factor mean of 9.65 (*SD* = 1.47), $t = -.12$, $p > .05$. However, with Restrained Eaters, a two-tailed *t*-test showed a significant difference between the overweight group's restraint factor mean of 15.24 (*SD* = 1.95) and the normal weight group's restraint factor mean of 16.59 (*SD* = 2.24), $t = -2.26$, $p < .05$.

Extension of Hypothesis Four - Overweight as Related to the TFEQ Disinhibition Factor:

Besides restrained eating, the disinhibition of the restrained eating might also contribute to an individual's percent overweight. A significant positive correlation was obtained between percent overweight and score on the TFEQ disinhibition factor for Restrained Eaters, $r_{n=83} = .45$, $p < .01$. A further analysis examined whether the disinhibition by Unrestrained and Midrestrained Eaters also had some connection with their percent overweight. There was a significant positive correlation between percent overweight and TFEQ's disinhibition factor scores for both Unrestrained Eaters, $r_{n=56} = .65$, $p < .01$, and Midrestrained Eaters, $r_{n=59} = .63$, $p < .01$. A Fisher r to z transformation, $z = 1.71$, $p > .05$, revealed that the correlation between percent overweight and disinhibition among Unrestrained Eaters did not significantly exceed this correlation among Restrained Eaters.

Differences in disinhibition of restrained eating were also assessed by separating overweight and normal weight women and comparing their TFEQ disinhibition factor means. The overweight group's disinhibition factor mean was 9.73 ($SD = 2.99$), while the normal weight group's parallel mean was 4.66 ($SD = 3.39$) (see Table 2). The intergroup two-tailed t-test was significant ($t = 9.38$, $p < .01$).

An alternate way to view the differences between normal and overweight participants on the TFEQ disinhibition factor, was to separate the women into either a High or Low

Disinhibition Group based on a median split of the disinhibition scores and then compare their percent overweight. The High Disinhibition Group consisted of 101 women with TFEQ disinhibition scores greater than five, while the Low Disinhibition Group comprised 97 women with TFEQ disinhibition scores below six. A two-tailed *t*-test revealed that the average percent overweight of 19.79 (*SD* = 25.09) for the High Disinhibition Group was significantly higher than the average percent overweight of -4.79 (*SD* = 11.82) for the Low Disinhibition Group, $t = -8.76$, $p < .01$. The strikingly high average percent overweight for the High Disinhibition Group questioned the existence of normal weight women in this group; however, in fact, 40 of these women were normal weight.

Overweight as Related to the Interaction of the TFEQ Restraint Factor with the TFEQ Disinhibition Factor:

Although they did not subscribe to this view, it was suggested by Polivy and Herman (1985) that women who binge might moderate their weight by restraining their eating. Marcus, Wing and Lamparski (1985) found that the TFEQ disinhibition factor strongly correlated with binge eating severity ($r = .61$, $p < .01$); therefore, it is possible that the normal weight women in the High Disinhibition Group might control their weight by restraining their eating. Tests were conducted to see whether there was support for this supposition.

Firstly, it was contended that there will be a negative

correlation between the TFEQ restraint factor and percent overweight which is unique to the High Disinhibition Group. This pattern was observed; there was a significant negative correlation between percent overweight and the TFEQ restraint factor for the High Disinhibition Group ($r_{n=101}$ = -.24, $p < .05$), while the Low Disinhibition Group showed a significant positive correlation between percent overweight and the TFEQ restraint factor ($r_{n=97}$ = .23, $p < .05$).

Secondly, it was proposed that for the High Disinhibition Group, the normal weight group's TFEQ restraint factor score would be higher than the overweight group's restraint factor score. The normal weight group's TFEQ restraint factor mean was 12.55 (SD = 5.18), while the overweight group's parallel mean was 8.91 (SD = 4.66), a difference that was significant by the two-tailed t-test (t = -3.44, $p < .01$).

DISCUSSION

This study seems the first to use a random sample procedure when assessing the concept of restrained eating. However, the sample used is biased in that it consists of 51% of the telephoned households - only the households with women that were willing and able to participate. The largest group of potential respondents who were unable to participate were those that declined (25% of the contacted households). Whether their survey responses would significantly differ from those who participated is an important question which remains open.

Twenty-six percent of the participants were classified as overweight. The second National Health and Nutrition Examination Survey found that 27 percent of U.S. women were overweight (National Center for Health Statistics, 1987). Because their classification of overweight was approximately five percent more stringent than the criteria used in this study, it suggests that the weight distribution of this study's sample may be slightly heavier than that of the U.S. women population.

There were also indications that the concept of restrained eating might be similar in normal weight women of all ages. Heatherton's (1986) .68 correlation between the TFEQ restraint factor and the Restraint Scale, and his .48 correlation between the TFEQ disinhibition factor and the Restraint Scale are nearly identical to the parallel present values of .66 and .47, respectively. However, Heatherton's

(1986) participants consisted of young women from an introductory psychology course, the typical population from which subjects are recruited. Lowe and Kleifield (1988) also used participants from an introductory psychology course who were all less than 15% overweight, and their .65 correlation between the TFEQ restraint factor and the Restraint Scale is almost identical to the present value. This suggests that findings from other restrained eating studies might generalize to normal weight women in the general population, the type of women used in determining the present correlations.

One reason for using the TFEQ restraint and disinhibition factor instead of the Restraint Scale was the controversy that some overweight individuals might be artificially identified as restrained eaters by the Restraint Scale. This study found that the correlation between the Restraint Scale's Weight Fluctuation (WF) factor and percent overweight was significantly higher than the correlation between the Restraint Scale's Concern with Dieting (CD) factor. This finding is consistent with the results of other studies (Blanchard & Frost, 1983; Drewnoski et al., 1982; Ruderman, 1983). The consistency across studies supports the contention that many overweight individuals are falsely identified as restrained eaters due to their large weight fluctuations.

Besides its ability to assess overweight individuals, another advantage of the TFEQ over the Restraint Scale is the former's ability to measure restraint and disinhibition

as distinct concepts. The results of this study indicate the necessity for assessing these two factors separately to understand how each differentiates normal weight and overweight individuals.

The most striking difference between the normal weight and overweight participants was the latter's higher scores on the TFEQ disinhibition factor. In addition, high disinhibition factor scorers averaged almost 20 percent overweight whereas low scorers were almost five percent underweight. In conjunction with these findings, there was a highly significant correlation between respondents' disinhibition factor scores and their percent overweight ($p < .01$), which did not significantly differ between High Restrained, Midrestrained, and Unrestrained Eaters.

Support for the consistency of this relationship between the TFEQ disinhibition factor and body weight is noted in similar recent findings by Westerterp, Nicolson, Boots, Mordant, and Westerterp (1988) and Bjorvell, Rossner, and Stunkard (1986). Westerterp et al. (1988) used female participants including employees, students, and respondents to a newspaper advertisement (some of whom had self-defined weight problems), while Bjorvell et al.'s (1986) overweight participants--mostly women--were all seeking treatment for their obesity. Both studies found that the overweight participants scored significantly higher on the disinhibition factor than the individuals in the normal weight group.

Since the questions on the TFEQ disinhibition factor

seem to reflect excessive eating, the higher TFEQ disinhibition factor scores by overweight individuals suggests that they are consuming more food than normal weight individuals. This contradicts a common view in the pertinent literature. Based on laboratory studies, Spitzer and Rodin (1981) stated that the evidence "suggests that overweight subjects do not eat more than normal weight subjects in these experimental probes"(p. 296). Accordingly, Wardle (1987) reported that "the conclusion from numerous food intake studies has been that the obese on average eat less than, or the same as their thin counterparts (Garrow, 1974; Braitman, Adlin, & Stanton, 1985)" (p. 470). Like many authors, Sobel and Stunkard (1989) explained this lower energy intake of overweight individuals by the following: they require less energy than lean individuals. Although there is some evidence for this in select groups of overweight people (George et al., 1989; Roberts, Savage, Coward, Chew, & Lucas, 1988), any generalization to the majority of obese individuals goes against the consensus "that obese people (on average) have a higher energy expenditure than lean people, and thermodynamic considerations demand that they must therefore have a higher energy intake to maintain their body weight" (Garrow, 1988, p. 108).

Naturalistic studies provide some evidence for this connection between body weight and amount consumed (Spitzer and Rodin, 1981). Therefore, it is possible that overweight participants in the noted laboratory studies did not eat

more, because their methodology was not designed to measure the type of eating assessed by the TFEQ disinhibition factor. Accordingly, Garrow (1988) contended that the food monitoring procedure used by many studies does not accurately reveal a participant's pattern of actual food consumption.

While the relationship between the TFEQ disinhibition factor and percent overweight is clear, the connection between the TFEQ restraint factor and weight control is less direct. Although normal weight participants scored significantly higher on the restraint factor than overweight participants, this difference was accounted for largely by the Restrained Eaters and will be discussed later. Either way, this finding contrasts with Westerterp et al.'s (1988) findings that overweight women's restraint factor scores were significantly higher than the scores of normal weight women.

The frequency of overweight Unrestrained Eaters did not significantly differ from the frequency of overweight women in the entire study. In addition, there was no significant correlation between the TFEQ restraint factor and percent overweight for Unrestrained Eaters, Midrestrained Eaters and overall. These findings indicate that, in spite of palatable foods, other mechanisms besides restrained eating can successfully modulate body weight for many women. This finding concurs with two other studies, each assessing a different population. Laessle, Tuschl, Kotthaus and Pirke (1989) used young women consisting mainly of college

students. They reported no significant difference in body weight between high and low restraint factor scorers. Similarly, Bjorvell et al. (1986) reported no significant restraint factor differences between normal weight controls and overweight persons on a waiting list for weight control treatment.

However, these results do not necessarily contradict the supposition that palatable foods might facilitate overeating and resulting weight gains. Some people might have other mechanisms that limit their palatable food consumption without needing to restrain their eating. Learning might be such a mechanism (Booth, 1982), as was reflected by participants' comments. More specifically, it seems that some people have "internalized" healthy eating patterns. For them, restraining is unnecessary because they habitually do not eat the food that restrained eaters need to consciously restrain from eating. For example, a "healthy" eater might eat fruit after a meal with no desire of eating a rich dessert, while the restrained eater may want to eat the dessert but consciously refrains from so doing. Other people may not eat an excess of palatable foods because their lifestyles are so active or hectic that they give little thought to food. On the other hand, some people may consume many palatable foods, yet either their physiological response to food (George et al., 1989) or exercise level allows energy output to match energy input so that they do not gain weight (Garrow, 1978).

Several of the post hoc findings suggest that under two

specific circumstances restrained eating might influence body weight. Firstly, for those who employ restrained eating, it might control their body weight depending on how intensely they restrain their eating. Normal weight Restrained Eaters scored significantly higher than overweight Restrained Eaters on the TFEQ restraint factor. Accordingly, for Restrained Eaters, there was an inverse relationship approaching significance ($p = .054$) between the TFEQ restraint factor score and percent overweight.

Secondly, restrained eating might modulate a woman's weight if she exhibits the type of excess eating characterized by high scores on the TFEQ disinhibition factor. This idea is supported because normal weight high scorers on the disinhibition factor had significantly higher TFEQ restraint factor scores than overweight respondents. In addition, there was a negative correlation between the TFEQ restraint factor and percent overweight, for high scorers on the disinhibition factor but not for low scorers. Further evidence for this relationship is revealed in the study by the Bjorvell et al. (1986). As mentioned earlier, their overweight participants scored significantly higher on the disinhibition factor than the normal weight control group. While receiving behavioral treatment, these participants' restraint factor scores increased as a function of both behavioral treatment duration and weight loss, while their high disinhibition factor scores remained stable.

These results suggest that a woman is prone to be

overweight due to her style of eating which is reflected by high TFEQ disinhibition scores; so she may begin to restrain her eating to control her weight. Accordingly, the restrained eating might be a consequence of the type of eating measured by the high TFEQ disinhibition factor scores, so the term "disinhibition of restrained eating" may not properly reflect its construct for overweight people. Instead, it might reflect individuals who eat too much regardless of whether or not they ever restrain their eating (since independent of restraint factor score, there was a signficant correlation between the disinhibition factor score and percent overweight); these women may possess a special vulnerability to consume the ever-present palatable foods. Accordingly, Stunkard and Messick (1985) recognized that the construct of the disinhibition factor "requires continuing appraisal, particularly in relation to interpretations that do not invoke prior inhibition as a prerequisite" (p. 79).

The eating style reflected by the TFEQ disinhibition factor seems analogous to a binge (Polivy, 1976; Spencer & Fremouw, 1979). In fact, Marcus et al.(1985) found that the TFEQ disinhibition factor highly correlated (r = .61, p < .001) with the severity of binge eating for overweight women seeking help to control their weight. So this idea that disinhibition tendencies might incite the restrained eating is contrary to the popularly held belief (and a basis behind the Restraint Scale) that binge eating is a direct consequence of restrained eating (Heatherton et al., 1988;

Polivy & Herman, 1985; Herman and Polivy, 1988). However, Lowe and Kliefield (1988) noted that "although cognitive factors are influential in instigating overeating in vulnerable individuals, little is known about the contributions of cognitive factors and actual weight loss in producing this vulnerability" (p. 160). So it is possible that the causation of restrained eating and binging differs among different clinical and nonclinical groups.

Although the idea that binge eating precedes restrained eating is contrary to the premise of the Restraint Scale, it is not necessarily contrary to the construct of the Restraint Scale. It is possible that the normal weight women with high TFEQ restraint and disinhibition scores will overeat following a preload or other form of disinhibition. In fact, the high correlation between the Restraint Scale and the TFEQ combined restraint and disinhibition factor (which is significantly higher than the correlation between the Restraint Scale with either the TFEQ restraint factor or the TFEQ disinhibition factor) suggests that, for normal weight women, the construct of the combined TFEQ restraint and disinhibition factor and the construct of the Restraint Scale are quite similar. Controlled laboratory experiments are needed to understand the extent of this correspondence.

Regardless of whether or not the TFEQ restraint and disinhibition factor can replace the Restraint Scale, these factors appear useful. Although there is only an incipient understanding of their constructs, they seem to identify some distinguishing characteristics of normal weight and

overweight women. Consequently, the following is proposed. High TFEQ disinhibition factor scorers might be vulnerable to excessive food consumption which results in weight gain, unless they can successfully restrain their eating. While low scorers on the disinhibition factor might have a eating style, a lifestyle, or a physiological system which makes them relatively immune to excessive food consumption and subsequently they maintain a moderate body weight. This would suggest that there are at least three possible routes to help high disinhibition factor scorers lose weight. Firstly, they could be instructed on how to successfully restrain their eating, as was shown by Bjorvell et al. (1986). Or, treatment could focus on incorporating an eating style or lifestyle which, in itself, makes the individual less vulnerable to excessive eating. Finally, treatment could directly confront the situations that incite overeating as represented by the disinhibition factor (Bjorvell et al., 1986).

Due to the inability of this study's correlational design to assess causality, further research is required to determine whether there is support for this proposal. It first needs to be demonstrated whether the eating style, which is measured by the TFEQ disinhibition factor, reflects overeating and results in weight gain; or if it is only a by-product of other circumstances which create the excess weight. It also needs to be determined whether restrained eating, as measured by the TFEQ restraint factor, is a method for controlling weight--especially for high

disinhibition factor scorers. Accordingly, an understanding of the construct and predictive ability of these two factors is necessary.

In addition, if the eating style reflected by the disinhibition factor affects body weight, further knowledge is needed to help in preventing and treating this type of obesity. Useful information may be provided by understanding the influences and reasons behind the eating style which is represented by the disinhibition factor. Furthermore, demonstrating the existence and determinants of normal weight women's eating styles (other than restrained eating) might also be helpful.

However, in conducting future research based on the study's findings, the limitations of the research design also need to be considered. As previously mentioned, 25% of the contacted households were unwilling to participate; therefore, their eating style as reflected by the TFEQ restraint and disinhibition factor remains unknown. If this study would have inquired into the reasons behind the refusals, there may have been some understanding of the characteristics of women who refused, and possibly an indication of their attitude toward food. It is possible that some of the refusals were from overweight women who were unwilling to think about their eating style; therefore, their restraint and disinhibition factor scores may have been different from the scores of the overweight participants. If this were the case, then the course and treatment of their obesity might substantially differ from

that of overweight participants with high disinhibition factor scores.

Another limitation of this study is that the convergent validity of the TFEQ restraint and disinhibition factor was only assessed for the normal weight participants. In addition, all the women's scores were determined soley by self-report. Consequently, this study could have been more informative if, for respondents of all weight classifications, it had demonstrated whether there existed convergent validity for the restraint and disinhibition factor: if the respondents' restraint and disinhibition factor scores also correlated with additional measures that reflected the eating styles assessed by the restraint and disinhibition factor. For instance, a participant's spouse or close friend could have been questioned about the participant's eating style.

A third limitation of this study is that some of the women may have displayed a reponse style, which would bias the results. A subset of respondents may have acquiesced to answering a certain way. For example, a participant might have responded 'true' to all the questions in the first part of the survey, and then consistently chose the first of the four possible responses in the survey's second part. Another bias might have been displayed if the respondent answered the questions in a manner that she felt were socially desirable regardless of whether or not it reflected her true eating style. The study's findings would have been more sound had it also determined whether these biases

existed--and whether they were unique to the normal weight or overweight participants--by including questions that assessed for social desirability and acquiescence.

Even though this study was limited by not addressing the issues discussed above, it did offer some evidence--by assessing the commmunity--of differences between normal weight and overweight women in relation to their TFEQ restraint and disinhibition factor scores. The study has shown that, regardless of restraint factor score, there was a significant positive correlation between percent overweight and the disinhibition factor. Furthermore, restrained eating as measured by the restraint factor was not necessary to control body weight; although, the restraint factor did negatively correlate with percent overweight for women with high disinhibition factor scores, and normal weight Restrained Eaters scored significantly higher than overweight Restrained Eaters on the TFEQ restraint factor. Finally, the study showed that, for normal weight women, the TFEQ restraint and disinhibition factor highly correlated with the Restraint Scale which suggests that these measures assess similar constructs for normal weight women.

APPENDICES

APPENDIX A

APPENDIX A

TELEPHONE SURVEY

Directions for Scoring: To designate which factor is being measured, beside each question is a '1' or '2' and/or a 'CD' or 'WF'. One is the TFEQ restraint factor, '2' is the TFEQ disinhibition, 'CD' is the Concern with Dieting factor (Restraint Scale), and 'WF' is the Weight Fluctuation factor (Restraint Scale). For part one, one point is given to the specified factor if the underlined T or F is answered. For part two, one point is given to the TFEQ restraint or disinhibition factor if either response 3 or 4 (or 5 for question 40) is answered. The factors of the Restraint Scale are scored by adding the numbers that are associated with their answers.

Introduction

Hello. Is this the (**last name**) residence?

- (If the respondent says no without automatically hanging up, then ask, Is this (**the number that was called**)?, and if the person says yes then proceed).

This is (**interviewer's name**) calling from Michigan State University. I am doing a telephone survey of women's eating styles. I need to speak with a female who is at least 18 years old.

- (If the person who answers the telephone agrees to

continue, then the interview proceeds. If another person agrees to be interviewed, then the interviewer goes back to line two. If no one is available at this time, then the interviewer asks if (and when) someone would be available at another time.) -

Your participation is voluntary and you could discontinue with the survey at any time. It is really important to get your response for this research. Your telephone number was chosen randomly. Everything you tell me will be held in complete confidence and your name will not be used. My questions will take about ten minutes. Would you be willing to be surveyed either now or at another more convenient time?

- (If the person decides not to participate, then respond with a "Thank-you anyways. Goodbye."

If the person starts asking spontaneous questions, then answer them and then find out whether she is willing to participate.) -

Okay, great. Throughout the survey, feel free to stop me if you have any questions or you would like me to repeat a question that I have asked you. Okay.

- (<u>Part One</u>) -

The first part of the survey contains a number of statements. Each statement should be answered either true or false. Listen to each statement and decide how you feel

about it.

If you agree with the statement, or if you feel that it is true about you, then answer true.

If you disagree with the statement, or if you feel that it is false as applied to you, then answer false.

Okay?

1. When you smell a sizzling steak or see a juicy piece of meat, you find it very difficult to keep from eating, even if you have just finished a meal.

- (circle response and only say true or false if the interviewee needs the prompt)-

T F 2

2. You usually eat too much at social occasions like parties and picnics.

T F 2

3. When you have eaten your quota of calories, you are usually good about not eating anymore.

T F 1

4. You deliberately take small helpings as a means of controlling your weight.

T F 1

5. Sometimes things just taste so good that you keep on eating even when you are no longer hungry.

T F 2

6. When you feel anxious, you find yourself eating.

T F 2

7. Life is too short to worry about dieting.

T F 1

8. Since your weight goes up and down, you have gone on reducing diets more than once.

T F 2

9. When you are with someone who is overeating, you usually overeat too.

T F 2

10. You have a pretty good idea of the number of calories in common food.

T F 1

11. Sometimes when you start eating, you just can't seem to stop.

T F 2

12. It is not difficult for you to leave something on your plate.

T F 2

13. While on a diet, if you eat food that is not allowed, you consciously eat less for a period of time to make up for it.

T F 1

14. When you feel blue, you often overeat.

T F 2

15. You enjoy eating too much to spoil it by counting calories or watching your weight.

T F 1

16. You often stop eating when you are not really full as a conscious means of limiting the amount that you eat.

T F 1

17. Your weight has hardly changed at all in the last ten years (not counting pregnancies).

T F 2

18. When you feel lonely, you console yourself by eating.

T F 2

19. You consciously hold back at meals in order not to gain weight.

T F 1

20. You eat anything you want, any time you want.

T F 1

21. Without even thinking about it, you take a long time to eat.

T F 2

22. You count calories as a conscious means of controlling your weight.

T F 1

23. You do not eat some foods because they make you fat.

T F 1

24. You pay a great deal of attention to changes in your figure.

T F 1

25. While on a diet, if you eat a food that is not allowed, you often then splurge and eat other high calorie foods.

T F 2

(Part Two)

The next part of the survey contains questions which have four possible responses. After I read the question and the four possible responses, I would like you to choose the response that is appropriate for you. Okay.

26. How often are you dieting in a conscious effort to control your weight?

rarely	sometimes	usually	always	
1	2	3	4	1

27. Would a weight fluctuation of 5 pounds affect the way you live your life?

0	1	2	3	CD
not at all	slightly	moderately	very much	
1	2	3	4	1

28. Do your feelings of guilt about overeating help you to control your food intake?

never	rarely	often	always	
1	2	3	4	1

29. How conscious are you of what you are eating?

0	1	2	3	CD
not at all	slightly	moderately	extremely	
1	2	3	4	1

30. How frequently do you avoid "stocking up" on tempting foods?

almost never	seldom	usually	almost always	
1	2	3	4	1

31. How likely are you to shop for low calorie foods?

unlikely	slightly likely	moderately likely	very likely	
1	2	3	4	1

32. Do you eat sensibly in front of others and splurge alone?

0	1	2	3	CD
never	rarely	often	always	
1	2	3	4	2

33. How likely are you to consciously eat slowly in order to cut down on how much you eat?

unlikely	slightly likely	moderately likely	very likely	
1	2	3	4	1

34. How likely are you to consciously eat less than you want?

unlikely	slightly likely	moderately likely	very likely	
1	2	3	4	1

35. Do you go on eating binges though you are not hungry?

never	rarely	sometimes	at least once a week	
1	2	3	4	2

36. To what extent does this statement describe your eating behavior?

"You start dieting in the morning, but because of any number of things that happen during the day, by evening you have given up and eat what you want, promising yourself to start dieting again tomorrow."

not like you	little like you	pretty good description of you	describes you perfectly	
1	2	3	4	2

37. How often are you dieting?

never	rarely	sometimes	often	always	
0	1	2	3	4	CD

38. Do you have feelings of guilt after overeating?

never	rarely	often	always	
0	1	2	3	CD

39. Do you give too much time and thought to food?

never	rarely	often	always	
0	1	2	3	CD

(<u>Part Three</u>)

In order to finish off the survey, I would like a little information about you.

40. On a scale of 0 to 5, where 0 means no restraint in eating (meaning you eat whatever you want, whenever you want it) and 5 means total restraint (meaning you are constantly limiting food intake and never "giving in"), what number would you give yourself? 1

0

eat whatever you want, whenever you want it

1

usually eat whatever you want, whenever you want it

2

often eat whatever you want, whenever you want it

3

often limit food intake, but often "give in"

4

usually limit food intake, rarely "give in"

5

constantly limiting food intake, never "giving in"

41. How tall are you? _____

42. How old are you? _____

43. How many years of schooling have you completed?

_____

44. How much do you weigh? _____

45. How long has it been since your last meal or snack?

_____

46. What is the maximum amount of weight that you have ever lost within one month? ___

0-4	5-9	10-14	15-19	20+	
0	1	2	3	4	WF

47. What is your maximum weight gain within a week?_____

0-1	1.1-2	2.1-3	3.1-5	5.1+	
0	1	2	3	4	WF

48. In a typical week, how much does your weight fluctuate (maximum - minimum)? _____

0-1	1.1-2	2.1-3	3.1-5	5.1+	
0	1	2	3	4	WF

49. How many pounds over your desired weight were you at your maximum weight? (not counting pregnancies)___

0-1	1-5	6-10	11-20	21+	
0	1	2	3	4	WF

50. At what age was that? _____

51. Within the past year, what is the most that your weight has fluctuated? _____
(maximum - minimum)

That was the last question. I really appreciate your help. Do you have any (further) questions or comments about the survey? - (Answer any questions) If you were interested, I could send you the results of this survey?

- (If the interviewee would like to have the results, then write down name and address on a separate piece of paper. Write down any other comments that are pertinent to this interview.) -

Thank you very much. Goodbye.

Comments:

APPENDIX B

APPENDIX B

Table 1

Correlation of the Restraint Scale with the TFEQ Restraint and Disinhibition Factor

(n = 127)	TFEQ Restraint Factor	TFEQ Disinhibition Factor	TFEQ Combined Restraint and Disinhibition Factor
Restraint Scale	.78*	.66*	.47*

*p < .01

Table 2

Mean Scores on the TFEQ Restraint and Disinhibition Factor for Normal Weight, Overweight, and Total Participants

	Participants		
Factor Score	Normal Weight (n = 127)	Overweight (n = 52)	Total (n =198)
Restraint			
M	11.37	9.56	10.82
SD	5.62	4.90	5.33
Disinhibition			
M	4.66	9.73	6.20
SD	3.39	2.99	3.89

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