

## 1. Introduction

- There is an obesity epidemic occurring with the UK, so gaining an understanding of the factors which may contribute to overeating is therefore important.
- People encounter daily hassles and stressors throughout their day, particularly in the workplace.
- 80% of individuals are believed to change their caloric intake in response to stress, particularly increasing consumption of high fat, sugary foods (O'Connor et al 2008).
- Accordingly, chronic stress may contribute to the obesity epidemic.

This study aims to assess:

- The effect of perceived workplace stress on eating behaviour;
- The impact of workplace shift patterns on perceived daily stress and eating behaviour.

## 2. Methods

### Participants

450 participants, from 3 public sector workplaces. The 3<sup>rd</sup> workplace is comprised of the emergency services who work shifts.

### Measures

**Food Intake** is measured using a 7-day weighed intake food-diary, detailing *all* food and drink consumed over this period (figure 1). Hourly measures of hunger, fullness, stress are recorded on a VAS using a pro-diary (figure 2).



Figure 1; 7 Day food diary with calibrated scales



Figure 2; CamTECH Pro-diary

**Stress & Hassles:** In addition to the hourly measure of stress, the Daily Hassles Scale (recording each type, time and level of stress) was completed daily (O'Connor et al, 2008). The Depression, Anxiety, Stress Scale (DASS) was also completed at the end of the 7-day assessment period (Henry & Crawford, 2005).

**Eating Behaviour** is measured using the Dutch Eating Behaviour Questionnaire (Van Strien T. et al, 1986) and Three Factory Eating Inventory (Stunkard & Messick, 1985).

### Recruitment to date

130 participants from workplaces 1 & 2 have completed the study.

## 3. Results

The mean BMI for 130 participants was 25.3, on the cusp of normal into over-weight (Table 1). There were no significant differences between BMI groups in age or stress levels.

	Age (yrs)	BMI (kg/m <sup>2</sup> )	Stress (SD)
BMI <25 (n=73)	39.7 (SD= 12.0)	22.5 ± 0.2 (17.6 - 25.0)	10.11 (7.6)
BMI >25 <30 (n=40)	44.5 (SD= 9.7)	27.0 ± 0.2 (25.2 - 29.6)	13.10 (9.3)
BMI >30 (n=17)	42.2 (SD= 12.6)	33.4 ± 0.7 (30.0-39.1)	10.82 (8.3)
ALL (n=130)	41.5 (11.5)	25.3 ± 0.4 (17.6 - 39.1)	11.12 (8.3)

Table 1; Descriptive statistics for 130 participants.

## 3. Results

Both BMI and stress were significantly associated with eating behaviour (figure 3 & table 2). High BMI in the overweight category was associated with restrained eating and emotional eating, although those with a BMI over 30 showed no significant difference from normal weight BMI in eating behaviour (figure 3).

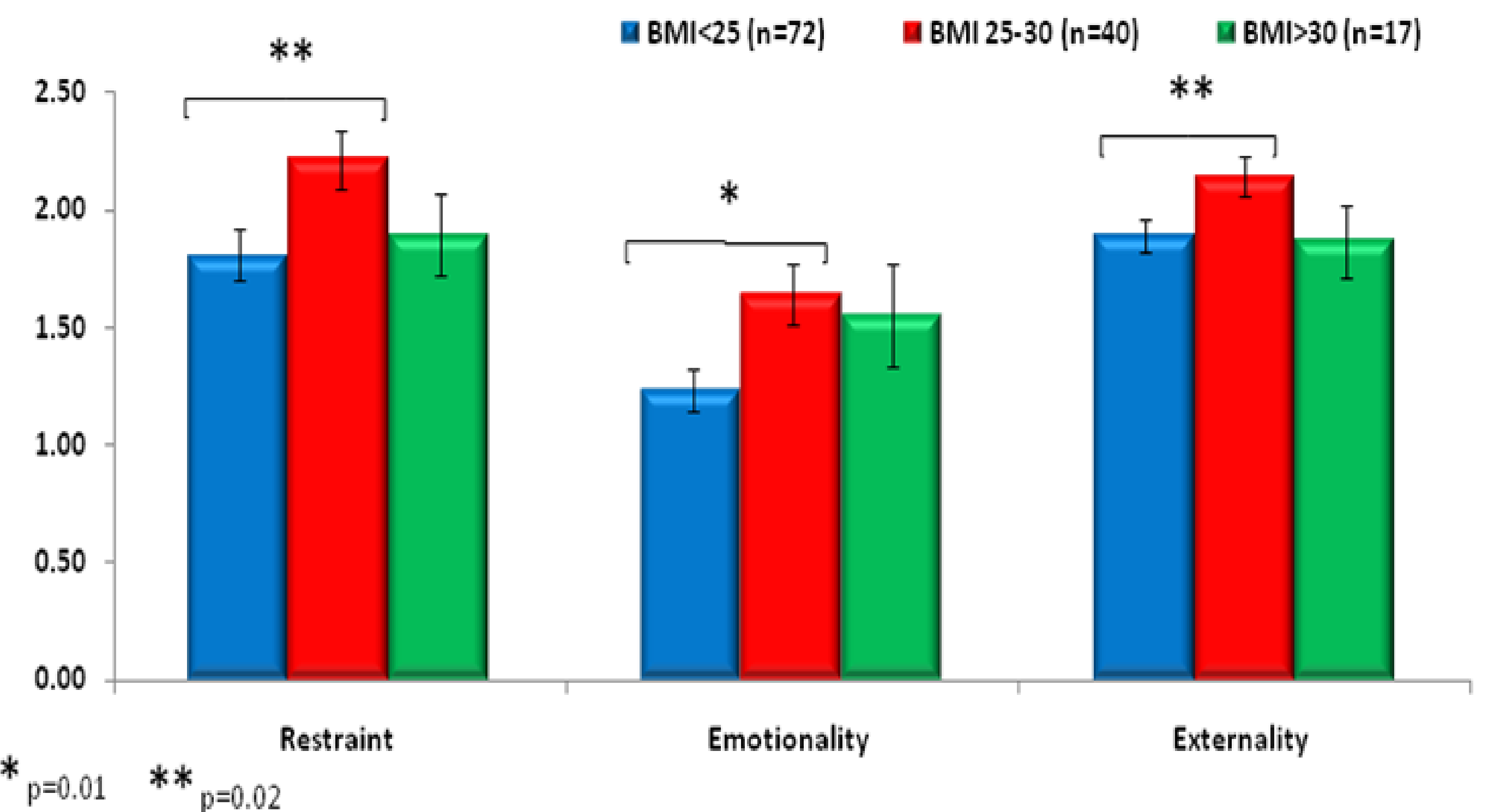


Figure 3; Significant associations between BMI and eating behaviour.

Stress, based on the DASS scores, indicated that higher levels of perceived stress was associated with eating behaviour, specifically emotional eating and external eating behaviours (table 2).

	Restrained (DEBQ)	Emotional (DEBQ)	Externality (DEBQ)
Stress (DASS)	.111	.303**	.220**

\*\* p < .01

Table 2; Significant associations between stress and eating behaviour.

Perceived stress remained significantly associated with eating behaviour even when BMI had been controlled for (Table 3).

	Restrained (DEBQ)	Emotional (DEBQ)	Externality (DEBQ)
Stress (DASS)	.112	.334**	.221*

\* p < .01 \*\* p < .001

Table 3; Significant associations between stress and eating behaviour. Controlling for BMI

## 4. Future Analysis

Upon completion of recruitment, detailed analysis will investigate the relationship between stress and caloric intake, as well as the source of the calories (ie. snacking versus meals). The role of personality on eating behaviour will also be assessed as well as the role of shift work and work environment.

## 5. Conclusions

- **Early results indicate stress to be significantly associated with eating behaviour, independently of BMI.**
- **The findings of this study will;**
  - increase our understanding of stress-induced eating
  - assess the impact of workplace shift patterns on daily stress and eating behaviour
  - evaluate the impact of a health-promoting work environment on daily stress and eating behaviour in a large group of men and women
  - Influence policy by directly targeting the role of diet composition in our 'obesogenic environment'

### References

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