

Determinants of Emotional Eating Among Generation Z University Students: Analysis of Debq Responses

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Abstract: This cross-sectional analysis of 183 Dutch Eating Behavior Questionnaire (DEBQ) responses from Generation Z medical students investigates restrained, emotional, and external eating patterns [8][7][4]. Subscale scores (1–5 Likert) indicated moderate dysregulated eating: Restrained Eating M=2.55, SD=0.95; Emotional Eating M=2.58, SD=0.96; External Eating M=3.28, SD=0.78 [1][2][7]. A cut-off of ≥ 4.0 classified 6.6% as high restrained eaters, 9.3% high emotional eaters, and 17.5% high external eaters.

External eating items reached the top means (e.g., “crave food when you see/smell something tasty” M=3.79, 70.5% ≥ 4) [7]. Among emotional triggers, boredom scored highest (M=3.18, 45.4% ≥ 4). Emotional eating correlated significantly with external eating ($r=0.24$, $p=0.001$) [1][2][7]. In regression analysis, external eating significantly predicted emotional eating ($\beta=0.31$, $p=0.001$) while restrained eating did not ($\beta=0.04$, $p=0.58$; $R^2=0.06$). [1][2][7]

Findings suggest that emotional eating risk in this population is moderate and mainly linked to food cue reactivity and boredom [1][2]. Environmental and psychological strategies may help reduce emotionally driven eating.

Keywords: emotional eating; DEBQ; medical students; external eating; boredom; Generation Z.

Cite this Article

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Introduction

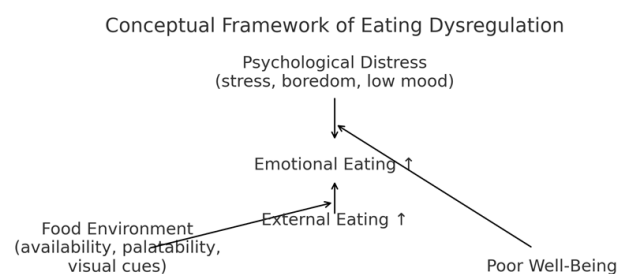
Generation Z university students face academic pressure, reduced physical activity, and high digital exposure that may encourage reliance on food for emotional regulation [4]. Emotional eating contributes to obesity, metabolic risk, and mental health burden. [1][2][3]

The Dutch Eating Behavior Questionnaire (DEBQ) measures three distinct patterns:

- Restrained Eating — intention to control food intake to manage weight
- Emotional Eating — eating triggered by negative affect
- External Eating — eating in response to food availability, smell, sight, social cues

A conceptual pathway is illustrated below:

FIGURE 1. Conceptual Framework of Eating Dysregulation



Poor Well-Being → Weakened restraint → Risk amplification

Research questions:

1. Which DEBQ subscales are most elevated in Gen Z medical students?
2. Which emotional triggers and external cues are most influential?

3. Which subscale best predicts emotional eating?

Materials and Methods

Data Source

Secondary analysis of 183 complete DEBQ [8] responses from the dataset collected April–May 2025. All responses were anonymous and belonged to medical students aged approximately 18–25 years.

Instrument and Subscale Structure

DEBQ consists of 34 items rated 1–5 (higher score = stronger endorsement) [8]. Subscale grouping is shown below.

TABLE 1. DEBQ Subscale Composition [8]

Subscale	Items	Example Items
Restrained	10	“Eat less when weight is gained?”
Emotional	13	“Crave food when bored?”, “Eat when depressed?”
External	10	“Eat more if tastes good?”, “Crave when seeing food?”

Subscale scores were computed as mean item score.

Statistical Analysis

Descriptive statistics (means, SDs, proportions) were computed for all DEBQ subscales. Normality of item distributions was evaluated using Shapiro–Wilk tests and inspection of Q–Q plots. Given generally acceptable symmetry, parametric methods were applied [1][2]. Internal consistency was assessed using Cronbach’s alpha for restrained, emotional, and external eating domains, expecting $\alpha \geq 0.70$ based on prior DEBQ research [8]. Pearson correlations quantified linear relationships among subscales; Spearman coefficients were used where assumptions were not met [3]. Multiple linear regression tested predictors of emotional eating, with external and restrained eating entered simultaneously. Effect sizes (standardized β) and 95% confidence intervals were reported. All analyses used $\alpha = 0.05$ (two-tailed).

- Descriptive: Means, SDs, percentage of respondents ≥ 4.0
- Correlation: Pearson r among subscales
- Regression: Emotional eating predicted by restrained + external eating
 - Model: Emotional = $\beta_0 + \beta_1(\text{Restrained}) + \beta_2(\text{External}) + \varepsilon$
 - $\alpha = 0.05$ (two-tailed)

Results

Subscale and Item-Level Patterns

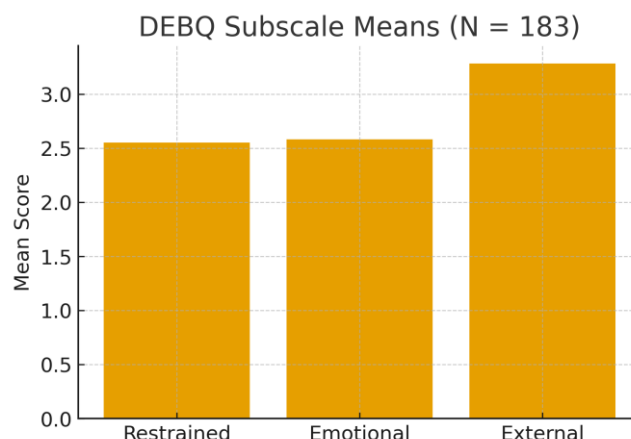
Subscale Means (N=183)

- Restrained: 2.55 ± 0.95
- Emotional: 2.58 ± 0.96
- External: 3.28 ± 0.78

High-risk classification (≥ 4.0):
Restrained 6.6% | Emotional 9.3% | External 17.5%.

FIGURE 2. Subscale Means with SD Error Bars

(3-bar chart: Restrained 2.55, Emotional 2.58, External 3.28)



External eating dominates, showing stronger cue reactivity. Top item means confirm this:

TABLE 2. Top 10 Highest-Mean Items

Rank	Item (short form)	Mean	% ≥ 4
1	Crave when see/smell tasty food	3.79	70.5
2	Eat delicious food immediately	3.78	67.2
3	Eat more if food tastes good	3.75	67.2
4	Eat more if food looks/smells appealing	3.67	61.7
5	Want food when near bakeries/cafés	3.55	59.6
6	Crave food when bored	3.18	45.4
7	Hard to resist tasty food	3.16	41.0
8	Want snacks near cafeterias	3.00	36.1
9	Eat less if weight gained	2.93	36.6
10	Want to eat when depressed	2.91	39.9

- Boredom is the strongest emotional trigger.

Subscale Relationships

TABLE 3. Correlation Matrix (Pearson r)

	Restrained	Emotional	External
Restrained	1.00	-0.01	-0.20**
Emotional	-0.01	1.00	0.24**
External	-0.20**	0.24**	1.00

** $p < 0.01$

Key observations:

- Emotional $\leftrightarrow$ External $\rightarrow$ positive association (cue-driven eating relates to emotional eating)
- Restrained $\leftrightarrow$ External $\rightarrow$ inverse relationship
- Restrained $\leftrightarrow$ Emotional $\rightarrow$ no meaningful link

Predictors of Emotional Eating

Regression model:

$$\text{Emotional} = 1.46 + 0.04 \times \text{Restrained} + 0.31 \times \text{External}.$$

Predictor	Beta	p-value
Restrained	0.04	0.58
External	0.31	0.001

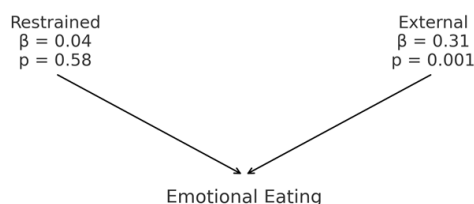
Model Fit: $R^2 = 0.06$, $p = 0.003$

FIGURE 3. Regression Path Diagram

External Eating → Emotional Eating ($\beta = 0.31$, $p = 0.001$)

Restrained Eating → Emotional Eating (ns) [1][2][7]

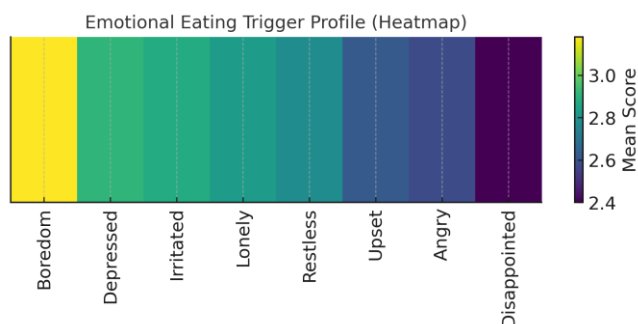
Regression Model Predicting Emotional Eating



External eating is the only meaningful predictor.

Emotional Trigger Profile

FIGURE 4. Emotional Eating Heatmap (Item Means)
(Hot colors = stronger trigger) [1][2].



- Boredom 3.18
- Depressed mood 2.91
- Irritated 2.88
- Lonely 2.83
- Bored/restless 2.78
- Upset 2.62
- Angry 2.58
- Disappointed/let down 2.38–2.43

Low-arousal negative mood is the biggest driver.

Discussion

The present analysis demonstrates that emotional eating among Gen Z medical students reflects a combination of affective vulnerability and external cue reactivity [1][2]. Moderate levels of deregulated eating align with earlier research in similar populations, suggesting that psychological distress contributes

meaningfully to elevated emotional eating tendencies [6]. Correlations indicated that external eating was positively associated with emotional eating, reinforcing models that highlight environmental cue sensitivity as a trigger for dysregulated intake [7]. The regression findings further emphasize that external eating is a unique predictor of emotional eating even after accounting for restrained eating, supporting mechanisms proposed in psychosocial frameworks [4]. This aligns with evidence that food visibility, accessibility, and sensory cues contribute disproportionately to eating behaviors in youth and university environments [7]. The emotional eating pattern observed—particularly boredom-related triggers—is consistent with affect-regulation theories suggesting that individuals may use food to alleviate low-stimulation negative states [1]. In the context of medical education, high workload, academic stress, and sedentary study patterns may exacerbate these tendencies [3]. Additionally, digital exposure and information-seeking behaviors may indirectly influence eating choices, consistent with findings showing complex interactions between media, cognition, and dietary decision-making [5].

Summary

- Eating dysregulation is moderate overall
- External and emotional eating overlap, especially boredom-related
- Restrained eating is separate and does not increase emotional eating

Environmental cues (tasty food, cafés, visibility) strongly drive eating. When students feel bored or down during long study periods, this magnifies cue-driven hunger.

Comparison with Literature

Consistent with published studies:

- Emotional eating linked to negative affect
- External eating common in student environments
- Boredom is a major trigger in youth populations

Current sample shows less extreme emotional eating than some Western cohorts — possibly due to cultural norms or stronger social eating patterns.

Practical Public Health Implications

Intervention focus should be dual:

Level	Strategy
Individual	Mindfulness-based eating awareness; coping skills for boredom and mood
Campus environment	Reduce constant exposure to high-palatability foods; healthier vending
Educational culture	Normalize seeking support; include self-care in medical training

Medical students must manage their own eating behaviors to model healthy habits professionally.

Limitations: self-report, single university, cross-sectional design, no demographics. Further work should include objective tools (wearables, food diaries) + longitudinal analysis.

Conclusion

External eating is the primary driver of emotional eating in this sample.

Although levels are not severe, early preventive efforts can strengthen emotion regulation and food-environment resilience in future physicians.

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