

Financial motives and alcohol-related compensatory behaviours across adulthood: A cross-sectional study of UK drinkers

GOODWIN, Elizabeth, DALTON, Michelle, WHITAKER, Candice and BEAUMONT, Jordan <<http://orcid.org/0000-0002-9861-3379>>

Available from Sheffield Hallam University Research Archive (SHURA) at:
<https://shura.shu.ac.uk/38071/>

This document is the Published Version [VoR]

Citation:

GOODWIN, Elizabeth, DALTON, Michelle, WHITAKER, Candice and BEAUMONT, Jordan (2026). Financial motives and alcohol-related compensatory behaviours across adulthood: A cross-sectional study of UK drinkers. *Addictive Behaviors Reports*, 24, p. 100747. [Article]

Copyright and re-use policy

See <http://shura.shu.ac.uk/information.html>



Review

Financial motives and alcohol-related compensatory behaviours across adulthood: A cross-sectional study of UK drinkers

Elizabeth Goodwin^{a,*}, Michelle Dalton^a, Candice Whitaker^a, Jordan Beaumont^b

^a School of Psychology, Leeds Trinity University, Leeds, UK

^b Sheffield Business School, Sheffield Hallam University, Sheffield, UK

ARTICLE INFO

Keywords:

Binge-drinking
Socioeconomic
Eating behaviour
Psychological predictors
Adult populations

ABSTRACT

Objectives: Food and alcohol disturbance (FAD) refers to behaviours in which individuals modify food intake around drinking episodes, often to offset the caloric content of alcohol or enhance intoxication. These behaviours have been widely studied in student populations, but less is known about their prevalence and correlates in broader adult samples. This study examined alcohol-related compensatory behaviours and their associations with demographic, psychological and contextual factors, including financial motives for drinking, in UK adult drinkers.

Method: A cross-sectional survey examined associations between demographic, psychological and contextual factors, including financial motives, and engagement in alcohol-related compensatory behaviours in adults ($n = 117$, aged 18–76 years) who reported alcohol use. FAD was measured using the Compensatory Eating and Behaviour in Response to Alcohol Consumption Scale (CEBRACS), alongside measures of alcohol consumption. Data were analysed using frequentist and Bayesian regression analyses.

Results: Engagement in at least one alcohol-related compensatory behaviour was common, with 64% of participants endorsing at least one behaviour. Total CEBRACS scores were negatively associated with age, indicating higher engagement among younger participants ($r^2 = 0.20$). Body mass index was not associated with compensatory behaviours. Financial drinking motives showed the strongest and most consistent association with CEBRACS scores ($\beta = 0.48$, $p < .001$) and remained significant in fully adjusted models, whereas psychological variables showed limited associations.

Conclusions: Alcohol-related compensatory behaviours were reported across adulthood and appear to be shaped by financial motives for drinking. These findings highlight the role of economic context in alcohol-related decision making and support extending research beyond student populations.

1. Introduction

Food and alcohol disturbance (FAD) refers to behaviours in which individuals modify their food intake around drinking episodes, for example by skipping meals or restricting food consumption prior to alcohol use. These behaviours are typically motivated by a desire to offset the caloric content of alcohol or to intensify intoxication (Berry et al., 2024). Because these behaviours occur within drinking episodes, they may also reflect strategies used to manage intoxication, caloric intake, or financial costs associated with alcohol consumption. In popular media, such behaviours have sometimes been labelled “drunkorexia” (Kershaw, 2008), although this term has been criticised for trivialising behaviours that may carry health risks (Choquette et al.,

2018). For example, drinking on an empty stomach increases the speed of intoxication and the risk of blackouts and injury (Giles et al., 2009).

Despite evidence of potential harm, FAD is not recognised as a diagnostic category in either the DSM-5-TR (American Psychiatric Association, 2022) or ICD-11 (World Health Organization, 2019). This reflects ongoing uncertainty about whether these behaviours are better understood as a form of disordered eating, a feature of alcohol misuse, or a distinct behavioural pattern shaped by both alcohol related and calorie related motives (Gates & Odar Stough, 2022; Griffin & Vogt, 2020). A recent review highlighted substantial variation in how FAD is defined and measured, with some studies assessing compensatory behaviours without examining the motives underlying them (Berry et al., 2024).

* Corresponding author at: Leeds Trinity University, Brownberrie Lane, Horsforth, Leeds LS18 5HD, UK.

E-mail address: e.goodwin@leedstrinity.ac.uk (E. Goodwin).

<https://doi.org/10.1016/j.abrep.2026.100747>

Received 17 March 2026; Received in revised form 20 August 2026; Accepted 5 September 2026

Available online 8 September 2026

2352-8532/© 2026 Published by Elsevier Ltd. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

This conceptual ambiguity has contributed to inconsistent findings and limits understanding of the factors associated with alcohol-related compensatory behaviours.

Most research on FAD has been conducted on university student samples, where alcohol consumption is often embedded within social and cultural aspects of student life (Eisenberg & Fitz, 2014; Griffin & Vogt, 2020). While this work has provided important insights, it remains unclear whether alcohol-related compensatory behaviours occur beyond student populations or how these behaviours may vary across adulthood (Hunt & Forbush, 2016; Kelly-Weeder, 2011). There is emerging evidence that compensatory eating and drinking behaviours occur in older age groups (Moeck & Thomas, 2021). More recently, CEBRACS scores above the scale minimum were reported by 43% of a non-clinical sample of adult drinkers aged 18–67 (Różycka et al., 2025). Examining these behaviours across a broader age range may therefore help clarify whether FAD represents a student-specific phenomenon or reflects wider patterns of alcohol-related decision making.

Psychological correlates examined in relation to alcohol-related compensatory behaviours include stress, anxiety, emotion regulation difficulties and body-related concerns, although the evidence remains mixed and is largely derived from adolescents and young adults (Pérez-Ortiz et al., 2024). This emphasis on individual psychological characteristics has left the contexts in which people make decisions about eating and drinking comparatively underexplored. Financial pressures may represent one such contextual factor. Qualitative accounts suggest that some individuals restrict food to obtain greater “value for money” from alcohol by becoming intoxicated more quickly (Vogt et al., 2022). Recent UK polling indicates that some adults prioritise alcohol over food when money is limited (WithYou, 2023), raising the possibility that financial considerations may be associated with alcohol-related compensatory behaviours. This association has not previously been examined quantitatively in a UK adult sample.

The present study examines alcohol consumption patterns and alcohol-related compensatory behaviours among UK adult drinkers. In addition to demographic and psychological factors, the study examines financial considerations as a contextual correlate of compensatory behaviours, addressing both an underexamined aspect of FAD and the concentration of existing evidence in student samples.

Research questions

1. Do usual drinking frequency and alcohol units consumed on the heaviest drinking day vary by age?
2. To what extent are age, BMI, and financial considerations associated with engagement in alcohol-related compensatory behaviours?
3. Are anxiety, stress and emotion regulation difficulties associated with alcohol-related compensatory behaviours after accounting for demographic, alcohol-related and financial factors?

2. Method

2.1. Participants

An a priori G*Power calculation based on seven planned predictor variables, a medium effect size ($f^2 = 0.17$), $\alpha = 0.05$ and power of 0.90 indicated a minimum required sample of 115 participants (Faul et al., 2009).

To be eligible to take part, participants had to be 18 years of age or over, based in the UK and consume alcohol at least occasionally. Additionally, participants reporting a current or previous diagnosis of an eating disorder or alcohol use disorder were excluded in order to focus on alcohol-related compensatory behaviours in a non-clinical sample.

To maintain data quality, two attention checks were embedded in the survey to identify inattentive responding (Meade & Craig, 2012). Two participants failed both checks and were removed. One participant reported their age as 17, which fell below the inclusion criteria and the legal drinking age in the UK (UK Government, 2021). After these

exclusions, the final sample consisted of 117 participants.

2.2. Procedure

The study received university ethical approval on 12.03.2024. Participants were recruited via social media, the university Research Participation Scheme (RPS) and posters placed around campus. The survey was anonymous and completed online, hosted by JISC Online Surveys (JISC, 2024). Participants recruited through the RPS received course credits; all other participants were uncompensated. Recruitment links were publicly accessible and could be shared, resulting in a convenience sample.

After providing informed consent, participants completed demographic questions including age, gender, height, weight, ethnicity and student status. Body mass index (BMI) was calculated from self-reported height and weight (kg/m^2).

2.3. Measures

Cronbach's alpha (Cronbach, 1951) was calculated in SPSS and interpreted as per Kline's, 2005 guidance (Kline, 2005).

2.3.1. Food and alcohol disturbance (FAD)

FAD was assessed using the Compensatory Eating and Behaviours in Response to Alcohol Consumption Scale (CEBRACS) (Rahal et al., 2012). The questionnaire measures engagement in FAD behaviours over the previous 3 months and asks participants to consider behaviours before, during and after drinking. The original authors state that the scale consists of four subscales: 1) Alcohol Effects 2) Bulimia 3) Diet and Exercise and 4) Restriction. Subsequent studies have suggested different subscale models. Choquette et al. (2020) highlighted that none of the proposed structures, including the original, has shown consistent replication, indicating ongoing uncertainty in how subscales should be interpreted (Choquette et al., 2020). The scale contains 21 items and responses are given on a 5-point Likert scale ranging from “Never” (1 point) to “Almost all the time” (5 points). Scores can range between 21 and 105, with higher scores indicating a greater frequency of engagement in the behaviour.

The CEBRACS total score showed excellent internal consistency ($\alpha = 0.93$). Reliability was also high for Alcohol Effects ($\alpha = 0.97$) and Diet and Exercise ($\alpha = 0.89$), but lower for Bulimia ($\alpha = 0.61$) and Restriction ($\alpha = 0.43$). The total score was retained as the primary outcome because it was the planned measure of overall FAD engagement. However, high internal consistency does not resolve concerns about the scale's structure, and recent cross-national findings have raised further questions about the use of CEBRACS total and subscale scores across different samples (Berry et al., 2026). Alcohol Effects and Diet and Exercise were also examined separately because they were the only subscales with acceptable reliability in this sample. Exploratory analyses then considered the seven Alcohol Effects items individually, as these behaviours were particularly prominent in the English sample examined by Berry et al. (2026). Bulimia and Restriction were not examined further because of their lower reliability.

2.3.2. Emotion regulation

Emotion regulation difficulties were assessed using the DERS-16 (Bjoreberg et al., 2016). Items are rated from 1 (“Almost never”) to 5 (“Almost always”), with higher scores indicating greater difficulty regulating emotions. Reliability in this sample was $\alpha = 0.96$.

2.3.3. Anxiety

Trait anxiety was assessed with the STAI-T5 (Zsido et al., 2020). Items are rated from 1 (“Almost never”) to 4 (“Almost always”), including two reverse-scored calmness items. Total scores range from 5 to 20, with higher scores reflecting greater anxiety. Internal consistency was $\alpha = 0.88$.

2.3.4. Stress

Stress was assessed using the PSS-4 (Cohen & Williamson, 1988). Items are rated from 1 (“Never”) to 5 (“Very often”), with reverse-scoring applied to positively worded items. Scores range from 4 to 20. Internal consistency $\alpha = 0.79$.

2.3.5. Body image

Body appreciation was assessed using the 3-item BAS-2SF (Tylka et al., 2022). Items are rated from 1 (“Never”) to 5 (“Always”). Scores were reverse coded so that higher scores reflected lower body appreciation. Internal consistency was $\alpha = 0.84$.

2.3.6. Alcohol consumption

As FAD occurs within drinking episodes, alcohol use was assessed to provide context for drinking patterns. Participants were asked to report how many alcohol units they typically consumed on their heaviest drinking day using three categories: 1–5 units, 5–10 units, or 10 units or more. They also reported their usual drinking frequency. Unit categories were dummy coded for analysis. This measure provides a categorical estimate of consumption on the heaviest drinking day but does not assess the frequency of heavy or binge-drinking episodes.

2.3.7. Financial considerations

Four items were developed for this study to assess food and alcohol decisions made when money was limited. The items covered prioritising alcohol over food or hunger, changing eating habits to afford alcohol and changing drinking choices to achieve intoxication at lower cost. The full item wording is provided in the Supplementary Material (S1). Exploratory factor analysis indicated a single-factor structure, and internal consistency was good ($\alpha = 0.84$). Items were summed to create a financial considerations composite score, with higher scores indicating greater endorsement of financially constrained food and alcohol decisions.

2.4. Statistical analysis

Alcohol consumption was collected in three categories (1–5 units, 5–10 units, and 10+ units). To prepare these data for regression, two dummy variables were created: one representing the 1–5-unit category and one representing the 5–10 unit category, with the 10+ unit group as the reference category. Drinking frequency was treated as an ordinal variable (1–5), reflecting increasing days per week on which alcohol was consumed. These variables were included as covariates because FAD occurs within drinking episodes, making drinking patterns relevant contextual factors even if bivariate correlations were small. Preliminary associations were examined using Spearman's rank-order correlations due to non-normal distributions in several variables.

A hierarchical linear regression was then conducted to examine correlates of total CEBRACS scores. Variables were entered in three blocks. Block 1 included demographic covariates (age, gender, student status) and alcohol-related variables (drinking frequency and the two unit-category dummy variables). Block 2 added psychological variables (emotion dysregulation, trait anxiety and perceived stress). Body appreciation was excluded from the regression model due to weak associations with the outcome and to preserve statistical power given the sample size. Finally, Block 3 added financial considerations. This approach allowed the additional variance associated with each variable group to be assessed while adjusting for the preceding covariates. Variance inflation factors were inspected to check multicollinearity and were all below 2.5. Age and BMI distributions were examined using skewness and boxplots. Values more than 1.5 interquartile ranges beyond the third quartile were identified as potential BMI outliers. For the final hierarchical model, studentised deleted residuals, leverage and Cook's distance were examined to identify observations that might exert disproportionate influence on the estimates (Field, 2018). Sensitivity analyses repeated the model after excluding cases with absolute

studentised deleted residuals above 3 and, separately, cases exceeding a Cook's distance threshold of $4/n$. These analyses assessed whether the findings depended on potentially influential observations. All valid observations were retained in the primary analyses because unusual but plausible values do not necessarily represent erroneous data.

The hierarchical model was repeated with Alcohol Effects and Diet and Exercise as outcomes because these were the two CEBRACS subscales with acceptable reliability. For the seven individual Alcohol Effects items, endorsement was defined as any response above “never”. Item distributions were summarised using medians and interquartile ranges, and associations with financial considerations were examined using Spearman's rank-order correlations because responses were ordinal and positively skewed. Holm-adjusted p values were used to account for the seven item-level comparisons (Holm, 1979).

To examine whether associations might reflect overlap between the financial and CEBRACS items, the analyses were repeated using two restricted financial scores. The first excluded the item about prioritising intoxication over hunger. A stricter two-item score also excluded the item about changing eating habits to afford alcohol, leaving only prioritisation of alcohol purchases over food and changes to drinking choices intended to achieve intoxication at lower cost. The hierarchical models and item-level correlations were repeated using these restricted scores as sensitivity analyses; the original four-item score remained the primary measure.

Data were analysed using SPSS (Version 29.0). The full survey, including scale items and response options, is provided in the Supplementary Material (S2).

3. Results

3.1. Sample characteristics

A total of 142 individuals completed the online questionnaire. Twelve participants who reported never consuming alcohol and eleven who did not provide sufficient data (e.g., age, alcohol consumption or BMI) were excluded. The final sample consisted of 117 participants.

Full descriptive statistics are presented in Table 1. Most participants identified as White (91%) and female (62%), with 27% students (23% undergraduate, 4% postgraduate). Age showed little skew (skewness = 0.16, $SE = 0.22$), and no observations exceeded the boxplot boundaries. BMI was positively skewed (skewness = 2.38, $SE = 0.22$), with six observations identified as potential outliers above the upper boundary of 41.46 kg/m².

3.2. Alcohol use and FAD engagement

Alcohol use varied across the sample. A total of 37.61% drank occasionally (less than weekly), 29.06% reported drinking two to three

Table 1
Descriptive statistics for study variables ($n = 117$).

	Minimum	Maximum	Mean	Standard deviation
Age (years)	18	76	39.54	15.25
BMI (kg/m ²)	18.00	67.32	28.34	7.99
Total CEBRACS (AU)	21	78	28.46	10.24
Alcohol effects (AU)	7	35	10.02	5.65
Bulimia (AU)	6	12	6.39	1.07
Diet and exercise (AU)	6	27	9.44	4.62
Restriction (AU)	2	8	2.62	1.11
DERS Score (AU)	16	80	36.82	15.20
STAI Score (AU)	5	20	11.38	3.97
PSS Score (AU)	4	18	11.99	2.11
BAS Score (AU)	3	15	8.38	2.85

Note. CEBRACS = Compensatory Eating and Behaviours in Response to Alcohol Consumption Scale; DERS = Difficulties in Emotion Regulation Scale; STAI = State-Trait Anxiety Inventory; PSS = Perceived Stress Scale; BAS = Body Appreciation Scale.

days per week, and 11.70% drank almost every day. Reported consumption on the heaviest drinking day was most commonly 5–10 units (40%) or 10 or more units (35%). Age was not associated with unit-consumption category ($p = .66$).

FAD engagement was common. In total, 64.10% of participants endorsed at least one CEBRACS item. Simple linear regressions examined age and BMI in relation to total CEBRACS scores. Age was significantly associated with lower FAD scores, $F(1, 115) = 22.54$, $p < .001$, accounting for 16% of the variance ($R^2 = 0.16$). Scores decreased by approximately 0.27 points per year ($b = -0.27$, $SE = 0.06$, $p < .001$), which reflected a moderate effect size ($f^2 = 0.20$). BMI was not significantly associated with total CEBRACS ($p = .13$) nor with any of the subscales (values ranged from $p = .06$ to 0.33). Excluding the six potential BMI outliers did not alter the result for total CEBRACS, $b = -0.24$, $SE = 0.21$, $p = .257$, or for Alcohol Effects, Diet and Exercise or Restriction, for which p values ranged from 0.304 to 0.492 . The association with Bulimia changed from $p = .058$ in the full sample to $p = .048$ after exclusion, although the effect remained small, $R^2 = 0.035$, and was not interpreted given the subscale's lower reliability.

The four financial consideration items were strongly intercorrelated and were also correlated with total CEBRACS scores. A single-factor solution was supported, with $KMO = 0.76$ and a significant Bartlett's test ($p < .001$). The factor had an eigenvalue of 2.88 and accounted for 71.83% of the variance, with all item loadings ≥ 0.60 . The items were therefore summed to form the financial considerations score.

3.3. Correlational analyses

Spearman correlations were conducted to examine associations between CEBRACS scores and demographic, psychological, and financial variables. Several variables were found to be significantly associated with total CEBRACS scores: gender ($r_s = -0.23$, $p = .011$), age ($r_s = -0.45$, $p < .001$), student status ($r_s = -0.37$, $p < .001$), financial considerations ($r_s = 0.54$, $p < .001$), DERS-16 scores ($r_s = 0.30$, $p = .001$), STAI-T5 scores ($r_s = 0.28$, $p = .002$), and PSS-4 scores ($r_s = 0.28$, $p = .003$).

A hierarchical regression was conducted to examine associations with total CEBRACS scores. Variables were entered in three blocks to assess the contribution of demographic, alcohol-related, psychological and contextual factors.

Block 1: Demographic and alcohol-related variables.

Age, gender, student status, drinking frequency and heaviest-day drinking units accounted for 32.6% of the variance in CEBRACS scores, $R^2 = 0.326$, $F(6, 110) = 8.88$, $p < .001$. Younger age was associated with higher CEBRACS scores, and participants consuming 1 to 5 units showed lower scores than those consuming 10 or more units.

Block 2: Psychological variables.

Emotion dysregulation, trait anxiety and perceived stress were added in Block 2. Adding psychological variables did not significantly improve model fit, $\Delta R^2 = 0.035$, F change(3, 107) = 1.94 , $p = .128$, and none of the psychological variables were significant correlates once demographic and alcohol-related variables were accounted for.

Block 3: Financial considerations.

Financial considerations were entered in the final block and accounted for an additional 6.4% of the variance, $\Delta R^2 = 0.064$, F change(1, 106) = 11.88 , $p < .001$. The final model accounted for 42.5% of the variance in total CEBRACS scores, $R^2 = 0.425$, adjusted $R^2 = 0.371$.

In the final model, financial considerations were the only variable independently associated with total CEBRACS scores ($\beta = 0.34$, $p < .001$). The negative association with age did not meet the conventional significance threshold ($p = .061$), and no other demographic, alcohol-related or psychological variables were independently associated with scores in the fully adjusted model. A summary of the regression results is presented in Table 2.

Table 2

Model summary for hierarchical regression exploring associations with total CEBRACS scores.

Model	Predictor variables	R^2	ΔR^2	F (df)	p
1	Age, gender, student status, drinking frequency, 1–5 units (dummy), 5–10 units (dummy)	0.33	–	8.88 (6, 110)	<0.001
2	+ DERS-16, STAI-T5, PSS-4	0.36	0.04	1.94 (3, 107)	0.13
3	+ Financial considerations	0.43	0.06	11.88 (1, 106)	<0.001

Regression diagnostics identified two observations with absolute studentised deleted residuals above 3 and six observations exceeding the Cook's distance threshold of $4/n$. The maximum Cook's distance was 0.247 . Excluding the two observations with large residuals did not alter the association with financial considerations, $\beta = 0.403$, $\Delta R^2 = 0.087$, $p < .001$. The association also remained when all six observations exceeding the Cook's distance threshold were excluded, $\beta = 0.448$, $\Delta R^2 = 0.110$, $p < .001$. The unstandardised financial coefficient remained approximately 1.15 across all three analyses.

3.4. CEBRACS subscale and item analyses

The hierarchical model accounted for 52.4% of the variance in Alcohol Effects scores, adjusted $R^2 = 0.479$. Financial considerations accounted for an additional 7.3% of the variance, $\beta = 0.364$, $p < .001$. Student status was also independently associated with scores, with students reporting higher Alcohol Effects scores than non-students, $\beta = -0.233$, $p = .014$. For Diet and Exercise, the final model accounted for 20.5% of the variance, adjusted $R^2 = 0.130$. The additional variance associated with financial considerations did not meet the conventional significance threshold, $\Delta R^2 = 0.025$, $\beta = 0.214$, $p = .069$. Women reported higher Diet and Exercise scores than men, $\beta = -0.233$, $p = .018$, while those reporting 1–5 units on their heaviest drinking day had lower scores than the 10-or-more-unit reference group, $\beta = -0.271$, $p = .014$. Full model results are provided in Supplementary Table ST1.

Endorsement of the seven Alcohol Effects items ranged from 18.8% to 34.2% , with eating less before drinking to get drunker endorsed most frequently. All seven items were positively associated with financial considerations, with Spearman correlations ranging from $r_s = 0.463$ to 0.566 . Each association remained significant after Holm adjustment, adjusted $ps < 0.001$.

Removing the financial item concerning prioritisation of intoxication over hunger did not weaken the associations with total CEBRACS or Alcohol Effects scores (Supplementary Table ST2). In the stricter analysis, both items referring explicitly to hunger or changed eating behaviour were removed. The two remaining financial items were moderately correlated, $r = 0.51$. This restricted score remained independently associated with total CEBRACS, $\beta = 0.360$, $p < .001$, Alcohol Effects, $\beta = 0.355$, $p < .001$, and Diet and Exercise, $\beta = 0.239$, $p = .037$. Its correlations with the seven individual Alcohol Effects items ranged from $r_s = 0.466$ to 0.559 , with all Holm-adjusted $ps < 0.001$.

4. Discussion

This study examined alcohol-related compensatory behaviours across a broad adult age range and considered their associations with demographic, psychological and financial factors. FAD behaviours were reported across the sample, although total CEBRACS scores were higher at younger ages. Financial considerations were independently associated with total CEBRACS and Alcohol Effects scores after demographic, alcohol-related and psychological variables were included. These associations remained when potentially overlapping financial items and influential observations were excluded, while the psychological variables were not independently associated with scores in the adjusted models.

Almost two thirds of participants (64.10%) endorsed at least one

CEBRACS item. This proportion was higher than the 41.6% reported among alcohol-consuming students in France (Ritz et al., 2024) and the 43% reported in a non-clinical Polish adult sample (Różycka et al., 2025). Differences in recruitment, sample composition and national context mean that these estimates cannot be compared directly. Data collection also took place during a period of heightened cost-of-living pressure in the UK, when some adults reported prioritising alcohol over food (WithYou, 2023). This provides relevant context for the financial findings, but the cross-sectional design cannot determine whether wider economic conditions contributed to the level of endorsement observed.

Emotion regulation difficulties, anxiety and stress were associated with total CEBRACS scores at the bivariate level, but the psychological block did not improve the adjusted model. Financial considerations accounted for an additional 6.4% of the variance in total scores. The subscale and item-level analyses indicated that this association was particularly clear for behaviours intended to enhance alcohol's effects, and it remained when the financial items referring explicitly to hunger and changed eating behaviour were removed. Qualitative research has similarly identified "value for money" as a reason for restricting food before drinking, particularly where the aim is to feel the effects of alcohol more quickly (Vogt et al., 2022). The results provide quantitative evidence that financial considerations are associated with these decisions in a broader adult sample. However, the direction of the relationship cannot be established, and shared response tendencies or a broader tendency to prioritise alcohol may partly account for the associations.

The study extends existing work in two ways. Its broad adult age range allowed alcohol-related compensatory behaviours to be examined outside the student settings that dominate the literature. More importantly, financial considerations were examined alongside demographic, alcohol-related and psychological variables rather than treated as background context. The sensitivity analyses also showed that the association was not dependent on the most conceptually overlapping items or a small number of influential observations. These findings provide an initial quantitative basis for examining financial context in future FAD research.

There are several limitations to consider, although many of them point to areas where the field itself is still developing. First, the four financial items were developed for this study and have not been independently validated. They assess financial considerations tied directly to food and alcohol decisions rather than objective socioeconomic position, financial hardship or food insecurity. Two items also refer explicitly to hunger or changed eating behaviour, creating conceptual proximity to the CEBRACS outcome. Although the associations remained when these items were removed, the sensitivity analyses do not establish that the financial score represents a distinct construct. Its high internal consistency and single-factor structure show that the items covaried, but not that they had discriminant validity. Future research should develop and validate a broader measure that distinguishes financial circumstances, alcohol affordability and financial reasons for changing food intake.

The cross-sectional, self-report design also prevents conclusions about temporal order or causation. It cannot determine whether financial constraints precede compensatory behaviours, whether individuals who already prioritise alcohol are more likely to endorse financial considerations, or whether both reflect other unmeasured factors. Measuring the predictor and outcomes within the same survey may also have increased their association through shared method variance.

It is also relevant that the CEBRACS has shown inconsistent factor structures across samples, and recent cross-national evidence advises caution when interpreting both total and subscale scores (Berry et al., 2022). The total score was retained as the planned primary outcome and had high internal consistency, but this does not establish that all items measure a single underlying construct. Examining the two reliable subscales and the individual Alcohol Effects items reduced reliance on the total score but did not resolve the wider measurement problem. The

findings should therefore be interpreted as associations with the behaviours captured by the CEBRACS rather than with a clearly established unitary FAD construct.

A further limitation is that the study did not include a measure of disordered eating attitudes or behaviours. FAD studies regularly control for general eating pathology to distinguish compensatory alcohol-related motives from broader disordered eating tendencies. It may therefore not be possible to determine whether some associations reflect FAD-specific behaviour or more general eating-behaviour practices without controlling for this. Future research should incorporate validated measures to clarify these relationships.

Finally, the study used broad categories of alcohol consumption, which limited the ability to assess drinking patterns in more detail. Collecting continuous unit data or explicit binge frequency in future studies would strengthen the ability to understand how drinking behaviour relates to FAD.

Despite these limitations, the findings indicate that financial considerations warrant further examination alongside the psychological correlates more commonly studied in FAD research. Their association with CEBRACS scores remained after potentially overlapping items and influential observations were removed and was clearest for behaviours intended to enhance alcohol's effects. This does not show that economic pressure causes FAD, but it suggests that explanations focused only on individual psychological characteristics may overlook the circumstances in which food and alcohol decisions are made. Longitudinal research using independently validated financial measures is needed to establish how these relationships develop over time.

CRediT authorship contribution statement

Elizabeth Goodwin: Writing – review & editing, Writing – original draft, Visualization, Software, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Michelle Dalton:** Writing – review & editing, Visualization, Supervision, Methodology, Conceptualization. **Candice Whitaker:** Writing – review & editing, Supervision, Methodology, Conceptualization. **Jordan Beaumont:** Writing – review & editing, Supervision, Methodology, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Acknowledgements

This research was supported by a funded PhD studentship from Leeds Trinity University.

Data availability

Data will be made available on request.

References

- American Psychiatric Association. (2022). *Diagnostic and statistical manual of mental disorders* (5th ed., text rev.). American Psychiatric Publishing. <https://doi.org/10.1176/appi.books.9780890425787>
- Berry, K. A., Choquette, E. M., Looby, A., & Rancourt, D. (2024). Unification of the food and alcohol disturbance literature: A systematic review. *Clinical Psychology Review*, 113, Article 102486. <https://doi.org/10.1016/j.cpr.2024.102486>
- Berry, K. A., Hernandez Puelma, J. A., Herchenroeder, L., Looby, A., Bravo, A. J., & Cross-Cultural Addictions Study Team. (2026). A cross-national examination of the compensatory eating and behaviors in response to alcohol consumption scale (CEBRACS) across six countries. *Psychology of Addictive Behaviors*. <https://doi.org/10.1037/adb0001153>. Advance online publication.
- Bjoreberg, J., Ljótsson, B., Tull, M. T., Hedman, E., Sahlin, H., Lundh, L. G., ... Gratz, K. L. (2016). Development and validation of a brief version of the difficulties

- in emotion regulation scale: The DERS-16. *Journal of Psychopathology and Behavioral Assessment*, 38(2), 284–296. <https://doi.org/10.1007/s10862-015-9514-x>
- Choquette, E. M., Rancourt, D., & Thompson, J. K. (2018). From FAD to FAD: A theoretical formulation and proposed name change for “drunkorexia” to food and alcohol disturbance (FAD). *International Journal of Eating Disorders*, 51(7), 781–784. <https://doi.org/10.1002/eat.22926>
- Choquette, E. M., Rancourt, D., & Thompson, J. K. (2020). Reexamination of the psychometric properties of the compensatory eating and behaviors in response to alcohol consumption scale (CEBRACS) and exploration of alternative scoring. *Eating Behaviors*, 37, Article 101388. <https://doi.org/10.1016/j.eatbeh.2020.101388>
- Cohen, S., & Williamson, G. (1988). Perceived stress in a probability sample of the United States. In S. Spacapan, & S. Oskamp (Eds.), *The social psychology of health: Claremont symposium on applied social psychology* (pp. 31–67). Sage.
- Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, 16(3), 297–334. <https://doi.org/10.1007/BF02310555>
- Eisenberg, M. H., & Fitz, C. C. (2014). “Drunkorexia”: Exploring the who and why of a disturbing trend in college students’ eating and drinking behaviors. *Journal of American College Health*, 62(8), 570–577. <https://doi.org/10.1080/07448481.2014.947991>
- Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical power analyses using G*power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods*, 41(4), 1149–1160. <https://doi.org/10.3758/BRM.41.4.1149>
- Field, A. (2018). *Discovering statistics using IBM SPSS statistics* (5th ed.). SAGE.
- Gates, T., & Odar Stough, C. (2022). Exploring risk factors of food and alcohol disturbance (FAD) in U.S. college students. *Eating and Weight Disorders - Studies on Anorexia, Bulimia and Obesity*, 27(3), 1025–1032. <https://doi.org/10.1007/s40519-021-01313-2>
- Giles, S. M., Champion, H., Sutfin, E. L., McCoy, T. P., & Wagoner, K. G. (2009). Calorie restriction on drinking days: An examination of drinking consequences among college students. *Journal of American College Health*, 57(6), 603–610. <https://doi.org/10.3200/JACH.57.6.603-610>
- Griffin, B. L., & Vogt, K. S. (2020). Drunkorexia: Is it really “just” a university lifestyle choice? *Eating and Weight Disorders - Studies on Anorexia, Bulimia and Obesity*, 26(6), 2021–2031. <https://doi.org/10.1007/s40519-020-01051-x>
- Holm, S. (1979). A simple sequentially rejective multiple test procedure. *Scandinavian Journal of Statistics*, 6(2), 65–70.
- Hunt, T. K., & Forbush, K. T. (2016). Is “drunkorexia” an eating disorder, substance use disorder, or both? *Eating Behaviors*, 22, 40–45. <https://doi.org/10.1016/j.eatbeh.2016.03.001>
- Jisc. (2024). Jisc Online Surveys [Computer software]. <https://www.onlinesurveys.ac.uk>
- Kelly-Weeder, S. (2011). Binge drinking and disordered eating in college students. *Journal of the American Academy of Nurse Practitioners*, 23(1), 33–41. <https://doi.org/10.1111/j.1745-7599.2010.00562.x>
- Kershaw, S. (2008). Starving themselves, cocktail in hand. The New York Times. Retrieved from <https://www.nytimes.com/2008/03/02/fashion/02drunk.html>.
- Kline, R. B. (2005). *Principles and practice of structural equation modeling* (2nd ed.). Guilford Press.
- Meade, A. W., & Craig, S. B. (2012). Identifying careless responses in survey data. *Psychological Methods*, 17(3), 437–455. <https://doi.org/10.1037/a0028085>
- Moeck, E. K., & Thomas, J. J. (2021). Food and alcohol disturbance in a broad age-range adult sample. *Eating Behaviors*, 41, Article 101502. <https://doi.org/10.1016/j.eatbeh.2021.101502>
- Pérez-Ortiz, N., Andrade-Gómez, E., Fagundo-Rivera, J., & Fernández-León, P. (2024). Comprehensive management of drunkorexia: A scoping review of influencing factors and opportunities for intervention. *Nutrients*, 16(22), 3894. <https://doi.org/10.3390/nu16223894>
- Rahal, C. J., Bryant, J. B., Darkes, J., Menzel, J. E., & Thompson, J. K. (2012). Development and validation of the compensatory eating and behaviors in response to alcohol consumption scale (CEBRACS). *Eating Behaviors*, 13(2), 83–87. <https://doi.org/10.1016/j.eatbeh.2011.11.001>
- Ritz, L., Mauny, N., Mortier, A., Leconte, P., & Margas, N. (2024). Association de la drunkorexia au risque de troubles des conduites alimentaires et de trouble de l’usage de substance en population étudiante. *Alcoologie et Addictologie*, 44(1), 30–43. <https://sfalcoologie.fr/wp-content/uploads/Revue-T44-N1-2024-Ritz-Ludivine.pdf>.
- Różycka, J., Celban, J., Stefanek, F., & Stojek, M. (2025). The rates and characteristics of drunkorexia in a non-clinical group of adults declaring alcohol consumption. *Advances in Psychiatry and Neurology*, 34(2), 63–74. <https://doi.org/10.5114/ppn.2025.151775>
- UK Government. (2021). Alcohol and young people law: Is it illegal to drink alcohol in public if you're under 18?. <https://www.gov.uk/alcohol-young-people-law>.
- Vogt, K. S., Harper, M., & Griffin, B. L. (2022). “... because I’m so drunk at the time, the last thing I’m going to think about is calories”: Strengthening the argument for drunkorexia as a food and alcohol disturbance, evidence from a qualitative study. *British Journal of Health Psychology*, 27(4), 1188–1208. <https://doi.org/10.1111/bjhp.12594>
- WithYou. (2023). Cost of living pressures placing UK adults at greater risk of alcohol dependence. Retrieved May 16, 2025, from <https://www.wearewithyou.org.uk/latest/news-and-views/cost-of-living-pressures-placing-uk-adults-at-greater-risk-of-alcohol-dependence>.
- World Health Organization. (2019). *International classification of diseases for mortality and morbidity statistics* (11th ed.). <https://icd.who.int/>.
- Zsido, A. N., Teleki, S. A., Csokasi, K., Rozsa, S., & Bandi, S. A. (2020). Development of the short version of the state-trait anxiety inventory. *Current Psychology*, 39(4), 1292–1302. <https://doi.org/10.1007/s12144-018-9857-5>