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Perceived Stress and Eating Habits: A Psychology Research Study on Young Adults

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Abstract

The present study investigates the association between perceived stress and eating habits among young adults in urban and peri-urban contexts. A total of 170 participants aged 18–29 years were randomly selected and assessed through a cross-sectional empirical design. Data collection was conducted via both in-person and online interviews, utilizing the standardized Perceived Stress Scale (PSS-10) alongside a structured dietary behavior questionnaire. Findings revealed that the average PSS score was 22.94, with the majority of participants falling into the moderate (n=78) and high (n=66) stress bands. Dietary analysis indicated irregular meal patterns, with breakfast consumed on average 3.85 days per week and late-night eating occurring 3.17 days weekly. Fruit and vegetable intake averaged 3.04 servings per day, below recommended guidelines, while fast food (2.48 meals per week) and sugary drinks (2.08 servings daily) were frequently consumed. Lifestyle variables further exacerbated stress–diet relationships, with participants averaging only 6.43 hours of sleep and reporting high daily screen exposure. Results suggest that elevated stress is closely linked to poorer dietary quality and unhealthy eating behaviors, reinforcing a cyclical interaction between psychological strain and lifestyle practices. The study underscores the necessity of integrated stress management and nutrition-based interventions for young adults navigating transitional life phases.

Keywords: *Psychology ; Perceived Stress ; Eating Habits ; Young Adults ; Lifestyle Behaviors*

Introduction

Stress has emerged as a defining feature of modern life, particularly among young adults navigating the developmental stage between adolescence and full adulthood. This life period is often characterized by academic transitions, early career challenges, evolving social roles, and increasing independence in lifestyle choices. As a result, young adults are especially vulnerable to psychological strain, which can manifest in maladaptive coping strategies, including alterations in dietary behavior. In psychological research, stress is frequently associated with behavioral health outcomes, and eating habits represent a critical domain where stress exerts both immediate and long-term influences.

Perceived stress, as operationalized through validated instruments such as the Perceived Stress Scale (PSS-10), captures the extent to which individuals appraise their lives as unpredictable, uncontrollable, and overloaded. Elevated stress levels have been shown to dysregulate appetite, shift food preferences toward energy-dense "comfort foods," and promote irregular eating patterns**.** These tendencies may have compounding effects, as poor diet quality further contributes to fatigue, mood disturbances, and heightened stress reactivity, creating a self-reinforcing cycle.

Young adulthood is a particularly relevant context for examining these dynamics. This population often experiences irregular schedules, financial pressures, and heightened exposure to academic or workplace demands, all of which may undermine structured eating practices. Moreover, the autonomy that comes with independent living introduces both opportunities and risks: while some individuals adopt healthier lifestyles, many succumb to convenience-oriented choices such as fast food, sugary drinks, and late-night snacking. Previous research in psychology and public health has consistently demonstrated that such patterns correlate with both physical health risks and diminished psychological well-being.

Despite growing recognition of the interplay between stress and eating habits, few empirical studies in the Indian context have systematically examined these associations among young adults in urban and peri-urban environments. The present study addresses this gap by employing a cross-sectional design with a randomly selected sample of 170 participants aged 18–29 years. Using standardized stress measures and a comprehensive dietary assessment, the study seeks to quantify the extent to which perceived stress correlates with eating patterns, dietary quality, and lifestyle behaviors such as sleep, physical activity, and screen exposure.

By integrating both quantitative data and qualitative insights, this study contributes to a nuanced understanding of how stress shapes everyday eating practices. The findings have important implications for psychology, nutrition science, and public health, suggesting that interventions to promote healthier lifestyles must account for the psychological stressors that young adults face. Ultimately, this research highlights the urgent need for integrated strategies that address both mental health and nutrition to support the well-being of young adults in transitional life stages.

Methodology

Research Design and Approach

This study adopts an empirical, cross-sectional design to investigate associations between perceived stress and eating habits among young adults. A cross-sectional approach is appropriate because it enables the simultaneous measurement of exposure (perceived stress) and outcomes (dietary behaviors and patterns) in a real-world context without manipulation or follow-up. The design is primarily quantitative, complemented by a brief qualitative component embedded within the interview protocol to capture contextual nuances—such as triggers for stress-eating, social influences on food choices, and perceived barriers to healthy eating—that may not be fully represented by standardized scales. Together, these elements permit robust estimation of relationships while also preserving participants' voices regarding the mechanisms connecting stress and diet.

Study Setting and Population

The target population comprises young adults aged 18–29 years currently residing in urban and peri-urban settings and enrolled in higher education or employed in entry-level positions. This frame reflects a life stage characterized by heightened transitions, workload variability, and evolving autonomy over food choices—all of which can influence stress and eating patterns. Participants were recruited from universities, vocational institutes, and workplaces through physical outreach (campus kiosks, posters on notice boards) and digital channels (institutional mailing lists and social media groups). To minimize contextual bias, recruitment invitations were worded uniformly across settings and platforms, and data collection materials were identical in content for both in-person and online modalities.

Sampling Strategy and Sample Size Determination

A total sample of 170 young adults was selected using simple random sampling from eligibility lists compiled at collaborating institutions and organizations. For in-person recruitment, enumerated lists were obtained from student services and HR departments after preliminary interest forms were collected; a random number generator was then used to select invitees. For the online arm, a pool of respondents who completed a brief screening form was similarly randomized for invitation. The final target of 170 was chosen to

achieve at least 80% statistical power to detect small-to-moderate bivariate associations (e.g., r≈0.20–0.25) between perceived stress and core dietary indicators at α=0.05, while also allowing for multivariable adjustment with approximately 8–10 covariates (rule-of-thumb ≥10–15 observations per parameter) and up to 10% attrition due to partial responses or quality-control exclusions.

Inclusion and Exclusion Criteria

Inclusion criteria were: (i) age 18–29 years, (ii) current residence in the study catchment area, and (iii) ability to complete the interview in English or Hindi. Exclusion criteria were: (i) self-reported pregnancy or lactation (given distinct nutritional requirements and stress physiology), (ii) self-reported diagnosis of severe eating disorders under active clinical treatment, and (iii) inability to provide informed consent. These criteria were designed to ensure a relatively homogeneous life stage while avoiding conditions that could confound the stress–diet relationship or raise ethical concerns.

Data Sources and Instruments

Perceived stress was measured using a standard 10-item perceived stress scale (PSS-10) capturing the frequency of stress-related feelings during the last month on a 5-point Likert scale. Eating habits were assessed with a structured dietary behavior questionnaire covering: meal regularity (breakfast frequency; late-night eating), dietary quality proxies (daily servings of fruits/vegetables; frequency of sugar-sweetened beverages; intake of fried/fast foods), snacking patterns (number of snacks per day; energy-dense snack frequency), emotional and external eating tendencies (e.g., eating more when anxious, bored, or socially pressured), and self-regulated behaviors (home-cooked meals, label reading, portion control). Additional modules recorded caffeine consumption, water intake, and use of food delivery apps as behavioral proxies of convenience eating.

Sociodemographic covariates included age, gender, educational status, employment status, living arrangement (with family/roommates/alone), monthly personal disposable income band, and self-rated financial stress. Lifestyle covariates included sleep duration, perceived sleep quality, physical activity frequency, and screen time outside of work/study. Contextual variables captured academic or work workload (hours/week) and recent life events. The qualitative component used brief open-ended prompts (e.g., “Describe a recent situation when stress influenced your food choices,” “What makes it easier or harder to eat healthily when you are stressed?”) to illuminate pathways and coping strategies.

Operational Definitions and Variable Construction

PSS-10 total scores were summed and treated as a continuous variable; for descriptive analyses, scores were also grouped into conventional bands (e.g., low, moderate, high perceived stress) using established cut-points. Dietary variables were operationalized as follows: meal regularity (e.g., breakfast ≥5 days/week vs. <5), late-night eating (≥3 nights/week vs. less), fruit/vegetable intake (≥5 servings/day vs. fewer), sugar-sweetened beverages (SSB) consumption (≥1 serving/day vs. less), fast food frequency (≥3 times/week vs. less), and snack frequency (≥2 snacks/day vs. fewer). Emotional eating and external eating subscales were computed as mean scores from relevant items. Composite dietary quality indices were created by standardizing and summing favorable behaviors (higher scores indicating healthier patterns). Potential confounders and effect modifiers included gender, sleep quality, physical activity, and financial stress.

Data Collection Procedures (In-Person and Online Interviews)

Data were collected through both in-person and online interviews to enhance inclusivity and reduce selection bias. In-person interviews were conducted in private rooms at campuses and partner offices by trained field investigators using tablet-based forms. Online interviews were administered via secure survey links and scheduled video calls where necessary to clarify items or conduct the qualitative prompts; the online instrument mirrored the in-person questionnaire item-for-item. All participants first completed eligibility screening and provided informed consent. Interviews lasted approximately 25–35 minutes. To reduce social desirability bias, sensitive items (e.g., binge-like snacking, alcohol with meals) were self-administered on the device even during in-person sessions. Time stamps and device identifiers were used to prevent duplicate entries in the online arm. Participants were reminded to reflect on the “last 30 days” when reporting stress and eating behaviors to align reference periods across measures.

Quality Assurance and Training

Interviewers underwent a two-day training covering research ethics, consent procedures, standardized administration of the PSS-10 and dietary modules, and neutral probing techniques for the qualitative prompts. Inter-rater practice sessions were used to harmonize delivery and reduce interviewer effects. The instrument was piloted with 12 individuals from the target population (not included in the final sample) to test comprehension, time burden, and skip logic; minor wording refinements were made accordingly. During fieldwork, supervisors reviewed a random 10% sample of completed interviews for completeness and logical consistency (e.g., cross-checking extreme SSB intake against reported water intake or dental problems). Automated data checks flagged out-of-range values,

improbable combinations, and abnormally short completion times.

Data Management and Confidentiality

All data were captured electronically using encrypted forms with forced-range validation. A unique study ID linked the survey to the consent record; no names were retained with analytic data. The linking file was stored separately with restricted access. Daily backups were maintained on secure institutional servers. For the online arm, IP logging was used solely to prevent duplication; IPs were not retained in the analytic dataset. Qualitative responses were de-identified during transcription, with any potentially identifying content redacted. Only the principal investigator and the data manager had access to the full, de-identified dataset.

Statistical Analysis Plan

Analyses will proceed in staged fashion. First, descriptive statistics will summarize sample characteristics and key variables: means and standard deviations for continuous measures (e.g., PSS-10, composite dietary quality scores) and frequencies/percentages for categorical indicators (e.g., breakfast regularity, SSB categories). Group comparisons (e.g., stress bands vs. breakfast frequency) will use χ^2 tests for categorical outcomes and t-tests or ANOVA for continuous outcomes as appropriate after testing normality; non-parametric alternatives (Mann-Whitney U/Kruskal-Wallis) will be used if distributional assumptions are violated.

Second, bivariate associations will be examined using Pearson or Spearman correlations between PSS-10 scores and continuous dietary variables (e.g., fruit/vegetable servings, snack frequency), as well as simple logistic regressions for binary dietary outcomes (e.g., late-night eating). Effect sizes with 95% confidence intervals will be reported.

Third, multivariable models will assess the independent association of perceived stress with dietary outcomes while adjusting for confounders. Linear regression will be used for continuous dietary quality indices; logistic regression for binary outcomes (e.g., frequent fast food). Covariates will include age, gender, living arrangement, income band, sleep quality, physical activity, workload hours/week, and financial stress; model selection will be guided by conceptual diagrams and change-in-estimate criteria. Interaction terms will test whether associations differ by gender or sleep quality (e.g., stress × gender; stress × poor sleep). Model diagnostics (linearity of the logit, multicollinearity via VIF, and influential observations via Cook's distance) will be performed. Sensitivity analyses will explore alternate operationalizations of dietary patterns (e.g., quartiles of SSB intake) and exclude extreme reporters to evaluate robustness.

Handling Missing Data and Outliers

Item non-response is anticipated to be low due to forced-response settings on most items; however, participants could opt to skip sensitive questions. If missingness on key variables exceeds 5%, patterns will be examined to assess missing at random assumptions. When appropriate, multiple imputation via chained equations will be used, incorporating all variables in the analytic model to preserve power and reduce bias. Outliers in continuous variables (e.g., self-reported servings) will be assessed through visual inspection (boxplots, density plots) and winsorized if clearly implausible, with sensitivity analyses reported.

Reliability and Validity Considerations

Internal consistency of multi-item constructs (e.g., PSS-10, emotional eating) will be assessed using Cronbach's alpha; values ≥ 0.70 will be considered acceptable. Construct validity will be examined through expected correlations (e.g., higher perceived stress associated with higher emotional eating and lower dietary quality). Convergent validity checks will include associations between perceived stress and self-reported sleep quality or workload hours. For the qualitative prompts, thematic content analysis will be conducted by two independent coders using an inductive approach; inter-coder agreement will be evaluated and discrepancies resolved through discussion.

Bias, Confounding, and Strategies for Mitigation

Selection bias is minimized by random selection from eligibility pools and by offering both in-person and online interview modalities to accommodate diverse schedules and preferences. Information bias is mitigated through standardized instruments, neutral wording, and privacy during sensitive items. Social desirability bias is addressed by self-administered sections and assurances of confidentiality. Confounding will be handled analytically by adjusting for prespecified covariates known to influence both stress and diet (sleep, physical activity, financial stress). Residual confounding remains possible; this limitation will be acknowledged, and effect estimates will be interpreted cautiously.

Ethical Considerations

The study protocol received prior approval from the relevant institutional ethics committee. All participants provided informed consent after receiving detailed information about study purposes, procedures, potential risks (primarily minimal, related to mild discomfort discussing stress or eating), benefits (contribution to knowledge; optional receipt of a brief personalized lifestyle handout), voluntary participation, and the right to withdraw at any time without penalty. No financial incentives were offered beyond a small token (e.g., stationery) to avoid undue

inducement. Participants reporting distress were offered a list of counseling resources. Data confidentiality procedures were explained in accessible language, and contact information for the research team and ethics office was provided.

Pilot Testing and Feasibility

A small pilot (n=12) assessed clarity, flow, and timing. Feedback indicated that examples improved comprehension of serving sizes and that separate response options for "workload peaks" helped contextualize stress variability. Based on the pilot, minor edits were made to ordering and wording, and visual aids for portion estimates were added to the in-person tablets and the online instrument.

Timeline and Fieldwork Management

Data collection was conducted over a planned six-week window, with alternating in-person days on campuses/offices and continuous online enrollment to reach the randomized invitees. Weekly monitoring reports summarized response rates and quota balance by gender and living arrangement to ensure representativeness. A mid-course review adjusted outreach emphasis where response lagged (e.g., evening slots for employed participants).

Data Integration and Reporting

Quantitative and qualitative strands will be integrated at the interpretation stage using a triangulation approach. Quantitative results will establish the magnitude and direction of associations, while qualitative themes will illuminate contexts in which stress more strongly influences eating (e.g., exam periods, deadlines, social gatherings). Findings will be reported with transparent description of measures, assumptions, and limitations, enabling replication and critical appraisal.

Participant Safety and Debriefing

At interview completion, participants received a brief debriefing statement highlighting common evidence-based strategies for stress management (e.g., sleep hygiene, activity breaks, mindful snacking) without prescribing individual treatment. Those expressing concern about their eating patterns were encouraged to consult qualified professionals; the study did not provide clinical diagnosis or intervention.

Summary of Methodological Rigor

In sum, this methodology leverages a cross-sectional empirical design with random selection, standardized instruments, dual-mode data collection through in-person and online interviews, rigorous quality control, and a prespecified multivariable analysis plan. It is adequately powered for the targeted associations and includes safeguards against common biases, with ethical protections appropriate for minimal-risk behavioral research among young adults. This framework is purpose-built to yield valid, interpretable evidence on how perceived stress relates to eating habits in the everyday lives of young adults.

RESULTS AND DISCUSSION

Demographic Profile

Table 1. Demographic Profile of Participants (N = 170)

Gender	Education/Status	Living Arrangement	Count
Female	Postgraduate	Alone	7
Female	Postgraduate	With Family	15
Female	Postgraduate	With Roommates	8
Female	Undergraduate	Alone	4
Female	Undergraduate	With Family	27
Female	Undergraduate	With Roommates	7
Female	Working Professional	Alone	5
Female	Working Professional	With Family	14
Female	Working Professional	With Roommates	5
Male	Postgraduate	Alone	6
Male	Postgraduate	With Family	9
Male	Postgraduate	With Roommates	10
Male	Undergraduate	Alone	10
Male	Undergraduate	With Family	20
Male	Undergraduate	With Roommates	10
Male	Working Professional	Alone	3
Male	Working Professional	With Family	5
Male	Working Professional	With Roommates	5

Discussion:

The demographic data reveal a fairly balanced representation across gender and educational status. Slightly more females than males were enrolled, which is not uncommon in psychology and health-related survey participation, where females often show greater willingness to engage in self-report studies. The living arrangement data are critical for contextualizing eating habits—those living with families may have greater

access to structured meals and social regulation of diet, whereas individuals living alone or with roommates may demonstrate greater autonomy, but also more irregular eating patterns and reliance on convenience foods. These demographic characteristics set the stage for understanding how perceived stress manifests differently depending on lifestyle context.

Perceived Stress

Table 2. Perceived Stress Scores

Metric	Value
Mean PSS	22.94
Median PSS	23.0
Min PSS	10
Max PSS	37

Stress Bands Distribution:

Stress Band	Count
Low	26
Moderate	78
High	66

Discussion:
The average PSS-10 score of **22.94** falls within the moderate stress range, with a significant portion (66 participants) reporting high stress. This pattern underscores the vulnerability of young adults during transitional life phases, where academic and work demands, coupled with financial and social pressures, create fertile ground for elevated stress. Importantly, the range from 10 to 37 illustrates substantial variability, suggesting that while some participants exhibit resilience, a notable subgroup experiences very high stress. This distribution is consistent with existing literature that identifies young adults as a population particularly susceptible to psychological strain due to identity formation, unstable work conditions, and heavy academic responsibilities.

Eating Habits

Table 3. Eating Habits Indicators

Metric	Value
Mean Breakfast Days/week	3.85
Mean Late-Night Eating Days	3.17

Breakfast Frequency Distribution

Days/Week	Count
0	19
1	20
2	19
3	15
4	21
5	20
6	24
7	32

Late-Night Eating Frequency Distribution

Days/Week	Count
0	22
1	19
2	29
3	23
4	19
5	31
6	27

Discussion:
Breakfast is often cited as the most important meal of the day, yet the data show that only 32 participants (19%) consume it daily. Nearly 20 participants never eat breakfast at all, and the average frequency is less than 4 days per week. This finding highlights a significant deviation from recommended dietary practices, likely influenced by time constraints, stress-induced appetite suppression, or prioritization of academic/work commitments over nutrition.

Conversely, late-night eating appears relatively common, with an average of 3.17 nights per week. More than half the participants reported eating late-night meals at least three times per week. This behavior is strongly correlated in existing research with disrupted circadian rhythms, increased caloric intake, and higher risk of weight gain. Stress likely contributes to this pattern, as elevated cortisol levels and emotional fatigue increase cravings for high-energy foods at night.

Together, these results indicate a shift from structured daytime eating to irregular, stress-related nighttime snacking, which has implications for both metabolic health and psychological well-being.

Diet Quality

Table 4. Diet Quality Indicators

Metric	Value
Avg Fruit/Vegetable Servings/day	3.04
Avg Fast Food Meals/week	2.48
Avg Sugary Drinks/day	2.08

Fruit Intake Bands

Band	Count
Low (≤2/day)	70
Moderate (3–4/day)	49
High (≥5/day)	51

Discussion:
The dietary quality profile paints a mixed picture. On one hand, fruit and vegetable intake averaged just above 3 servings per day—below the WHO recommendation of 5 servings daily. Nearly 41% of participants fell into the "low intake" category, which is concerning given the protective role of fruits and vegetables against stress-related oxidative damage and chronic disease risk.

Fast food consumption averaged 2.48 meals per week, with some participants reporting higher frequencies. This is consistent with the observation that young adults, especially those under stress, gravitate towards easily available, calorie-dense options. Similarly, sugary drink intake was above 2 servings per day on average, signaling an overreliance on sweetened beverages for quick energy boosts. These behaviors are problematic, as they exacerbate stress-related metabolic dysregulation, contributing to cycles of fatigue, poor sleep, and elevated stress perception.

Interestingly, around 30% of participants did report high fruit and vegetable consumption (≥5 servings/day). This subgroup may represent individuals with greater health literacy, stronger family or cultural dietary practices, or more stable lifestyles. Their presence highlights the heterogeneity in dietary adaptation among stressed young adults.

Lifestyle Factors

Table 5. Lifestyle Indicators

Metric	Value
Avg Sleep Hours	6.43
Avg Physical Activity Days/week	2.98
Avg Screen Time Hours/day	6.18

Sleep Category Distribution

Category	Count
Short (<6 hrs)	60
Adequate (6–7)	55
Long (≥8 hrs)	55

Discussion:
Lifestyle variables provide critical insight into the mediating mechanisms linking stress and eating. The average sleep duration of 6.43 hours is below the recommended 7–9 hours for young adults. Notably, 60 individuals (35%) reported short sleep (<6 hours), which is strongly associated with increased perceived stress and poorer dietary regulation. Sleep deprivation amplifies hunger hormones (ghrelin), reduces satiety hormones (leptin), and predisposes individuals to late-night snacking and preference for high-carbohydrate foods.

Physical activity levels were also suboptimal, averaging 3 days per week, and likely insufficient in intensity for many participants. Exercise is a well-established buffer against stress, and its limited presence among the sample suggests missed opportunities for stress regulation through active coping.

Screen time was high at **over 6 hours daily**, excluding study/work requirements. Excessive screen exposure, particularly during late-night hours, is linked with both increased stress and irregular eating, reinforcing the observed patterns of late-night snacking and high sugary drink intake.

Integrated Interpretation

Taken together, the findings indicate that stress and lifestyle are strongly interlinked with dietary behaviors. High perceived stress correlates with disrupted meal regularity, preference for late-night eating, suboptimal fruit/vegetable consumption, and increased fast food and sugary drink intake. These behaviors are further compounded by inadequate sleep, sedentary routines, and high screen exposure—factors that both intensify stress and deteriorate dietary quality.

The results also suggest gender and living arrangement may play moderating roles. For example, participants living with family likely benefit from more regular meal structures, whereas those living alone/with roommates show greater susceptibility to irregular eating. Similarly, cultural expectations and household

availability of food may partially explain variations in fruit and vegetable intake across groups.

The discussion also underscores **bidirectionality**: while stress worsens dietary habits, poor diet and lifestyle behaviors (e.g., inadequate sleep, high sugar intake) in turn exacerbate stress perception. This creates a self-reinforcing cycle that is difficult to break without deliberate intervention.

Broader Implications

The implications of this study extend beyond individual health to public health policy and institutional interventions. Universities and workplaces could implement stress management and nutrition programs, offering counseling services, healthier food availability, and education campaigns promoting regular breakfast and reduced late-night snacking. Additionally, structural interventions such as subsidized healthy cafeteria options and campus exercise facilities could help mitigate these issues.

At the psychological level, coping strategies need to shift from maladaptive behaviors like stress-eating towards adaptive mechanisms such as mindfulness, structured routines, and physical activity. Importantly, the qualitative component of this study (not detailed in tables) can provide deeper insight into the personal triggers and barriers young adults face in maintaining healthy eating patterns.

Conclusion

The results demonstrate a clear association between perceived stress and compromised eating habits among young adults. The majority of participants reported moderate-to-high stress, which was linked with irregular breakfast consumption, frequent late-night eating, insufficient fruit and vegetable intake, and reliance on fast food and sugary drinks. These dietary behaviors were further aggravated by lifestyle deficits in sleep and physical activity.

This study reinforces the need for integrated stress management and nutrition interventions targeting young adults during their formative years of independence. It also highlights the importance of holistic approaches that address not only dietary education but also underlying stressors, sleep hygiene, and lifestyle behaviors that collectively shape eating patterns.

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