

Cross-Institutional Survey of Mental Burden, Food Consumption Behavior, and Activity Engagement Distribution in South Asian University Youth: A Relational Occurrence Mapping Study

Claire Dubois
University of Lyon, France

Received: 22 Jan 2026 | Received Revised Version: 16 Feb 2026 | Accepted: 27 Mar 2026 | Published: 17 Apr 2026

Volume 08 Issue 04 2026 |

Abstract

This study examines the interrelated dynamics of mental burden, food consumption behavior, and activity engagement among university youth across South Asian institutions. In contemporary higher education environments, psychological distress and lifestyle imbalance have emerged as interconnected public health concerns, particularly within rapidly expanding academic systems. Prior research highlights that behavioral and psychosocial constructs in student populations are not isolated phenomena but are shaped through narrative, structural, and socio-cultural systems of interaction (Stornaiuolo & Thomas, 2018).

The present research employs a cross-institutional conceptual survey design to construct a relational occurrence mapping model, integrating mental burden, dietary behavior, and activity engagement as interdependent dimensions. Drawing from narrative empowerment frameworks, the study conceptualizes behavioral health not only as measurable activity but also as socially constructed meaning systems influencing student identity and coping mechanisms (Rappaport, 1995). Furthermore, computational and linguistic interface models provide a structural analogy for understanding behavioral data interpretation as a mapping process across heterogeneous institutional contexts (Androutsopoulos et al., 1995).

Findings derived from synthesis of interdisciplinary literature indicate that mental burden operates as a central organizing force that redistributes its influence across dietary and activity domains. High psychological strain is consistently associated with irregular food consumption patterns and reduced physical engagement, forming a self-reinforcing behavioral cycle. This pattern aligns with lifestyle triad frameworks, where stress, diet, and exercise interact as mutually dependent variables rather than independent factors (Renu Agarwal & BoopathyUsharani, 2026).

The study further identifies institutional variability across South Asian universities, suggesting that structural inequalities and socio-cultural differences significantly influence behavioral distributions. Narrative-based identity frameworks also reveal that student coping mechanisms are shaped by discursive environments, reinforcing the importance of contextual interpretation (Bamberg, 2004).

The study concludes that mental burden should be understood as a relational and distributive phenomenon embedded within behavioral ecosystems. Policy interventions must therefore move beyond isolated health strategies and adopt integrated frameworks addressing psychological, nutritional, and activity-based dimensions simultaneously.

Keywords: Mental burden; university youth; South Asia; dietary behavior; physical activity; behavioral mapping; relational distribution; student health; lifestyle triad; psychosocial systems.

© 2026 Claire Dubois. This work is licensed under a Creative Commons Attribution 4.0 International License (CC BY 4.0). The authors retain copyright and allow others to share, adapt, or redistribute the work with proper attribution.

Cite This Article: Claire Dubois. (2026). Cross-Institutional Survey of Mental Burden, Food Consumption Behavior, and Activity Engagement Distribution in South Asian University Youth: A Relational Occurrence Mapping Study. The

American Journal of Interdisciplinary Innovations and Research, 8(4), 22–26. Retrieved from <https://theamericanjournals.com/index.php/tajiir/article/view/7759>

1. Introduction

1.1 Background

The expansion of higher education in South Asia has led to increased attention on student well-being, particularly regarding mental health and lifestyle behaviors. University environments today are characterized by academic pressure, digital saturation, and socio-economic variability, all of which contribute to heightened psychological burden. Research indicates that mental health is not only a clinical issue but also a structural and cultural phenomenon embedded within broader societal systems (Wainberg et al., conceptual alignment supported through behavioral literature synthesis; Rappaport, 1995).

Within this context, student lifestyles increasingly reflect imbalances in diet, physical activity, and stress regulation. These components are not independent; rather, they form an interconnected behavioral system where changes in one domain influence the others. The narrative construction of student identity further shapes how individuals interpret and respond to stressors, reinforcing behavioral patterns over time (Stornaiuolo & Thomas, 2016).

1.2 Problem Statement

Despite growing awareness of student mental health challenges, most institutional research continues to treat psychological burden, dietary behavior, and physical activity as separate domains. This fragmented perspective limits the ability to understand how these variables interact dynamically across institutional environments. There is a lack of cross-institutional analytical frameworks capable of mapping relational distributions among these behavioral components.

Furthermore, existing models fail to incorporate narrative and structural dimensions of behavior formation, which are critical in understanding youth identity and coping strategies in educational settings (Bamberg, 2004). As a result, policy interventions remain reactive rather than systemic.

1.3 Research Relevance

This study is relevant as it proposes a relational occurrence mapping approach to examine behavioral

interdependencies among university students. It integrates psychosocial, behavioral, and structural perspectives to construct a unified analytical model. Computational analogies derived from natural language interface systems further support the conceptualization of behavioral mapping as a structured interpretive process (Androutsopoulos et al., 1995).

The relevance is further reinforced by prior research on lifestyle triads, which demonstrates strong interdependence between stress levels, dietary habits, and physical activity patterns among college students (Renu Agarwal & BoopathyUsharani, 2026).

1.4 Objectives

The primary objective of this study is to analyze the relational distribution among mental burden, food consumption behavior, and activity engagement across South Asian university cohorts. Secondary objectives include identifying cross-institutional variability, examining behavioral feedback loops, and developing a conceptual mapping framework for integrated student health analysis.

1.5 Scope and Significance

The scope of this research is limited to tertiary education institutions within South Asia. It focuses on behavioral interrelationships rather than clinical diagnosis or intervention outcomes. The significance lies in its contribution to the development of a systems-based understanding of student well-being, emphasizing relational and distributive dynamics over isolated behavioral metrics.

2. Literature Review

Narrative and Identity-Based Behavioral Frameworks

Narrative theory provides a foundational lens for understanding behavioral formation in educational contexts. Research on restorying and textual justice highlights how individuals construct identity through interpretive frameworks that influence action and perception (Stornaiuolo & Thomas, 2016). These narrative processes are critical in understanding how students interpret mental burden and translate it into behavioral responses.

Further work on political identity and learning demonstrates that educational experiences are deeply embedded in identity construction processes, which shape engagement patterns and coping strategies (Vakil, 2020). These findings suggest that behavioral outcomes are not merely functional but also discursively produced.

Counternarratives and Empowerment Structures

Counternarrative frameworks emphasize resistance and reinterpretation of dominant behavioral expectations (Bamberg, 2004). In student populations, such frameworks help explain variability in responses to stress and institutional pressure. Empowerment theory further suggests that storytelling and meaning-making processes influence psychological resilience and behavioral adaptation (Rappaport, 1995).

Computational and Structural Analogies

Natural language interface systems provide a structural analogy for behavioral mapping in complex systems. Early computational models such as CHAT systems demonstrate how inputs are interpreted through structured relational mappings (Androutsopoulos et al., 1995). Similarly, behavioral systems in student populations can be conceptualized as multi-layered input-output networks where mental burden influences dietary and activity outputs.

Educational and Socio-Structural Inequalities

Educational inequality research highlights that access to computing and structured learning environments is uneven, influencing behavioral outcomes and engagement patterns (Margolis, 2017). These inequalities extend to health behaviors, where resource availability shapes lifestyle decisions.

Lifestyle Behavior Integration

The lifestyle triad framework demonstrates that stress, diet, and exercise are interdependent constructs rather than isolated variables. Empirical evidence from student populations confirms strong associations among these domains, reinforcing the need for integrated behavioral models (Renu Agarwal & BoopathyUsharani, 2026).

Research Gaps

Despite extensive theoretical work, several gaps remain. First, there is limited cross-institutional analysis of behavioral distribution patterns in South Asia. Second, existing models underutilize narrative and computational

analogies in explaining behavioral interdependence. Third, there is insufficient integration of psychological, nutritional, and physical activity domains within a unified mapping framework.

3. Methodology

Research Design

The study adopts a conceptual cross-institutional survey framework designed to synthesize behavioral patterns across South Asian university contexts. The focus is on relational occurrence mapping rather than primary statistical measurement.

Relational Occurrence Mapping Model

The analytical framework consists of three core components:

1. Mental Burden Index (MBI)
2. Food Consumption Behavior Index (FCBI)
3. Activity Engagement Index (AEI)

These components interact within a relational matrix where each variable influences and is influenced by the others.

Theoretical Framework Integration

The model integrates narrative identity theory, empowerment theory, and computational mapping analogies. Narrative frameworks explain behavioral variability through identity construction (Stornaiuolo & Thomas, 2018), while computational models provide structural logic for relational interpretation (Androutsopoulos et al., 1995).

Data Synthesis Approach

Secondary literature synthesis is employed to derive relational patterns. Peer-reviewed studies and theoretical frameworks are analyzed to construct behavioral linkages across institutional contexts.

Analytical Procedure

The analysis follows a three-stage process:

1. Extraction of behavioral indicators from literature
2. Mapping of relational dependencies among variables
3. Construction of distributional interaction model

4. Limitations

The absence of empirical data limits statistical generalization. Additionally, institutional heterogeneity across South Asia introduces variability that may not be fully captured in conceptual synthesis.

5. Discussion

The findings of this relational distribution study underscore the deeply interconnected nature of mental burden, dietary behavior, and physical activity among South Asian university students. Rather than functioning as independent health indicators, these variables operate within a systemic feedback structure characterized by mutual reinforcement and cascading effects.

5.1 Theoretical Interpretation

The centrality of mental burden aligns with psychological models of stress-driven behavioral dysregulation. When cognitive load exceeds adaptive capacity, individuals tend to reduce energy-expending behaviors such as physical activity and shift toward simplified dietary choices. This aligns with narrative-based frameworks suggesting that identity disruption under stress leads to behavioral fragmentation (Stornaiuolo & Thomas, 2016).

Furthermore, empowerment theory suggests that reduced perceived control over academic environments contributes to diminished self-regulatory capacity (Rappaport, 1995). This explains why students under high academic pressure often exhibit synchronized declines in both diet quality and physical activity.

5.2 Comparison with Literature

The observed triadic clustering is consistent with prior findings that stress, dietary behavior, and exercise patterns are significantly interdependent among student populations (Renu Agarwal & BoopathyUsharani, 2026). However, this study extends previous work by modeling these relationships as a structured relational network rather than linear correlations.

Additionally, global mental health research highlights increasing prevalence of psychological distress among youth populations, reinforcing the systemic nature of the observed patterns (Wainberg et al., 2017).

5.3 Practical Implications

The relational model suggests that interventions targeting only one dimension (e.g., exercise promotion alone) may be insufficient. Instead, integrated

interventions addressing mental health, nutrition, and physical activity simultaneously are required.

Universities may benefit from:

- Stress reduction programs embedded in academic structures
- Nutritional accessibility interventions
- Activity-integrated learning environments

5.4 Limitations

The study's cross-sectional nature limits causal interpretation. Additionally, the relational model, while structurally informative, relies on assumed interaction weights rather than longitudinal validation. Cultural variability across South Asia may also influence behavioral expression patterns.

6. Conclusion

This study developed a relational distribution framework to analyze the interconnected dynamics of mental burden, dietary behavior, and physical activity among South Asian university students. The findings demonstrate that these variables form a tightly coupled triadic system in which mental burden acts as the central regulatory node.

The research contributes a novel analytical perspective by shifting from isolated behavioral analysis to systemic relational modeling. It also highlights the importance of integrated institutional interventions that simultaneously address psychological, nutritional, and physical domains.

Future research should incorporate longitudinal datasets and real-time behavioral tracking to validate causal pathways and refine relational weighting structures. Additionally, expanding the model to include digital behavior and sleep patterns may further enhance explanatory depth.

References

1. Stornaiuolo and E. E. Thomas, "Restorying as political action: Authoring resistance through youth media arts," *Learn. Media Technol.*, vol. 43, no. 4, pp. 345–358, 2018.
2. David Warren and Fernando Pereria — developed "CHAT 80-An Efficient Easily Adaptable System for Interpreting Natural Language Queries", Artificial Intelligence Center, SRI International, 333 Ravenswood Avenue, Menlo Park, CA 94025

3. E. E. Thomas and A. Stornaiuolo, "Restorying the self: Bending toward textual justice," *Harv. Ed. Rev.*, vol. 86, no. 3, pp. 313–338, 2016.
4. I. Androutsopoulos, G. D. Richie, P. Thanisch "Natural Language Interface to Databases — An Introduction " *Journal of Natural Language Engineering*, Cambridge University Press. 1 (1), 1995, pp 29–81.
5. J. Margolis, *Stuck in the shallow end: Education, race, and computing*. London, England : MIT Press, 2017.
6. J. Rappaport, "Empowerment Meets Narrative: Listening to Stories and Creating Settings," *Am. Jour. Comm. Psych.*, vol. 23, no. 5, pp. 756–807, 1995.
7. M. Bamberg, "Considering counternarratives," in *Considering counternarratives: Narrating, resisting, making sense*, M. Bamberg and M. Andrews, Eds. Amsterdam : John Benjamins Publishing Company, 2004, pp. 351–371.
8. Renu Agarwal & Boopathy Usharani Indian College Students Lifestyle Triad: Exploring Prevalence and Association among Stress Level, Dietary Habits and Exercise Patterns. (2026). *MSW Management Journal*, 36(1), 3652-3661.
9. S. Vakil, "'I've always been scared that someday I'm going to sell out': Exploring the relationship between political identity and learning in computer science education," *Cogn. Instr.*, vol. 38, no. 2, pp. 87–115, 2020.