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Silent Signals: How Academic Stress Fuels Body-Focused Repetitive Behaviors among University Students

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ABSTRACT: Academic stress is increasingly recognized as a major challenge in higher education, affecting not only students' emotional well-being but also their behavioral coping responses. One underexplored behavioral manifestation of academic stress is body-focused repetitive behaviors (BFRBs), including nail biting, hair pulling, skin picking, lip biting, teeth grinding, and foot tapping. Although often perceived as harmless habits, these behaviors may represent maladaptive coping strategies in response to sustained academic pressure.

This exploratory study examined the prevalence, types, and perceived triggers of BFRBs among foundation-year university students in Qatar. A ten-item mixed-methods questionnaire was administered to a cohort of foundation-year students (N = 21) in a structured classroom setting, achieving a 100% response rate. The survey collected data on the presence and frequency of BFRBs, emotional states associated with these behaviors, perceived academic stress, and familial patterns. Quantitative data were analyzed using descriptive statistics, while qualitative responses were summarized thematically.

The findings indicate that 94% of participants reported engaging in at least one BFRB. The most commonly reported behaviors were foot tapping (30%), lip biting (22%), and nail biting (18%). A majority of respondents (67%) reported observing similar behaviors among family members. The most frequently reported emotional states prior to engaging in these behaviors were anxiety (27%) and stress (23%). Many participants also indicated that their behaviors intensified during periods of increased academic demands, such as examinations and assignment deadlines.

This study provides preliminary descriptive evidence that body-focused repetitive behaviors are highly prevalent even among early-stage university students and are commonly perceived to co-occur with academic stress. While the findings do not establish causal relationships, they highlight the importance of recognizing behavioral manifestations of stress within student mental health frameworks. Larger, multi-institutional studies using validated instruments and robust analytical designs are recommended to further clarify the relationship between academic stress and BFRBs and to inform targeted prevention and support strategies in higher education.

KEYWORDS: Academic stress; Body-focused repetitive behaviors; College students; Mental health; Coping mechanisms; Behavioral disorders

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1. INTRODUCTION

Academic stress has become a pervasive phenomenon across educational levels, driven by academic competition, performance expectations, and future career uncertainty (Kohn & Frazer, 1986). While the psychological consequences of academic pressure have been well documented, its behavioral manifestations have received comparatively less attention. A growing body of evidence suggests that academic stress may precipitate maladaptive coping behaviors, particularly Body-Focused Repetitive Behaviors (BFRBs), which include compulsive actions such as nail biting, hair pulling, skin picking, teeth grinding, lip biting, and similar repetitive motor behaviors. These behaviors are increasingly conceptualized not as trivial habits, but as stress-responsive self-regulatory mechanisms linked to emotional dysregulation and psychological overload.

Evidence consistently shows that BFRBs are highly prevalent in academic populations, particularly in high-demand disciplines. Research among university and medical students has documented widespread engagement in behaviors such as lip biting, nail biting, hair pulling, and skin picking (Duke et al., 2010; Khan et al., 2018; Korkmaz, 2024; Lin et al., 2023; Murad et

al., 2016; Odlaug et al., 2013). Across studies, prevalence estimates vary but consistently indicate that a substantial proportion of students engage in at least one form of BFRB.

Hair pulling (trichotillomania) has been highlighted as one of the most prominent behaviors in student populations (Duke et al., 2010). Distinctions between automatic and focused hair-pulling styles suggest that BFRBs may vary in their level of conscious awareness and emotional antecedents, indicating heterogeneous behavioral pathways rather than a single uniform habit pattern (Duke et al., 2010). Similarly, large-scale student studies have reported frequent engagement in lip biting, nail biting, and skin picking, particularly in medical and dentistry cohorts exposed to sustained academic stress (Khan et al., 2018; Korkmaz, 2024; Murad et al., 2016). These findings collectively suggest that BFRBs are not isolated phenomena but represent a widespread behavioral response pattern within high-pressure academic environments.

Across literature, academic stress emerges as a central trigger for BFRBs. Students in academically demanding disciplines demonstrate higher rates of repetitive behaviors, supporting the hypothesis that cognitive overload and performance anxiety contribute directly to the onset or intensification of these behaviors (Khan et al., 2018; Korkmaz, 2024; Murad et al., 2016). Studies of trichotillomania in student populations suggest that stress-induced emotional states, such as tension, frustration, and cognitive fatigue, often precede engagement in hair-pulling behaviors (Duke et al., 2010). Likewise, research in medical and dental students demonstrates that parasitic habits such as teeth grinding, lip biting, and clenching are frequently exacerbated during periods of heightened academic demand (Murad et al., 2016). Despite strong indications of stress-behavior associations, the literature remains largely correlational, offering limited causal insight into whether academic stress initiates BFRBs or merely intensifies pre-existing tendencies.

A consistent pattern in the literature is the strong association between BFRBs and psychological vulnerability. Students engaging in BFRBs frequently report higher levels of anxiety, depression, irritability, emotional instability, and difficulties in emotion regulation (Khan et al., 2018; Korkmaz, 2024; Odlaug et al., 2013). Evidence shows that students with BFRBs exhibit significantly greater stress reactivity, impulsivity, and emotional dysregulation compared to their peers (Korkmaz, 2024). Skin-picking disorder, in particular, has been associated with diminished self-esteem, increased depressive symptoms, and higher perceived stress levels (Odlaug et al., 2013). Gender-based patterns also emerge, with female students reporting higher engagement in skin-focused repetitive behaviors, while males report different emotional and body-image related correlates (Odlaug et al., 2013). Collectively, these findings suggest that BFRBs are embedded within a broader emotional regulation framework, functioning as maladaptive tools for managing psychological distress rather than isolated behavioral habits.

While psychosocial triggers dominate the current literature, emerging evidence suggests that BFRBs may have a familial or hereditary component. Observational and clinical studies indicate that repetitive behaviors may cluster within families, pointing toward genetic vulnerability or learned behavioral modeling. However, empirical research exploring this dimension remains limited and methodologically inconsistent. Most studies focus on clinical symptomatology without systematically examining family history, limiting our understanding of intergenerational transmission patterns. The absence of robust hereditary data represents a critical gap, particularly given the developmental onset of many BFRBs during early adolescence (Duke et al., 2010).

Despite growing recognition of the interaction between academic stress and maladaptive repetitive behaviors, substantial gaps remain. Existing literature largely emphasizes psychological distress outcomes while under-exploring the behavioral manifestations of stress, particularly in non-clinical student populations. Furthermore, most studies rely on cross-sectional designs, limiting causal interpretation and temporal understanding of stress-behavior dynamics (Khan et al., 2018; Korkmaz, 2024; Odlaug et al., 2013). There is also limited integration of familial risk factors with stress-triggered behavioral outcomes. The fragmented nature of current evidence prevents the development of comprehensive prevention and early intervention frameworks at the institutional levels.

Accordingly, this study addresses these gaps by systematically examining the prevalence, types, and triggers of body-focused repetitive behaviors among university students, with a specific focus on academic stress as a precipitating factor and the potential role of familial predisposition. By integrating behavioral, psychological, and contextual dimensions, this research provides a more comprehensive understanding of how academic environments shape maladaptive coping behaviors and offers evidence to inform early identification and targeted institutional support strategies. Besides, this study seeks to address these gaps by systematically examining the types, frequency, and triggers of BFRBs among university students, with a particular focus on academic stress as a precipitating factor and the potential role of familial predisposition.

By adopting a synthesis-informed and behavior-focused approach, this study aims to identify the most common types of body-focused repetitive behaviors among students linked to academic stress. This objective seeks to establish which BFRBs are most frequently observed in academic settings. By cataloging the range of behaviors, such as nail biting, hair pulling, or foot tapping, this study also aims to prioritize the most pressing behavioral patterns for further examination and intervention, and explore the causes and triggers associated with these behaviors. It is essential to understand not only *what* behaviors are occurring, but *why* they manifest in specific academic situations. This includes examining stressors such as exam periods, assignment overload, peer pressure, and even perceived failure. Emotional states (e.g., anxiety, frustration, helplessness) preceding BFRBs will be analyzed to assess their psychological roots. The third objective is to investigate the link between these habit disorders and genetics or hereditary traits. By including questions about familial occurrences of BFRBs, this research will examine whether these behaviors may have a

genetic basis or are influenced by environmental learning within family settings. This line of inquiry could help differentiate between behaviors caused primarily by situational academic stress and those influenced by hereditary predispositions.

2. METHODOLOGY

2.1 Study Design and Participants

A total of N = 21 students constituted the target population and were invited to participate. Participants who were in their foundation year of study during the second semester/2024 were invited to participate via institutional email, with an age distribution centered around 18 years. The sample consisted of 13 female students (61.9%) and 8 male students (38.1%), based on the group random assignment process used by the program.

All 21 students completed the survey, resulting in a 100% response rate. This high response rate reflects the structured administration of the survey during scheduled class time rather than individual non-response. We emphasize that participation was voluntary and anonymous to address any concerns regarding coercion.

A convenience sampling approach was employed within randomly selected class groups, rather than a fully randomized institutional sample. This approach was selected to align with the logistical and time constraints of the undergraduate research project within which this study was conducted.

2.2 Survey Instrument and Development

Data were collected using a ten-item, mixed-methods questionnaire developed specifically for this study. The instrument was designed to be brief and easy to complete online, while still capturing the key constructs aligned with the study objectives. The questionnaire included items across four core domains: (1) demographic information; (2) presence and types of body-focused repetitive behaviors (BFRBs), such as nail biting, hair pulling, skin picking, teeth grinding, and lip biting; (3) perceived frequency and academic-stress-related triggers of these behaviors; and (4) perceived impact of BFRBs on academic performance and emotional well-being. Most items were closed-ended and used multiple-choice or Likert-type response options (e.g., from “never” to “very often” or from “strongly disagree” to “strongly agree”).

Two open-ended questions were included to allow participants to elaborate on their experiences. One question invited students to describe situations in which they typically noticed themselves engaging in BFRBs, while the second asked how they perceived academic stress to influence or trigger these behaviors. These questions were included to provide qualitative context and deeper insight into students’ lived experiences.

The development of this questionnaire was informed by domains commonly assessed in existing research on BFRBs and academic stress. However, the instrument was adapted to the context of a private university in Qatar and to the exploratory nature of this pilot study. The study was conducted as part of an undergraduate research-based academic project in which all student research teams were required to use a standardized survey format consisting of exactly ten questions to ensure equity and comparability across projects. This institutional requirement made it impractical to use longer, fully validated psychometric instruments in their original formats.

Existing validated instruments for BFRBs and stress were reviewed during the design phase, and core conceptual domains from these tools informed the content of the questionnaire. The final items were refined through expert review to ensure clarity, relevance, and alignment with the study objectives. Although the instrument was not a formally validated psychometric scale, this approach was considered appropriate given the study’s exploratory, pilot nature and the structural constraints of the research framework.

The full wording of all survey questions and response options is provided in Appendix A.

2.3 Data Collection and Analysis

The survey was conducted using Microsoft Forms, which was selected because it is free, widely accessible to students, and integrated with the institution’s email system. The survey link (Appendix A) was distributed via university email, and responses were collected over a period of three weeks. No exclusion criteria were applied; all students who accessed the link and provided consent were able to participate.

The questionnaire consisted of ten items, including both closed-ended and short open-ended questions designed to explore the presence and types of body-focused repetitive behaviors (BFRBs), perceived academic stress, emotional states, and perceived family patterns. The instrument was designed specifically for this educational research activity due to institutional constraints limiting survey length, which required all student research projects to use a standardized ten-question format.

Quantitative data from closed-ended questions were exported from Microsoft Forms into Microsoft Excel for cleaning and analysis. The analysis was intentionally limited to descriptive statistics, including frequencies and percentages, in order to summarize the prevalence of reported behaviors and students’ perceptions. No inferential statistical tests were conducted, as the study was designed as a small-scale, exploratory descriptive investigation, and the sample size was not sufficient to support robust inferential analysis.

Responses to open-ended questions were reviewed manually using simple descriptive content analysis. Responses were grouped by similarity of meaning to identify recurring themes related to stress, emotions, and behavioral awareness. These qualitative findings were used only to complement the quantitative descriptions and were not treated as formal qualitative research outcomes.

Given the exploratory nature of the study, the findings are presented as descriptive patterns rather than statistical associations, and are intended to inform future, larger-scale research.

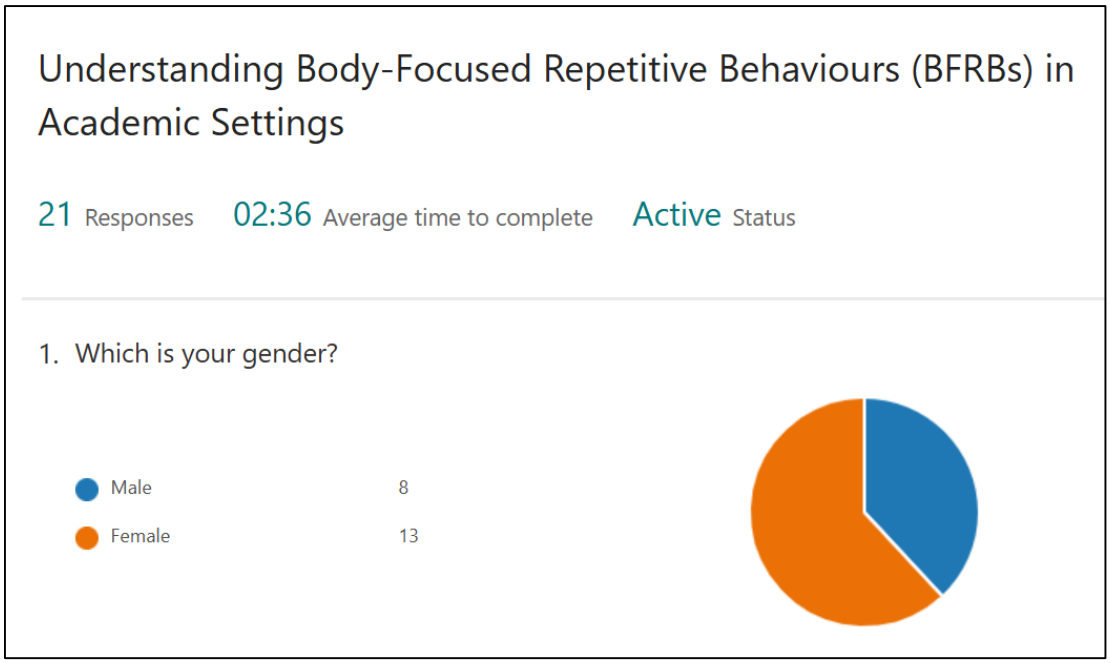
2.4 Ethical Considerations

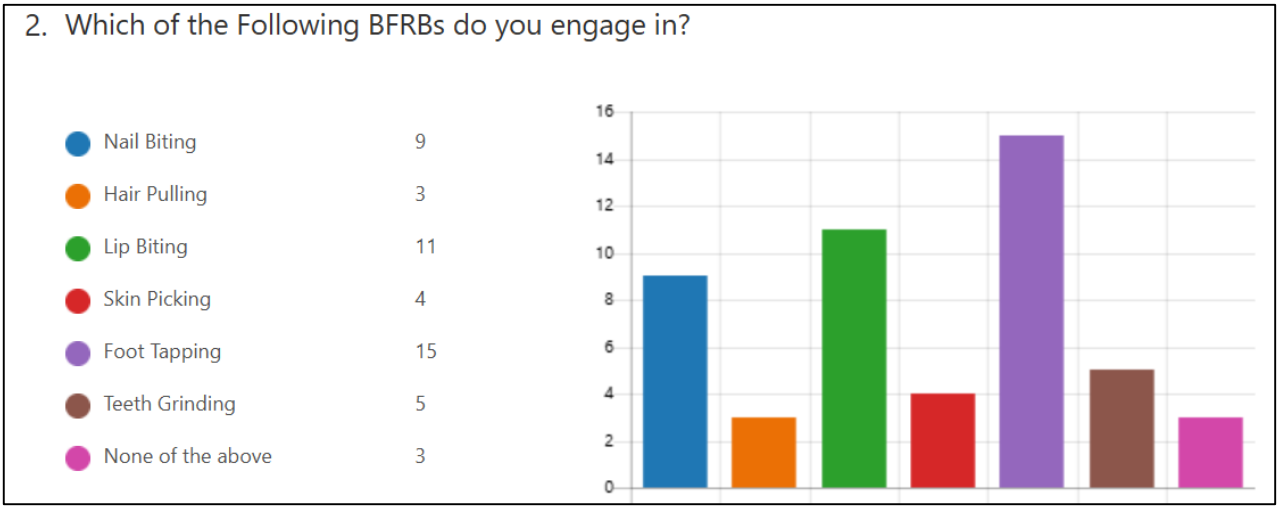
This study involved minimal risk and was conducted in accordance with institutional ethical guidelines. Participation was voluntary, and no identifying personal information (such as names, student IDs, or IP addresses) was collected. At the beginning of the survey, participants were presented with an information sheet outlining the purpose of the study, the anonymous nature of participation, and their right to withdraw at any time before submission. Informed consent was obtained electronically by asking participants to indicate agreement before accessing the survey questions.

Because the study involved an anonymous, non-clinical student survey with no collection of sensitive personal data and no intervention, it was deemed exempt from full Institutional Review Board (IRB) review under the university's policy on minimal-risk educational research.

3. RESULTS

The following figures show the results of the survey in terms of response to each question.





3. Does any of your friends engage in BFRBs?

Yes	13
No	2
I don't know	6

4. Does anyone in your family engage in a BFRB?

Yes	14
No	2
I don't know	5

5. Have you noticed a connection between your academic performance and the frequency of BFRBs?

Yes	10
No	8
No, I don't engage in BFRBs	3

6. What types of resources or support would be most beneficial to reduce academic stress and prevent BFRBs?

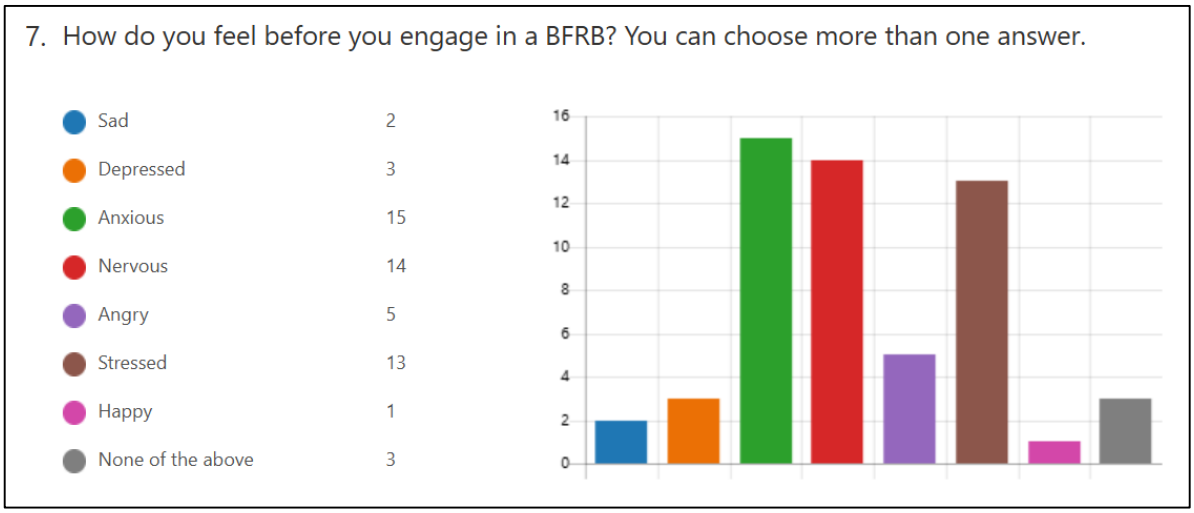
21
Responses

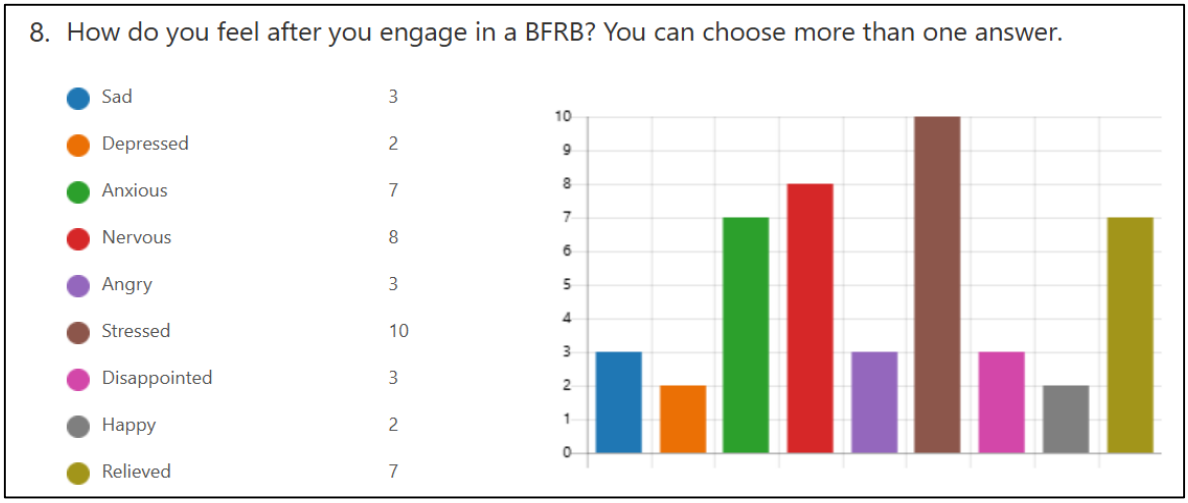
Latest Responses

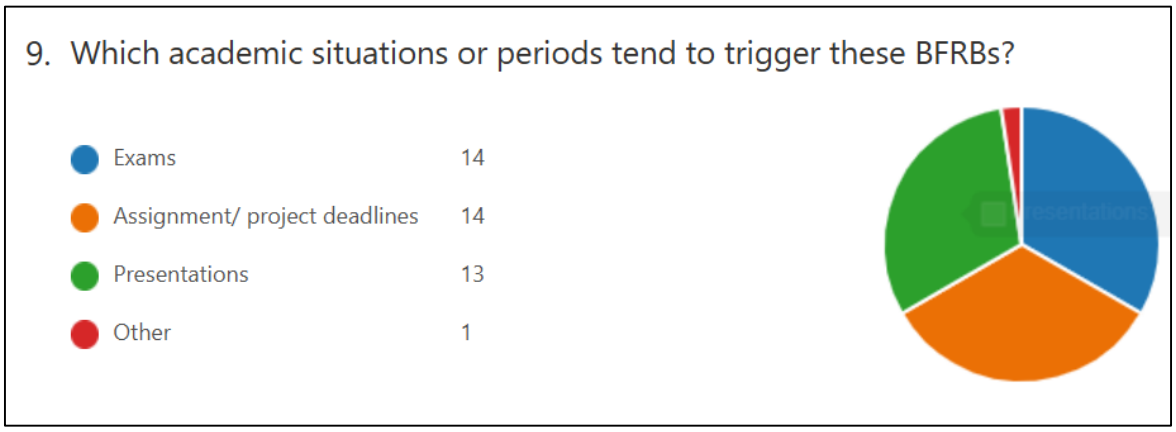
"explain ways to stop bfrbs"

"Lip Biting and Nail Biting"

"talking to a friend about it or getting a stress ball"







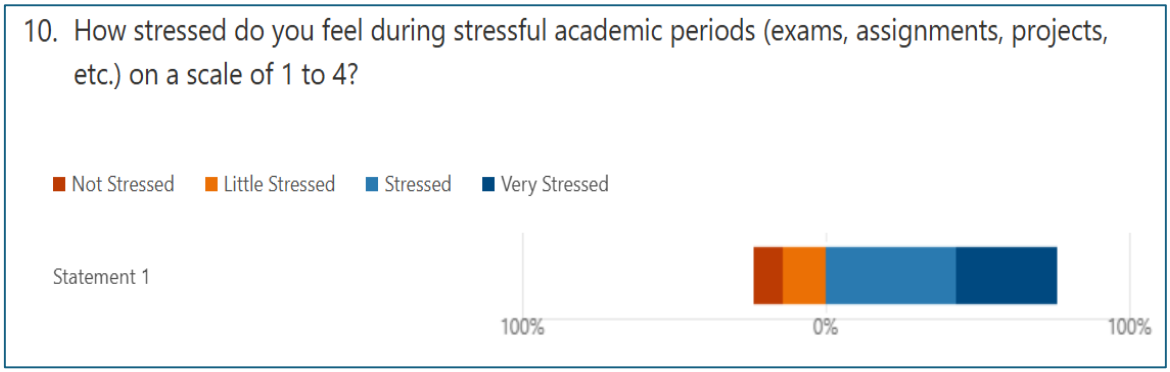


Figure 1. The ten questions and the survey results as used in this study.

4. DISCUSSION

The findings of this study indicate that body-focused repetitive behaviors (BFRBs) are commonly reported among foundation-year university students. Although the participant group contained a higher proportion of female students (61.9%), this reflects the composition of the selected classroom cohort rather than a deliberate sampling strategy. The inclusion of gender remains relevant to BFRB research, as existing literature has described gender-related tendencies in the manifestation of repetitive behaviors. For example, several studies reported that females demonstrated higher rates of certain BFRBs, while males showed higher lifetime prevalence in other forms (Moritz et al., 2024; Siddiqui et al., 2012). Similarly, Khan et al. (2018) identified patterns in which males were more likely to engage in wall-striking, whereas females more commonly engaged in lip biting (Khan et al., 2018). Additional studies have reported higher frequencies of skin picking among female students (Korkmaz, 2024) and a greater prevalence of parafunctional habits among females at advanced stages of education (Murad et al., 2016). The present study did not perform inferential testing of gender differences; therefore, the findings are best interpreted as descriptive patterns relevant to the broader context of existing work.

Foot tapping was the most frequently reported BFRB (30%), followed by lip biting (22%) and nail biting (18%). This pattern suggests that motor-based and oral-focused behaviors may be particularly common among students in stressful academic environments. These findings are consistent with earlier research that identified both conscious and automatic repetitive behaviors as common coping patterns among students (Duke et al., 2010; Khan et al., 2018). Foot tapping, in particular, may not always be perceived by students as a stress-related behavior, as it can occur subconsciously. The lower reporting of hair pulling, skin picking, and teeth grinding may reflect variations in self-awareness, stigma, or social visibility. The small proportion of students reporting no engagement in BFRBs supports earlier observations that such behaviors are widespread in student populations exposed to academic demands (Duke et al., 2010). In comparison with previous studies, Teng et al. (2002) conducted a study to assess the prevalence of BFRBs in typically developing individuals and to investigate the role of self-reported somatic activity in the occurrence of these behaviors. The findings showed that 13.7% of participants met the criteria for at least one form of BFRB, with nail biting being the most frequently reported behavior. Individuals who exhibited BFRBs reported significantly higher levels of somatic activity compared to those without such behaviors. Further analyses demonstrated consistent patterns across specific behaviors, including nail biting, mouth chewing, and skin picking, where affected individuals consistently reported elevated somatic activity levels (Teng et al., 2002).

Students' reports regarding their peers' engagement in BFRBs revealed that many participants perceived these behaviors to be common within their social circle. This suggests a possible normalization of repetitive behaviors in high-pressure academic environments. The proportion of respondents who were uncertain whether their peers engaged in BFRBs implies that such habits may often be subtle, unconscious, or socially concealed. These observations are aligned with prior studies indicating that repetitive behaviors may be automatic and not always socially visible (Odlaug et al., 2013). The present study does not establish social causality; rather, it provides descriptive insight into how students perceive the visibility and prevalence of these behaviors within their peer networks.

Family-related patterns were also frequently reported by participants, with a notable proportion indicating that family members engage in similar behaviors. This observation is consistent with previous literature suggesting that BFRBs may involve both hereditary vulnerability and environmental learning (Keuthen, 2014; Okumuş & Akdemir, 2022). Research by Grootheest et al. (2005) reported that repetitive behaviors such as nail biting and hair pulling may have inherited components in a proportion of affected individuals (Grootheest et al., 2005). A recent study examined Trichotillomania (TTM) and excoriation disorder (ED) in terms of their tendency to cluster in families (Chen et al., 2025). To explore shared and distinct familial vulnerabilities, self-reported family histories of mental health disorders were examined in a cross-sectional genetics study involving individuals with TTM only, ED only, and those experiencing both conditions (Pedram et al., 2021). The authors reported that individuals with TTM were more likely to report having a first-degree relative with the same condition (approximately 25%) compared with those with ED alone. In contrast, individuals with ED more frequently reported having a first-degree relative with ED (approximately 40%) compared with those with TTM only. Participants who experienced both conditions commonly reported family members affected by similar grooming-related behaviors (Chen et al., 2025)Moreover, the study found that, across all groups, there were consistently high reports of family histories of anxiety, depression, attention-related difficulties, and obsessive–compulsive symptoms. Parental mental health histories showed broadly similar patterns between groups; however, mothers were more frequently reported to have a history of anxiety and depression compared with fathers (Chen et al., 2025). While our present study cannot differentiate between genetic and learned mechanisms, the descriptive patterns observed contribute preliminary evidence that familial context may play a role and warrant further investigation.

Students' perceptions of the relationship between academic stress and BFRBs varied across respondents. Importantly, this study did not conduct inferential testing and does not claim statistically verified associations. Instead, the findings reflect students' perceptions and self-reported experiences. These descriptive observations are broadly consistent with the literature suggesting that academic stress can function as a situational trigger for maladaptive coping behaviors (Korkmaz, 2024; Murad et al., 2016; Odlaug

et al., 2013). The variation in views among respondents highlights that repetitive behaviors are likely influenced by multiple interacting factors, including individual resilience, coping styles, and environmental stressors.

Students' suggested strategies for reducing BFRBs reflected a combination of institutional and personal coping approaches. Recommendations such as reducing academic workload, increasing awareness of stress-related behaviors, accessing emotional regulation support, and using physical coping tools (e.g., stress balls) are aligned with broader recommendations in the literature emphasizing education, early intervention, and the development of adaptive coping mechanisms (Murad et al., 2016; Salimzadeh et al., 2021; Teixeira et al., 2022). These findings suggest that students recognize both systemic and individual-level contributors to stress, even though the study design does not allow for evaluation of effectiveness or causality.

The emotional states reported prior to engaging in BFRBs were predominantly anxiety, nervousness, and stress. These findings are consistent with previous studies that describe BFRBs as responses to heightened emotional tension rather than random or purposeless actions (Korkmaz, 2024; Murad et al., 2016; Odlaug et al., 2013). The relatively low reporting of sadness and depressive symptoms suggests that, in this non-clinical population, these behaviors may be more closely tied to acute stress and performance-related tension rather than persistent mood disturbance. The small number of students reporting feelings such as joy or neutrality before engaging in BFRBs highlights that, for some individuals, these behaviors may be habitual or automatic rather than strictly stress-driven. These findings are consistent with a recent review conducted by Barber et al. (2025), where the authors' review included a large body of evidence (more than 100 studies, with a combined sample exceeding 15,000 participants) examining anxiety in individuals with body-focused repetitive behaviors (BFRBs) and the relationship between anxiety and symptom severity. Findings consistently showed that anxiety disorders are commonly reported among individuals with BFRBs. Conditions such as generalized anxiety disorder, obsessive–compulsive disorder, social anxiety, panic disorder, and specific phobias were frequently observed across studies (Craske & Waters, 2005). The relationship between anxiety symptoms and the severity of BFRBs was generally described as modest, suggesting that while anxiety is a frequent co-occurring condition, it does not fully explain the intensity of repetitive behaviors. Stronger relationships were observed for more deliberate ("focused") repetitive behaviors compared with more automatic habits. Overall, the findings highlight a complex and nuanced relationship between anxiety and BFRBs. Although anxiety disorders frequently co-occur with these behaviors, the severity of anxiety appears to be only moderately linked to the severity of BFRBs, indicating that multiple psychological and behavioral mechanisms likely contribute to the development and persistence of these conditions (Barber et al., 2025).

In our study, participants' reports of emotional states after engaging in BFRBs indicate that these behaviors do not consistently provide relief. A substantial proportion of students reported continuing to feel stressed or experiencing disappointment following the behavior, while only a minority described feeling relieved. These descriptive patterns align with previous literature suggesting that BFRBs may offer a temporary distraction while reinforcing longer-term stress cycles (Odlaug et al., 2013; Shapiro, 2020). However, the present study does not make causal claims and instead highlights self-reported experiences that reflect the complexity of these behaviors.

Academic stressors such as examinations, assignment deadlines, and presentations were frequently reported as high-pressure situations. These findings are consistent with broader research demonstrating that peak academic periods are associated with heightened stress and maladaptive coping behaviors (Korkmaz, 2024; Murad et al., 2016; Odlaug et al., 2013). The descriptive patterns observed in this study suggest that even students who may otherwise cope effectively experience elevated stress during these periods. These findings contribute to the growing body of evidence that academic environments play a significant role in shaping stress-related behavioral patterns.

Overall, the findings of this study are best interpreted as descriptive and exploratory. They support existing literature suggesting that BFRBs are prevalent among students and are frequently perceived to co-occur with academic stress. Importantly, this study does not claim statistical associations or causal relationships. Instead, it provides preliminary observational evidence that highlights the need for larger-scale, multi-institutional studies using validated measurement tools and inferential designs to more rigorously examine these relationships.

5. CONCLUSIONS, RECOMMENDATIONS, AND LIMITATIONS

5.1 General Conclusions

This study explored body-focused repetitive behaviors (BFRBs) among foundation-year university students and examined students' perceptions of the relationship between these behaviors and academic stress. The findings provide a descriptive snapshot of how common such behaviors may be within a non-clinical student population and how students themselves understand their behavioral and emotional responses to academic demands. While the study was intentionally exploratory in nature, it contributes to a growing body of literature that recognizes the behavioral consequences of academic stress as an important component of student mental health.

The results suggest that a notable proportion of students experience repetitive behaviors such as nail biting, lip biting, hair pulling, and teeth grinding during their academic life. These behaviors, although often perceived as minor habits, may reflect deeper challenges in emotional regulation, stress processing, and coping. The study does not establish causal relationships; however, it

highlights the relevance of considering behavioral manifestations as part of a broader understanding of student well-being. By focusing on an early-stage university population, this research adds a perspective that is often underrepresented in the literature, which tends to focus on clinically diagnosed populations or students in advanced professional programs.

One of the key contributions of this study lies in its emphasis on students' own perceptions. Understanding how students interpret their behaviors and connect them to their academic environments is crucial for developing responsive mental health strategies. Rather than positioning BFRBs solely as pathological outcomes, this study frames them as potential behavioral expressions of stress, adjustment challenges, and emotional overload. This perspective allows for a more nuanced, humane understanding of student experiences and avoids oversimplifying complex behavioral patterns.

Importantly, this study positions itself as a pilot investigation. Its primary contribution is not to provide definitive conclusions, but to identify patterns that warrant deeper, more rigorous investigation. In doing so, it demonstrates the feasibility of examining BFRBs in early university populations and underscores the need for methodologically stronger research designs in future work. The descriptive evidence provided here can serve as a foundation upon which subsequent quantitative, qualitative, and intervention-based studies can build.

The findings also hold relevance for higher education institutions. Universities increasingly recognize the importance of supporting student mental health, yet behavioral manifestations of stress are frequently overlooked in favor of more visible emotional outcomes such as anxiety and depression. This study suggests that greater attention to stress-related behaviors could enhance early identification of distress among students. However, it is important to emphasize that this research does not prescribe specific interventions; rather, it offers an evidence-informed basis for considering how student support services might broaden their conceptualization of wellbeing.

At the same time, it is necessary to acknowledge the boundaries of the present work. The study was conducted within a single institutional context and relied on a brief survey instrument designed for exploratory purposes. As such, it should not be interpreted as representative of wider student populations or used to inform clinical decision-making. Instead, its value lies in opening space for further scientific inquiry and prompting discussion about the visibility of behavioral coping mechanisms within academic environments.

Looking forward, this study encourages a shift toward more integrated models of student mental health research. Future studies would benefit from employing validated psychometric instruments, larger and more diverse samples, and longitudinal designs that can clarify the temporal relationship between stress and behavior. Deeper qualitative approaches, including interviews and focus groups, may also provide richer insight into the lived experiences of students and the meanings they ascribe to their behaviors.

In conclusion, this research contributes a cautious, descriptive account of body-focused repetitive behaviors in a foundation-year student context and emphasizes the importance of acknowledging behavioral responses as part of the academic stress experience. By highlighting an underexplored intersection between stress and behavior, it lays the groundwork for more robust future studies and reinforces the need to prioritize holistic understandings of student wellbeing in higher education.

5.2 Recommendations

Based on the exploratory findings of this study and the limitations acknowledged, several recommendations are proposed for future research, institutional practice, and policy development.

5.2.1 Recommendations for Future Research

Future studies should prioritize the use of validated psychometric instruments to assess both academic stress and body-focused repetitive behaviors. Employing standardized tools will improve the reliability of findings and allow more meaningful comparisons across studies and cultural contexts. Researchers are encouraged to adapt internationally established scales, where necessary, through formal validation procedures rather than creating new instruments without psychometric testing.

Larger and more diverse samples are strongly recommended. Multi-institutional studies across different academic disciplines, levels of study, and cultural backgrounds would contribute to a more comprehensive understanding of the prevalence and determinants of BFRBs. Expanding beyond foundation-year students will allow researchers to examine developmental trends and stress–behavior patterns across different stages of academic life

Longitudinal research designs are particularly warranted. Repeated measurements across academic semesters or years would help clarify whether academic stress acts as a trigger, a maintenance factor, or a consequence of BFRBs. Such designs would also help identify critical periods of vulnerability, such as transition phases (e.g., entry to university, examination periods, or program milestones).

Mixed-methods approaches should be strengthened. While surveys provide important breadth, future research would benefit from incorporating structured interviews, focus groups, and observational methods to deepen understanding of students' lived experiences. These approaches can help uncover contextual, cultural, and emotional nuances that are not easily captured through closed-ended survey items.

Genetic and familial aspects of BFRBs warrant more systematic investigation. Future studies should incorporate structured family history assessments and, where feasible, interdisciplinary collaboration with clinical and genetic researchers to explore potential hereditary mechanisms.

5.2.2 Recommendations for Institutional Practice

Higher education institutions should consider adopting proactive mental health screening frameworks that include behavioral indicators such as repetitive habits, rather than focusing solely on emotional symptoms like anxiety and depression. Incorporating brief behavioral checklists into routine student well-being assessments may assist in early identification of vulnerable students.

Universities are encouraged to strengthen stress management and emotional regulation training within foundation and transition programs. Evidence-based workshops on coping strategies, mindfulness, time management, and emotional self-awareness may help students develop healthier responses to academic pressure

Student support services should be trained to recognize BFRBs as potential indicators of psychological distress. Counselors, academic advisors, and teaching staff may benefit from professional development sessions that increase awareness of the behavioral manifestations of stress and appropriate referral pathways.

Peer-support and mentoring programs could be expanded to reduce stigma associated with repetitive behaviors and mental health challenges. Establishing safe, confidential environments where students feel comfortable discussing stress-related behaviors may help improve help-seeking behaviors and early intervention.

Institutions may also consider evaluating structural indicators of student mental health capacity, such as student-to-counsellor ratios, wait times for wellbeing services, and availability of trained mental health staff, in line with international benchmarks. These structural indicators can help ensure that any awareness or prevention initiatives are realistically supported by institutional capacity.

5.2.3 Recommendations for Policy and System-Level Development

At the policy level, institutions should integrate behavioral health considerations into broader student wellbeing and mental health strategies. National and institutional mental health frameworks could be expanded to recognize maladaptive coping behaviors alongside emotional and cognitive indicators.

Funding bodies and educational authorities are encouraged to support interdisciplinary research exploring the intersection of academic stress, behavioral health, and educational performance. Targeted research funding may accelerate the development of evidence-based prevention and intervention models.

Ethical and methodological standards in student mental health research should be strengthened. Institutions should promote transparent reporting practices, encourage the ethical use of validated measures, and support the creation of research environments that balance educational equity with scientific rigor.

While this study does not provide prescriptive solutions due to its exploratory nature, the recommendations outlined above reflect proportionate, evidence-informed directions that align with the current state of research in this field. Implementing these steps progressively may contribute to a more comprehensive and scientifically grounded understanding of student mental health and the behavioral consequences of academic stress.

5.3 Limitations

First, the study relied on a brief, purpose-designed questionnaire rather than fully validated psychometric instruments. Although the survey was informed by existing literature and reviewed for clarity and relevance, it was not subjected to formal psychometric testing for reliability and validity. As a result, measurement error cannot be ruled out, and the findings should be viewed as exploratory rather than diagnostic. The use of standardized, validated scales in future studies would strengthen the reliability and comparability of results.

Second, the sample size was small (N = 21) and was drawn from a single educational program within one institution. Participants were enrolled in the International Foundation Program rather than across multiple academic disciplines or year levels. This limits the generalizability of the findings to broader university populations. In addition, the use of convenience sampling within selected class groups may have introduced selection bias.

Third, participation in the survey was conducted in a structured classroom setting, which may have influenced how students responded. Although responses were anonymous, the non-voluntary nature of participation within a scheduled academic activity may have increased the risk of social desirability bias and limited the depth of disclosure for sensitive behaviors.

Fourth, the study design was cross-sectional, capturing student experiences at a single point in time. This prevents any conclusions about causality or changes in behaviors over time. Longitudinal designs would be necessary to assess whether academic stress precedes the onset of BFRBs or whether these behaviors fluctuate across academic periods.

Fifth, the data analysis was intentionally limited to descriptive statistics (frequencies and percentages). No inferential statistical tests were conducted due to the small sample size and the exploratory nature of the study. Therefore, the results cannot support claims of statistical associations, differences between groups, or predictive relationships. The findings should be interpreted strictly as descriptive patterns.

Finally, the qualitative component was limited to brief open-ended responses collected through an online questionnaire, rather than in-depth interviews or focus groups. This constrained the depth of qualitative insights and limited the ability to explore students' lived experiences in detail.

Taken together, these limitations indicate that the study should be viewed as a pilot investigation designed to generate preliminary insights and inform more robust future research.

AUTHOR CONTRIBUTIONS

F. M.: conceptualization, methodology, investigation, data curation, software, visualization, writing—original draft preparation; M.N.: supervision, validation, writing—reviewing and editing. All authors have read and agreed to the published version of the manuscript.

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Institutional Review Board Statement

This study involved minimal risk, anonymous survey responses, and did not involve any clinical intervention or collection of identifiable personal data. It was conducted in accordance with institutional policies and was exempt from formal IRB approval.

Informed Consent Statement

Informed consent was obtained from all participants at the beginning of the survey.

Data Availability Statement

All data used in this research are presented in this article.

Conflict of Interest

The authors declare no conflict of interest.

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