Assessing the Relationship Between the Development of Body-Focused Repetitive Behaviors/ Disorders and Factors Influencing Distinct Pain Thresholds in Neurodivergent Youth

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Background

- Body-focused repetitive behaviors and disorders (BFRB/Ds) are self-destructive grooming actions characterized by actions such as nail-biting, skin-picking, hair-pulling, and lip-biting. Enacting in the behavior is self-soothing. These disorders are classified under the Obsessive-compulsive and related disorders in the DSM-V.
- BFRDs are a more severe version of BFRBs. The repetitive behavior can be so frequent that it causes dysfunction and impairs daily function.
- "Neurodivergence" is a broad term encompassing individuals and conditions associated with variations in neural processing. This category includes ADHD, autism, dyslexia, dysgraphia, mental health issues, and sensory processing disorders.

Major Types of BFRB/Ds

Skin Picking Disorder (SPD)	Onychophagia – Nail biting	Trichotillomania - Hair pulling	Morsicatio Labiorum – Lip biting.

Etiology (Cause)

- The exact cause behind the behavior is still being researched.
- Possibly inherited through genetics.
- Known triggers are:
  - Inability to tolerate inactivity (Boredom levels)
  - Perfectionism
  - Frustration
  - Stress levels (This varies from person to person)

Why is this a significant problem?

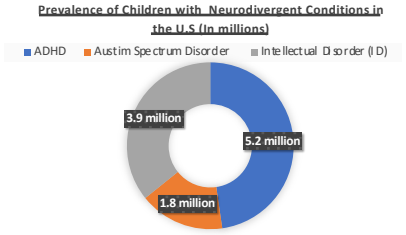
- Depending on the severity, some BFRB/Ds subtypes are treatment-resistant.
- Grooming areas or spots can develop into infected sores if not medically treated.
- Lack of epidemiological studies.
- There is an underreported rate of clinical diagnosis of BFRB/Ds.

Prevalence Rates

General population rates

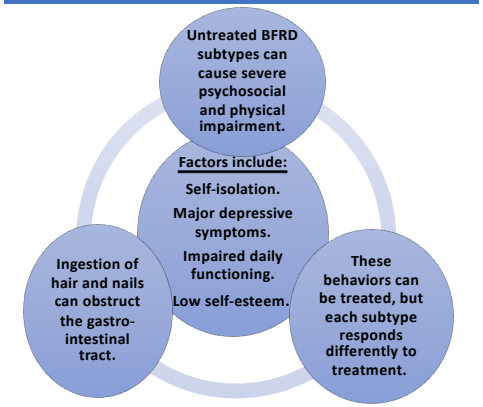
- Approximately 4% of the general population has a clinical diagnosis for BFRB/Ds.

- This indicates that 1 out of every 25 people is affected by this behavior/disorder.
- Problem: This statistic is likely underreported because many individuals who engage in this behavior avoid seeking professional help because they fear social judgment and shame.



Small clinical studies suggest that 30%-70% of children with BFRB/Ds have one or more mental health comorbidities such as ADHD, PTSD, and OCD.

Impact on Life



Relationship to Pain Processing

- Studies suggest individuals with BFRB/Ds have blunted autonomic stress reactions and respond to pain differently than the norm (Grant et al., 2017).
- Dopamine is a neurotransmitter that plays a role in pain perception & pleasure. These disorders may be associated with dopaminergic alterations and malfunctions in Hypothalamic-Pituitary-Adrenal Axis (HPA) feed back sensitivity (Hoffman et al., 2021).
- Assessing the sensitivity of the patient's HPA axis feedback, dopamine regulation, and autonomic stress responses may help determine whether non-invasive stimulation of specific areas in the prefrontal cortex, combined with reward learning, can improve treatment success rates for these conditions alongside current treatments.

Populations At Risk

- **Females – BFRB/Ds are more prevalent in females than in males.**
- **Genetic predisposition – People with a family history of BFRB/Ds are most likely to develop one subtype.**
- **Individuals who experienced abuse, trauma, and substance use.**

Current Treatments for BFRB/Ds

CBT	• **Cognitive Behavioral Therapy** • Long-term success rate approx. 20%.
HRT	• **Habit Reversal Training** • Long-term success rate approx. 20%.
SSRIs	• **Selective Serotonin Reuptake Inhibitors** • Long-term success rate approx. 10%-20%.

Methods

- An examination of the relationship between body-focused repetitive behaviors, pain, and autonomic stress could be designed as follows:
  - Recruit UTA students aged 18-24.
  - Use Generic BFRB Scale-8 (GBS-8) to body-focused repetitive behaviors.
  - Use Numeric Pain Rating Scale (NPRS) to assess participants' pain perception in their fixation or picking area.
  - Use Cold Pressor Test to examine subjective general pain response.

Conclusion

- BFRB/Ds severity varies by individual, but are common in neurodivergent youth and females.
- Treatments exist for body-focused repetitive behaviors, but success rates are low.
- Autonomic stress responses in HPA sensitivity may explain pain processing in these subjects.
- Better understanding mechanisms of pain processing in BFRB/Ds could lead to improved treatment outcomes.

Future Directions

- Assess the patient's frustration, perfectionism, sensory pain, reward learning, and boredom levels in conjunction with symptom experiences.
- Investigate what strategies can increase awareness of disruptive behaviors and promote inclusive environments for those affected.
- Consider novel approaches such as Transcranial Magnetic Stimulation as a form of treatment.

Acknowledgments

References