

Reactions to Behaviors: The Role of Education on People's Perceptions of Body-Focused Repetitive Behaviors

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Abstract

Reactions to body-focused repetitive behaviors (BFRBs) (trichotillomania, excoriation disorder, onychophagia, and trichophagia) were measured by evaluating people's reactions on a Likert scale. A total of 221 participants completed the survey. It was predicted that educating people about those conditions would produce more positive ratings. However there was no difference between the experimental and control group that received no information. It was found that trichophagia was viewed most negatively followed by trichotillomania, excoriation disorder, and then onychophagia which was viewed most positively. These findings suggest that information presented in a quick and limited format did not impact the views of participants. However, it is seen that attention needs to be directed toward promoting a greater understanding of these disorders in order to minimize the negative perceptions of people with these conditions.

Keywords: BFRBs, trichotillomania, onychophagia, excoriation

1.Introduction

1.1 Overview Of Bfrbs

One person's atypical behaviors can often incite a reaction in others. Behaviors such as trichotillomania (hair-pulling disorder), excoriation disorder (skin-picking disorder), onychophagia (nail-biting disorder), and trichophagia (hair-eating disorder) may elicit emotional responses from others. These disorders are called body-focused repetitive behaviors (BFRBs). These disorders are classified under Obsessive Compulsive and Related Disorders in the Diagnostic and Statistical Manual 5 (American Psychiatric Association, 2013). Imagine looking around a room and knowing at least two out the fifty people shared the same disorder¹. That is true for these conditions, however onychophagia is even higher in prevalence. These disorders are thought to affect at least twenty percent of the population. These conditions affect individuals of all ages and all genders. These disorders often lead to negative social, economic, physical, and emotional outcomes for individuals with BFRBs. It is anticipated that trichophagia would be rated most negatively, followed by trichotillomania, excoriation disorder and onychophagia, and that the informational component will result in more positive view of the disorders.

1.2 How Those With Bfrbs Perceive Their Own Conditions

To get an idea of how these disorders cause others to react, it is important to understand how people with BFRBs perceive their own conditions. Casati, Toner, and Yu completed interviews with women with trichotillomania². They found that women in the study commonly felt embarrassed, isolated, and had poor body images. If individuals with BFRBs withdraw from social interactions, it could be startling to other people who are

witnessing these behaviors for the first time. The study was conducted by speculating that the feelings of shame often lead people to continue the cycle of pulling. However, some of the women felt disclosure of their condition meant they could educate others. The study ultimately found that while there is a significant psychosocial impact on women with trichotillomania, through psycho-education the women's negative perceptions of themselves could be alleviated. While this study described how women with trichotillomania felt about their appearance, it is important to evaluate how others view their appearance as well because gaining insight into their reactions can help to determine the type of interventions that would best inform others.

They conducted two-hour interviews and asked patients about their history with the disorder, other co-morbid conditions, treatment history, and the social implications the disorder has had on patients. It was found that shame and depression were common emotions expressed by patients. Additionally, for social situations, individuals with trichotillomania avoided going in a swimming pool or going to a hairdresser for a haircut. This point is relevant for the current study because if individuals with BFRBs avoid social situations, it means that those who witness BFRBs may have been less exposed to these differences in appearance. If individuals with BFRBs are staying hidden in society, it could be startling to those witnessing these behaviors for the first time. The study concluded by speculating that the feelings of shame often lead people to continue the cycle of pulling. Some individuals with BFRBs will attempt to hide the hair loss in social settings. However, it becomes a constant burden for individuals with BFRBs to carry that secret. While the study suggests that not all non-sufferers understand the hardships of individuals with these disorders, it brings value for individuals with BFRBs to know others with the same disorder share common feelings. While the point of the current study was to call attention to reactions of those witnessing these behaviors, the insight from those with these disorders is important to see if their feelings of social rejection match the reactions of others.

1.3 How Bfrbs Impact The Lives Of Those With Them

Some researchers choose to focus on how these conditions impact different dimensions of individuals with BFRBs lives³. One study was done with adults who confirmed their diagnosis with an interview and the Massachusetts General Hospital Hair Pulling Scale. The participants of the study were then asked to complete a survey that assessed the participants' monetary losses related to trichotillomania such as makeup and wigs. The survey also assessed how participants were socially impacted. It was found that many of the participants avoided romantic relationships, haircuts, and social events. It was found that 44.6% of participants experienced a missed day of work due to hair pulling.⁴ A total of 70.3% of participants spent money on psychologist visits as well. These results meant that individuals with BFRBs were spending money for treatment and cosmetics as well as losing money for missed work and school. Both studies found that trichotillomania hinders social experiences and places an abundance of economical costs on those with the disorder. It shows how these behaviors may happen in any setting despite other people being around. However, it lacks insight into how others view the impact of these conditions.

While some studies focus solely on individuals with BFRBs feelings and reactions to their conditions, other studies focused on peers of individuals with BFRBs. One study asked middle school students to complete a Social Acceptance Scale (SAS) after watching a video of actors with behaviors including trichotillomania and tic-like movements⁵. They used two groups to examine if tic movements or trichotillomania would result in lower scores on the SAS. It was found that the actors portraying trichotillomania were given statistically significantly lower scores on the SAS than the actors not displaying trichotillomania. These results are important because it demonstrates the social judgments that individuals with trichotillomania face.

1.4 How Others Perceive Those With Bfrbs

Another study that aimed to measure the effects that trichotillomania has on peers of those with the disorder was done by Marcks, Woods, and Ridosko⁶. It was conducted by having anecdotal conditions where characters with the disorder are described as identifying his or her condition or hiding it. Undergraduate students answered the surveys after reading these anecdotal stories. They then answered a 24-question survey regarding their feelings about the character in the anecdotes. The researchers found that in the anecdotes where the character admitted to having trichotillomania, that character was given significantly lower ratings. In situations in which the character had hair loss but did not disclose his or her diagnosis, the characters were rated as neutral and sometimes positive. The study explains that overall this outcome can be attributed with the stigma surrounding mental health conditions. Marcks, Woods, and Ridosko thought that if education was provided, it may have influenced the participants' ratings⁷. Marcks, Woods, and the Ridosko's study used photographs and the Boudjouk, Woods, Miltenberger, and Long's study looked

at peer perceptions, however both had the limited lenses of participants who were middle school students or college students.^{8,9} The current study hopes to gain a broader picture of reactions of adolescents and adults. These studies were also done over ten years ago. While stigma for mental illness still exists it is important to note that the social dynamic surrounding mental health has changed which could possibly impact the reactions to these conditions.

A more recent study examined how participants view individuals with trichotillomania before and after treatment¹⁰. It was found that after viewing before and after pictures of individuals, participants rated pictures of people with trichotillomania lower on attractiveness than the controls without a BFRB. Like previous studies, researchers attributed these lower scores to mental health stigma. However, if participants are unaware of these conditions and the implications, they may use their judgment based solely on appearance. While they were informed that participants had trichotillomania, they were not provided with information about the disorder. The current study aims to compare a group without information and one with information to see if education improves reactions. However, this study that involves rating photographs gives insight into the current study. It does this by providing possible reactions from participants. The reactions to the photographs were overall negative providing a general expectation of negative reactions from participants in the current study when reading the anecdotes about trichotillomania.

1.5 The Current Study

While there have been studies where researchers tested individual's reactions to these disorders, there is little that has been done to see if any interventions would change participants reactions. Studies have mentioned that education would be a variable that may influence participant's reactions¹¹ The current study will compare a group who receives educational information on these disorders and one that will not get information. This manipulation is to see if this intervention yields different reactions to BFRBs. The current study will focus on a broader age group of people who are ages eighteen and older. In addition, this study is taking place over ten years after these earlier studies and there is potential that shifting societal values regarding mental illness may yield different results. While BFRB is a relatively new term, few studies tend to address these behaviors together and tend to discuss them separately. Aside from research done on the perceptions of BFRBs, there are very limited resources regarding BFRBs aside from how they impact individuals psychologically¹². This study will bridge this gap by addressing four BFRBs: trichotillomania, excoriation disorder, onychophagia, and trichophagia. Trichophagia is presently ignored in the research in terms of social implications. Most studies concentrate on the medical complications that result from bezoars (balls of hair that form in the intestines)¹³. This study includes trichophagia to address this absence in existing research.

The current study created anecdotal situations representing trichotillomania, excoriation disorder, onychophagia, and trichophagia. One group was given information explaining how these disorders impact individuals and one did not receive the information. Participants were then asked to rate adjectives in order to measure reactions to people with these conditions. This manipulation was designed to test if education influences participants' reactions to the disorders. This study would be a meaningful addition to current research because by delineating different reactions based on the specific disorder, it is hoped that education about these disorders can be improved.

2. Method

2.1 Participants

A total of 221 participants completed the survey; 58 filled out a paper copy and 163 took the online survey. Of the 221 participants, their ages ranged from 18 to 55 ($M= 21.52$; $SD=5.72$). A total of 74.8% ($N=166$) of participants were female, 20% ($N=44$) of participants were male, 1.4% ($N=3$) were transgender, 2.7% ($N=6$) were gender nonconforming, and 0.5% ($N=1$) preferred not to answer. A majority were college-aged students from a variety of majors.

3. Design

This study was a mixed (between and within subjects) design. The independent variables are the types of disorders and whether participants received information on the disorders before making their judgments. The dependent variable

is how strongly the participants reacted to the behaviors based on how they rated the positive, negative, and neutral adjectives.

Group 1 was the control group because they did not have the information. Group 2 was the manipulation group. Prior to reading the anecdotes, Group 2 received an informational sheet that explained each disorder, the social and emotional implications of the disorders and statistics about the disorders.

4. Materials

The purpose of the questionnaire was to measure if participants who were given the information about the disorders (Group 2) had more positive reactions as compared to the group just given the anecdotes (Group 1). Prior to the survey there was an informed consent form and a sheet that asked participants to confirm that they were at least eighteen years old. The survey included an eight-question demographics portion which asked about gender, age, disability status, sexual orientation, religion and education. Some participants omitted some of these answers. The Qualtrics online version followed the same format as the paper version.

Then there were four pages each of which contained anecdote describing the following disorders: trichotillomania, excoriation disorder, onychophagia, and trichophagia. After each anecdote there were seven adjectives and two open-ended questions. The anecdotes were crafted based on research that described the behaviors, and were made gender neutral to avoid confounding variables. The adjectives on the Likert questions ranging from Strongly Disagree (1) to Strongly Agree (7). The following adjectives were used to assess people's responses to the anecdotes: confused, concerned, sympathetic, ambivalent, curious, annoyed, distressed, disgusted, and altruistic. Ambivalent, curious, and confused were considered neutral. Annoyed, distressed, and disgusted were considered negative. Altruistic, sympathetic, and concerned were considered positive. These were chosen to give a representative sample of words. For example, altruistic was chosen in order to gauge if a participant would want to help someone who was engaging in these behaviors. Annoyed was used to see if participants felt these behaviors were a nuisance. Following this there were two qualitative open questions which were "Do you know what this scenario describes?, and Have you heard of or experienced this scenario before? If so, where?", Participants had no restriction on the length of their answers.

4.1 Procedure

Participants were recruited from public areas surrounding New Paltz and public areas in New York City. Data was collected from participants in areas that included dining areas, class, and meeting spaces. The experimenter who approached participants was a female SUNY New Paltz undergraduate student who was randomly assigning participants to groups. Prior to and at the completion of classes, meetings, etc., participants were invited to participate in a study about reactions to certain behaviors. Interested parties were given an informed consent form and then provided with a hard copy of the survey. The only criterion of inclusion/exclusion was based on age of consent, which is 18 years old. Participants were also recruited electronically through a campus-wide email system and Facebook pages. These participants took the survey through Qualtrics. Participation was voluntary and the surveys were collected from SUNY New Paltz students as well as people from the surrounding town area and the greater New York City area.

Prior to distribution an equal number of each condition of the survey was counted out. In addition to this to reduce experimenter bias, the experimenter placed a blank sheet of paper over all surveys. Consent forms were then handed out prior to survey. Participants were then given a survey with information or without information. The manipulation was if participants are given the information about the disorders. If not given the information in the beginning of the survey, participants were given the information as part of their debriefing. The instructions written on the surveys with information indicated that participants were to read the information prior to answering questions. For the surveys without the information, participants simply had the instruction of reading the anecdotes and then answering questions. Proceeding the Likert scales all survey indicated for participants to, "Please read the following passages and answer the questions that follow. When answering the questions think about how you would react in that moment." All participants in the in-person study were then given a debriefing form in a sealed envelope in their packets. If participants did not have information they were given the information on their debriefing form and were made aware of the differences between conditions. The envelopes indicated that they were not to be opened until the completion of the survey. Their surveys were collected and participants were thanked for their time. The survey took participants approximately ten minutes to complete. The procedure was the same for online participants however, they were

recruited through emails and social media and led to a Qualtrics survey link. To ensure results were consistent separate mixed ANOVAS were done to compare the paper edition, and electronic survey results. These results compared with the combined data which showed significance in how the disorders were viewed but not for the condition of information or not given information

5. Results

In order to determine if being informed about the disorders led to a difference in the ratings of the positive, negative and neutral adjectives between the four disorders, three mixed 2 (condition) x 4 (disorder) ANOVAs were done.

The adjectives were grouped together based on whether they were positive, negative, or neutral. Then positive, negative and neutral scales were created by averaging the Likert scale responses for each emotional reaction. These three groups served as the dependent variables to determine if the manipulation of knowledge about the disorder and the type of disorder affected people's reactions. It was found that the disorders differed from each other significantly within each adjective. Below the delineation of this according to adjectives is explored.

For the negative adjectives the ANOVA revealed that the ratings of negative adjectives were significantly different between disorders, $F(3,567) = 26.72, p < .005$. The Tukey post hoc test revealed trichophagia had the most negative scores, followed by trichotillomania, excoriation disorder, and onychophagia. These results showed that trichophagia disorder was viewed least favorably in comparison to the others which showed that participants reacted with more disgust, annoyance and distress toward the situation that described an individual with trichophagia. All disorders differed from each other for the negative adjectives according to the subscripts indicated the Tukey post hoc tests. For means, standard deviations and post hoc comparisons, see Table 1. There was no significant difference in ratings based on the manipulation, $F(1,189) = 2.85, ns$ and no interactions, $F(1,189) = 1.10, ns$.

Table 1. Means and Standard Deviations for Negative Adjectives

<i>Disorder</i>	<i>Mean</i>	<i>Standard Deviation</i>
Trichotillomania	2.64 _a	1.34
Excoriation Disorder	2.56 _b	1.29
Onychophagia	2.25 _c	1.25
Trichophagia	3.06 _d	1.59

For the positive adjectives the ANOVA revealed that the ratings of positive adjectives were significantly different between all four disorders, $F(3,543) = 41.32, p < .001$. The Tukey post hoc test revealed that trichotillomania had the highest positive ratings overall followed by excoriation disorder, trichophagia, and then onychophagia. These were positive adjectives and higher scores indicate participants agreeing with feeling altruistic, concerned, and sympathetic for people with this disorder compared to the other disorders. Therefore, participants were most sympathetic, altruistic, and concerned toward the person with Trichotillomania. All disorders differed from each other for the positive adjectives according to the subscripts indicated by the Tukey post hoc tests. For means, standard deviations and specific contrasts between means, see Table 2. There was no significant effect of the manipulation, $F(1,181) = 0.001, ns$ and no interactions, $F(1,181) = 1.88, ns$.

Table 2. Means and Standard Deviations for Positive Adjectives

<i>Disorder</i>	<i>Mean</i>	<i>Standard Deviation</i>
Trichotillomania	4.71 _a	1.24
Excoriation Disorder	4.48 _b	1.35
Onychophagia	3.78 _c	1.41
Trichophagia	4.27 _d	1.29

For the neutral adjectives, the ANOVA revealed that the ratings of neutral adjectives were significantly different based on the type of disorder, $F(3, 531) = 78.06, p < .001$. The Tukey post hoc test revealed that trichophagia and trichotillomania had the highest scores for the neutral adjectives followed by excoriation; onychophagia had the lowest ratings. This means that participants felt most ambivalent towards these disorders. Trichotillomania and Trichophagia

did not differ from each other however Excoriation Disorder and Onychophagia differed from each other. For means, standard deviations and specific contrasts between means, see Table 3. There was no significant effect of the manipulation, $F(1,177) = 0.04$, $p < 0.001$, ns and no interactions, $F(1,177) = 0.47$, ns.

Table 3. Means and Standard Deviations for Neutral Adjectives

<i>Disorder</i>	<i>Mean</i>	<i>Standard Deviation</i>
Trichotillomania	3.76 _a	1.23
Excoriation Disorder	3.14 _b	1.17
Onychophagia	2.51 _c	1.15
Trichophagia	3.76 _a	1.40

6. Discussion

Previous research has shown that the disorders tend to be viewed negatively by others and perceptions vary by disorder. It was predicted that trichophagia would be rated most negatively, followed by trichotillomania, excoriation disorder and onychophagia, which was supported by the results in this study. Onychophagia is most likely thought to be most accepted because it has a higher prevalence than all other BFRBs. The prevalence rate is between 12 and 14%¹⁴. Significance was not found for the interaction between the disorders and the informational condition of the study. This means that information did not prove to make a difference in participants' ratings of BFRBs.

Stemberger, Thomas, Mansueto, and Carter interviewed patients with trichotillomania who described the negative social implications of the disorder¹⁵. This finding matches the results of the current study. In general, the fact the disorders caused negative reactions of any kind is not surprising due to previous research which asked participants to rate actors with trichotillomania and those without it¹⁶. Those with any disorder were rated more harshly, which shows that these disorders are inherently seen in a negative light. For the neutral scores, onychophagia also had the lowest scores which can indicate how it is normalized. The finding that trichophagia was rated with the highest scores of the negative adjectives meant that participants were most disgusted or distressed towards those with trichophagia. However, for the positive adjectives, trichotillomania was rated most positive, followed by trichophagia. This meant that more participants agreed with feeling altruistic or sympathy towards individuals with trichotillomania. This pattern could possibly be explained by the fact that participants did not fully understand the medical complications of trichophagia, which could possibly exemplify, why it was rated most negatively and not most positively. If participants just viewed it is a bad habit and as something gross, that is where the understanding of it being rated most negatively comes in. Onychophagia had the lowest ratings, for the neutral, positive, and negative adjectives. This means that because the negative adjectives were rated low that participants disagreed with the behavior being disgusting. The low scores on the positive adjectives mean participants did not agree towards feeling altruistic or sympathetic towards individuals who have onychophagia. This outcome could possibly be explained by the fact that nail biting is a commonly known as a "bad habit" thus participants may have experienced it more.

While the manipulation of information did not result in a significant difference in the ratings, it may be attributed to the limited nature of information provided. Participants only had a few paragraphs and possibly may not have had enough time to absorb or process the information. The presence of the manipulation could also have possibly contributed to more negative ratings because of the stigma associated with the word "disorders."

The qualitative research portion of the study showed that participants were likely to disclose the status of their own personal experiences with these disorders or share information about others they knew with these conditions. Participants from both the experimental and control group explained that they recognized these disorders from television shows and YouTube bloggers. This finding demonstrates the statistic that these disorders are relatively prevalent within the population, with an estimated two of every 50 individuals suffering from a disorder¹⁷.

7. Limitations

The time allotted was a limitation of this study. It may have been useful to perform this study under more controlled conditions. For the experimental condition, information could be given before the survey was administered and then participants would have to devote their attention to a physical presentation of information such as pictures and writing on a screen during a fixed amount of time. In the current study, the information was immediately followed by the

survey, which did not provide much time for the participants to fully comprehend the information or guarantee their full attention. Also, the majority of participants came from college-aged students who may have a different perspective than those from other developmental periods in their lives.

8. Future Directions

Another way to conduct this experiment would be by adding photographs or videos which would more clearly represent what the different disorders entail. Having people in the experimental condition sit in a room and watch short clips that give information about these disorders and show someone struggling with the disorder could have strengthened the manipulation. Pictures could also show the variety of severity in the disorders, as well as provide information that would be clear and displayed long enough for participants to fully understand. These changes would help eliminate some ambiguity and personal interpretation that occurs with a written description. Additionally, potentially testing multiple methods of education and seeing which one produced the most positive reactions would garner information about how best to disseminate information. Finally, a stronger emphasis on how prevalent these disorders are could possibly provide context for these conditions.

9. Implications

By understanding the differences in reactions to these disorders, it is hoped that educational materials can be developed to give a clearer description of these conditions, emphasizing the commonality that exists. The reason that education is being suggested, despite there not being a significant difference between the conditions present is because it unclear as to if the word disorder in the education component promoted stigma. Perhaps, a follow-up study would include different wording and representations of explaining the disorder. Examples of educational programs would be slide shows that separate the disorders and explain them while emphasizing that they fall under the same classification of disorders. This approach is important because onychophagia for example is viewed most positively, therefore if people came to understand that onychophagia and trichophagia were similar, both disorder may be viewed less negatively. Other educational information could be distributed as pamphlets as they are easily accessible and easily produced. To incorporate findings from the current study, any education distributed would emphasize the commonality of disorders which could help to alleviate feeling of distress, disgust, and annoyance. Education can inform people that sufferers cannot stop the behaviors and that many people live with these disorders. Giving more details about the disorders including the effects and severity of the symptoms and providing statistics about who suffers from these disorders, the effects, as well as how these disorders are different for each individual can possibly diminish the false perceptions of these disorders. Based on the finding that trichophagia has the highest positive adjectives reactions, it can be inferred that there is inherent sympathy, altruistic reactions, and concern from others and these ideals can be used to appeal to the emotions of those learning about the other disorders. Finding negative reactions to all the disorders and a difference between all disorders shows the need for clarification. The results of this study could be used to aid in developing methods to promote a more positive understanding of these disorders in the future.

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