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DSM-5 Trichotillomania: Perception of Adults with Trichotillomania After Psychosocial Treatment

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Abstract

Objective—Trichotillomania (TTM) is associated with significant embarrassment and is viewed negatively by others. A potentially important outcome variable that is often overlooked in treatment for TTM is appearance and social perception.

Method—The present study tested whether participants in a randomized controlled trial of psychotherapy for TTM are viewed more positively by others. All participants in the trial were photographed at baseline and post-treatment. Three treatment responders and three treatment non-responders were selected randomly for the present study. Several healthy controls were also photographed in a similar manner. Undergraduate college students ($N = 245$) assessed whether they would reject the person socially, whether the individual has a psychological or medical problem, and attractiveness.

Results—Individuals with TTM were viewed more negatively than healthy controls at baseline, but treatment responders showed positive improvements on all perceptions relative to non-responders. While treatment responders were still perceived more poorly than controls on social rejection and perceptions of problems at post-treatment, responders were rated no differently than controls on attractiveness at post-treatment.

Conclusions—The results suggest that persons with TTM who respond to treatment are rated by others as significantly improved in appearance, but they might be still stigmatized or socially rejected.

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Clinical trial registration information: U.S. National Institutes of Health human subject's trial forum ([ClinicalTrials.gov](https://clinicaltrials.gov/ct2/show/study/NCT00872742); #NCT00872742)

Keywords

Hair Pulling; Psychotherapy; Stigma

Introduction

Trichotillomania (TTM) is characterized by chronic hair pulling, resulting in significant hair loss (American Psychiatric Association, 2013) and negative psychosocial consequences including depression, anxiety, and lowered quality of life (Odlaug et al., 2010; Woods et al., 2006b). The psychosocial impacts of TTM might be largely due to embarrassment associated with the effects of pulling, as individuals with TTM avoid social activities and have body image concerns (Casati et al., 2000; Stemberger et al., 2000; Wetterneck, Woods, Norberg, & Begotka, 2006). Also, peers stigmatize hair pulling and view affected individuals negatively (Boudjouk et al., 2008; Ricketts et al., 2012; Woods, Fuqua, & Outman, 1999).

Effective behavioral treatments for TTM exist (McGuire et. al, 2014), but whether these brief interventions lead to observable improvements in appearance has yet to be determined. Indeed, there has been little research on the social validity of behavioral treatment for TTM, which refers to the degree to which all consumers of an intervention (e.g., client, family members, friends) endorse the overall effects on targeted symptoms (Baer, Wolf, & Risley, 1987).

This study investigated whether photographs of persons who responded to psychosocial treatment showed improvements in peer perception relative to photographs of non-responders and normal controls. Consistent with previous findings, it was hypothesized that persons with TTM would be perceived more negatively prior to treatment than healthy controls. It was also hypothesized that individuals at post-treatment who had responded to treatment would be rated more positively relative to individuals at post-treatment who had not responded to treatment. Likewise, we explored whether treatment responders would be perceived differently than healthy controls at post-treatment.

Method

Participants

Institutional review board approval was obtained for the current study. All procedures were performed in accordance with the ethical standards of the institutional research committee, the 2013 Declaration of Helsinki, and comparable ethical standards. Informed consent was gathered from all participants, and course credit was offered for participation. Participants were undergraduate psychology students ($N = 245$) who were at least 18 years old (Mean Age = 18.94; Range = 18–25), mostly female (66.1%; $n = 162$), English speaking, and ethnically diverse (62.0% Caucasian, 22.4% Hispanic, 7.8% Asian, 4.5% African American, and 3.3% biracial).

Materials

Photographs of TTM patients were taken from participants of a randomized controlled trial of psychotherapy for TTM (NIMH Grant #R01MH080966; Woods, PI). Sixty-nine patients received 10 sessions of psychotherapy over 12 weeks and consented for their photos to be used for educational and research purposes. Participants were photographed in the facial and scalp regions by independent evaluators at baseline and post-treatment with a Canon *PowerShot* A470 digital camera (7.1-megapixel resolution).

Photo sets from three treatment responders and three treatment non-responders were chosen at random (Mean Age = 35.33; Age Range = 19–57; 5 females). Treatment response was operationalized by scores of 1 (*very much* improved) or 2 (*much* improved) on the Clinical Global Impressions-Improvement Scale (Guy, 1976). Photos from three consenting undergraduate students without TTM were used as controls (Mean Age = 21.33; Age Range = 21–22; 2 females).

The Social Perception and Causal Attributions Scale (SPCA) is a 21-item measure that assesses social evaluation, peer rejection, perceptions of psychological and medical problems, and the need for professional help (Marcks et al., 2005; Ricketts et al., 2012). Items are rated on a 5-point Likert scale, with higher scores indicating a more negative social perception. Items were slightly modified for the current study to refer to anonymous subjects and be directionally consistent. Thus, we performed a parallel analysis (O'Connor, 2000) and exploratory factor analysis using principal axis factoring and a promax rotation (Russell, 2002). The two-factor solution and factor loadings were consistent with Marcks et al. (2005), but one item (“I would be concerned about this person’s appearance”) was deleted because it loaded on both factors. The “social evaluation/rejection” factor displayed an eigenvalue of 11.21 and accounted for 52.26% of the variance, and the “has problems/needs help” factor displayed an eigenvalue of 2.28 and accounted for 9.55% of the variance. Internal consistency was excellent (both subscales $\alpha = .94$), all item factor loadings were acceptable (.44 – .96), and item-total correlations were high (.68 – .81).

The Attractiveness Rating Scale (Ricketts et al., 2012) assesses attractiveness of photographed persons on a scale of one (very unattractive) to ten (very attractive). Inter-observer agreement was measured by the two-way mixed model intra-class correlation coefficient, which was .47 and reflected moderate agreement (Landis & Koch, 1977).

Procedure

Participants were recruited through a study sign-up website. All participants provided demographic information before being informed that they would be asked questions regarding their perceptions of people with varying degrees of hair loss. Participants were randomized to view a slideshow on a 26" *Sanyo* LCD monitor containing either the six *baseline* TTM photos and the three control photos or the six *post-treatment* TTM photos and the three control photos. The presentation order of photos was randomized within slideshows.

Analysis

For each measure, differences between groups were analyzed within each time point using separate one-way ANOVAs. Independent-samples *t*-tests were used to determine whether TTM responders and TTM non-responders showed significant changes between time points. All tests were two-tailed.

Results

SPCA – Social Evaluation/Rejection Scale

The one-way ANOVA of TTM status at baseline was significant ($F(2, 383) = 15.37, p < 0.001$), and Bonferroni post-hoc tests showed that both TTM responders and TTM non-responders had significantly higher scores than controls (both *p*-values < 0.001). TTM responders showed marginal improvement between baseline and post-treatment, whereas TTM non-responders showed no change (See Table 1). The one-way ANOVA of TTM status at post-treatment was significant ($F(2, 350) = 17.39, p < 0.001$). Post-hoc tests showed that TTM responders had significantly lower scores than TTM non-responders ($p = 0.001$) but were still marginally higher than controls ($p = 0.09$).

SPCA – Has Problems/Needs Help Scale

The one-way ANOVA of TTM status at baseline was significant ($F(2, 383) = 61.76, p < 0.001$), and post-hoc tests showed that TTM responders and TTM non-responders both had significantly higher scores than controls (*p*-values < 0.001). TTM responders showed significant improvements across treatment, whereas TTM non-responders showed significant worsening across treatment (See Table 1). The one-way ANOVA of TTM status at post-treatment was significant ($F(2, 350) = 84.34, p < 0.001$), and TTM responders had significantly better scores than TTM non-responders ($p < 0.001$) but still had significantly worse scores than controls ($p < 0.01$).

Attractiveness Scale

The one-way ANOVA of TTM status at baseline was significant ($F(2, 383) = 46.87, p < 0.001$), and post-hoc tests showed that TTM responders and TTM non-responders both had significantly lower (less attractive) scores than controls (both *p*-values < 0.001). TTM responders showed a significant improvement in attractiveness across treatment whereas TTM non-responders showed no change (See Table 1). The one-way ANOVA of TTM status at post-treatment was significant ($F(2, 338) = 27.79, p < 0.001$), and TTM responders had significantly better scores than TTM non-responders ($p < 0.001$) but were not significantly different from healthy controls ($p = .26$).

Discussion

This study replicated previous research showing that persons with TTM are perceived more negatively than healthy controls (Ricketts et al., 2012). Furthermore, our findings showed that persons who respond to TTM treatment are perceived better after treatment, as significant change was detected on two peer perception measures and marginal change was

detected on a third. Marginal support was found for the notion that TTM treatment responders would approach levels achieved by healthy controls at post-treatment.

Results of the present study suggest that effective treatment had a greater impact on perceptions of attractiveness and, to a lesser extent, on broader social perceptions and causal attributions. One potential explanation of these findings is that successful TTM treatment has significant cosmetic benefits, but that the perceptual stigma associated with hair pulling is more resistant to change after brief treatment. These results are consistent with research that showed that mental health stigma is influenced by the concealability and aesthetic quality of the illness (Jones et al., 1984). Perhaps persons who make significant gains during brief TTM treatment still show subtle visual evidence of irregular hair loss. Further, research indicates that negative fitness-related facial cues (i.e., dermatological health) bias observers' interpretation of others' personality and qualities (Zebrowitz & Montepare, 2008). For instance, one negative facial cue that signals poor health or abnormal behavior (i.e., slight irregular hair loss) can become overgeneralized to be interpreted as an indicator of psychological instability. Thus, when individuals with TTM grow back some of their hair during treatment, they might be rated as more attractive but still stigmatized.

There are several important limitations to the current study. First, the findings comparing photographed persons are inherently limited by the lack of controlling for factors related to appearance. While we did control for gender and hair color, other factors could play a large role in judgements about appearance. For instance, the control sample was notably younger than persons with TTM, creating a potential age confound. Relatedly, the limited stimulus set of persons with TTM presents problems for external validity.

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Table 1

Average Scale Scores in Responders, Non-Responders, and Controls Across Time

	Baseline Mean (SD)	Post-Treatment Mean (SD)	<i>t</i>	<i>p</i>-value
<u>SPCA – Social Evaluation/Rejection Scale</u>				
Responders	18.15 (5.62)	16.84 (5.20)	1.89	0.06
Non-Responders	19.33 (5.95)	19.51 (6.12)	–0.10	0.92
Controls	15.95 (4.57)	15.32 (4.62)	n/a	n/a
<u>SPCA – Has Problems/Needs Help Scale</u>				
Responders	28.29 (6.56)	24.06 (6.53)	5.06	<0.001
Non-Responders	29.82 (6.19)	32.05 (6.74)	–2.70	0.007
Controls	21.83 (5.53)	21.46 (6.21)	n/a	n/a
<u>Attractiveness Scale</u>				
Responders	4.34 (1.25)	5.21 (1.24)	–5.39	< 0.001
Non-Responders	4.27 (1.13)	4.33 (1.19)	–0.36	0.73
Controls	5.58 (1.25)	5.29 (1.22)	n/a	n/a