

Based on the literature, trichotillomania (TTM, chronic hair pulling) in children and adults appears to be responsive to behavioral interventions such as habit reversal. However, some have questioned the generality and acceptability of such procedures. This study compared the acceptability ratings of four interventions targeting TTM (habit reversal, hypnosis, medication, and punishment). In the study, 233 college students read case vignettes in which the age of the analogue client and the severity of the hair pulling were manipulated. Results showed significant differences between the four treatment conditions, with hypnosis and habit reversal being rated most acceptable. Age of the analogue client and severity of TTM did not significantly influence acceptability ratings.

Acceptability of Treatments for Trichotillomania

Effects of Age and Severity

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Treatment acceptability was originally defined by Kazdin (1981) as “judgments by lay persons, clients, and others of whether treatment procedures are appropriate, fair, and reasonable for the problem or client” (p. 493). Part of the rationale for evaluating treatment acceptability is that practitioners, as opposed to consumers or society at-large, may use different criteria to evaluate treatments (Kazdin, 1980). Although treatment decisions should not be based solely on treatment-acceptability ratings, this type of information may help identify variables related to premature withdrawal from therapy and likelihood that treatment will be implemented correctly (Cross-Calvert & Johnston, 1990; Kelley, Heffer, Gresham, & Elliott, 1989; Reimers,

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Wacker, Cooper, & DeRaad, 1992; Witt, Martens, & Elliott, 1984). Furthermore, in situations in which several interventions are effective for treating a given problem, treatment choice should be influenced by variables other than efficacy, such as client preferences (Heffer & Kelley, 1987).

Numerous factors influence ratings of treatment acceptability. One of the most widely investigated factors is severity of problem behavior (Miltenberger, 1990). The majority of studies report that acceptability ratings for intervention increase as the severity of the problem increases (Burgio, Hardin, Sinnott, Janosky, & Hohnman, 1995; S. N. Elliott, Witt, Galvin, & Moe, 1986; Lindeman, Miltenberger, & Lennox, 1992; Tarnowski, Gavaghan, & Wisniewski, 1989; Witt et al., 1984), although at least one study has found the opposite (Reimers et al., 1992).

The influence of client gender on ratings of treatment acceptability has also been studied, but the results have been inconclusive. Burgio and Sinnott (1989) reported a treatment-by-age interaction, with medication judged as more acceptable for a 75-year-old woman and behavioral interventions as more acceptable for a 5-year-old girl for treating disruptive behaviors. Another group of researchers did not find a significant influence of age on acceptability ratings of interventions for self-injurious behaviors (Tarnowski, Rasnake, Mulick, & Kelly, 1989). Two other studies included age among nine other manipulated descriptor variables and attempted to predict acceptability ratings through a regression equation (Spreat, Lipinski, Dickerson, Nass, & Dorsey, 1989; Spreat & Walsh, 1994). In these studies, age (alone or in combination with other variables) was not a significant predictor of the acceptability of electric shock treatments (Spreat et al., 1989; Spreat & Walsh, 1994). Further research may reveal that age is a predictor of treatment acceptability only for certain types of behavior problems or for more intrusive interventions.

In the treatment of repetitive behavior disorders, behavior therapy has a long history of successful interventions (for a review, see Woods & Miltenberger, 2001). As a result, clients and clinicians are faced with a large number of possible interventions from which to choose. In such cases, treatment-acceptability data would be valuable in the treatment decision-making process, but unfortunately, such data are currently unavailable. One such disorder that typifies this problem is trichotillomania (TTM).

TTM, first used in the late 1880s, refers to a condition characterized by chronic hair pulling (Hallopeau, 1889). Individuals qualify for a diagnosis of TTM if they exhibit recurrent hair pulling that results in noticeable hair loss (alopecia) and experience either a sense of tension before pulling or relief and/or pleasure when pulling hair. The hair pulling must not be the result of another mental or medical condition (e.g., dermatological condition), and it must cause “significant distress or impairment in social, occupational, or other areas of functioning” (American Psychiatric Association, 1994, p. 621). Hair pulling is typically a private behavior, and individuals with TTM often go to great lengths to hide the effects of this “peculiar” behavior from friends, family, and health care providers (Stein & Christenson, 1999; Swedo, 1993).

The secretive nature of TTM may inhibit individuals from seeking treatment. From a sample of 123 self-identified hair pullers, 58% reported they had never received any type of treatment (Cohen et al., 1995). The reasons for this underuse of treatment are not well understood. In addition to embarrassment about the behavior, some have hypothesized there is a lack of awareness about potential interventions for hair pullers and confusion as to where services can be obtained (Stein & Christenson, 1999). It is speculated that other factors may also contribute to the failure to pursue treatment for TTM. Such factors may include minimization of the severity of the problem or concerns with the acceptability of available treatments.

The psychiatric literature typically characterizes TTM as a complex psychopathological disorder that is relatively resistant to treatment (Graber & Arndt, 1993). Among pharmacological treatments for TTM, antidepressants have been the most thoroughly researched, particularly clomipramine (Christenson & O’Sullivan, 1996; O’Sullivan, Christenson, & Stein, 1999; Swedo et al., 1989). Although significant reductions in hair pulling have occurred with the use of medication (e.g., Swedo et al., 1989), concerns with the maintenance of treatment effects and with treatment acceptability, as indicated by high drop-out rates, have been noted (Swedo, Lenane, & Leonard, 1993).

In contrast to the psychiatric literature, Friman, Finney, and Christophersen (1984) promoted a behavioral view of TTM, calling hair pulling a “relatively isolated symptom comparable to other habit disorders such as thumb sucking, nose picking, or fingernail biting”

(p. 250). This alternative model and its associated behavioral treatments evoked debate over the fundamental nature of the disorder as well as its appropriate treatment (e.g., Ames, 1985; Friman, 1992; Friman, Rostain, Parrish, & Carey, 1990).

In recent years, research has emerged demonstrating the validity of various behavioral approaches to treating hair pulling. The first approach is based on the conceptualization that habit behaviors (including TTM) are maintained by negative reinforcement because the behaviors reportedly produce reductions in tension, anxiety, or some aversive condition experienced by individuals (see Miltenberger, Fuqua, & Woods, 1998). One potential intervention for decreasing tension, thus reducing or eliminating the motivation for hair pulling, involves relaxation-training procedures such as progressive muscle relaxation (e.g., DeLuca & Holborn, 1984) or a combination of relaxation with suggestions for behavior change. This latter technique has been referred to as *hypnobebehavioral treatment* (Robiner, Edwards, & Christenson, 1999). The studies investigating the efficacy of this treatment for hair pulling consist primarily of uncontrolled case studies without quantifiable data. However, despite their limitations, these reports document success in reducing hair pulling, primarily in normal, functioning adults. Relative to other treatments, hypnosis requires little effort from the recipient and may be well accepted by some individuals.

A second behavioral approach involves punishment procedures. A number of aversive consequences have been used to produce dramatic reductions in hair pulling. The list of aversive consequences used includes electric shock (Corte, Montrose, & Locke, 1971; Crawford, 1988; Deshpande & Mehta, 1989), aromatic ammonia (Altman, Haavik, & Cook, 1978), facial screening (Barmann & Vitali, 1982), pain-sensitizing cream (Ristvedt & Christenson, 1996), response prevention (J. T. Rapp et al., 2000), and snapping of a rubber band against one's own skin (Rodolfa, 1986). The majority of the studies using punishment procedures have documented their efficacy for decreasing hair pulling in children and adults with developmental disabilities (e.g., Altman et al., 1978). Fewer studies have been done using punishment procedures with typically developing adults. This raises concerns about the acceptability and generality of punishment-treatment protocols (A. J. Elliott & Fuqua, 2001).

To date, only two studies have collected acceptability information on the use of a punishment procedure to decrease hair pulling (Barmann & Vitali, 1982; J. T. Rapp et al., 2000). In both studies, participants had severe developmental disabilities; therefore, the treatment-acceptability ratings were completed by parents and caregivers. Barmann and Vitali (1982) found that parents and care providers were generally in support of facial screening (i.e., briefly covering face with a terry cloth bib contingent on hair pulling) to reduce hair pulling for all three children in this study, particularly with respect to its ease of use. J. T. Rapp et al. (2000) received high treatment-acceptability ratings from a parent of a 19-year-old woman for both the application of hand splints and the combination of response interruption (hold hands at side for 20 seconds) and differential reinforcement of other behaviors. These data indicate punishment procedures have been acceptable to parents or case providers of individuals with severe developmental disabilities. However, data were collected after treatment effects were apparent, so there is no information on the pretreatment acceptability of such procedures.

The behavioral intervention with the strongest empirical support for decreasing chronic hair pulling is habit reversal. Habit reversal is a multicomponent intervention that has been used to treat many repetitive behaviors, such as motor tics, vocal tics, thumb sucking, nail biting, and even stuttering (see reviews by Woods & Miltenberger, 1995, 1996). Habit reversal is currently listed as a "probably efficacious" treatment for habit behaviors on the American Psychological Association's list of empirically validated treatments (Chambless et al., 1998).

Although many studies have reported achieving and maintaining zero levels of hair pulling with the use of habit reversal (e.g., Tarnowski, Kelly, & Mendlowitz, 1987), not all have found such results (Long, Miltenberger, & Rapp, 1999; Mouton & Stanley, 1996; J. S. Rapp, Miltenberger, Long, Elliott, & Lumley, 1998; Vitulano, King, Scahill, & Cohen, 1992). In such cases, it has been speculated that nonresponders have controlling variables for their hair pulling that differ from those of the responders (Elliott & Fuqua, 2000). Another possibility is that nonresponders do not find habit reversal an acceptable treatment, which may influence adherence to the treatment

protocol or early withdrawal from treatment (Keuthen, Aronowitz, Badenoch, & Wilhelm, 1999; Rothbaum & Ninan, 1999).

Despite the weight of the research in this area, some have questioned the generality and acceptability of habit reversal and have begun supplementing the procedure with additional treatment components (e.g., Rothbaum & Ninan, 1999). Although these components have been added without empirically demonstrating their necessity, one of the criticisms that spawned their inclusion, the lack of treatment acceptability with habit-reversal procedures cannot be refuted, due to the paucity of information about the acceptability of habit reversal.

Although habit reversal has been found to be acceptable for the treatment of other habit behaviors such as stuttering (A. J. Elliott, Miltenberger, Rapp, Long, & McDonald, 1998) and motor tics (Woods, Miltenberger, & Lumley, 1996), only one study has evaluated the acceptability of the procedure as a treatment for TTM. Tarnowski, Rosen, McGrath, and Drabman (1987) treated an 11-year-old girl with severe TTM with habit reversal and asked the mother to rate the acceptability of the intervention. This mother rated the procedure a 5 on a 5-point Likert-type scale, reflecting high acceptability. Again, the treatment-acceptability data were collected after treatment implementation; therefore, it is not known how acceptable the treatment was perceived to be after its initial presentation to the parent and child.

In summary, very limited data have been collected on the acceptability of the various effective interventions for TTM. As discussed earlier, such data would be helpful when choosing an intervention for a person with the disorder. In this study, we compare the differential acceptability of four interventions for TTM (medication, hypnotherapy, punishment, and habit reversal). In addition, we investigate the effects of altering the age of the client and the severity of her symptoms.

METHOD

PARTICIPANTS

Extra credit was given to 233 introductory psychology undergraduate students who participated in this study, although information from

8 participants was not used because of incomplete data. There were 139 women and 89 men who participated. The mean age of the participants was 19.1 years (range = 17 to 33 years).

To determine the sample's familiarity with TTM, information regarding general exposure to the disorders was collected. Only 10.1% ($n = 23$) of the participants knew someone who had similar problems, and 0.9% ($n = 2$) reported personally having problems with hair pulling. Neither of the individuals who had difficulty with hair pulling had ever received treatment.

Along with participants' lack of direct experience with TTM, they also had limited knowledge of the disorder. Participants were asked to rate their knowledge of TTM on a 5-point scale from 1 (*virtually no knowledge*) to 5 (*quite a bit of knowledge*). The mean knowledge rating was 2.3 ($SD = 1.0$), with only two participants (0.9%) reportedly knowing "quite a bit" about TTM.

STIMULUS MATERIALS

Case vignette. The case vignette (see the appendix) used in this study was based on the fourth edition of the *Diagnostic and Statistical Manual of Mental Disorders's (DSM-IV)* (American Psychiatric Association, 1994) diagnostic criteria for TTM as well as on clinical experience. Professionals knowledgeable about TTM were consulted to ensure accuracy of the written case description.

Age of the analogue client and severity of hair pulling were manipulated to determine their influence on treatment-acceptability ratings. Client age was manipulated by including vignettes of three separate age groups: child (age 6 years), adolescent (age 16 years), and adult (age 26 years; see the appendix). These ages were selected to represent various groups that had been discussed in the literature. Age 6 for the childhood vignette was selected because early onset TTM has been defined as chronic hair pulling before age 7. The adolescent age was based on the mean age of onset for TTM, which is 13.1 years (Christenson, Mackenzie, & Mitchell, 1991). The adult age was selected based on when people typically present for treatment. The majority present for treatment in their late 20s to early 30s

(Christenson et al., 1991). Age 26 was selected because it fell within the age range of average presentation for treatment and it created equal distances between the three age groups. Severity level was manipulated by varying the percentage of hair loss, percentage of life engaged in hair pulling, and whether trichophagy (hair swallowing) was present. Levels of severity were categorized as mild versus severe.

Treatment vignettes. Similar to previous studies in treatment acceptability, treatment conditions were derived from versions reported in the literature and represented diverse means of treating TTM (e.g., Kazdin, 1980). The description and rationale for each treatment was based on seminal articles published on the use of that intervention with TTM and available from the first author. Professionals knowledgeable about TTM were consulted to ensure accuracy of each treatment description and rationale.

DATA COLLECTION

Each participant was randomly assigned to one of six case vignettes describing an individual with chronic hair pulling. Each case vignette described an analogue client of one age (child, adolescent, or adult) and one severity level of hair pulling (mild or severe). Each participant was given a packet containing the case vignette, four treatment vignettes, a ranking form, a narrative questionnaire, and a background information questionnaire.

Participants first read the randomly selected case vignette followed by four descriptions and rationales of potential treatment interventions for chronic hair pulling. The order of treatment descriptions was counterbalanced to control for sequence effects. After reading each treatment description, the participant completed a modified version of the Abbreviated Acceptability Rating Profile (AARP) (Tarnowski & Simonian, 1992). Next, the participant rank ordered the treatments from the most acceptable (1) to the least acceptable (4). Participants then completed a narrative questionnaire that asked why they ranked treatments the most or least acceptable. Finally, each participant com-

pleted a background questionnaire soliciting basic demographic information and information regarding general exposure to TTM.

INSTRUMENTATION

AARP

A measure of treatment acceptability was given to assess the degree to which each treatment intervention was viewed as fair, reasonable, and appropriate for TTM. The AARP was modified slightly to accommodate the varying ages of the analogue client (Tarnowski & Simonian, 1992). The AARP consists of eight items rated on a 6-point Likert-type scale ranging from *strongly disagree* to *strongly agree*. The AARP yields an overall acceptability score between 8 (low) and 48 (high). An intervention has traditionally been considered "acceptable" if it receives a rating greater than the midpoint on the scale (AARP midpoint = 28) (Tarnowski & Simonian, 1992).

The AARP was created as an abbreviated and simplified alternative to the Intervention Rating Profile-15 (Witt & Martens, 1983). The Intervention Rating Profile-15 has been widely used to evaluate consumers' or potential consumers' acceptance of a treatment, but the utility of the instrument was limited by its time intensiveness (especially when rating multiple treatments) and readability (Tarnowski & Simonian, 1992). A principal components analysis of the AARP indicated that all items loaded on a unitary factor (acceptability) and that this factor accounted for 88% of the variance (Tarnowski & Simonian, 1992).

Intervention Ranking Form

After reading the four treatment vignettes and completing the AARP for each treatment, participants rank ordered the treatments from the most acceptable (1) to the least acceptable (4). A description of each treatment was provided on the ranking form to keep participants from referring to their previous acceptability ratings. The order of the treatment descriptions on the ranking was identical to the order of original presentation.

Narrative Questionnaire

After the participants rank ordered the treatments from most to least acceptable, they provided written responses to why they ranked a treatment most acceptable and why they ranked a treatment least acceptable. The responses were coded into various content areas. The content codes were derived from examination of the responses, with each sentence receiving one content code. A list of the codes used in this analysis can be obtained from the first author.

The reliability of the response coding was determined by randomly selecting 32.7% of participants and having a second rater code responses. Interobserver agreement was calculated by comparing whether both scorers gave a response the same code. The agreement percentage was calculated by dividing the number of agreements by the number of agreements plus disagreements and multiplying by 100. The mean interobserver agreement for coding responses was 83.1%.

INTEGRITY OF THE INDEPENDENT VARIABLE

To provide support that participants read the case and treatment vignettes, they were asked to underline key words or phrases as they worked through the materials. A scoring template was used, and each underlined word or section was tabulated.

EXPERIMENTAL DESIGN

This study used a 2 (severity level) \times 3 (age of client) \times 4 (intervention) mixed design. Severity level and age of client were between-groups variables, and treatment intervention was a within-group variable. Severity level was manipulated by varying the percentage of hair loss, percentage of life engaged in hair pulling, and whether trichophagy (hair swallowing) was present. Levels of severity were categorized as low versus high. Age of the client was manipulated by including vignettes of three separate age groups: child (6 years), adolescent (16 years), and adult (26 years). All aspects of this study were completed in a university research laboratory.

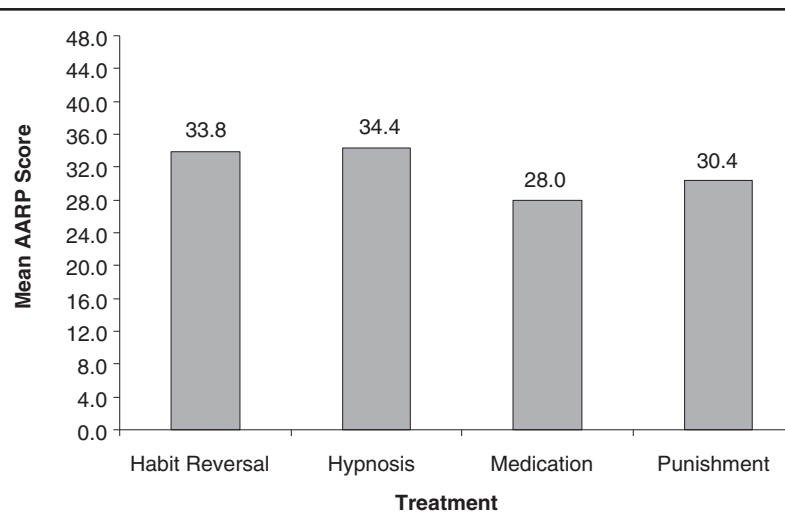


Figure 1. Mean AARP scores by treatment type.

NOTE: AARP = Abbreviated Acceptability Rating Profile.

RESULTS

AARP FINDINGS

A repeated measures ANOVA was used to analyze the AARP data. There were no significant interactions or significant main effects for age or severity; however, there was a significant main effect for type of treatment intervention, $F(3, 666) = 27.53, p < .00$. As can be seen in Figure 1, the majority of participants rated all four treatments as acceptable. Hypnosis and habit reversal received the highest acceptability ratings (34.4 and 33.8, respectively), whereas punishment and medication were rated as less acceptable (30.4 and 28.0, respectively). Paired sample t tests, with a Bonferroni correction, were conducted to determine the differences between treatments (see Table 1). There were significant differences between four of the following variable pairings: habit reversal versus medication, $t(227) = 6.84, p < .01$; habit reversal versus punishment, $t(227) = 4.22, p < .01$; hypnosis versus medication, $t(227) = 8.54, p < .01$; and hypnosis versus punishment, $t(227) = 4.93, p < .01$. Two variable pairings were not significant: habit reversal versus hypnosis, $t(227) = -.89; p > .05$; and medication

TABLE 1
Mean Differences of AARP Data for Treatment Type

	<i>Habit Reversal (33.75)</i>	<i>Hypnosis (34.39)</i>	<i>Medication (28.02)</i>	<i>Punishment (30.36)</i>
Habit reversal	—	0.64	5.73 ^a	3.39 ^a
Hypnosis		—	6.39 ^a	4.03 ^a
Medication			—	2.34
Punishment				—

NOTE: AARP = Abbreviated Acceptability Rating Profile.

a. Denotes significant difference between the group means (means in parentheses), with a Bonferroni correction.

versus punishment, $t(227) = -2.65, p > .05$. In summary, it was found that habit reversal and hypnosis were equally acceptable and more acceptable than either medication or punishment, which were equally acceptable to one another.

TREATMENT RANKING

Analysis of the ranking data yielded findings that closely corresponded to the AARP data. Hypnosis and habit reversal received the highest mean rankings (2.14 and 2.28, respectfully), whereas punishment and medication were ranked as less acceptable (2.68 and 2.89, respectfully).

A repeated measures ANOVA was used to determine if significant differences existed among the four treatment conditions in how they were rank ordered by participants. Again, a significant effect was found for the type of treatment, $F(3, 666) = 17.6, p < .01$. Paired sample t tests, with a Bonferroni correction, indicated significant differences between the following four variable pairings: habit reversal versus medication, $t(227) = 3.58, p < .01$; habit reversal versus punishment, $t(227) = 3.58, p < .01$; hypnosis versus medication, $t(227) = 7.36, p < .01$; and hypnosis versus punishment, $t(227) = 4.59, p < .01$. Two variable pairings were not significant: habit reversal versus hypnosis, $t(227) = 1.27, p > .05$; and medication versus punishment, $t(227) = 1.68, p > .05$.

NARRATIVE DATA

Participants' responses to why they ranked a treatment as most acceptable and why they ranked a treatment as least acceptable were coded into various content areas. Each sentence was assigned one response code; however, many participants wrote more than one sentence. When a participant wrote numerous sentences, each sentence was equally weighted so the total equaled 1.0. For example, if a participant wrote four sentences on why he or she ranked a treatment most acceptable, each sentence was given a weight of 0.25. If a participant wrote only one sentence, that sentence was weighted 1.0.

Coded responses for most acceptable treatment. Overall, participants made reference to procedural issues (16.0%) and anticipated effectiveness of the treatment (16.0%) as reasons they ranked a treatment most acceptable. The next most common responses included lack of side effects (12.1%), reference to other treatments (10.9%), and addressing underlying problems (9.1%). The reasons mentioned the least were age of the client (0.4%) and client's anticipated compliance with treatment (0.4%).

As can be seen in Table 2, each treatment was ranked most acceptable for different reasons. Procedural issues were mentioned most frequently for both habit reversal (35.5%) and punishment (27.3%), whereas efficacy was most frequently mentioned for medication (23.8%) and addressing an underlying problem was most frequently noted for hypnosis (18.2%). It is interesting that efficacy was mentioned quite frequently for hypnosis (15.0%), medication (23.8%), and punishment (24.5%), but not for habit reversal (6.5%).

Coded responses for least acceptable treatments. The reasons why participants ranked a treatment the least acceptable were more varied than why they ranked a treatment the most acceptable. Concerns regarding side effects were mentioned most frequently (13.0%), followed closely by emotional responses (12.6%) and references to other treatments (12.4%). The reasons mentioned the least frequently were ease of use (0.2%), length of treatment (1.4%), and age of the analogue client (1.6%).

TABLE 2
Reasons Treatment Ranked Most Acceptable

	<i>% Habit Reversal (n = 67)</i>	<i>% Hypnosis (n = 47)</i>	<i>% Medication (n = 39)</i>	<i>% Punishment (n = 47)</i>
Age	0.0	0.0	2.6	0.0
Awareness	4.5	6.4	4.8	2.8
Compliance	1.2	0.0	0.0	0.0
Ease	1.2	0.0	9.6	1.0
Efficacy	6.5	15.0	23.8	24.5
Emotional	0.5	1.3	2.6	1.2
Generalization	1.5	0.7	0.0	1.0
Length of treatment	2.6	2.2	0.9	0.5
Maintenance	0.0	0.0	3.5	0.0
Miscellaneous	5.0	3.3	5.4	3.3
Other treatment reference	15.9	11.8	3.9	8.0
Personal experience	1.7	3.3	5.4	7.4
Procedural	35.5	12.2	10.2	27.3
Rationale	5.8	8.6	13.9	2.8
Side effect	11.1	14.9	4.8	15.2
Severity	0.0	2.0	5.2	2.1
Underlying problems	6.7	18.2	3.5	2.8

As can be seen in Table 3, each treatment was ranked least acceptable for different reasons. Efficacy concerns were the most frequent explanation for low rankings of both habit reversal (23.1%) and hypnosis (26.3%). References to other treatments were made most often for ranking medication the least acceptable (25.0%), and procedural concerns were mentioned most frequently for Punishment (21.7%). It is interesting that concerns regarding the analogue client's lack of hair pulling awareness and compliance with treatment were mentioned frequently for habit reversal (15.3% and 15.1%, respectively) but rarely for the other three treatments.

INTEGRITY OF THE INDEPENDENT VARIABLE

Participants underlined any main points as they read the case and treatment vignettes. This was done to provide support that participants actually read the material and thereby contacted the independent vari-

TABLE 3
Reasons Treatment Ranked Least Acceptable

	<i>% Habit</i> <i>Reversal</i> (n = 43)	<i>% Hypnosis</i> (n = 21)	<i>% Medication</i> (n = 95)	<i>% Punishment</i> (n = 69)
Age	1.8	1.9	2.3	0.5
Awareness	15.3	2.4	0.7	8.3
Compliance	15.1	4.8	0.4	9.6
Ease of use	0.8	0.0	0.0	0.0
Efficacy	23.1	26.3	1.4	14.1
Emotion	4.0	20.1	15.9	11.3
Generalization	0.0	0.0	0.0	0.0
Length of treatment	0.8	0.0	2.2	1.2
Maintenance	1.3	4.0	2.4	0.7
Miscellaneous	4.0	0.0	6.8	6.3
Other treatment reference	0.0	4.0	25.0	5.6
Personal experience	2.4	7.1	1.9	1.9
Procedural	13.5	10.9	2.4	21.7
Rationale	3.2	4.8	7.2	1.2
Side effect	5.1	4.0	19.5	11.7
Severity	6.2	8.7	4.4	2.2
Time until effective	0.0	0.0	1.5	0.0
Underlying problem	3.5	1.2	6.0	3.8

ables. Of the participants, 24 (10.5%) did not underline any words in the case vignette and 44 (19.3%) did not underline any words in the treatment vignettes.

Analyses comparing those who underlined ($n = 164$) with those who failed to underline either the case or treatment vignettes ($n = 64$) were conducted to determine if there were significant differences between the two groups. There were no significant differences between groups for any of the analyses previously reported. Therefore, no participants were excluded.

DISCUSSION

The purpose of this study was to examine the acceptability of various treatments for TTM. All four treatments were rated as acceptable

interventions to decrease chronic hair pulling across age groups and severity levels. Hypnosis and habit reversal were rated significantly more acceptable than were either punishment or medication. Consistent with previous research, this study found that pharmacological and punishment-based procedures received lower acceptability ratings (Miltenberger, 1990). It is interesting that habit reversal was rated as quite acceptable despite the fact that it may be operating as a punishment procedure (Miltenberger et al., 1998). However, the emphasis on solicitation of social support from friends or family members (i.e., a reinforcement-based strategy) may have increased the overall acceptability of the habit-reversal procedure.

Neither age of the analogue client nor severity of hair pulling influenced treatment-acceptability ratings. Although it is possible these variables do not play a role in acceptability of interventions for TTM, it is also possible that the vignettes used in this study did not clearly differentiate the various levels of age and severity. For example, comparing treatment-acceptability ratings between a 5-year-old and a 75-year-old may have yielded different results.

The familiarity of the participant pool with TTM may have also negated any effects of age or severity of treatment-acceptability ratings. In this study, the participant pool was relatively unfamiliar with TTM and may have viewed any case in which someone was pulling hair as severe. Because participants read only one case vignette and thereby were exposed to only one age and severity level, it is unknown how exposure to a greater variety of case presentations would have affected acceptability ratings.

Methodological issues may have also had an effect on the acceptable ratings for all four treatments. In this study, participants were asked to read only one treatment vignette at a time and immediately answer questions about its acceptability. Although presentation of the treatment vignettes was counterbalanced to control for sequence effects, participants may have responded differently if they had read all treatment vignettes before completing acceptability measures. This point relates to a methodological issue that requires further exploration in treatment-acceptability research.

Participants were also asked to write why they ranked treatments as the most and the least acceptable. The majority of respondents identi-

fied procedural issues as the reason for ranking habit reversal or punishment as the most acceptable. In contrast, efficacy was frequently mentioned as a rationale for ranking medication the most acceptable. In fact, presumed efficacy was noted much more frequently for hypnosis, medication, and punishment compared with habit reversal. Perhaps the procedures of habit reversal outweigh concerns regarding efficacy. However, a clinical subject population may weigh efficacy over procedural issues, as they are directly experiencing the disorder.

Explanations for ranking a treatment the least acceptable also varied across treatments. Concerns regarding efficacy were the most frequent explanations for ranking habit reversal and hypnosis as the least acceptable. It is interesting that no statements regarding efficacy were provided to participants in this study. Future research should examine the influence of presumed efficacy in treatment acceptability.

This study had many limitations that must be taken into account. First, there are inherent flaws with an analogue design to study treatment acceptability (see Miltenberger, 1990). These include participant's exposure to the case and treatment solely through written materials. Individuals who experience the effects of the behavior under question or who experience the treatment more directly may respond differently. Furthermore, college students were used as raters in this study, and they may represent different views than would society at large. Because of the prevalence and secretive nature of TTM, obtaining large enough sample sizes to manipulate more than one variable could be quite difficult. Furthermore, previous research has documented numerous habit behaviors in college student populations (e.g., Hansen, Tishelman, Hawkins, & Doepke, 1990; Woods, Miltenberger, & Flach, 1996); thus, the argument could be made that college students represent potential consumers.

Despite these limitations, this study represents the first systematic evaluation of treatment acceptability for TTM. Future research should expand this line of research to different repetitive behaviors as well as to different populations of raters (e.g., practitioners, actual consumers). The results from this study suggest that psychological interventions, particularly habit reversal and hypnosis, are acceptable procedures for treating TTM across age and severity levels. Given the weight of empirical research in support of habit reversal, the combination of efficacy and acceptability apparently make this the treatment of

choice for treating hair pulling, although more direct empirical comparisons would be beneficial.

APPENDIX CASE VIGNETTE

Sarah is an [8-, 16-, or 26-]year-old girl or woman who has pulled her hair for the past [3 months versus 30 months] and is now in treatment for this problem. Sarah typically pulls hair from the top of her head and her eyebrows. [She pulls primarily from her head and has a bald spot the size of a nickel behind one ear versus she has pulled out approximately 50% of the hair on the top of her head, and she also pulls from her eyebrows.]

Sarah makes many efforts to hide her hair pulling and bald patches from others. She will often wear a hat over her head or arrange her hair to cover the bald patches. She is often fearful that others will discover her secret and will think less of her. Sarah has tried many times to stop pulling her hair; however, many times she feels as if she just has to pull out one more hair. Sarah has tried many things, such as putting gloves over her hands and cutting her hair short, to keep from pulling; however, nothing has been successful for longer than a week.

There are also times when Sarah is unaware she is pulling out hair. This most frequently happens when she is watching television and looks down to notice a pile of hair sitting next to the chair. [Sarah will sometimes run a pulled hair along her lips, bite of the end of the hair that contains the root, and swallow it.]

NOTE: Information in brackets indicates manipulations of age and severity.

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