

MOTIVATION TO SEEK TREATMENT IN A TRICHOTILLOMANIA

POPULATION: EFFECT OF SEVERITY, DISTRESS, AND

FUNCTIONAL IMPAIRMENT

By

Maria Banis

Submitted to the

Faculty of the College of Arts and Sciences

of American University

in Partial Fulfillment of

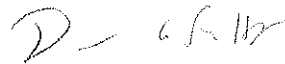
the Requirements for the Degree of

Master of Arts

In

Psychology

Chair:



David Haaga, Ph.D.



James Gray, Ph.D.



Michele Carter, Ph.D.



Dean of the College of Arts and Sciences

April 25, 2012

Date

2012

American University

Washington, D.C. 20016

© COPYRIGHT

by

Maria Banis

2012

ALL RIGHTS RESERVED

MOTIVATION TO SEEK TREATMENT AMONG A TRICHOTILLOMANIA
POPULATION: EFFECT OF SEVERITY, DISTRESS, AND
FUNCTIONAL IMPAIRMENT

BY

Maria Banis

ABSTRACT

Trichotillomania (TTM) is an impulse-control disorder characterized by pulling of one's hair. While much is known about severity and impairment, there is limited research on motivation to seek treatment. The current study attempted to identify prevalence of intrinsic versus extrinsic motivation in the TTM sample; and to determine associations between type of motivation and distress, severity, and psychosocial impairment. Sixty participants were assessed on measures of severity, distress, functional impairment, and motivation. Significantly more participants endorsed intrinsic motivation ($t=24.8, p<.001$). Total motivation was significantly correlated with time interference ($r=.27, p=.04$). This study was among the first to assess motivation in a TTM population. Motivation was not associated with distress, severity, or social, economic, or occupational/academic impairment, but total motivation was correlated with time interference. Previous findings were replicated in the correlations between distress and severity, and psychosocial impairment. Due to sample limitations, larger studies assessing motivation are warranted.

ACKNOWLEDGEMENTS

This Masters thesis would not have been possible with the help and support from many people. First and foremost, I would like to thank my advisor, Dr. David Haaga, for his guidance, encouragement, and patience in the development of my thesis. I also wish to thank my committee members, Drs. James Gray and Michele Carter, for their knowledge and assistance in preparing the final draft. I would like to also express my gratitude to my lab members Kate Rogers and Natalie Rusch, whose patience in discussing potential study ideas from the start and in answering my endless questions about trichotillomania and graduate school in general has been extremely valuable, and to my lab members Sam Nelson and Martha Falkenstein for their continuing support. Lastly, I am very grateful to the individuals who took part in the study, as this thesis would never have been possible without their willingness to share their personal experiences with trichotillomania.

TABLE OF CONTENTS

ABSTRACT.....	ii
ACKNOWLEDGMENTS.....	iii
LIST OF TABLES.....	v
Chapter	
1. INTRODUCTION.....	1
Functional Impairment	
Motivation to Seek Treatment	
2. METHODS.....	8
Participants	
Measures	
Procedure	
3. RESULTS.....	14
4. DISCUSSION.....	19
APPENDIX.....	27
REFERENCES.....	34

LIST OF TABLES

1. Descriptive Statistics.....	15
2. Additional Correlations.....	17

CHAPTER 1

INTRODUCTION

In the Diagnostic and Statistical Manual of Mental Disorders IV-TR (2004), trichotillomania (TTM) is classified as an impulse-control disorder characterized by pulling of one's hair. According to recent studies, TTM affects as many as 3.4% of women and 1.5% of men in the United States (Wetterneck, Woods, Norberg & Begotka, 2006; Diefenbach, Tolin, Hannan, Crocetto, & Worhunsky, 2005). For one to be diagnosed with TTM, he or she must display noticeable hair loss, experience an increasing sense of tension before or during the attempt to resist pulling, feel some relief, pleasure, or gratification while or after pulling, and experience significant distress or functional impairment as a result of hair pulling. Like many other DSM disorders, TTM ranges in severity, with subclinical levels that may be unnoticeable and non-distressing, to severe, resulting in noticeable bald patches and significant amounts of distress (Duke, Bodzin, Tavares, Geffken & Storch, 2009).

Severity of hair loss has been typically associated with lower levels of life satisfaction, as well as self-esteem (Diefenbach, et al., 2005; Casati et al., 2000). However, Odlaug, Kim & Grant (2010) had slightly different findings. In their investigation of symptom severity and quality of life among participants with TTM and pathological skin picking (PSP) compared to a healthy control group, they found that quality of life did not differ significantly based on severity of TTM symptoms. However, scores were numerically worse than those of the healthy control subjects and were

indicative of an average quality of life. From these findings, it can be deduced that higher levels of symptom severity will affect life satisfaction.

Functional Impairment

A number of studies have been conducted investigating the psychosocial and economic impact of trichotillomania on individuals (Diefenbach et al., 2005; Casati, Toner & Yu, 2000; Flessner, Conelea, Woods, Franklin, Keuthen & Cashin, 2008). Avoidance of social activities is common among those with TTM; these include haircuts, going on vacation, formal events, entertainment, public showering, going out on a windy day, sports, avoiding brightly lit areas, or other social events. For example, Stemberger, Thomas, Masueto, and Carter (2000) found that 60% of their participants avoided haircuts and swimming, and 35% avoided sexual intimacy as a result of hair pulling. Others have expressed feelings of embarrassment and fear of public exposure (Diefenbach et al., 2005; Casati et al., 2000; Woods et al., 2006).

TTM has also been found to impair academic and occupational functioning, therefore causing an economic impact (Diefenbach et al., 2005). While some may avoid certain occupations because of a higher possibility of discovery of hair loss, others may miss work or school, or may even quit their jobs (Casati et al., 2000; Wetterneck et al., 2006; Flessner et al., 2008). Others have avoided pursuing job promotion or job interviews (Woods et al., 2006). For example, 44.6% of participants missed at least one day of work in the three months prior to study participation, and 22.2% missed school (Wetterneck et al., 2006). Sixteen percent of participants reported that hair pulling

interfered with job duties at least once a day, and 77.8% reported interference at least once a week.

Motivation to Seek Treatment

While much is known about symptom severity and functional impairment, a search of the PsychINFO database with keywords “trichotillomania, motivation, treatment-seeking, etc.” in a number of combinations resulted in no hits, leading to a belief that there is little to no research detailing the motivation for seeking treatment among a TTM population. Motivation is essentially a desire to change (Fickenscher, Novins & Beals, 2006), and Pelletier, Tuson & Haddad (1997) outlined three types of motivation that control behavior: extrinsic, intrinsic, and amotivation.

Motivation resulting in a behavior due to external stimuli is considered extrinsic, i.e. to receive a reward or to avoid punishment. For example, one with TTM might enter treatment because her family is frustrated with seeing her pull and lower her quality of life because of the distress or psychosocial impairment the behavior causes, but she may have no real desire to be there (Pelletier et al., 1997; Fickenscher et al., 2006).

Intrinsically motivated individuals perform a behavior voluntarily because they find the behavior pleasurable and beneficial (Pelletier et al., 1997; Ryan, Lynch, Vansteenkiste & Deci, 2011). For example, an intrinsically motivated individual would enter therapy because he feels that he will learn the skills needed to deepen his understanding of his difficulties with TTM and to improve his quality of life. This is the desirable type of motivation because it has been correlated with maintenance of behavioral change achieved in therapy (Curry, Wagner & Grothaus, 1990; Fickenscher et al, 2006), whereas

extrinsically motivated individuals may enter therapy to appease others, but retention is short-term and self-defeating behaviors return. Lastly, amotivation is a lack of a perception between the relationship of a behavior and the outcome of that behavior; this is also undesirable, as individuals may feel incompetent and a lack of control (Pelletier et al., 1997). The client entering therapy with an ingrained hopelessness and the conviction that it will be a waste of time would be amotivated.

While little is known about motivation to seek treatment among a population with a TTM diagnosis, a number of studies investigating motivation for treatment have been conducted among substance abuse populations (Miller, 1985; Nosyk, Geller, Guh, Oviedo-Joeckes, Brissette, Marsh, Schechter & Anis, 2010; Fickenscher, Novins & Beals, 2006; Breda & Heflinger, 2004). Nysok et al. (2010) used a three-question measure assessing high, moderate, or low level of motivation for treatment with individuals receiving treatment for opiate addiction. Fifteen percent of participants reported low motivational status to seek treatment for heroin addiction, 34% reported moderate, and 52% reported high (Nysok et al., 2010). The most frequently cited reasons for participating were primarily extrinsic, as they were free heroin for participation, and limiting illegal activity; however, an intrinsic reason, “to reduce the impact of heroin,” was also endorsed. Those with low motivation were more likely to choose cash payments or “free heroin,” while those with high were likely to choose a reduction of impact of heroin use.

Fickenscher et al. (2006) studied a sample of American Indian adolescents receiving treatment for substance abuse as well. They found that age of individual during

treatment completion was independent of motivational status, while other studies have found that older age is associated with higher levels of motivation (Rosenkranz, Henderson, Muller & Goodman, 2011). Fickenscher and colleagues (2006) also found that one form of extrinsic motivation in particular (concern of legal problems) was associated with treatment completion. It appears that it is a person's internal concern about their legal problems rather than the presence of legal problems that is related to treatment completion. In his review of the literature discussing substance abuse populations, Stark (1992) noted a number of other studies that have also endorsed extrinsic reasons for substance abusing clients to enter and remain in treatment.

Studies conducted among adolescents with substance disorders have shown that extrinsic motivation is the primary type because of the tendency of these disorders to attract legal problems (Breda & Heflinger, 2004). Individuals are either sent to treatment or may have external gains by attaining help for their disorders. Intrinsic motivation is less common among substance use, unless the individual has engaged in polysubstance use.

TTM is similar to depression and anxiety in that it is a debilitating disorder depending on the severity, distress, and functional impairment caused, but different from substance use disorders in that it does not usually cause legal problems. The worse the symptoms of TTM are, the higher the likelihood that one would seek to overcome this disorder for one's own sake without having evoked external pressure to get better. Miller (1985) found individuals with diagnoses of depression and anxiety to be motivated through internal mechanisms. On measures assessing depression and state/trait anxiety,

positive correlations have been found between depressive and anxiety symptoms with internal motivation (Cahill, Adinoff, Hosig, Muller & Pulliam, 2003). Holtforth et al. (2009) found similar results, with anxious and depressed clients entering therapy for symptom relief and better quality of life. As trichotillomania does not usually elicit legal difficulties (as with substance disorders, causing extrinsic motivation for treatment), the initial hypothesis of this study is that a higher percentage of individuals with TTM will endorse intrinsic motivation than extrinsic purposes for seeking treatment.

One goal of the current study was to determine if a correlation exists between type of motivation (i.e. extrinsic or intrinsic) and distress caused by TTM, with the expectation that there will be a positive correlation between distress and intrinsic motivation, but none between distress and extrinsic. In a review discussing populations with mood and anxiety diagnoses, Miller (1985) found that higher levels of distress tended to contribute to one's motivation for treatment. In addition, Cahill et al. (2003) noted a positive correlation between distress and internal motivation from a substance using population, which also endorsed high levels of depression and anxiety.

An additional goal was to explore the correlation between motivation and severity of TTM symptoms, as previous findings in studies of other mental disorders have been mixed. In a population with substance using diagnoses, individuals with a perception of higher severity (as opposed to actual severity) were found to be more likely to accept help and/or seek treatment because of the associated negative consequences (Miller, 1985). In a similar population, Ryan, Plant & O'Malley (1995) found increased problem severity to be positively linked to internal causes of motivation and negatively associated

with external motivation. However, in their review, De Leon, Melnick & Hawkes (2000) cited a number of studies that exhibit negative correlations between more severe psychopathology and motivation to seek treatment.

Furthermore, the association between psychosocial impairment (specifically social, occupational/academic, and economic) caused by TTM and type of motivation will be assessed. As noted in previous studies, functional impairment is associated with severity and distress caused by TTM symptoms (Diefenbach et al., 2005; Casati et al., 2000; Woods et al., 2006). The expectation was that severity and distress would be associated in motivation to seek treatment; therefore, it is plausible to presume that functional impairment will also be linked to motivation.

CHAPTER 2

METHODS

Participants

A total of sixty participants were recruited for the study from the Washington, D.C. metropolitan area via advertisements placed in the free daily newspaper in the city and on the self-help website for those suffering from trichotillomania, www.stoppulling.com, as well as from referrals from practitioners. The sample consisted of 57 females and 3 males with an average age of 33 years. Seventy-five percent were white, 17% black or African American, 3% Asian, 3% other, and 2% were Native Hawaiian or other Pacific islander. The majority was employed full-time (63%), followed by 13% being full time students, 8% employed part-time, 8% at-home parents or type of caregiver, 7% unemployed but looking for employment. Twenty-eight percent completed graduate school, 28% completed college, 20% completed high school, 13% had some graduate school, 7% had some college, and 3% completed some high school. Multiple participants had more than one pulling site: 75% pulled from the scalp, 43% from the eyelashes, 42% from eyebrows, 18% from the pubic region, 10% from legs, 10% from face (including beard, chin, other areas on the face), 7% from underarms, and 5% from arms.

In order to be eligible for the study, participants had to be 18 years or older, may have been on medications for trichotillomania but on a stable dose for at least four weeks at time of participation to account for acclimation, and must have met DSM-IV criteria for TTM, though criteria B and C (experience of increasing and decreasing sense of

tension associated with hair pulling) were not required as these criteria do not necessarily have to be present for one to display clinically significant TTM. Prospective participants were excluded if they endorsed any of the following: symptoms of suicidality, major depression, psychosis, severe anxiety, or substance abuse for at least one month prior to inclusion in the study.

Measures

Demographics survey. The demographics survey assessed participant age, gender, ethnicity, highest level of educational attainment, and current employment status.

The Trichotillomania Diagnostic Interview (TDI; Rothbaum & Ninan, 2004).

This interview is designed to determine if participants meet DSM-IV-TR diagnostic criteria for trichotillomania. All criteria except B and C (increasing and decreasing tension associated with pulling) were required; if not met, participants were excluded from the study.

Psychiatric Institute Trichotillomania Scale (PITS; Winchel et al., 1992). The PITS is a semistructured interview measuring severity with six items rated on a 0 to 7 scale. Some preliminary questions assessed history of TTM, including age of onset, periods of reprieve from TTM, length of time since onset of TTM, lifetime sites and any site shifts, and efforts taken to hide or disguise hair loss. Items assess number of hair pulling sites, time spent thinking about and actually pulling, frequency of urges to pull, severity of hair loss, interference with functioning, and distress about hair pulling. Interrater reliability between two raters was very good ($r=0.90$). The item assessing distress was used for the present study.

In order for the interviewer to rate distress on a zero (No distress or thoughts about it) to seven (Has daily severe distress regarding hair pulling or its consequences) scale, prompts include “Is pulling your hair something that you think about much?,” “Does it bother you that you do this?,” “What do you worry about?,” “Are you ever worried that this problem will keep you from doing important things in life, or will make it harder?,” “Do you worry that it will have any effect on your work (studies, etc.)?,” “What about things like dating or marriage – are you concerned that your hair pulling will affect those things?.”

Structured Clinical Interview for DSM (SCID I/P with Psychotic Screen; First et al., 2002). The SCID is also a structured diagnostic interview to evaluate exclusion criteria and to determine if participants have any comorbid Axis I diagnoses. The general screening was used first, then followed by any necessary additional modules. Inter-rater reliability scores range for the different modules of the SCID, but have been moderate to good ($r=0.60$ for agoraphobia, $r=0.83$ for social and specific phobias, $r=0.66$ for major depressive disorder, etc.; Lobbestael, Leurgens & Arntz, 2011).

Massachusetts General Hospital Hairpulling Scale (MGH-HS; Keuthen et al., 1995). The MGH-HS is a 7-item self-report survey that assesses hairpulling severity over the past week. Each item was rated on a scale of 0-4, allowing for a range of 0 to 28 for the total score. Items ask about the urge to pull, actual pulling, and distress experienced as a result of pulling. Good to very good internal consistency has been found ($\alpha=0.80-0.89$), excellent test-retest reliability ($r=0.97$), and strong convergent validity ($r=0.63-0.75$; Keuthen et al., 1995; Diefenbach et al., 2005; O’Sullivan et al., 1995).

Sheehan Disability Scales (SDS; Arbuckle, Frye, Brecher, Paulsson, Rajagopalan, Palmer & Innocenti, 2009). The SDS is a self-report assessment with 3 Likert scales from 0 (not at all impaired) to 10 (extremely impaired). Each scale is designed to detect perceived disability, asking how much symptoms have disrupted work/school, social life, and family life/home responsibilities. The SDS was found to have very good internal consistency ($\alpha=0.89$) and good test-retest reliability ($r=0.73$) in a study conducted with bipolar disorder.

The Social and Economic Impact of Hairpulling (Woods et al., 2006). This is a self-report measure designed to assess functional impairment. Each item is answered yes/no, with questions asking about specific events avoided (e.g. Have you ever avoided a haircut due to hair pulling? Have you ever refrained from close relationships due to pulling? Does hair pulling currently interfere on at least a daily basis with your job duties? Have you spent money on products to conceal the effects of your hair pulling?). There have been no measures of reliability or validity as of yet. Because of the lack of psychometric data, the SDS (above) was used as the valid and reliable source of perceived interference.

As there is no scoring system for the Social and Economic Impact of Hairpulling scale, one has been created for this study in order to effectively assess how each facet of impairment is associated with TTM. The 35 items were broken down into domains, covering social impairment, occupational/academic impairment, economic impairment, time interference, substance use, and whether depressive or anxiety symptoms were endorsed. The social, occupational/academic, economic, and time domains were used for

the purposes of the current study. Additional scoring information can be found in Appendix A.

Client Motivation for Therapy Scale (CMOTS; Pelletier et al., 1997). The CMOTS is a 24-item self-report measure designed to assess six different types of client motivation for therapy, which include: intrinsic motivation, amotivation, and four types of extrinsic motivation (external, introjected, identified, and integrated regulation).

Of the four types of extrinsic motivation described by Pelletier et al. (1997), external regulation, which refers to motivation to carry out behaviors due to external rewards or to avoid punishment, is the subscale used in the present study. For example, a substance-abusing individual is told he must enter treatment or lose his job would be motivated by external regulation. Introjected, identified, and integrated regulation have some intrinsic value; they each include a self-determined sense of purpose for entering treatment and the awareness that therapy will be valuable (Pelletier et al, 1997), and do therefore not measure extrinsic motivation in the same way that external regulation does.

Each subscale is scored using the sum of the items associated to them, each on a scale of 1-7. The intrinsic motivation subscale is sum of items 3, 4, 12, and 16; an example of one of these items is, “[I am in therapy at the present moment] for the pleasure I experience when I feel completely absorbed in a therapy session.” External regulation is the sum of items 1, 11, 21, and 22; an example is “[I am in therapy at the present moment] because other people think that it’s a good idea for me to be in therapy.” The score of these subscales ranges from 4 to 28. In a study examining the psychometric

properties of this measure, good levels of internal consistency were found (α values between 0.70 and 0.92 for each of the subscales).

Procedure

Prospective participants who showed interest in the study were first screened over the telephone to determine if they met inclusion and did not meet any of the exclusion criteria. They then came into American University where they were administered informed consent, the TTM diagnostic interview (TDI), the PITS, and the SCID with trained psychology graduate students. If, at this point, individuals endorsed any of the exclusion criteria, they were compensated for their time and referred elsewhere for treatment. If they were still eligible after the in-person interviews, participants then completed the self-report questionnaires, which include the demographics survey, MGH-HS, the Social and Economic Impact of Hairpulling, the CMOTS, and the WHOQOL-BREF. (Interview portion was video recorded for training and interrater reliability evaluation purposes.) Before they left, participants were debriefed and compensated for their time. The entire participation session was approximately 45-90 minutes.

CHAPTER 3

RESULTS

Descriptive statistics for the study are shown in Table 1. Participants spend an average of \$2,606 on trichotillomania per year, expenses including make-up and other products to conceal effects of TTM as well as visits to medical and mental health professionals, explaining the large standard deviation. The minimum amount of money spent per year is \$0, while the maximum is \$30,600. The median amount of money spent is \$300.

Participants also endorsed spending an average of 239 minutes (about 4 hours) per day on TTM-related activities, including physically pulling, resisting the urge to pull, and thinking about pulling. The minimum time spent per day is 4 minutes, while the maximum is 960 minutes (16 hours) a day, and the median is 150 minutes (2.5 hours) a day.

The average MGH-HS score is close to that of another TTM sample used to create the MGH-HS measure (17.25; Keuthen, Flessner, Woods, Franklin, Stein, Cashin, & TLC Scientific Advisory Board, 2007), suggesting that the present sample's severity was representative of the overall TTM population.

	Mean	Std. Deviation
Intrinsic Motivation	17.02	5.22
Extrinsic Motivation	6.58	3.93
Social Impact	2.43	2.58
Economic Impact	\$2606.69	5724.84
Occupational/Academic Impact	1.46	1.02
Time Interference	239.48	248.47
MGH-HS total	17.08	4.01
Occupational/Academic Disability	2.76	2.53
Social Disability	2.98	2.59
Distress	3.78	1.37

Table 1. Descriptive Statistics

A one-sample t-test was conducted to determine which type of motivation to seek treatment was more commonly endorsed in this sample. Participants scored significantly higher on the intrinsic motivation subscale ($M=17.02$, $SD=5.22$) than the extrinsic ($M=6.58$, $SD=3.93$; $t=24.8$, $p<.001$). No participants scored higher on extrinsic than intrinsic, although one person did have equal scores for the two subscales.

Pearson correlations were conducted to determine what, if any, association exists between the item measuring distress on the PITS and the various subscales of the CMOTS; to determine if symptom severity is associated with intrinsic motivation, using the MGH-HS and the intrinsic motivation subscale of the CMOTS; using each subscale of the CMOTS and the social, occupational/academic, economic and time domains, individually, from the Social and Economic Impact of Hairpulling scale to show if any association exists between motivation and psychosocial impairment; and using only the item assessing time spent physically pulling and each subscale of the CMOTS. Neither

extrinsic nor intrinsic motivation was correlated significantly with any measures of symptom severity, distress, or functional impairment; correlations ranged from -.15 to .22, shown in Table 2.

However, other correlations were found. Social and economic impact were significantly positively correlated ($r=.49$, $p<.001$), as were social impact and occupational/academic disability ($r=.44$, $p=.001$), distress and severity ($r=.34$, $p=.008$), distress and time consumed due to TTM symptoms ($r=.33$, $p=.011$), and economic impact and occupational/academic impact ($r=.51$, $p<.001$).

Additionally, Pearson correlations were run between types of motivation and age as assessed from the demographics questionnaire, and length of time individuals have had TTM from initial onset ($M=260.82$ months, $SD=165.20$), as assessed from TTM history questions on the PITS. While the external regulation subtype of extrinsic motivation was not found to be associated with age, it was significantly negatively correlated with length of time individuals have had TTM from initial onset ($r=-.29$, $p=.037$).

As the total PITS score is an interview measure of severity, Pearson correlations were run to assess if it revealed similar results to the MGH, a self-report measure of severity. They were not correlated with each other, as would be expected, and all other correlations, both significant and not, were similar, except that the PITS severity score yielded significant positive correlations with Occupational/Academic and Social Disability (Table 2).

Social impact as measured by the Social and Economic Impact of Hairpulling Scale and Social Disability as measured by the SDS were significantly positively

correlated ($r=.69$, $p<.01$), as were Occupational/Academic Impact and Occupational/Academic Disability ($r=.49$, $p<.01$). These correlations indicate that the created subscales of the Social and Economic Impact of Hairpulling Scale accurately assess social and occupational/academic impairment as compared to the empirically validated SDS.

	Intrinsic	Extrinsic	Social Impact	Economic Impact	Occ/Ac Impact	Time Interference	MGHtotal	PITStotal	Occ/Ac Disability	Social Disability	Distress	Time spent pulling
Extrinsic	.28*											
Social Impact	.01	.04										
Economic Impact	.04	-.15	.49**									
Occ/Ac Impact	.02	.00	.25	.51**								
Time Interference	.04	.04	.16	-.05	-.13							
MGHtotal	.06	.01	.04	.09	.25	.12						
PITStotal	.05	.11	.25	.22	.21	.15	.18					
Occ/Ac Disability	.11	.22	.44**	.25	.49**	.25	.11	.29*				
Social Disability	.01	.07	.69**	.29*	.37**	.16	.04	.39**	.69**			
Distress	.10	.21	.09	.06	.15	.33*	.34**	.58**	.20	.13		
Time spent pulling	.03	-.14	.16	.03	-.05	.69**	.14	.15	.31*	.25	.16	
Age	-.05	-.19	.25	.26	.19	-.15	-.09	-.17	.10	.07	-.20	-.15

Table 2. Additional Correlations.

* Correlation is significant at the 0.05 level (2-tailed). ** Correlation is significant at the 0.01 level (2-tailed).

As intrinsic and extrinsic motivation were positively correlated, they were combined to give a total motivation score and a Pearson correlation was conducted to determine that there were no significant correlations between total motivation and distress ($r=.18$, $p=.17$), severity ($r=.04$, $p=.75$), and social ($r=.03$, $p=.81$), economic ($r=-.04$, $p=.75$), or occupational/academic impact ($r=.02$, $p=.89$). As time spent physically

pulling is the most quantifiable measure of time, a Pearson correlation was run to reveal that time spent pulling was also not correlated with total motivation ($r=-.05$, $p=.71$), however, total time interference was ($r=.27$, $p=.04$).

Because the standard deviations were larger than the means for Time Interference and Economic Impact, analyses were re-run excluding outliers.¹ There were four high-end outliers for Time Interference (two participants each reporting 960, one 940, and one other at 720 minutes per day, whereas the next highest time was 660). When these participants were excluded, Time Interference was significantly positively associated with external regulation ($r=.39$, $p=.003$), but not with intrinsic motivation ($r=-.09$, $p=.51$), severity ($r=.02$, $p=.87$) or distress ($r=.12$, $p=.39$). There were nine high-end outliers for Economic Impact (one participant reporting \$30,600; \$20,500; \$20,450; \$13,000; \$12,020; \$7,000; \$5,050; \$5,015; \$5,000; whereas the next highest amount spent reported was \$4,300). Economic Impact was not significantly correlated to intrinsic motivation ($r=-.03$, $p=.84$), external regulation ($r=.01$, $p=.97$), severity ($r=.24$, $p=.09$) or distress ($r=-.05$, $p=.72$) when these participants were excluded.

¹ Outliers were those participants whose scores fell 1.5 times the Interquartile Range below the first quartile or above the third quartile.

CHAPTER 4

DISCUSSION

The goals of the current study were to determine if any correlations exist between type of motivation and distress caused by TTM, severity of TTM symptoms, and functional impairment, including social, economic, occupational/academic, or time interference. Individuals in the present study endorsed higher levels of intrinsic vs. extrinsic motivation to seek therapy. Neither extrinsic nor intrinsic motivations were correlated with distress, symptom severity, or social, economic, occupational/academic impairment, or time interference; however, total motivation was positively associated with daily time interference. When outliers were excluded, daily time interference was still positively associated with extrinsic motivation.

It would seem that the longer one spends per day on TTM-related activities, such as thinking about pulling, resisting the urge to pull, or physically pulling, the more completely motivated one would be to seek treatment. When TTM consumes so much time in one's day, thereby preventing studying, socializing, working, sleeping, etc., individuals must feel an inclination towards therapy in order to help them lead more normal, productive lives. An interesting finding is that time interference was also associated with distress, but distress, in addition to severity and other forms of psychosocial impairment, was not associated with motivation. These results could be explained by the length of time that participants have had TTM, as participants reported having had symptoms for an average of 21.7 years. Our participants may be similar to severely depressed individuals (DeLeon et al., 2000), in that those with severe TTM

symptoms and extreme distress may feel hopeless about their ability to completely recover and lack the motivation to get better.

Because TTM is a disorder resulting in distress depending on severity and psychosocial impairment (Duke et al., 2009; Diefenbach, et al., 2005), and usually without provocation from others to improve, it is not surprising that intrinsic motivation was most commonly endorsed. Individuals would express desire to enter therapy if it would help them terminate this self-injurious behavior, especially if they display obvious, aesthetic consequences of hairpulling which they would prefer to control. TTM does not cause legal problems, as would substance use disorders, and the worse the symptoms are, the higher the possibility that one would seek to overcome this disorder for one's own sake.

Positive associations were found between social and economic impact, social and occupational/academic impact, distress and severity, distress and time consumed by TTM, and economic and occupational/academic impact. The physical consequences of TTM can also explain these correlations. Many participants displayed bald or nearly bald patches, and significant hair loss on their eyebrows and eyelashes, resulting in their reluctance to attend certain social events, and even avoidance of work or school. Because TTM may take several minutes or hours to conceal, individuals find themselves running late for events, or deciding to skip them altogether. Products and accessories used to conceal the effects of TTM, as well as visits to healthcare providers, can be quite expensive, placing an economic burden on individuals suffering with TTM. Subjects in previous studies have noted spending as much as thousands of dollars on TTM-related

factors (Diefenbach et al., 2005; Casati et al., 2000; Woods et al., 2006), and the current findings were consistent with this as participants spent an average of \$2,606 a year. The findings pertaining to the correlations between psychosocial interference and distress and severity are also consistent with previous studies (Diefenbach et al., 2005; Casati et al., 2000; Woods et al., 2006), as those who experience higher levels of distress also endorsed more functional impairment.

The scores for both interview and self-report severity measures were not correlated, as would be expected. While both the TDI and PITS purportedly assess the same information, i.e. urges to pull, actual pulling, and distress associated with pulling, the lack of association suggests that an interviewer's perception of one's severity is different than that of the individual's. The interviewer gathers more detailed information from the probing questions on the PITS than the MGH does, and the PITS is scored without the bias of the participant, excluding the social desirability aspect that a self-report measure might reflect; therefore, the PITS semi-structured interview might be a more reliable measure of severity. Most other correlations between the two assessments were similar, except that severity as assessed by the PITS was positively linked to Occupational/Academic and Social Disability. Analogous to the reasoning for the associations between the other forms of impairment, the resultant noticeable areas of hair loss would cause an individual with TTM to have more impairment at work or school and in their social life because of the irritation in concealing the effects and the self-consciousness induced.

Participants in the study also noted spending a large portion of time in the day to TTM-related activities, including physically pulling, thinking about pulling, and resisting the urge to pull. The mean of 239 minutes per day pulling is similar to that of Wetterneck et al.'s (2006) study reporting 230 minutes. What is shocking in the current study is the maximum amount of time reported on TTM-related activities of 960 minutes per day. This might be an account from someone who perceives spending all waking hours consumed with urges to pull and thoughts of pulling, such as the short- and long-term consequences, worry about their appearance, worry about what others think when they see them, and other self-deprecating thoughts. While these issues may be in the back of one's mind throughout the day, it is difficult to believe that 16 hours a day would be spent on focused thinking about TTM and pulling, therefore interfering entirely with one's life on a daily basis. Due to this rationale and the fact that it is the most quantifiable measure of time interference, time spent only physically pulling was analyzed with the motivational items. This did not yield significant correlations, which may be explained by the idea that one might be more inclined to seek treatment based on the total amount of time that every aspect of hairpulling consumes. Additionally, the median amount of time spent on pulling related activities was 150 minutes, which is a more reasonable measure, assuming that the individual was not multi-tasking during these behaviors as much as those who spend all waking hours on TTM.

The present study had a few sample limitations that should be considered in future research. First, the sample was very well educated, with over half having completed an undergraduate education at least, 28% having completed graduate school, and 13%

having some graduate school experience as well. In attaining a Bachelor's degree, individuals accrue the ability to seek help for their behavior should they desire. Those without this education, while recognizing the behavior as abnormal, may not know how to go about searching for a solution, much less that TTM is a diagnosable disorder with potential treatment options. While other studies have found similar results pertaining to education in their samples (Diefenback et al., 2005; Odlaug et al., 2010), these may not be representative of the general TTM population because each study, including the current, had similar recruitment methods. Thus, recruitment for the present study was another limitation. Participants were recruited via online and paper advertisements, and therapist referral. Individuals seeking help from a therapist or a hairpulling website will already be aware that there is support for their behavior. These recruitment methods exclude cases of TTM, which may exist in regions that do not have treatment for TTM readily available.

Another limitation was the predominantly female sample. While TTM usually affects more females than males, there tends to be a 3 to 1 ratio in the overall TTM population (Chamberlain, Menzies, Sahakian & Fineberg, 2007), and only 5% of the study's participants were male. This might be because men have an easier time covering up the effects of TTM. For example, if the pulling sites are on the beard or scalp, they would easily be able to shave; because women tend to prefer to have longer hair, it is difficult for them to get away with shaving their head. In addition, men may feel a stigma associated with entering therapy more than women would, at the risk of seeming too vulnerable. Findings for the study cannot be generalized to the overall TTM

population, as the sample was too homogenous. Further research should attempt to recruit a more heterogeneous group from all educational backgrounds using different methods.

Lastly, the measure of motivation used in this study, the CMOTS, was not sufficient in assessing extrinsic motivation in this particular population. According to Pelletier et al. (1997), external regulation and intrinsic motivation should be negatively correlated; however, in the present study, these subscales were positively linked. Individuals with TTM may be interested in treatment for equal extrinsic and intrinsic reasons than other pathologies, suggesting that a motivation scale that is used for other disorders should probably not be used for TTM. It is unlikely that individuals will enter treatment purely based on the wishes of close family or friends, but having the desire to appease those close to them might be a motivating factor in addition to gaining a deeper understanding and control of their behavior.

Despite the shortcomings, this study has some strengths that can inform professionals and spark further research. This was among the first to study motivation in a TTM sample with the purpose of giving insight to clinicians about the individuals coming to them for treatment. Whether clients present to therapy as intrinsically or extrinsically motivated, they may still be resistant to certain changes they need to make in order to recover. Therapists should highlight the amount of time that their clients are actually spending on TTM-related activities and enforce the idea that they could be doing something else (e.g. being more punctual, studying, socializing, etc.), in the attempt to foster the self-realization of the client that they must follow the treatment plan. In

addition, clinicians and researchers could also consider the negative correlation found between extrinsic motivation and length of time participants have had TTM from initial onset. The longer individuals have had TTM, the less likely they will be to endorse extrinsic reasons for seeking treatment, probably because they have had enough and wish to jettison this debilitating disorder as soon as possible. These individuals are likely to have a better treatment outcome.

Motivation was not correlated with distress, severity, or functional impairment, but previous studies have shown that motivation is associated with readiness to change (Girvin, 2004). Individuals may not feel the need to enter therapy if they do not have high levels of distress or severity of TTM symptoms. Similarly, they may not be ready to change their behavior if they are not encountering negative consequences. Future studies should incorporate readiness to change with motivation, as well as with severity and distress, in order to determine what factors interact to cause individuals to seek treatment and for treatment to be effective.

In summary, motivation was not correlated with severity of TTM symptoms, distress, or psychosocial impairment, though previous findings were replicated with the correlations between severity and distress, and the various functional impairment factors. Future research should continue to investigate motivation in a more diverse TTM sample and in association with stages of change. Some individuals may only consider TTM to be a bothersome habit that they would like to remove, but because the symptoms do not have any real detrimental effects on their life, they are not as determined and therefore not as ready to change. Others may be severely distressed, seeing TTM as an obstacle to

job promotion, forming intimate relationships, and overall positive quality of life; these individuals would likely be ready to change their behaviors to overcome TTM. It would be interesting to see if distress, severity and impairment would, in fact, be associated with readiness to change.

APPENDIX

The Social and Economic Impact of Hairpulling

1. Have you ever avoided getting a haircut as a result of your hairpulling?
Yes No
2. Have you ever avoided going on vacation as a result of your hairpulling?
Yes No
3. Have you ever avoided going to social events (i.e. parties, reunions, etc) as a result of your hairpulling?
Yes No
4. Have you avoided going to entertainment activities (i.e. concerts, plays, sporting events) as a result of your hairpulling?
Yes No
5. Have you ever avoided going to formal events where you would not be able to wear hats, bandanas, or other accessories to cover the effects of your hairpulling?
Yes No
6. Have you ever avoided going to restaurants as a result of your hairpulling?
Yes No
7. Have you ever avoided going out in well-lit areas as a result of your hairpulling?
Yes No
8. Have you ever refrained from participating in group activities as a result of your hairpulling?
Yes No
9. Have you ever refrained from engaging in close friendships as a result of your hairpulling?
Yes No
 - a. If you answered yes to question 9, how often do you refrain from these relationships?
Never

Rarely

Some of the time

Most of the time

Always

b. Has your hairpulling affected the quality of your close friendships?

Never

Rarely

Some of the time

Most of the time

Always

10. Have you ever refrained from engaging in intimate relationships as a result of your hairpulling?

Yes No

a. If you answered yes to question 10, how often do you refrain from these relationships?

Never

Rarely

Some of the time

Most of the time

Always

b. Has your hairpulling affected the quality of your intimate relationships?

Never

Rarely

Some of the time

Most of the time

Always

11. Are you currently working or held a job within the past month?

Yes No

a. If you answered yes to question 11, does your hairpulling interfere with your job duties on at least a daily basis?

Yes No

b. Does your hairpulling interfere with your job duties on at least a weekly basis?

Yes No

c. How many days of work have you missed in the past three months?

12. Have you ever missed work as result of your hairpulling?

Yes No

13. Have you ever quit a job as a result of your hairpulling?

Yes No

14. Have you ever not pursued job advancement (i.e. asking for a raise, obtaining a higher position in your company) as a result of your hairpulling?

Yes No

15. Are you currently going to school?

Yes No

a. If you answered yes to question 15, have you ever missed school as a result of your hairpulling?

Yes No

b. Has your hairpulling caused you difficulties in performing your responsibilities at school (i.e. taking notes, giving speeches, talking in group discussions)?

Yes No

c. How many days of school have you missed in the past three months due to hairpulling?

Yes No

16. Have you ever had difficulty studying as a result of your hairpulling?

Yes No

17. Have you ever dropped out of school as a result of your hairpulling?

Yes No

18. Have you decided not to pursue more schooling as a result of your hairpulling?

Yes No

19. Have you spent money on products (i.e. wigs, bandanas, false eyelashes) to help conceal the effects of your hairpulling?

Yes No

- a. If you answered yes to question 19, how much money have you spent on these products in the past year?

20. How much time on average day do you spend covering up (i.e. with make-up, accessories, etc.) the effects of your hairpulling?

I do not spend any time on the average day covering up the effects

0-15 minutes per day

15-30 minutes per day

30-60 minutes per day

1-2 hours per day

More than 1-2 hours per day

21. Has your hairpulling resulted in damage to areas of your skin?

Yes No

22. Have you sought medical help from a physician for your hairpulling?

Yes No

- a. If you answered yes to question 22, how much money would you estimate you spent on this (please include money that insurance may have covered)?

23. Have you sought help from a psychologist for your hairpulling or the effects of your hairpulling?

Yes No

- a. If you answered yes to question 23, how much money would you estimate you spent on this (please include money that insurance may have covered)?

24. Have you sought help from a dermatologist for your hairpulling or the effects of your hairpulling?

Yes No

- a. If you answered yes to question 24, how much money would you estimate you spent on this (please include money that insurance may have covered)?

25. Have you ever been hospitalized as a result of your hairpulling?

Yes No

- a. If you answered yes to question 25, how much money would you estimate you spent on this (please include money that insurance may have covered)?

26. How much time do you spend per day pulling your hair? (please indicate either minutes or hours)

27. How much time do you spend per day trying to resist the urge to pull your hair? (please indicate either minutes or hours)

28. How much time do you spend per day thinking about pulling your hair? (please indicate either minutes or hours)

29. What is the total amount of time per day you spend pulling, resisting the urge, or thinking about pulling your hair? (please indicate minutes or hours)

30. Do you feel you have experienced depression or a sustained period of feeling down as a direct result of your hairpulling?

Yes No

31. Do you feel you have experienced any excessive anxiety, stress, or worry as a direct result of your hairpulling?

Yes No

32. Do you smoke tobacco products to help relieve yourself of negative feelings (i.e. anxiety, depression, guilt, worry, shame) associated with hairpulling?

Yes No

33. Do you drink alcohol to help relieve yourself of negative feelings (i.e. anxiety, depression, guilt, worry, shame) associated with hairpulling?

Yes No

34. Do you use illegal drugs to help relieve yourself of negative feelings (i.e. anxiety, depression, guilt, worry, shame) associated with hairpulling?

Yes No

35. Are you currently on medication to help relieve the feelings associated with hairpulling?

Yes No

a. If you answered yes to question 35, how much money would you estimate you have spent on this? (include money that insurance may have covered)

Scoring the **Social and Economic Impact of Hairpulling** measure

Scoring each domain

Social: Questions #1-10

Each question is Yes/No

Yes = 1

No = 0

*A point will be given to question 9 if “Yes” is circled for 9 OR 9b

*A point will be given to question 10 if “Yes” is circled for 10 OR 10b

Total score is sum of questions 1-10, with maximum score of 10, minimum 0

Occupational/Academic: Questions #11-18

Each question is Yes/No

Yes = 1

No = 0

This domain will be scored as a continuous variable, minimum of 0 to maximum of 10, using questions 11a, 11b, 12, 13, 14, 15a, 15b, 16, 17, 18.

*Questions 11 and 15 may or may not be applicable depending on if the participant is holding a job (question 11), going to school (question 15), both working and in school, or neither working or in school.

*If “Yes” is circled for question 11, then 11a and 11b will be answered and those responses can be used. If “No” is circled for question 11, then 11a and 11b will not have been answered and missing data rules will apply.

*If “Yes” is circled for question 15, then 15a and 15b will be answered and those responses can be used. If “No” is circled for question 15, then 15a and 15b will not have been answered and missing data rules will apply.

Economic: Questions #19a, 22a-25a, 35a

Amount of money endorsed in questions 19a, 22a, 23a, 24a, 25a, & 35a will be averaged to give a mean amount of money spent on TTM-related costs.

Time-Interference: Question #29

Question #29 is the total amount of time per day pulling, resisting the urge, and thinking about pulling.

Depression/anxiety endorsed: Questions #30, 31

Both are Yes/No questions

Yes = 1

No = 0

Total score is sum of questions 30 & 31, with maximum score of 2, minimum 0

Substance used: Questions #32-34

All are Yes/No questions

Yes = 1

No = 0

Total score is sum of questions 32-34, with maximum score of 3, minimum 0

REFERENCES

- Breda, C., & Heflinger, C. A. (2004). Predicting incentives to change among adolescents with substance abuse disorder. *The American Journal of Drug and Alcohol Abuse*, 30, 251-267.
- Cahill, M.A., Adinoff, B., Hosig, H., Muller, K., & Pulliam, C. (2003). Motivation for treatment preceding and following a substance abuse program. *Addictive Behaviors*, 28, 67-79.
- Casati, J., Toner, B.B. & Yu, B. (2000). Psychosocial issues for women with trichotillomania. *Comprehensive Psychiatry*, 41, 344-351.
- Chamberlain, S.R., Menzies, L., Sahakian, B.J. & Fineberg, N.A. (2007). Lifting the veil on trichotillomania. *American Journal of Psychiatry*, 164, 568-574.
- Curry, S.J., Wagner, E.H. & Grothaus, L.C. (1990). Intrinsic and extrinsic motivation for smoking cessation. *Journal of Consulting and Clinical Psychology*, 58, 310-316.
- De Leon, G., Melnick, G. & Hawke, J. (2000). The motivation-readiness factor in drug treatment: Implications for research and policy. *Advances in Medical Sociology*, 7, 103-129.
- Diefenbach, G.J., Tolin, D.F., Hannan, S., Crocetto, J. & Worhunsky, P. (2005). Trichotillomania: Impact on psychosocial functioning and quality of life. *Behaviour Research and Therapy*, 43, 869-884.
- Duke, D.C., Bodzin, D.K., Tavares, P., Geffken, G.R. & Storch, E.A. (2009). The phenomenology of hairpulling in a community sample. *Journal of Anxiety Disorders*, 23, 1118-1125.
- Fickenscher, A., Novins, D. K., & Beals, J. (2006). A pilot study of motivation and treatment completion among american indian adolescents in substance abuse treatment. *Addictive Behaviors*, 31, 1402-1412.
- Flessner, C.A., Conelea, C.A., Woods, D.W., Franklin, M.E., Keuthen, N.J. & Cashin, S.E. (2008). Styles of pulling in trichotillomania: Exploring differences in symptom severity, phenomenology, and functional impact. *Behaviour Research and Therapy*, 46, 345-357.
- Girvin, H. (2004). Beyond 'stages of change:' Using readiness for change and caregiver-reported problems to identify meaningful subgroups in a child welfare sample. *Children and Youth Services Review*, 26, 897-917.

- Holtforth, M.G., Wyss, T., Schulte, D., Trachsel, M. & Michalak, J. (2009). Some like it specific: The different between treatment goals of anxious and depressed patients. *The British Psychological Society*, 82, 279-290.
- Keuthen, N.J., Flessner, C.A., Woods, D.W., Franklin, M.E., Stein, D.J., Cashin, S.E. & Trichotillomania Learning Center Scientific Advisory Board. (2007). Factor analysis of the Massachusetts General Hospital Hairpulling Scale. *Journal of Psychosomatic Research*, 62, 707-709.
- Miller, W. R. (1985). Motivation for treatment: A review with special emphasis on alcoholism. *Psychological Bulletin*, 98, 84-107.
- Nosyk, B., Geller, J., Guh, D. P., Oviedo-Joekes, E., Brissette, S., Marsh, D. C., Schechter, M. T., & Anis, A. H. (2010). The effect of motivational status on treatment outcome in the north american opiate medication initiative (NAOMI) study. *Drug and Alcohol Dependence*, 111, 161-165.
- Odlaug, B.L., Kim, S.W. & Grant, J.E. (2010). Quality of life and clinical severity in pathological skin picking and trichotillomania. *Journal of Anxiety Disorders*, 24, 823-829.
- Pelletier, L. G., Tuson, K. M., & Haddad, N. K. (1997). Client motivation for therapy scale: A measure of intrinsic motivation, extrinsic motivation, and amotivation for therapy. *Journal of Personality Assessment*, 68, 414-435.
- Rosenkranz, S.E., Henderson, J.L., Muller, R.T. & Goodman, I.R. (2011). Motivation and maltreatment history among youth entering substance abuse treatment. *Psychology of Addictive Behaviors*. Advance online publication. doi: 10.1037/a0023800.
- Ryan, R. M., Lynch, M. F., Vansteenkiste, M., & Deci, E. L. (2011). Motivation and autonomy in counseling, psychotherapy, and behavior change: A look at theory and practice 1ψ7. *The Counseling Psychologist*, 39 (2), 193-260.
- Ryan, R.M., Plant, R.W., & O'Malley, S. (1995). Initial motivations for alcohol treatment: Relations with patient characteristics, treatment involvement and dropout. *Addictive Behaviors*, 20, 279-297.
- Stark, M.J. (1992). Dropping out of substance abuse treatment: A clinically oriented review. *Clinical Psychology Review*, 12, 93-116.
- Stemberger, R. M. T., Thomas, A. M., Mansueto, C. S., & Carter, J. G. (2000). Personal toll of trichotillomania: Behavioral and interpersonal sequelae. *Journal of Anxiety Disorders*, 14, 97-104.

- Wetterneck, C.T., Woods, D.W., Norberg, M.M. & Begotka, A.M. (2006). The social and economic impact of trichotillomania: Results from two nonreferred samples. *Behavioral Interventions*, 21, 97-109.
- Woods, D.W., Flessner, C.A., Franklin, M.E., Keuthen, N.J., Goodwin, R.D., Stein, D.J., Walther, M.R. & Trichotillomania Learning Center-Scientific Advisory Board (2006). The trichotillomania impact project (TIP): Exploring phenomenology, functional impairment, and treatment utilization. *Journal of Clinical Psychiatry*, 67, 1877-1888.