Hairpulling and Skin Picking in Relation to Affective Distress and Obsessive-Compulsive Symptoms

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The current study examined the frequency and associated distress of both hairpulling and skin picking behaviors in 1,324 college students using the Massachusetts General Hospital Hairpulling Scale (MGHHS) and Skin Picking Scale (SPS). In this sample, many participants reported significant distress secondary to both hairpulling and skin picking. Participants who endorsed relatively frequent hairpulling or skin picking ($N = 72$) were scheduled for a follow-up testing session to further assess the relationship between these behaviors and measures of affective distress. Compared to a control sample, the follow-up sample endorsed significantly more symptoms of anxiety and stress reactivity, and had higher scores on a measure of obsessive-compulsive symptoms.

KEY WORDS: trichotillomania; skin picking; prevalence; obsessive-compulsive spectrum disorder.

Behaviors such as hairpulling, skin picking, nail biting, and chewing on the lips and inside of the mouth appear to be relatively common (Hansen, Tishelman, Hawkins, & Doepke, 1990). Although these behaviors can be harmless, they can also become frequent and damaging (Hansen et al., 1990; Woods, Miltenberger, & Flach, 1996). Based on the phenomenological similarities among these behaviors, Bohne, Wilhelm, Keuthen, Baer, and Jenike (2002) recently suggested the term body-focused repetitive behaviors (BFRBs). Teng, Woods, Twohig, and Marcks (2002) further argued that BFRBs may also share functional similarities and result in similar negative psychosocial outcomes. Unfortunately, the prevalence of BFRBs, as well as the relationship between their severity and other measures of psychopathology and affective distress, remains largely unknown. As reliable and validated assessment measures exist for both hairpulling and skin picking, the present study focuses on these two BFRBs.

Trichotillomania (TTM), or chronic hairpulling is the only BFRB to have a distinct diagnostic category in the Diagnostic and Statistical Manual of Mental Disorders, 4th edition (DSM-IV; American Psychiatric Association, 1994). TTM involves repetitive hairpulling that results in noticeable hair loss and has been associated with increased affective distress, interpersonal conflict (Soriano et al., 1996; Stemberger, Thoma, Mac-Glashan, & Mansueto, 2000), and social isolation (Soriano et al., 1996; Swedo & Rapoport, 1991; cf. Diefenbach, Reitman, & Williamson, 2000). In some cases, TTM can result in medical conditions that include skin infections, carpel tunnel syndrome, and gastrointestinal complications when hair is ingested (Lynch, Feola, & Guenther, 2003; O'Sullivan et al., 1995; Seker, Dilek, & Naraayvaz, 1996). In terms of comorbidity, patients diagnosed with TTM have relatively high rates of other psychiatric conditions, including mood and anxiety disorders, as well as diagnoses involving addiction (Christenson, Mackenzie, & Mitchell, 1991a; Schlosser, Black, Blum, & Goldstein, 1994; Swedo, Leonard, Lenane, & Rettew, 1992; Walsh & McDougle, 2001; Winchel, Jones, Stanley, Molcho, & Stanley, 1992).

Although not currently classified as a distinct disorder, skin picking is increasingly discussed in the psychopathology literature because of the impact it can have on physical and social well-being. Recent studies suggest

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that severe skin picking can result in scars, sores, and tissue damage (Arnold et al., 1998; Bohne et al., 2002; Stein, Niehaus, Seedat, & Emsley, 1998; Wilhelm et al., 1999), and in extreme cases skin picking can be potentially fatal (O'Sullivan, Phillips, Keuthen, & Wilhelm, 1998). Self-injurious skin picking has also been associated with negative affective experience such as shame and concerns about negative evaluations from others (Hansen et al., 1990; Wilhelm et al., 1999), as well as higher levels of depression (Keuthen et al., 2000).

Despite the increased attention to BFRBs such as skin picking and hairpulling, a number of outstanding issues remain. First, the prevalence of hairpulling remains unknown because large epidemiological studies using well-validated measures have not been conducted. However, Christenson et al. (1991a) found that 1.5% of men and 3.4% of women reported clinically significant hairpulling in a sample of 2,579 college students. Similarly, Rothbaum, Shaw, Morris, and Ninan (1993) found that over 10% of students reported hairpulling and 1% reported that this resulted in significant distress and hair loss. Other survey studies in college students indicate that over 15% of participants endorse some type of non-cosmetic hairpulling, with nearly 3% of this sample reporting clinical levels (Stanley, Borden, Bell, & Wagner, 1994). These data suggest that TTM may be relatively common; however, these data are difficult to interpret because measures with validated psychometric properties were not utilized (cf. Keuthen et al., 1995; O'Sullivan et al., 1995).

Although skin picking has been examined with validated measures, extant studies have involved relatively small samples (e.g., Bohne et al., 2002; Keuthen et al., 2000). Specifically, out of 105 college students, 3.8% reported skin picking that resulted in physical injury and distress (Keuthen et al., 2000). Similarly, out of 133 German students, 4.6% reported skin picking that resulted in distress or functional impairment (Bohne et al., 2002). Thus, the first goal of the present study was to investigate the prevalence of both hairpulling and skin picking behaviors in a large college sample using the Massachusetts General Hospital Hairpulling Scale (MGHHS) and Skin Picking Scale (SPS), both measures with established psychometric properties. Based on existing data, it was hypothesized that between 1 and 3% of participants would endorse distress related to excessive hairpulling, and between 3 and 5% would endorse distress resulting from skin picking.

The second goal of the study was to determine whether participants who report relatively frequent skin picking or hairpulling would also report higher levels of anxiety and affective distress. Although Keuthen et al.

(2001) found that skin picking severity was significantly correlated with both measures of anxiety and depression, a recent study by Bohne et al. (2002) found no relationship between skin picking severity and depression in a student sample. One possibility is that patient samples represent a more severe subset of skin pickers. Based on this possibility, it was hypothesized that skin picking severity would be positively related to increased anxiety and distress in students who endorse these behaviors. Although negative affective states such as anxiety and depression have also been related to hairpulling (Stanley, Borden, Mouton, & Breckenridge, 1995), no study has assessed both hairpulling and measures of affective distress in large college samples using measures with validated psychometric properties. In light of higher rates of mood disorders in patients with TTM, it was hypothesized that more severe hairpulling would relate to increased self-reported depression and anxiety symptoms.

Finally, the relationship between obsessive-compulsive symptoms and both hairpulling and skin picking was examined. Previous reports have noted similarities between these behaviors and obsessive-compulsive disorder (OCD). Trichotillomania (TTM) and skin picking have even been conceptualized as obsessive-compulsive *spectrum* disorders (Bienvenu et al., 2000; Jenike, 1989; Hollander & Benzaquen, 1997; Stein, Hutt, Spitz, & Hollander, 1993; Stein, Simeon, Cohen, & Hollander, 1995; Swedo & Leonard, 1992; Tynes, White, & Skeketee, 1990). This suggestion is motivated by the formal similarity between compulsions in OCD and compulsive behavior characteristic of disorders such as TTM and skin picking. For instance, compulsions and the urge to pull hair or skin-pick are similarly intense behaviors that are difficult to control, and often characterized by subsequent temporary relief (Swedo, 1993; Swedo & Leonard, 1992). Further support for the similarity between these disorders comes from studies that find high rates of comorbidity between OCD and TTM (Christenson et al., 1991a; Swedo et al., 1989) and between OCD and skin picking (Wilhelm et al., 1999).

Other studies suggest that there are a number of differences between OCD and behaviors such as skin picking and hairpulling. For instance, TTM is not associated with obsessions, appears to be maintained via positive reinforcement (pulling is pleasurable, not anxiety-reducing, as is the case in OCD), and unlike OCD, TTM is not triggered by external variables (cf. Keuthen, O'Sullivan, & Sprich-Buckminster, 1998). However, most studies have not examined the relationship between obsessive-compulsive (OC) symptoms and either hairpulling or skin picking in nonclinical samples. One exception is the relatively small study by Bohne et al. (2002), who reported that frequency

of skin picking was related to self-reported OCD symptoms in a student sample. No study has simultaneously evaluated the relationship between OCD symptoms and both hairpulling and skin picking. Therefore, the final goal of the present study was to determine whether hairpulling and skin picking severity are related to increased OC symptoms. Based on existing data and the notion that these behaviors may be part of an OC spectrum, it was hypothesized that both increased skin picking and hairpulling would relate to increased self-reported OC symptom severity.

To test these hypotheses, the MGHHS and SPS were administered to a large group of college students. All participants who endorsed relatively frequent hairpulling or skin picking on the MGHHS and SPS in an initial testing session were scheduled for a follow-up session 6 weeks later that involved completing the MGHHS, SPS, and other self-report measures. This examined both the temporal stability of hairpulling and skin picking behaviors over 6 weeks as well as the relationship between these behaviors and other symptoms of psychopathology utilizing well-validated measures.

METHOD

Participants

Students enrolled in introductory psychology courses at the University of Delaware participated in a testing session where they completed a number of self-report measures of different psychological constructs. In total, 1,324 participants (793 women, 531 men, and 75 participants who did not identify their gender) from 2004 Fall and Spring semesters with complete data constituted the initial sample.

Measures

MGHHS

The Massachusetts General Hospital Hairpulling Scale (MGHHS; Keuthen et al., 1995) is a seven-item self-report measure that assesses urges to pull hair, time spent pulling, perceived control, and distress associated with pulling. All items are scored using a 0 to 4 Likert scale, and address hairpulling behavior during the preceding week. Initial studies on the psychometric properties of the MGHHS have shown high internal consistency (coefficient alpha = 0.89), and moderate convergent validity with other self-report measures of hairpulling. The

MGHHS also shows divergent validity with measures of depression and anxiety, and appears sensitive to changes in level of symptom severity. It also demonstrates excellent test-retest reliability ($r = .97$) over one hour (O'Sullivan et al., 1995).

SPS

The Skin Picking Scale (SPS; Keuthen et al., 2001) is a six-item self-report measure that assesses urges to pick skin, as well as time spent, interference from, control over, and distress associated with skin picking. Like the MGHHS, the SPS is scored on a 0 to 4 Likert scale and respondents are asked about their skin picking behavior over the preceding week. In a group of severe skin pickers, the SPS has been shown to have good internal consistency (coefficient alpha = 0.80), and moderate convergent validity with duration of skin picking episodes.

DASS-21

The Depression Anxiety Stress Scales—21 item version (DASS-21; Lovibond & Lovibond, 1995) is a self-report measure that assesses negative affective experience. Participants are asked to rate how much a particular statement applied to them over the past week using a 4-point Likert scale ranging from 0 ('did not apply to me at all') to 3 ('applied to me very much'). The measure loads on three factors, each comprising seven items: Depression (*DASS-D*), Anxiety (*DASS-A*), and Stress reactivity (*DASS-S*). The DASS has been shown to have excellent psychometric properties in clinical (Antony, Bieling, Cox, Enns, & Swinson, 1998; Brown, Chorpita, Korotitsch, & Barlow, 1997) and non-clinical samples (Clara, Cox, & Enns, 2001; Lovibond & Lovibond, 1995).

The DASS-21 was used to assess anxiety and depression because it has been shown to better differentiate depression and anxiety than other self-report measures (Antony et al., 1998; Brown et al., 1997; Clara et al., 2001; Lovibond & Lovibond, 1995). Additionally, the DASS-21 contains a stress reactivity subscale; this aspect of affective distress seems especially relevant in light of the reported relationship between BFRBs and psychological stress (cf. Teng et al., 2002).

OCI-R

The Obessive-Compulsive Inventory—Revised (OCI-R; Foa et al., 2002) is an 18-item self-report measure

that assesses distress associated with obsessions and compulsions. In addition to the total score, separate subscale scores can be calculated for Washing, Checking, Ordering, Obsessing, Hoarding, and Neutralizing. Although the OCI-R is a relatively new measure, Foa et al. (2002) report excellent psychometric properties for the OCI-R in clinical patients with OCD, post-traumatic stress disorder (PTSD), generalized social phobia (GSP), and nonanxious controls. Hajcak, Huppert, Simons, and Foa (2004) reported similar properties for the OCI-R in a non-clinical college sample.

PSWQ

The Penn State Worry Questionnaire (PSWQ; Meyer, Miller, Metzger, & Borkovec, 1990) is a 16-item self-report measure that assesses dysfunctional attitudes about worry on a five-point Likert scale. It has been shown to have excellent psychometric properties in both clinical and non-clinical populations (Brown, Antony, & Barlow, 1992; Gillis, Haaga, & Ford, 1995; Stober, 1998; van Rijsoort, Emmelkamp, & Vervaeke, 1999).

For all measures utilized, higher scores reflect greater symptom severity.

Procedures

Participants from the 2004 Fall and Spring semesters completed the MGHHS and SPS for course credit. This study was approved by the University of Delaware IRB and all participants provided informed consent prior to participation. Participants who endorsed relatively frequent hairpulling or skin picking, scoring a 2 or higher on the frequency item of either the MGHHS or SPS, were selected for a subsequent questionnaire administration. On the MGHHS, a score of 2 corresponds to "This week I pulled my hair often"; on the SPS, a score of 2 corresponds to spending "1–3 hr/day picking my skin, or frequent skin picking". Forty-seven participants (20 men, 23 women, 4 unidentified) met this criterion on the MGHHS, and 68 participants (26 men, 35 women, and 7 unidentified) met this criterion on the SPS (only 13 participants met both criteria). Of these participants, 72 students (38 women and 34 men) were both scheduled and completed the second testing session which occurred 6 weeks later; at the second testing session, the MGHHS, SPS, DASS-21, OCI-R, and PSWQ were administered.

There were several reasons that follow-up data were obtained from only 63% of identified participants. Some participants dropped their psychology course and were therefore no longer in the Department of Psychology Subject Pool; some opted to do readings instead of participating in psychology experiments, and some participants failed to keep their scheduled appointment. The Massachusetts General Hospital Hairpulling Scale (MGHHS) and SPS scores for participants with follow-up data were compared to those participants for whom follow-up data were not obtained. Independent sample *t*-tests indicated that those with follow-up data had higher MGHHS scores ($t(113) = 2.63$, $p < .01$) but did not differ with respect to SPS scores ($t(113) = .86$, $p > .35$) compared to those participants without follow-up data. Importantly, these data indicate that participants with follow-up data had more severe hairpulling scores and comparable skin picking scores compared to those participants for whom follow-up data were not obtained, and therefore did not represent a less severe subset of participants.

RESULTS

Hairpulling and Skin Picking in the Initial Sample

Cronbach's alpha was calculated to assess the internal consistency of the MGHHS and SPS. Both the MGHHS (.91) and SPS (.88) demonstrated excellent internal consistency. The correlation between MGHHS and SPS ($r = .303$, $p < .001$) suggested that these behaviors are somewhat related, but are clearly distinct constructs.

In terms of hairpulling frequency on the MGHHS (item 1), 146 participants (11.03%, 83 women) indicated that they pulled their hair at least occasionally; 26 participants (1.96%, 17 women) reported that they pulled their hair often; 16 participants (1.21%, 6 women) said that they pulled their hair very often; 4 participants (0.30%, 3 women) said that they pulled their hair so often they felt like they were always pulling it.

In terms of distress associated with hairpulling (item 7), 95 participants (7.18%, 66 women) said they felt vaguely uncomfortable about their hairpulling; 27 participants (2.04%, 17 women) reported feeling noticeably uncomfortable about their hairpulling; 13 participants (0.98%, 4 women) reported feeling significantly uncomfortable about their hairpulling; finally, 19 participants (1.44%, 12 women) said they felt intensely uncomfortable about their hairpulling. Together, these data indicate that 3.47% of the sample rated the frequency of their hairpulling 'often' or greater, and pulling was related to significant distress in 2.42% of the sample.

In terms of the frequency of skin picking on the SPS (item 1), 381 participants (28.78%, 232 women) reported occasional skin picking (less than 1 h per day);

56 participants (4.23%, 33 women) said they picked their skin frequently (between 1 and 3 hours per day); 9 participants (0.68%, 5 women) reported very frequent skin picking (between 3 and 8 hr per day); 4 participants (0.30%, 2 women) said they felt that they were nearly constantly picking their skin (more than 8 hours per day).

In terms of distress associated with skin picking (item 5), 149 participants (11.25%, 103 women) reported mild distress; 37 participants (2.79%, 28 women) said they experienced moderate distress as a result of their skin picking; 13 participants (0.98%, 9 women) reported severe distress; 4 participants (0.30%, 1 woman) said they experienced extreme distress associated with their skin picking. These data indicate that 5.21% of the sample engaged in skin picking with 'frequent' or greater regularity; additionally, 4.07% reported at least moderate distress related to their skin picking.

Finally, the SPS also assesses social and work interference related to skin picking (item 4). Ninety-one participants (6.87%, 50 women) reported mild interference; 14 participants (1.06%, 9 women) said that skin picking interfered to a moderate degree; 3 participants (0.23%, 1 woman) reported severe interference, and 1 participant (0.08%, 1 woman) reported extreme interference due to skin picking. These data indicate that skin picking results in at least moderate interference (defined as definite interference with social or occupational performance) in 1.37% of the sample.

Hairpulling, Skin Picking, and Relationships to Other Measures in the Follow-Up Sample

Descriptive statistics and correlations are presented for the follow-up sample in Table I To ensure that the internal reliability reported earlier was not due to the overwhelming number of participants who scored a total of zero on both the MGHHS and SPS, Cronbach's alpha was again computed for the MGHHS and SPS. The MGHHS demonstrated excellent internal reliability (.91), while the SPS demonstrated good internal reliability (.83). To assess the reliability of hairpulling and skin picking behaviors over time, Pearson's r was calculated between the initial testing score and follow-up testing score for both the MGHHS and SPS. Test-retest reliability on MGHHS ($r = .49$) and the SPS ($r = .33$) scores were mildly to moderately stable.

An ANOVA on MGHHS and SPS scores with gender as a factor indicated that men and women did not differ with respect to hairpulling severity ($F(1, 70) < 1$); however, women had significantly higher skin picking scores ($F(1,70) = 4.98, p < .05$).

To examine whether the follow-up sample differed from a normative sample on the DASS-21, PSWQ, and OCI-R, scores from this sample were compared to data previously collected from 221 (159 women) introductory psychology students at the University of Delaware (cf. Hajcak et al., 2004) using independent samples t-tests. These analyses indicated that the follow-up sample reported significantly more symptoms of anxiety ($t(291) = 2.94, p < .01$) and stress reactivity ($t(291) = 4.65, p < .001$) based on their scores on the DASS-21, and reported more obsessive-compulsive symptoms ($t(291) = 2.84, p < .01$), based on their answers on the OCI-R.[5] However, the follow-up sample did not differ from the comparison group on either self-reported symptoms of depression ($t(291) = 1.09, p > .20$) or pathological worry ($t(291) = -1.38, p > .10$), as measured by the DASS-21 and PSWQ, respectively.

Bivariate correlations between the MGHHS, SPS, DASS-21, OCI-R, and PSWQ were conducted to evaluate the relationship between measures of hairpulling and skin picking and measures of anxiety and general psychopathology (Table II). These correlations indicate that higher scores on the SPS were related to higher scores on the PSWQ ($r = .257, p < .05$), but, higher scores on the SPS were not related to higher depression ($r = .04, p > .70$), anxiety ($r = .09, p > .40$), or stress-reactivity ($r = .04, p > .70$). Moreover, skin picking was unrelated to OC symptoms ($r = .02, p > .90$). On the other hand, higher scores on the MGHHS were related to increased anxiety ($r = .37, p < .001$) and stress-reactivity ($r = .31, p < .01$). More hairpulling was related to increased OC symptoms ($r = .27, p < .05$) and pathological worry ($r = .28, p < .05$). In particular, higher scores on the MGHHS were related to higher scores on the obsessing ($r = .28, p < .05$) and checking ($r = .25, p < .05$) subscales of the OCI-R.

DISCUSSION

In the present study, the prevalence of both hairpulling and skin picking behaviors was assessed in over 1,300 college students using validated self-report measures. Utilizing the MGHHS, results from this initial sample indicated that nearly 15% of the sample reported at least some non-cosmetic hairpulling and 2.42% of the sample reported hairpulling that resulted in significant distress. Results from the SPS indicated that over 30% of the sample endorsed at least some skin picking and approximately 5% of the sample reported picking their

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[5] Note: All of these differences are significant at a conservative threshold of $p < .01$ (.05/5), corrected for multiple statistical comparisons.

Table I. Descriptive Statistics in the Follow-up Sample and Relation to Scores in a Comparison Group

| | Sample 2 ($N = 72$) | | Comparison ($N = 221$) | | |
	Mean	SD	Mean	SD	T
MGHHS					
Men ($N = 34$)	5.29	6.30			
Women ($N = 38$)	6.29	5.64			
SPS					
Men ($N = 34$)	3.21	3.36			
Women ($N = 38$)	5.00	3.45			
DASS-D	4.71	3.79	4.12	4.04	1.09
DASS-A	4.71	3.93	3.29	3.43	2.94*
DASS-S	8.33	3.86	5.81	4.04	4.65**
PSWQ	41.36	10.76	43.82	13.85	−1.38
OCI-R	15.72	11.15	11.95	9.3	2.84*
Wash	1.5	2.07	1.58	2.05	−0.29
Obs	2.78	2.7	1.73	2.31	3.21*
Hoard	3.82	2.41	3.31	2.33	1.6
Ord	3.39	3.42	3.01	2.71	0.97
Chk	2.69	2.87	1.32	2.11	4.35*
Neut	1.54	1.97	1	1.59	2.35*

*$p < .01.$ **$p < .001.$

skin for at least an hour per day. In terms of associated distress, just over 4% reported at least moderate distress related to their skin picking. Thus, the hypotheses regarding prevalence rates were supported. These data are consistent with previous data on rates of hairpulling and associated distress using other measures (Christenson, Pyle, & Mitchell, 1991b; Rothbaum et al., 1993; Stanley et al., 1994) and studies that have examined rates and severity of skin picking (Bohne et al., 2002; Keuthen et al., 2000). Two advantages of the present study were that skin picking was assessed in a sample over ten times larger than those utilized in previous studies, and hairpulling was assessed

Table II. First-Order Correlations in the Second Sample ($N = 72$)

| | Scale | |
Correlations	MGHHS	SPS
DASS-D	0.218	0.039
DASS-A	.368***	0.089
DASS-S	.310**	0.04
PSWQ	.276*	.257*
OCI-R	.265*	0.015
Wash	0.123	−0.022
Obsess	.275*	0.022
Hoard	0.218	−0.052
Order	0.105	0.06
Check	.252*	0.003
Neut	0.177	0.033

*$p < .05.$ **$p < .01.$ ***$p < .001.$

with a self-report measure with validated psychometric properties.

From the initial sample, participants who endorsed relatively frequent hairpulling and skin picking were assessed in a follow-up testing session 6 weeks later. Both hairpulling and skin picking were only mildly to moderately stable over time. These data are consistent with the notion that these behaviors wane and wax in frequency. In addition, because the sample was comprised of college students, it is possible that changes in stress across the semester led to changes in skin picking and hairpulling behavior.

Results from 72 participants in the follow-up testing session indicated that this group of skin pickers and hairpullers had significantly higher scores on the anxiety and stress reactivity subscales of the DASS-21, and higher scores on the OCI-R, compared to a normative sample of college students. Interestingly, these participants did not appear more depressed than the normative sample. In general, these data are consistent with reported relationships between affective distress and BFRBs (Keuthen et al., 2000; Stanley et al., 1995).

Teng et al. (2002) and Bohne et al. (2002) argue that BFRBs such as hairpulling and skin picking should be classified under a single diagnostic category. Although these behaviors do share a number of phenomenological similarities (cf. Lochner, Simeon, Niehaus, & Stein, 2002), correlational data from the follow-up sample suggest that skin picking and hairpulling differentially relate

to measures of affective distress and pathological anxiety. Although neither skin picking nor hairpulling was related to depression, only skin picking was related to pathological worry, and only hairpulling was related to increased levels of anxiety, stress reactivity, and OC symptoms. These results supported the hypothesis that both skin picking and hairpulling would relate to anxiety; however, these data suggest that skin picking and hairpulling may relate to different types of anxiety (e.g., pathological worry and more general symptoms, respectively).

The fact that hairpulling, but not skin picking, related to OC symptoms was only partially consistent with the hypothesis that both behaviors would relate to increased OC symptoms. In general, these data are consistent with the proposed relationship between OCD and compulsive behaviors (e.g., Hollander & Benzaquen, 1997). However, the present data further indicate that hairpulling, but not skin picking, may relate to increased OC symptoms. Interestingly, correlational analyses indicated specific relationships between hairpulling severity and the obsessing and checking subscales of the OCI-R. These data raise further questions about the specific relationship between OCD symptom subtypes and BFRBs such as hairpulling. For instance, patients with OCD characterized by 'not just right' obsessions often report that compulsions relieve a sense of urge and mounting tension, rather than reducing fear, per se; this subtype of OCD may be especially associated with urge-driven behaviors such as hairpulling.

The present study did not find any evidence for a relationship between skin picking severity and affective distress. This finding was surprising, given the Keuthen et al. (2000) study that reported evidence for a relationship between skin picking severity and affective distress in a patient population. However, Bohne et al. (2002) did not find a relationship between skin picking and depression in a sample of German college students. These data appear to suggest that skin picking may have a greater relationship to negative affect in clinical populations. However, the average age of skin picking patients in the Keuthen et al. (2000) study was approximately 40, whereas participants in both the current study and the Bohne et al. (2002) study were older adolescents. Thus, these data are consistent with the possibility that affective distress may develop over time in skin pickers. Alternatively, one might conjecture that college students do not consider minor skin manipulation as abnormal and, thus, are not distressed by such behaviors. Future research may further explore these issues in community samples, through longitudinal designs, and by including even younger skin picking patients.

In terms of gender, the present study only found significant differences between men and women on measures of skin picking severity in the follow-up sample. These data are consistent with previous studies on skin picking (Arnold et al., 1998; Fruensgaard, 1984; Gupta, Gupta, & Haberman, 1987; Wilhelm et al., 1999) with the exception of Bohne et al. (2002) who found no gender effects in terms of skin picking severity in German college students. Interestingly, there was no evidence for higher rates of hairpulling in women compared to men. Other prevalence studies have indicated that more women than men engage in both nonclinical pulling and in pulling that meets full DSM criteria for TTM (cf. Stein, Christenson, & Hollander, 1999), although measurement strategies differed and may be at the heart of this inconsistency. These findings also contrast with those from adult clinical studies in which the vast majority of patients presenting for treatment are women (e.g., Christenson, 1995). Possible explanations for the discrepancy in the male:female sample ratio between survey and clinical studies are that women are more likely to seek help for psychiatric disorders in general, and that men with TTM can better disguise bald patches (i.e., by wearing hats, shaving, or explaining hair loss as part of male-pattern baldness).

Several limitations of the present study should be acknowledged. First, although the present data suggest that participants who engaged in skin picking and hairpulling reported higher levels of affective distress than a control group, the present study could not address the functional relationship between these behaviors and affective distress because of its cross-sectional design. For instance, affective distress may be a result of hairpulling and skin picking, or may serve as a trigger for these behaviors (cf. Teng et al., 2002). Second, because participants were college students, it is difficult to determine to what degree results from the current study are representative of non-clinical populations more generally. Along these lines, data from the present study do not address questions regarding the prevalence of impulse control disorders such as trichotillomania; rather, the present study can only shed light on the frequency and associated distress of hairpulling and skin picking *behaviors* in college students. Nonetheless, the present study suggests that these behaviors are relatively frequent and are associated with increased affective distress. Together these data highlight the need for more expensive, community-based studies to examine actual prevalence rates.

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