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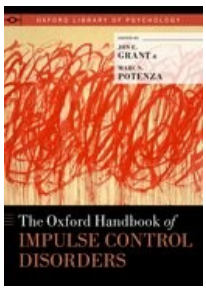

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CHAPTER

27 Assessment and Treatment of Pathological Skin Picking

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Abstract

Pathological skin picking (PSP) refers to chronic skin picking or scratching that causes tissue damage and distress. It is a heterogeneous category of behaviors and may be manifest in the context of various psychological disorders. This chapter presents an overview of the empirical literature on the assessment and treatment of PSP, including (1) a cognitive-behavioral model as heuristic for conceptualizing treatment, (2) assessment tools, (3) a review of the pharmacological and psychosocial treatment outcome literatures, (4) cognitive-behavioral treatment techniques, and (5) future directions. The chapter is intended to introduce the clinician to the assessment and psychological tools used to treat PSP, as well as to provide impetus to advance research in this understudied domain.

Keywords: skin picking, body-focused repetitive behavior, cognitive-behavior therapy, excoriation, habit reversal training

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Assessment and Treatment of PSP

Introduction

Pathological skin picking (PSP) refers to chronic picking or scratching of skin lesions that causes tissue damage and distress, sometimes quite severe (Simeon et al., 1997). In the literature it is referred to in many ways, including *neurotic, psychogenic*, or *psychocutaneous excoriation*; *dermatillomania*; *neurodermatitis*; *neurotic or self-inflicted dermatosis*; and *acne excoriée*, all of which may or may not describe exactly the same phenomenon. Not currently classified as a unique psychiatric disorder (American Psychiatric Association, 2000), PSP is a heterogeneous condition that is similar to other body-focused repetitive behaviors (BFRBs) but is manifest in the context of numerous disorders and clinical presentations. Individuals engage in PSP for many reasons, and the behavior itself varies considerably from individual to individual (e.g., site and instrument of picking). The phenomenology and treatment of PSP are relatively understudied, and although there is budding evidence for the efficacy of psychological and psychiatric interventions, the empirical literature is limited. The clinician wishing to develop a treatment approach may be flummoxed when consulting a small literature based on a heterogeneous patient population.

The purpose of this chapter is to provide an overview of the assessment and treatment of PSP and, in so doing, (1) to introduce the clinician to the assessment and psychological (particularly cognitive-behavioral) tools used to treat PSP and (2) to provide an impetus to advance research on PSP. We begin with a simplified model, as directly relevant to assessment and treatment, highlighting the diverse and multiply determined behaviors under the umbrella term *pathological skin picking*. With attention to the consequent importance of careful and functional assessment, we then present assessment tools with demonstrated utility for PSP. Thereafter, we review the treatment outcome literature and then describe cognitive-behavioral techniques in treating PSP. Finally, we end with directions for future research.

p. 361

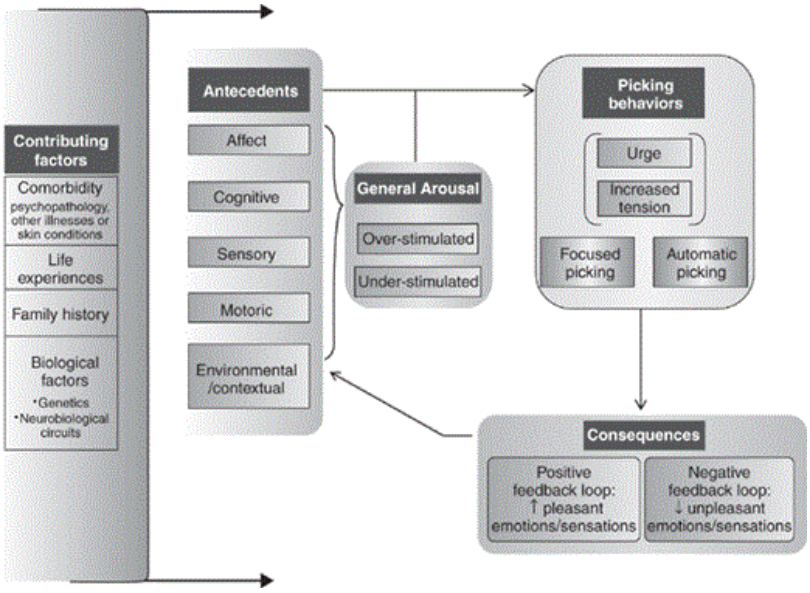
Cognitive-Behavioral Model of PSP

Historically, the model for understanding PSP has centered on the notion of urge reduction. That is, picking was thought to occur in direct response to an internal tension, urge, or discomfort, which was then relieved by picking. Thus, picking was negatively reinforced each time it successfully rid the individual of the unpleasant sensation. The growing literature on BFRBs, however, suggests that this contingency is likely only one of many factors involved in the development and maintenance of PSP. The current conceptualization incorporates a range of biological, psychological, and situational features that can play a role in the presentation of this phenomenon. This newer model importantly accounts for the heterogeneous presentation of PSP, which includes the varied pathways through which the behavior could result and be maintained. Figure 27.1 presents a simplified version of the models presented by Franklin and Tolin (2007) and Mansueto et al., (1997) for trichotillomania and other BFRBs. We delineate the different components of this model below and also illustrate how a careful functional analysis is imperative when selecting the most helpful treatment avenue for any given individual. An important caveat to consider with regard to the current model is that it should be viewed as a work in progress, as future research will most certainly elucidate the specific factors involved, as well as the relationships that exist between these factors.

The model outlines three areas in which the factors that may contribute to the development and maintenance of PSP lie: general vulnerability factors, antecedents, and consequents. General vulnerability factors themselves do not necessarily lead to the onset of PSP, but rather function as a backdrop and occasionally help explicate reasons for initial bouts of the behavior. For example, biological factors, including a potential genetic predisposition (Bienvenu et al., 2000; Wilhelm et al., 1999), altered neurobiological circuits (Grachev, 1997; Swedo et al., 1991), and altered pain sensitivity (Christenson et al.,

1991; Stanley et al., 1992) could all render an individual more vulnerable to the development of PSP. Family dynamics, such as learning or socialization, along with life experiences and comorbidity, may also increase
p. 362
an individual's ↳ general level of risk for PSP. In particular, the presence of additional conditions or syndromes is important to consider since they may help explain initial occurrences of PSP (e.g., acne) or because the PSP may actually be a symptom of the other condition (e.g., picking as a symptom of body dysmorphic disorder [BDD] or Praeder-Willi syndrome).

Fig. 27.1



Biopsychosocial model of PSP.

The second building block of the model consists of a number of direct antecedents that can increase the chance of in-the-moment PSP. Several authors have discussed how antecedents can be classified as either internal or external in nature (Franklin & Tolin, 2007; Mansueto et al., 1997). Internal cues include affective (e.g., agitation, worry, boredom), cognitive (e.g., "I will feel satisfied if I just pick once" or "People will judge me if they see my scab"), and sensory (e.g., itchiness) phenomena. By contrast, external cues may include motoric triggers (e.g., touching or feeling for skin imperfections) and environmental or contextual cues (e.g., specific situations or visual signs). These factors are often established as triggers via classical conditioning (Azrin & Nunn, 1973; Franklin & Tolin, 2007), wherein the drive to perform the behavior is strengthened when the individual is exposed to something that has previously been linked with PSP. Antecedents may also trigger picking by producing a state of dysregulated arousal in which the individual becomes either hyper- or hypoaroused (Christenson et al., 1993; Franklin & Tolin, 2007). Research has found that feeling both over- and understimulated is linked to PSP (Bohne et al., 2002) and that the behavior may take on the role of a specific emotion regulation strategy (Begotka et al., 2003). Finally, it is possible, though not necessary, for the antecedents to be associated with a building tension in the individual, which results in a subsequent urge to pick.

Once picking begins, it can be classified as either automatic or focused picking. The former often occurs outside the person's awareness, whereas the latter is more likely to be associated with a specific goal (e.g., removing blemishes or regulating emotional distress). The consequences of picking are the final component of the model and represent the reinforcing agent. Within the negative feedback loop, picking serves to remove unpleasant emotions and/or sensations associated with the antecedents of the picking episode. Indeed, many individuals with PSP report that the behavior reduces negative emotions, such as sadness, anxiety, or boredom, along with removing or altering unpleasant sensations or cognitions (Bohne et al.,

2002; Diefenbach et al., 2008; Wilhelm et al., 1999). At the same time, it is also possible for a positive feedback loop to be active. In this pathway, picking behaviors are reinforced by increasing pleasant emotions and/or sensations (Bohne et al., 2002; Meunier et al., 2009). These immediate consequences, which act as explicit behavioral contingencies that maintain the behavior, are distinct from the more long-term consequences of PSP. The delayed outcome of these behaviors often includes a series of detrimental repercussions, such as negative self-evaluation, mood states, social consequences, and possibly even physical scarring (Keuthen et al., 2000; Wilhelm et al., 1999).

Given the complexity of the model, it is clear that very few individuals with PSP will look exactly alike. As such, specific treatment strategies (discussed below in greater detail) may be helpful for one individual and completely ineffectual for another. It is therefore imperative for the clinician to conduct a thorough functional analysis with the patient to identify the most appropriate treatment strategies. For example, an individual with a skin disease (e.g., acne, eczema) may benefit from treatment of the physical condition in conjunction with treatment aimed at the PSP behaviors. In instances where features of BDD are driving the PSP, an individual may need supplementary cognitive-behavioral therapy (CBT) focused on BDD and instruction in more classical response prevention for the PSP. Considering the specific antecedents a given individual may experience, different techniques (e.g., stimulus control or alternative behaviors) could be implemented. With regard to consequences, if the therapist and the client determine that PSP functions primarily to modulate negative affect, techniques focused on emotion regulation and increasing distress tolerance may be most effective. As these examples indicate, each component of the model represents an instance where the cognitive-behavioral techniques for PSP can be uniquely tailored to a given individual's needs so that the most effective treatment is delivered.

Assessment Tools

In what follows, we provide an overview of the most commonly used assessment tools for PSP. These include self-monitoring and functional analysis, photographs, clinician-rated measures, and self-report measures. In light of the diversity of PSP, we again stress the necessity of careful assessment before intervention.

p. 363

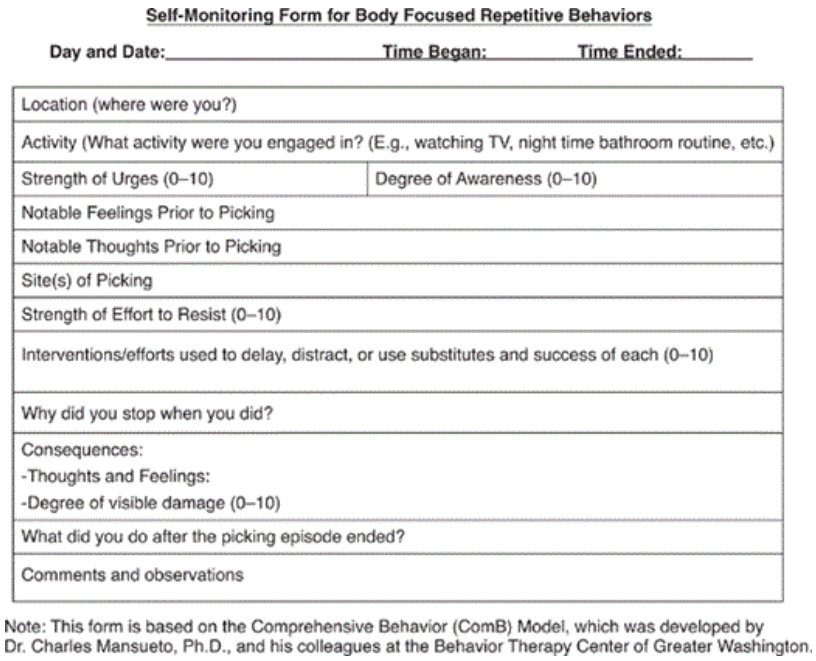
Self-Monitoring and Functional Analysis

Assessment begins with self-monitoring of the frequency and duration of the picking behavior. Particular attention should be paid to the relevant antecedents and consequences of the picking. Although a number of self-monitoring forms exist in the literature, Mansueto and colleagues have developed a particularly useful and detailed monitoring form for BFRBs and especially PSP (Figure 27.2; see also Mansueto et al., 1999). On this form, the patient records the date, times that picking began and ended, site of picking (e.g., the face, arm), intensity of the urge to pick, and efforts to resist picking. The form also allows the patient to note where he or she is and what he or she is doing, feeling, and thinking at the time the picking begins. After the picking has ended, the patient is prompted to write any resultant thoughts, feelings, or physical consequences. Mansueto and colleagues (1999) suggest that assessment should include evaluation of the following five types of antecedents and consequents: cognitive (e.g., having the thought "That hair is out of place"), affective (e.g., frustration, boredom), motoric (e.g., sitting in a certain position), sensory (e.g., an itch or tingling of the skin), and environmental (e.g., certain places or activities). Particular attention should also be paid to negative (e.g., relief from tension) and positive (e.g., pleasure, sensory stimulation) reinforcers of the behavior. As highlighted in the CBT model, these negative and positive feedback loops may play a crucial role in maintaining the picking behavior. Given the heterogeneous nature of PSP and the high levels of comorbidity, a careful functional analysis of the picking is essential to develop treatment interventions tailored to the patient's unique patterns of behavior.

Photographs

Photographs can provide an objective measure of the degree of picking and associated tissue damage. Twohig and colleagues (Twohig & Woods, 2001; Twohig et al., 2006) have used photographs as primary
p. 364 treatment outcome measures by having blind raters assess photographs of the affected areas for ↳ degree of damage. Photographic evidence can also provide a concrete measurement of treatment progress for the patient. Of course, clinicians should remain sensitive to any feelings of shame and embarrassment that being photographed may induce.

Fig. 27.2



Self-Monitoring Form for Body Focused Repetitive Behaviors

Day and Date: _____ **Time Began:** _____ **Time Ended:** _____

Location (where were you?)	
Activity (What activity were you engaged in? (E.g., watching TV, night time bathroom routine, etc.)	
Strength of Urges (0–10)	Degree of Awareness (0–10)
Notable Feelings Prior to Picking	
Notable Thoughts Prior to Picking	
Site(s) of Picking	
Strength of Effort to Resist (0–10)	
Interventions/efforts used to delay, distract, or use substitutes and success of each (0–10)	
Why did you stop when you did?	
Consequences: -Thoughts and Feelings: -Degree of visible damage (0–10)	
What did you do after the picking episode ended?	
Comments and observations	

Note: This form is based on the Comprehensive Behavior (ComB) Model, which was developed by Dr. Charles Mansueto, Ph.D., and his colleagues at the Behavior Therapy Center of Greater Washington.

Self-monitoring form for BFRBs, including pathological skin picking. This form is reproduced with the generous permission of Dr. Charles Manseuto, Ph.D.

Clinician-Rated Measures

Yale-brown obsessive compulsive scale modified for neurotic excoriation

The Yale-Brown Obsessive Compulsive Scale Modified for Neurotic Excoriation (NE-YBOCS) is based on the Yale-Brown Obsessive Compulsive Scale (Y-BOCS), a widely used clinician-rated measure of obsessive-compulsive disorder (OCD) symptom severity (Goodman et al., 1989). Like the original Y-BOCS, the NE-YBOCS includes 10 items. Items 1–5 have been modified to correspond to urges to pick or thoughts about picking, and items 6–10 correspond to the picking behavior (Arnold et al., 1999; Bloch et al., 2001; Grant et al., 2007). Each item is rated on a 0 to 4 scale yielding total scores that range from 0 to 40. Although no psychometric papers have been published on the NE-YBOCS, it has demonstrated good test-retest reliability (ρ = .83) and good construct validity when compared with other outcome measures in one treatment outcome study (Grant et al., 2007).

Skin picking treatment scale

Simeon et al. (1997) also modified the Y-BOCS to create a clinician-rated measure of PSP. The Skin Picking Treatment Scale (SPTS) comprises five items that assess the frequency and duration of picking, the severity of picking, the intensity of the urge to pick, the degree of perceived control over picking, and interference due to picking. As with the original Y-BOCS, each item is rated on a 0 to 4 scale. Total scores range from 0 to 20. Presently, no psychometric data have been reported on this measure, although it has been used in two treatment outcome trials (Bloch et al., 2001; Simeon et al., 1997).

Self-Report Measures

Habit questionnaire

The Habit Questionnaire is a self-report measure developed by Teng, Woods, Twohig, and Marcks (2002) to assess for the presence of a range of BFRBs including skin picking, mouth chewing, nail biting, skin biting, and skin scratching. For each endorsed behavior, the respondent is asked to rate the frequency and duration of the behavior as well as any associated impairment, injury, medical attention, or intervention. Respondents also report whether the behavior only occurs under the influence of alcohol or another substance and whether they have ever been diagnosed with any of the following comorbid conditions: OCD, Tourette's syndrome, autism, Asperger's syndrome, or developmental disability. The authors defined the presence of a BFRB as occurring more than five times a day for 4 weeks or longer and resulting in impairment in functioning, injury, medical attention, or intervention. In a sample of 105 undergraduate students, the Habit Questionnaire demonstrated moderate test-retest reliability (Ø = .69).

Milwaukee inventory for the dimensions of adult skin picking

The most recently developed measure of skin picking is the Milwaukee Inventory for the Dimensions of Adult Skin Picking (MIDAS; Walther et al., 2009). Building on previous work in PSP and trichotillomania (Arnold et al., 2001; Christenson & Mackenzie, 1994; Flessner et al., 2008b), Walther et al. sought to develop a measure that would distinguish between automatic and focused picking. The self-report measure includes six items assessing automatic picking (e.g., "I am usually not aware of picking my skin during the picking episode") and six items assessing focused picking (e.g., "I pick my skin when I am experiencing a negative emotion such as stress, anger, frustration, or sadness"). Each item is rated on a 1 (*not true of any of my skin picking*) to 5 (*true for all of my skin picking*) scale. Thus, scores on each subscale range from 6 to 30. Initial testing of the MIDAS has demonstrated adequate internal consistency (automatic subscale: α = .77; focused subscale: α = .81) and good construct validity.

Skin picking impact scale

The Skin Picking Impact Scale (SPIS; Keuthen et al., 2001a) is a 10-item self-report measure of the emotional (e.g., "I feel embarrassed because of my skin picking"), social (e.g., "I think my social life would be better if I didn't pick my skin"), and behavioral (e.g., "It takes me longer to go out because of my skin picking") consequences of skin picking. Respondents rate how much each item applies to them in the previous week on a 0 (*none*) to 5 (*severe*) scale. Thus, total scores range from 0 to 50. The SPIS has shown high internal consistency (α = .93) and good construct validity in a sample of self-injurious skin pickers. A cutoff score of 7 or above was shown to reliably distinguish self-injurious skin pickers from non-self-injurious skin pickers.

p. 365

Skin picking scale

The Skin Picking Scale (SPS; Keuthen et al., 2001b) is a six-item self-report measure modeled after the Y-BOCS (Goodman et al., 1989), assessing the frequency and intensity of the urge to pick and the time spent picking, as well as interference, distress, and avoidance due to skin picking. Each item is rated on a 0 (*none*) to 4 (*extreme*) scale. Thus, total scores range from 0 to 24. Initial testing revealed moderate internal consistency (α = .80) and good construct validity. Similar to the SPIS, a cutoff score of 7 or above was shown to reliably distinguish self-injurious skin pickers from non-self-injurious skin pickers.

Skin picking symptom assessment scale

The Skin Picking Symptom Assessment Scale (SP-SAS; Grant et al., 2007) is a 12-item self-report measure of skin picking modeled after two earlier measures of kleptomania (Grant & Kim, 2002) and pathological gambling (Kim et al., 2001). Respondents are asked to rate each symptom over the past week on a 0 to 4 scale. Total scores range from 0 to 48. As with the NE-YBOCS, no psychometric papers have been published on the SP-SAS. It has, however, demonstrated adequate test-retest reliability (ρ = .74) and satisfactory construct validity when compared with other outcome measures in one treatment outcome study (Grant et al., 2007).

Review of the Treatment Outcome Literature

Clinical trials designed specifically to treat PSP are few in number, and methodological ambiguities complicate interpretation. The literature is dominated by case reports, along with a few open trials and even fewer controlled and/or double-blind trials, all with small samples. Although definitive conclusions are difficult to draw, the studies suggest the utility of pharmacological and psychosocial treatments, including serotonergic and glutamatergic medications and CBT in treating PSP. In the following sections, we review the treatment outcome literature for PSP.

Pharmacotherapy and Biological Treatment

Simeon and colleagues (1997) conducted a double-blind pharmacotherapy trial in which they randomized 21 individuals with PSP to a 10-week course of fluoxetine (20–80 mg/day; *M* = 53–55 mg/day) or placebo. In completer analyses, fluoxetine led to greater improvement on two of three outcome measures: the Clinical Global Impression-Improvement Scale (CGI-I) and a self-report visual analog scale rating change in picking, but not the clinician-rated SPTS. Intent-to-treat analyses revealed significantly greater improvement only on the self-report measure. The magnitudes of some nonsignificant effects (SPTS in the completer analyses and CGI-I in the intent-to-treat analyses) were moderate or large, however, suggesting that the differences are meaningful, especially in light of the small sample size and resultant low statistical power. Furthermore, all 6 completers who received fluoxetine (and 8 of 10 who were randomized to receive fluoxetine) achieved clinical responder status compared with 3 of 11 on placebo. Of note, four participants dropped out of the fluoxetine condition: two had improved considerably (CGI-I = 2) and two had worsened considerably (CGI-I = 6), at least one of whose deterioration was clearly caused by the medication.

Four open-label trials of selective serotonin reuptake inhibitors (SSRIs) have been conducted for the treatment of PSP. Bloch and colleagues (2001) investigated fluoxetine in a sample of 15 subjects, all of whom received the study medication (20–60 mg/day) for 6 weeks. Responders (*n* = 8) were then randomized, double-blind, to receive continued fluoxetine at the dosage reached by week 6 or placebo for 6 more weeks. Overall, responders who received continued fluoxetine were considerably improved from baseline to week 12 on measures of skin picking (NE-YBOCS and a 7-item, then-unpublished version of the SPS), whereas those who were randomized to placebo returned to their baseline functioning by week 12. These results are promising, but conclusions regarding the efficacy of fluoxetine should be tempered by the finding that nearly half of the original 15 subjects did not respond to fluoxetine in the first arm of the study. Arnold and colleagues (1999) administered fluvoxamine (25–300 mg/day; *M* = 112.5 mg/day) to 14 subjects over 12 weeks and found improvement in picking behavior and global symptoms (but not in symptoms of depression) on both observer (NE-YBOCS) and self-report (visual analog scales) measures. However, half of the subjects dropped out of the study, four (29%) because of medication-related side effects. Keuthen and colleagues (2007) treated 27 individuals with escitalopram (5–30 mg/day; *M* = 25 mg/day) for 18 weeks. Following treatment, the sample was generally improved on measures of skin picking (SPTS, SPIS, and SPS,

as well as the CGI), mood, and quality of life. Of the 27 participants, 20 were classified as full or partial
p. 366 responders and 4 discontinued treatment due to ↳ side effects. Finally, Kalivas and colleagues (1996) report a case series of 31 patients with various self-injurious skin-directed disorders (26 of whom were described as having "neurotic excoriations") who were treated with sertraline (25–200 mg/day; *M* = 95 mg/day in responders and 72 mg/day in nonresponders) for an unspecified length of time. Three patients were not evaluated due to "intolerable adverse effects" (p. 589). Among the 28 participants who were evaluated, 19 experienced at least 50% reduction in open skin lesions.

Recently, Grant and colleagues (2007) conducted an open-label trial of lamotrigine, an anticonvulsant thought to affect glutamate. Twenty-four subjects were enrolled to receive lamotrigine (12.5–300 mg/day) for 12 weeks. As a group, subjects improved notably on measures of time spent picking as well as on secondary measures. Of the 20 subjects who completed the course of treatment, 16 were deemed responders. Only one of the four dropouts discontinued treatment because of a medication side effect. This study is notably the first to examine a non-SSRI in the treatment of PSP.

In addition to these few clinical trials, numerous case reports document the apparent utility of SSRIs, including fluoxetine (e.g., Gupta & Gupta, 1993), fluvoxamine (e.g., O'Sullivan et al., 1999), escitalopram (e.g., Pukadan et al., 2008), and paroxetine (e.g., Biondi et al., 2000) in treating at least some patients suffering from PSP (for reviews, see Arnold et al., 2001; Grant & Odlaug, 2009). Other authors, however, have published case reports suggesting that SSRIs may actually exacerbate skin picking in some patients (Denys et al., 2003). In addition to SSRIs, other pharmacological agents have also reportedly been effective in treating individual patients, including antidepressants such as clomipramine (e.g., Gupta et al., 1986) and doxepin (Harris et al., 1987); atypical or typical antipsychotics such as olanzapine (e.g., Blanch et al., 2004) and pimozide (Duke, 1983); the putative glutamate modulator, *N*-acetylcysteine (Odlaug & Grant, 2007); and naltrexone (Lienemann & Walker, 1989). Researchers have also reported success in augmenting previously inefficacious courses of some medications (e.g., citalopram, fluoxetine, venlafaxine) by adding other treatments, including atypical antipsychotics such as olanzapine (e.g., Christensen, 2004) and aripiprazole (Carter & Shillcutt, 2006; Curtis & Richards, 2007; Ginsberg, 2006); the antiglutamatergic agent riluzole (Sasso et al., 2006); inositol (Seedat et al., 2001); and CBT (Sahin et al., 2004).

A recent case report suggests that neurosurgery may be effective in reducing dangerous skin picking in patients who do not respond to other forms of treatment. Kondziolka and Hudak (2008) documented the effectiveness of bilateral anterior capsulotomies using gamma knife radiosurgery in a patient with treatment-refractory skin picking in the context of severe OCD. The patient had not responded to numerous medication trials and courses of behavior therapy, and had received multiple skin grafts, many of which he picked through. By 7 months postsurgery, his skin picking and OCD symptoms had decreased somewhat, and he was accepted for 2 months of inpatient therapy. By 17 months postsurgery, the skin picking was sufficiently reduced to allow the wound to begin to heal, and the OCD symptoms were greatly improved.

Psychosocial Treatment

Psychodynamic and eclectic therapies

In 1953, Seitz published a case series of brief psychodyanamic psychotherapy in 25 patients with "psychocutaneous excoriation syndromes" who did not respond to dermatological treatments. Based on earlier case reports and psychological studies of skin disorders, Seitz suggested that scratching is a conversion reaction stemming from "unexpressed rage and guilt, as well as the unsatisfied wishes for love," and that excoriation releases "tension associated with repressed rage; it atones for guilt by means of mutilating self-punishment; and it provides regressive gratification of the need for love through cutaneous-erotic masturbatory pleasure" (p. 201). Treatment itself consisted of 12 weekly sessions designed to elicit the verbal expression of rage and inferiority and "dilution" (p. 201) of the associated guilt and shame. Seitz reported that all 25 patients experienced temporary exacerbations of the cutaneous disorder, usually at the eighth session, and that 12 of the patients dropped out of treatment. For 12 of the 13 completers, however, the excoriation had resolved by acute posttreatment (i.e., "symptomatic cure," defined as "clearing of the lesions and absence of itching" [p. 201]), and all 12 maintained their gains at 3-month follow-up. Of those patients available for longer-term follow-up, six of seven were still in remission after 6 months and four of five after 1 year (different patients had relapsed at 6 months and 1 year). Participants who completed treatment differed at baseline from those who discontinued. They had significantly more mild skin lesions and were rated as more motivated. Although uncontrolled, this case series suggests that brief psychodynamic psychotherapy may be efficacious for individuals with mild skin
p. 367 picking who ↳ are motivated. Other reports indicate lower rates of treatment success with psychodynamic or eclectic therapy (e.g., Fruensgaard, 1991a, 1991b).

Cognitive-behavior therapy

Six studies and a number of case reports document the utility of various cognitive-behavioral techniques in treating PSP. These techniques are often implemented in combination with each other and are described in more detail below (see "Cognitive-Behavioral Techniques: A Clinician's Toolbox").

Only one between-groups controlled trial of CBT for PSP has been conducted. Teng, Woods, and Twohig (2006) compared brief habit reversal training (HRT; Azrin & Nunn, 1973; Azrin & Peterson, 1988) to no treatment (waiting list control; WL) in a sample of 19 chronic skin pickers. In this study, HRT consisted of three weekly meetings: a single 1-hour session of awareness and competing response training, followed by two half-hour booster sessions. Competing response training involved "participants [learning] to clench their fists for 1 min . . . contingent on the skin picking and its antecedents" (p. 416). Teng and colleagues found that HRT outperformed WL on self-monitored tallies of skin-picking frequency (77% versus 16% reduction in self-reported skin picking in the HRT and WL groups, respectively) and photograph ratings, and noted that the gains from HRT were maintained for at least 3 months. None of the participants had entirely ceased picking at posttreatment, however. Nevertheless, these results suggest that HRT can be an effective and fast-acting intervention for individuals with chronic PSP.

In addition to the study by Teng and colleagues (2006), two other studies have examined HRT for PSP using experimental designs. Using a multiple baseline across participants design, Twohig and Woods (2001) treated two brothers who engaged in damaging picking of their fingers with brief HRT similar in form and length to the treatment used by Teng et al. The frequency of picking and skin damage decreased for both participants after implementation of treatment; however, only one of the participants fully maintained his gains at follow-up. Lane and colleagues (2006) reported on the use of "competing activities" for a 9-year-old boy with PSP and comorbid attention deficit hyperactivity disorder (ADHD), low IQ, and learning and speech-language difficulties. At the beginning of each day, the boy was given a choice of three plastic balls

"to keep his hands occupied so as to avoid skin picking" (p. 460). Using an ABCBAB design, Lane and colleagues measured the percentage of time spent picking over the course of 29 days during which the child received medication only (Adderall for ADHD), medication with the intervention, or the intervention alone. The use of competing activities decreased the time spent picking (measured via direct observation) and appeared most effective when combined with medication for ADHD. No follow-up data or measures of long-term improvement in picking or the urge to pick were reported.

Two studies have examined acceptance-based forms of CBT using multiple-baseline designs. Twohig and colleagues (2006) examined the treatment of five chronic skin pickers with eight weekly 1-hour sessions of acceptance and commitment therapy (ACT; Hayes et al., 1999). Four of the five participants evidenced considerable treatment gains (i.e., low levels of self-monitored skin picking frequency and improvement in visible skin damage) at acute posttreatment; however, only one maintained the gains at 3-month follow-up. The results of this study suggest that ACT alone can be helpful, at least in the short term, but that "additional treatment development is needed particularly in the maintenance of gains" (p. 1520). It is noteworthy that the use of HRT techniques was explicitly proscribed in the aforementioned study. To evaluate the utility of combining techniques of ACT and HRT, Flessner and colleagues (2008a) conducted a pilot study of acceptance-enhanced behavior therapy in five individuals with chronic PSP or trichotillomania. The two participants with PSP improved (50% reduction in skin-picking severity), although somewhat less than did those with trichotillomania (65% reduction). Both participants with PSP initially received HRT but did not evince improvement until the addition of ACT techniques. It is impossible to know whether the addition of ACT techniques per se was responsible for the improvement (e.g., as opposed to continued time and effort in treatment).

There is evidence, as well, for the effectiveness of an Internet-based self-help program that follows the principles of HRT for PSP. In the only large-scale study of CBT for PSP (N = 372), Flessner and colleagues (2007) conducted an uncontrolled program evaluation of the computer-based intervention at www.StopPicking.com. The intervention lasted an average of 12 weeks and comprised an assessment phase, during which individuals monitored picking behavior and its associated antecedents and consequences; an
p. 368 intervention phase, which included various cognitive-behavioral coping strategies ↳ (e.g., stimulus control, use of competing responses, relaxation, cognitive restructuring); and a maintenance phase. Postintervention, 63% of participants were deemed responders on the basis of achieving a 25% reduction in scores on the SPS (Keuthen et al., 2001b).

A few other case reports have added to the literature suggesting that PSP can be treated successfully and relatively quickly with HRT. In four patients with neurodermatitis, Rosenbaum and Ayllon (1981) found that a single treatment session induced a marked decrease in skin picking for at least 6 months. In another report, a woman with acne excoriée was able to reduce the time she spent picking from 14 hours to less than 10 minutes per week after 1 month of HRT, and the gains were still evident after 4 months (Kent & Drummond, 1989). Noting the difficulty of making inferences from treatment outcomes in skin picking associated with a dermatological condition to cases of picking without any such condition, Deckersbach and colleagues (2002) reported three cases of people with chronic skin picking in the absence of a dermatological condition and in patients with psychiatric comorbidity. All were treated with CBT that included HRT but was supplemented with other techniques, such as those to increase emotion regulation skills. In two cases, relatively brief courses of treatment (four and seven sessions) were associated with considerable behavioral gains, and in the third, the patient ceased picking after 2 years of therapy, six sessions of which were focused on skin picking. Deckersbach et al. (2003) treated a woman with severe PSP (automatic and focused) related to BDD with eight sessions of CBT that included HRT, cognitive restructuring, and emotion regulation training. Over the course of treatment, the patient decreased the frequency of skin-picking episodes from 15–20 per day to fewer than 3 per day, and her self-report symptom scores decreased by approximately 50%. These gains were maintained at 3-month follow-up. Of

note, she evinced improvements in automatic skin picking more rapidly than in picking that served an emotion regulation function. Finally, Welkowitz et al. (1989) described the successful treatment of a man with excoriations at multiple sites with an intervention that included various behavioral strategies similar to elements of HRT.

Summary of Outcome Literature

Although large-scale studies are lacking, one double-blind study and five open-label trials suggest that SSRIs or glutamatergic agents may be efficacious in treating PSP for at least a subgroup of individuals. Enthusiasm is reduced by high or equivocal rates of nonresponse in some studies as well as notable dropout rates. Furthermore, the lack of clear diagnostic criteria and the use of variable outcome measures complicate interpretation (limitations common to studies of psychosocial treatments as well). Moreover, it is not known whether the efficacy of continued pharmacological treatment wanes over time. Case reports document the possibility that various other pharmacological agents may improve treatment outcome when used instead of, or to augment, serotonergic medications. These await further investigation.

One between-groups study and several small experimental paradigms suggest that CBT has utility in treating PSP and has the potential to induce gains quickly. Cognitive-behavior therapy treatments for PSP include HRT, acceptance and mindfulness, and various other techniques that are now described in more detail.

Cognitive-Behavioral Techniques: A Clinician's Toolbox

As is evident from the treatment outcome literature, a number of CBT techniques are helpful for patients with PSP, often in combination with each other. They include HRT, stimulus control, acceptance and mindfulness, cognitive strategies, relaxation training, emotion regulation, and various other tools. The population of individuals who engage in PSP is quite heterogeneous with respect to the underlying pathology, and the formulation of a treatment plan as well as the selection of intervention techniques must be tailored to the individual (see "Cognitive-Behavioral Model of Skin Picking"). In the following section, we describe various CBT techniques with utility in treating individuals with PSP.

Habit Reversal Training

Habit reversal training is an approach to treating habitual behaviors of many types (Azrin & Nunn, 1973; Azrin & Peterson, 1988) that incorporates a number of specific techniques at least some of which are present in many variations of CBT for PSP. The techniques include awareness training, the use of competing responses, and relaxation (described separately below).

Chronic skin pickers are frequently not aware of their picking, especially automatic pickers. Even those who engage in focused picking may not be cognizant of the psychological and environmental antecedents or consequences of picking, or the ↳ specific sequence and nature of the picking behavior itself. Hence, prerequisite to choosing an appropriate intervention strategy and, of course, implementing it in real time, is that the patients identify and recognize when and precisely how they pick. Awareness training is typically conducted both in and out of session and involves monitoring the occurrence of picking episodes (e.g., by tallying the number of such episodes and/or urges during set periods of time), as well as describing, frame by frame, what transpires before, during, and following picking. Ultimately, automaticity in detecting warning signs of picking is a critical antidote to the automaticity of habitual picking.

p. 369

Competing responses are behavioral alternatives that are used to contravene episodes of picking, and involve engaging in behavior opposite to, and incompatible with, the patient's idiosyncratic picking behavior. For example, a patient who picks with her fingernails might make a fist or hold an object whenever she experiences the urge to pick. The patient is taught to select a competing response that can be maintained long enough for the urge to pass (minimum 1 minute) and that does not disrupt necessary activities during potential picking episodes (e.g., socially inconspicuous for someone who picks at work). Targeted practice and reinforcement are used to facilitate the application and generalization of competing responses.

Stimulus Control

To the extent reasonable, environmental antecedents and triggers are manipulated to decrease the likelihood of picking or the intensity of the urge to do so. Patients who engage in automatic picking can avoid behaviors and situations during which they mindlessly pick. For example, someone who watches television or reads with his chin resting in his palm, which leads to mindless skin touching and ultimately picking, may intentionally keep his hands away from his face (e.g., in his pockets or otherwise occupied) during those activities. Similarly, he may engage in prophylactic use of competing responses upon entering situations of risk. Patients who engage in focused picking can also find ways to disrupt the cycle of picking. For example, a patient who picks in the mirror may remove the mirror, alter the lighting in the room, or smear petroleum jelly on the mirror.

Acceptance and Commitment Therapy

Acceptance and commitment therapy (ACT; Hayes et al., 1999) is a form of CBT that emphasizes the roles of experiential avoidance and behavioral rigidity in maintaining dysfunctional behavior. Acceptance and commitment therapy is highly compatible with HRT in treating PSP, and some have suggested that ACT may be particularly well suited for individuals who engage in focused picking to regulate emotion, as opposed to automatic picking (Flessner et al., 2008a). The full ACT treatment protocol is available on the Internet (http://www.contextualpsychology.org/treatment_protocols); it is written for OCD, but can be applied to skin picking by changing the term *obsession* to *urge to pick* (M. Twohig, personal communication, August 24, 2009).

As implemented by Twohig et al. (2006), ACT for PSP involves five steps that are learned and practiced over the course of 8 weeks:

1. Efforts to eliminate urges to pick, as well as other internal events (e.g., affective or motivational), are not effective. Hence, whereas many individuals who engage in pathological habitual behavior struggle to resist the negative affective experience of the urge itself, efforts to do so are highly unlikely to succeed.

2. Moreover, attempts to control urges themselves create or maintain the problem because in many cases they paradoxically exacerbate or magnify the internal experience or perceived lack of efficacy in managing it.

3. There is a difference between uncontrollable urges and controllable behaviors. Whereas efforts to resist the experience of an urge are likely unhelpful, those to resist the behavioral response to the urge (e.g., picking) are feasible, provided that one is willing to experience the discomfort of the urge. The mechanism of treatment is therefore not to decrease the urge, but rather to eliminate the picking.

4. Withstanding the urge to pick is difficult, especially if the urge itself is perceived as harmful or threatening in some way. Various exercises are introduced and practiced to alter the perception of

verbal events (e.g., thoughts, urges) as threatening or overly meaningful.

5. Ultimately, rather than succumb to urges by choosing unwanted behavior designed to avoid or neutralize internal experiences such as urges or affective states, the individual learns to pursue valued action whatever the immediate internal cost. That is, the patient learns to act rather than react. In the case of PSP, the patient chooses not to pick because he or she does not wish to pick, without regard to whether that choice is likely to decrease the experience of negative internal states.

Cognitive Strategies

In contrast to the use of HRT and ACT strategies, which are fundamentally suited to most individuals with PSP, the choice to supplement CBT with cognitive techniques is particular to the patient's clinical manifestation. For example, Deckersbach et al. (2002) describe patients whose picking episodes were often triggered by negative emotions such as sadness, some of which were fueled by dysfunctional beliefs (e.g., "My face looks horrible" [p. 371]; "I will never find a job" [p. 371]; "I cannot handle this" [p. 372]; "I have to get rid of this scab" [p. 372]). In such cases, cognitive restructuring (e.g., Beck, 1995) can be helpful to address underlying beliefs and assumptions. In general, CBT approaches to skin picking typically incorporate cognitive techniques as a flexible and optional module when appropriate. Often these strategies are most relevant when the urge to pick is triggered or accompanied by dysfunctional beliefs about oneself or one's ability to manage distress and regulate emotions.

Relaxation Training

Picking behavior may exacerbate and be exacerbated by generalized stress and tension. Hence, HRT frequently incorporates relaxation training, which can be used regularly as a means of lowering baseline stress, as well as strategically as a complement to competing responses to resist acute urges to pick.

There are numerous variations of relaxation training that differ in terms of complexity and refinement. Progressive muscle relaxation (Bernstein & Borkovec, 1973) and applied relaxation (Öst, 1987) are formal protocols through which an individual learns to relax by systematically tensing and then relaxing various muscle groups. Ultimately, the individual learns to engage in cued (without tensing, and in response to a self-generated cue) and differential (while performing another activity) relaxation and to apply relaxation in vivo. As such, relaxation training is a bona fide treatment with demonstrated efficacy for a number of disorders (e.g., Manzoni et al., 2008; Öst, 1987). However, less comprehensive relaxation training can be used as an adjunct to other CBT techniques. This can include simplified versions of muscle relaxation (e.g., focusing on four muscle groups; cf. Wolpe & Lazarus, 1966) as well as diaphragmatic breathing. Implementation of relaxation should be tailored to the individual, who may find utility in using it to lower generalized tension, resist the urge to pick, and/or regulate emotion.

Emotion Regulation

Clinicians have noted that some individuals engage in focused PSP to modulate negative affect or emotion dysregulation. Moreover, anecdotal evidence and studies of trichotillomania suggest that self-injurious BFRBs with an emotion regulation quality may respond less well or more slowly to straightforward behavioral treatment (e.g., Deckersbach et al., 2002, 2003; Flessner et al., 2008a). Therefore, individuals for whom picking is triggered by affective distress or who pick to self-sooth (common, for example, in individuals with borderline personality disorder) may benefit from the development of emotion regulation and distress tolerance skills. Specific techniques include relaxation, exercise, participation in enjoyable activities, acting opposite to the distressing emotion, distraction, and other forms of self-soothing (for a comprehensive list of emotion regulation and distress tolerance strategies, see Linehan, 1993).

Other CBT Techniques

At times, PSP is manifest as an epiphenomenon in the context of another disorder. When it is symptomatic of another underlying disorder, intervention strategies that focus exclusively on the picking behavior are unlikely to be sufficient. In such cases, developing a treatment plan requires attention not only to the behavior itself, but to the underlying symptoms and motivation to pick as well. For example, more than one-third of patients with BDD engage in skin picking, often to smooth or remove perceived blemishes (Grant et al., 2006). For those individuals, the BDD treatment protocol would likely incorporate cognitive restructuring, as well as exposure and response prevention, HRT, and stimulus control techniques. Habit reversal training would be useful to facilitate response prevention (i.e., resisting the urge to pick during exposures) but would not adequately address the BDD by itself.

Future Directions

Research on PSP has grown in recent years; however, treatment studies are notably lacking in number and size. Considering the widely discrepant manifestations of PSP behavior, this significantly limits the ability to make clinical inferences on the basis of the empirical literature. Certainly, larger comprehensive investigations are warranted. In addition, future research would benefit from attention to a number of issues that follow.

p. 371 We have emphasized throughout this chapter the heterogeneity of PSP. Indeed, examination of the treatment studies and case reports reveals samples drawn from a range of populations that differ on factors one might presume to predict treatment outcome, including type of picking (e.g., automatic versus focused) and diagnosis (e.g., the presence or absence of a dermatological condition, psychiatric disorder, and comorbidity). The severity of picking itself is not consistent, ranging from minor finger picking to dangerous self-mutilation. The extent to which these factors affect treatment is virtually unknown. Considering a condition with such variability, Paul's fundamental question of psychotherapy research is particularly salient: "*What* treatment, by *whom*, is most effective for *this* individual with *that* specific problem, and under *which* set of circumstances?" (1967, p. 111; emphasis in the original).

Larger studies would not only engender greater confidence in the efficacy of treatments for PSP (or lack thereof), but would permit examination of the clinical observation that subtypes of PSP respond differentially to various treatments (Grant & Odlaug, 2009). For example, a number of researchers have suggested that automatic picking is more responsive to behavioral interventions than is focused picking designed to regulate emotion. Therefore, mindfulness and emotion regulation skills may be particularly helpful for individuals who engage in the latter (Deckersbach et al., 2002, 2003; Flessner et al., 2008a). Similarly, a subset of patients with PSP seem not to respond to SSRIs (Keuthen et al., 2007) or even to

deteriorate (Denys et al., 2003). Keuthen and colleagues (2007) offer the possibility that such differential outcome depends on whether the PSP behavior is impulsive or compulsive (see also Arnold et al., 2001). Without larger, systematic studies, however, such accounts are speculative.

Even to the extent that studies that directly examine moderation are not feasible, efforts to articulate and standardize diagnostic criteria would markedly facilitate the conduct and comparative interpretation of treatment outcome studies, as well as the quality of empirically grounded clinical care (Bohne et al., 2002). Likewise, the field would benefit from further evaluation (e.g., psychometric properties) of measures that permit careful assessment of PSP and, ultimately, treatments better tailored to the individual. Existing studies are difficult to compare in part because they utilize a variety of outcome measures, many with unknown psychometric properties. This complicates even the evaluation of severity.

Finally, efforts to improve treatment outcome are generally warranted. Wilhelm et al. (1999) report retrospective data that suggest rather limited benefit from both behavioral and pharmacological treatments for most individuals with PSP. In addition, rates of nonresponse remain high in some pharmacological studies, and little is known about psychosocial treatment response rates. Future research should examine whether, as suggested by numerous case reports, combining medications and/or psychotherapy techniques can increase treatment success (Grant & Odlaug, 2009).

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Further Reading

Arnold, L. M., Auchenbach, M. B., & McElroy, S. L. (2001). Psychogenic excoriation: Clinical features, proposed diagnostic criteria, epidemiology, and approaches to treatment. *CNS Drugs*, *15*, 351–359.
WorldCat

Azrin, N. H., & Nunn, R. G. (1973). Habit-reversal: A method of eliminating nervous habits and tics. *Behaviour Research and Therapy*, *11*, 619–628.
WorldCat

Deckersbach, T., Wilhelm, S., & Keuthen, N. (2003). Self-injurious skin picking: Clinical characteristics, assessment methods, and treatment modalities. *Brief Treatment and Crisis Intervention*, *3*, 249–260.
WorldCat

Grant, J. E., & Odlaug, B. L. (2009). Update on pathological skin picking. *Current Psychiatry Reports*, *11*, 283–288.
WorldCat

p. 374 Grant, J. E., Odlaug, B. L., & Kim, S. W. (2007). Lamotrigine treatment of pathological skin picking: An open-label study. *Journal of Clinical Psychiatry*, *68*, 1384–1391.
WorldCat

Simeon, D., Stein, D. J., Gross, S., Islam, N., Schmeidler, J., & Hollander, E. (1997). A double-blind trial of fluoxetine in pathologic skin picking. *Journal of Clinical Psychiatry*, *58*, 341–347.
WorldCat

Teng, E. J., Woods, D. W., & Twohig, M. P. (2006). Habit reversal as a treatment for chronic skin picking: A pilot investigation. *Behavior Modification*, *30*, 411–422.
WorldCat

Twohig, M. P, Hayes, S. C., & Masuda, A. (2006). A preliminary investigation of acceptance and commitment therapy as a treatment for chronic skin picking. *Behaviour Research and Therapy*, *44*, 1513–1522.
WorldCat

References

American Psychiatric Association (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., Text Revision). Washington, DC: Author.
Google Scholar Google Preview WorldCat COPAC

Arnold, L. M., Auchenbach, M. B., & McElroy, S. L. (2001). Psychogenic excoriation: Clinical features, proposed diagnostic criteria, epidemiology, and approaches to treatment. *CNS Drugs*, *15*, 351–359.
WorldCat

Arnold, L. M., Mutasim, D. F., Dwight, M. M., Lamerson, C. L., Morris, E. M., & McElroy, S. L. (1999). An open clinical trial of fluvoxamine treatment of psychogenic excoriation. *Journal of Clinical Psychopharmacology*, *19*, 15–18.
WorldCat

Azrin, N. H., & Nunn, R. G. (1973). Habit-reversal: A method of eliminating nervous habits and tics. *Behaviour Research and Therapy*, *11*, 619–628.
WorldCat

Azrin, N. H., & Peterson, A. L. (1988). Habit reversal for the treatment of Tourette Syndrome. *Behaviour Research and Therapy*, *26*, 347–351.
WorldCat

Beck, J. S. (1995). *Cognitive therapy: Basics and beyond*. New York: Guilford.
Google Scholar Google Preview WorldCat COPAC

Begotka, A. M., Woods, D. W., & Wetterneck, C. T. (2003). The relationship between experiential avoidance and the severity of trichotillomania in a nonreferred sample. *Journal of Behavior Therapy and Experimental Psychiatry*, *35*, 17–24.
WorldCat

Bernstein, D. A., & Borkovec, T. D. (1973). *Progressive relaxation training: A manual for the helping professions*. Champaign, IL: Research Press.
Google Scholar Google Preview WorldCat COPAC

Bienvenu, O. J., Samuels, J. F., Riddle, M. A., Hoehn-Saric, R., Liang, K. Y., Cullen, B. A. M., Grados, M. A., & Nestadt, G. (2000). The relationship of obsessive-compulsive disorder to possible spectrum disorders: Results from a family study. *Biological Psychiatry*, *48*, 287–293.
WorldCat

Biondi, M., Arcangeli, T., & Petrucci, R. M. (2000). Paroxetine in a case of psychogenic pruritus and neurotic excoriations [Letter to the Editor]. *Psychotherapy and Psychosomatics*, *69*, 165–166.
WorldCat

Blanch, J., Grimalt, F., Massana, G., & Navarro, V. (2004). Efficacy of olanzapine in the treatment of psychogenic excoriation [Letter to the Editor]. *British Journal of Dermatology*, *151*, 714–716.
WorldCat

Bloch, M. R., Elliott, M., Thompson, H., & Koran, L. M. (2001). Fluoxetine in pathologic skin-picking: Open-label and double-blind results. *Psychosomatics*, *42*, 314–319.
WorldCat

Bohne, A., Wilhelm, S., Keuthen, N. J., Baer, L., & Jenike, M. A. (2002). Skin picking in German students: Prevalence, phenomenology, and associated characteristics. *Behavior Modification*, *26*, 320–339.
WorldCat

Carter, W. G., & Shillcutt, S. D. (2006). Aripiprazole augmentation of venlafaxine in the treatment of psychogenic excoriation [Letter to the Editor]. *Journal of Clinical Psychiatry*, *67*, 1311.
WorldCat

Christensen, R. (2004). Olanzapine augmentation of fluoxetine in the treatment of pathological skin picking [Letter to the Editor]. *Canadian Journal of Psychiatry*, *49*, 788–789.
WorldCat

Christenson, G. A., & Mackenzie, T. B. (1994). Trichotillomania. In M. Hersen & R. T. Ammerman (Eds.), *Handbook of prescriptive treatment for adults* (pp. 217–235). New York: Plenum Press.
Google Scholar Google Preview WorldCat COPAC

Christenson, G. A., Mackenzie, T. B., & Mitchell, J. E. (1991). Characteristics of 60 adult chronic hair pullers. *American Journal of Psychiatry*, *148*, 365–370.
WorldCat

Christenson, G. A., Ristvedt, S. L., & Mackenzie, T. B. (1993). Identification of trichotillomania cue profiles. *Behaviour Research and Therapy*, *31*, 315–320.
WorldCat

Curtis, A. R., & Richards, R. W. (2007). The treatment of psychogenic excoriation and obsessive compulsive disorder using aripiprazole and fluoxetine [Letter to the Editor]. *Annals of Clinical Psychiatry*, *19*, 199–200.
WorldCat

Deckersbach, T., Wilhelm, S., & Keuthen, N. (2003). Self-injurious skin picking: Clinical characteristics, assessment methods, and treatment modalities. *Brief Treatment and Crisis Intervention*, *3*, 249–260.
WorldCat

Deckersbach, T., Wilhelm, S., Keuthen, N. J., Baer, L., & Jenike, M. A. (2002). Cognitive-behavior therapy for self-injurious skin picking: A case series. *Behavior Modification*, *26*, 361–377.
WorldCat

Denys, D., van Megen, H. J. G. M., & Westenberg, H. G. M. (2003). Emerging skin-picking behaviour after serotonin reuptake inhibitor-treatment in patients with obsessive-compulsive disorder: Possible mechanisms and implications for clinical care. *Journal of Psychopharmacology*, *17*, 149–151.
WorldCat

Diefenbach, G. J., Tolin, D. F., Meunier, S., & Worhunsky, P. (2008). Emotion regulation and trichotillomania: A comparison of clinical and nonclinical hair pulling. *Journal of Behavior Therapy and Experimental Psychiatry*, *39*, 32–41.
WorldCat

Duke, E. E. (1983). Clinical experience with pimozide: Emphasis on its use in postherpetic neuralgia. *Journal of the American Academy of Dermatology*, *8*, 845–850.
WorldCat

Flessner, C. A., Busch, A., Heidemann, P., & Woods, D. W. (2008a). Acceptance-enhanced behavior therapy (AEBT) for trichotillomania and chronic skin picking: Exploring the effects of component sequencing. *Behavior Modification*, *32*, 579–594.
WorldCat

Flessner, C. A., Mouton-Odum, S., Stocker, A. J., & Keuthen, N. J. (2007). StopPicking.com: Internet-based treatment for self-injurious skin picking. *Dermatology Online Journal*, *13*, 3.
WorldCat

Flessner, C. A., Woods, D. W., Franklin, M. E., Cashin, S. E., & Keuthen, N. J. (2008b). The Milwaukee Inventory for Subtypes of Trichotillomania (MIST-A): Development of an instrument for the assessment of “focused” and “automatic” hair pulling. *Journal*

of Psychopathology and Behavioral Assessment, *30*, 20–30.
WorldCat

Franklin, M. E., & Tolin, D. F. (2007). *Treating trichotillomania: Cognitive-behavioral therapy for hairpulling and related problems*. New York: Springer.
Google Scholar Google Preview WorldCat COPAC

Fruensgaard, K. (1991a). Psychotherapeutic strategy and neurotic excoriations. *International Journal of Dermatology*, *30*, 198–203.
WorldCat

Fruensgaard, K. (1991b). Psychotherapy and neurotic excoriations. *International Journal of Dermatology*, *30*, 262–265.
WorldCat

Ginsberg, D. L. (2006). Addition of aripiprazole to venlafaxine useful in pathologic skin picking. *Psychiatry Weekly*. Retrieved August 14, 2009, from http://www.psychiatryweekly.com/aspx/article/ArticleDetail.aspx?articleid=312
WorldCat

Goodman, W. K., Price, L. H., Rasmussen, S. A., Mazure, C., Fleischmann, R. L., Hill, C. L., Heninger, G. R., & Charney, D. S. (1989). The Yale-Brown Obsessive-Compulsive Scale: I. Development, use, and reliability. *Archives of General Psychiatry*, *46*, 1006–1011.
WorldCat

Grachev, I. D. (1997). MRI-based morphometric topographic parcellation of human neocortex in trichotillomania. *Psychiatry Clinical Neuroscience*, *51*, 315–321.
WorldCat

Grant, J. E., & Kim, S. W. (2002). An open-label study of naltrexone in the treatment of kleptomania. *Journal of Clinical Psychiatry*, *63*, 349–356.
WorldCat

Grant, J. E., Menard, W., & Phillips, K. A. (2006). Pathological skin picking in individuals with body dysmorphic disorder. *General Hospital Psychiatry*, *28*, 487–493.
WorldCat

Grant, J. E., & Odlaug, B. L. (2009). Update on pathological skin picking. *Current Psychiatry Reports*, *11*, 283–288.
WorldCat

Grant, J. E., Odlaug, B. L., & Kim, S. W. (2007). Lamotrigine treatment of pathological skin picking: An open-label study. *Journal of Clinical Psychiatry*, *68*, 1384–1391.
WorldCat

Gupta, M. A., & Gupta, A. K. (1993). Olanzapine is effective in the management of some self-induced dermatoses: Three case reports. *Cutis*, *66*, 143–146.
WorldCat

Gupta, M. A., Gupta, A. K., & Haberman, H. F. (1986). Neurotic excoriations: A review and some new perspectives. *Comprehensive Psychiatry*, *27*, 381–386.
WorldCat

Harris, B. A., Sherertz, E. F., & Flowers, F. P. (1987). Improvement of chronic neurotic excoriations with oral doxepin therapy. *International Journal of Dermatology*, *26*, 541–543.
WorldCat

Hayes, S. C., Strosahl, K. D., & Wilson, K. G. (1999). *Acceptance and commitment therapy: An experiential approach to behavior change*. New York: Guilford Press.

Google Scholar Google Preview WorldCat COPAC

Kalivas, J., Kalivas, L., Gilman, D., & Hayden, C. T. (1996). Sertraline in the treatment of neurotic excoriations and related disorders [Letter to the Editor]. *Archives of Dermatology*, *132*, 589–590.
WorldCat

Kent, A., & Drummond, L. M. (1989). Acne excoriée—A case report of treatment using habit reversal. *Clinical and Experimental Dermatology*, *14*, 163–164.
WorldCat

Keuthen, N. J., Deckersbach, T., Wilhelm, S., Engelhard, I., Forker, A., O'Sullivan, R. L., Jenike, M. A., & Baer, L. (2001a). The skin picking impact scale (SPIS): Scale development and psychometric analysis. *Psychosomatics*, *42*, 397–403.
WorldCat

Keuthen, N. J., Deckersbach, T., Wilhelm, S., Hale, E., Fraim, C., Baer, L., O'Sullivan, R. L., & Jenike, M. A. (2000). Repetitive skin-picking in a student population and comparison with a sample of self-injurious skin-pickers. *Psychosomatics*, *41*, 210–215.
WorldCat

Keuthen, N. J., Jameson, M., Loh, R., Deckersbach, T., Wilhelm, S., & Dougherty, D. D. (2007). Open-label escitalopram treatment for pathological skin picking. *International Clinical Psychopharmacology*, *22*, 268–274.
WorldCat

p. 373

Keuthen, N. J., Wilhelm, S., Deckersbach, T., Engelhard, I. M., Forker, A. E., Baer, L., & Jenike, M. A. (2001b). The skin picking scale: Scale construction and psychometric analysis. *Journal of Psychosomatic Research*, *50*, 337–341.
WorldCat

Kim, S. W., Grant, J. E., Adson, D. E., & Shin, Y. C. (2001). Double-blind naltrexone and placebo comparison study in the treatment of pathological gambling. *Biological Psychiatry*, *49*, 914–921.
WorldCat

Kondziolka, D., & Hudak, R. (2008). Management of obsessive-compulsive disorder–related skin picking with gamma knife radiosurgical anterior capsulotomies: A case report [Letter to the Editor]. *Journal of Clinical Psychiatry*, *69*, 1337–1340.
WorldCat

Lane, K. L., Thompson, A., Reske, C. L., Gable, L. M., & Barton-Arwood, S. (2006). Reducing skin picking via competing activities. *Journal of Applied Behavior Analysis*, *39*, 459–462.
WorldCat

Lienemann, J., & Walker, F. D. (1989). Reversal of self-abusive behavior with naltrexone [Letter to the Editor]. *Journal of Clinical Psychopharmacology*, *9*, 448–449.
WorldCat

Linehan, M. M. (1993). *Skills training manual for treating borderline personality disorder*. New York: Guilford Press.
Google Scholar Google Preview WorldCat COPAC

Mansueto, C. S., Golomb, R. G., Thomas, A. M., & Stemberger, R. M. (1999). A comprehensive model for behavioral treatment of trichotillomania. *Cognitive and Behavioral Practice*, *6*, 23–43.
WorldCat

Mansueto, C. S., Stemberger, R. M., Thomas, A. M., & Golomb, R. G. (1997). Trichotillomania: A comprehensive behavioral model. *Clinical Psychology Review*, *17*, 567–577.
WorldCat

Manzoni, G. M., Pagnini, F., Castelnuovo, G., & Molinari, E. (2008). Relaxation training for anxiety: A ten-years' systematic review with meta-analysis. *BMC Psychiatry*, *8*, Article 41.

WorldCat

Meunier, S. A., Tolin, D. F., & Franklin, M. (2009). Affective and sensory correlates of hair pulling in pediatric trichotillomania. *Behavior Modification*, *33*, 396–407.
WorldCat

Odlaug, B. L., & Grant, J. E. (2007). *N*-acetyl cysteine in the treatment of grooming disorders [Letter to the Editor]. *Journal of Clinical Psychopharmacology*, *27*, 227–229.

Öst, L.-G. (1987). Applied relaxation: Description of a coping technique and review of controlled studies. *Behaviour Research and Therapy*, *25*, 297–409.
WorldCat

O'Sullivan, R. L., Phillips, K. A., Keuthen, N. J., & Wilhelm, S. (1999). Near-fatal skin picking from delusional body dysmorphic disorder responsive to fluvoxamine. *Psychosomatics*, *40*, 79–81.
WorldCat

Paul, G. L. (1967). Strategy of outcome research in psychotherapy. *Journal of Consulting Psychology*, *31*, 109–118.
WorldCat

Pukadan, D., Antony, J., Mohandas, E., Cyriac, M., Smith, G., & Elias, A. (2008). Use of escitalopram in psychogenic excoriation [Letter to the Editor]. *The Australian and New Zealand Journal of Psychiatry*, *42*, 435–436.
WorldCat

Rosenbaum, M. S., & Ayllon, T. (1981). The behavioral treatment of neurodermatitis through habit-reversal. *Behaviour Research and Therapy*, *19*, 313–318.
WorldCat

Sahin, E., Kalyoncu, A., Pektas, Ö., Tan, D., Mirsal, H., & Beyazyürek, M. (2004). Near-fatal skin-picking due to obsessive compulsive disorder responding to combined fluoxetine and cognitive-behavioral therapy: A case report. *Bulletin of Clinical Psychopharmacology*, *14*, 88–91.
WorldCat

Sasso, D. A., Kalanithi, P. S. A., Trueblood, K. V., Pittenger, C., Kelmendi, B., Wayslink, S., Malison, R. T., Krystal, J. H., & Coric, V. (2006). Beneficial effects of the glutamate-modulating agent riluzole on disordered eating and pathological skin-picking behaviors [Letter to the Editor]. *Journal of Clinical Psychopharmacology*, *26*, 685–687.
WorldCat

Seedat, S., Stein, D. J., & Harvey, B. H. (2001). Inositol in the treatment of trichotillomania and compulsive skin picking [Letter to the Editor]. *Journal of Clinical Psychiatry*, *62*, 60–61.
WorldCat

Seitz, P. F. D. (1953). Dynamically-oriented brief psychotherapy: Psychocutaneous excoriation syndromes: An experiment. *Psychosomatic Medicine*, *15*, 200–242.
WorldCat

Simeon, D., Stein, D. J., Gross, S., Islam, N., Schmeidler, J., & Hollander, E. (1997). A double-blind trial of fluoxetine in pathologic skin picking. *Journal of Clinical Psychiatry*, *58*, 341–347.
WorldCat

Stanley, M. A., Swann, A. C., Bowers, T. C., Davis, M. L., & Taylor, D. J. (1992). A comparison of clinical features in trichotillomania and obsessive-compulsive disorder. *Behaviour Research and Therapy*, *30*, 39–44.
WorldCat

Swedo, S. E., Rapoport, J. L., Leonard, H. L., Schapiro, M. B., Rapoport, S. I., & Grady, C. L. (1991). Regional cerebral glucose

metabolism of women with trichotillomania. *Archives of General Psychiatry*, *48*, 828–833.
WorldCat

Teng, E. J., Woods, D. W., & Twohig, M. P. (2006). Habit reversal as a treatment for chronic skin picking: A pilot investigation. *Behavior Modification*, *30*, 411–422.
WorldCat

Teng, E. J., Woods, D. W., Twohig, M. P., & Marcks, B. A. (2002). Body focused repetitive behavior problems: Prevalence in a nonreferred population and differences in perceived somatic activity. *Behavior Modification*, *26*, 340–360.
WorldCat

Twohig, M. P, Hayes, S. C., & Masuda, A. (2006). A preliminary investigation of acceptance and commitment therapy as a treatment for chronic skin picking. *Behaviour Research and Therapy*, *44*, 1513–1522.
WorldCat

Twohig, M. P., & Woods, D. W. (2001). Habit reversal as a treatment for chronic skin picking in typically developing adult male siblings. *Journal of Applied Behavior Analysis*, *34*, 217–220.
WorldCat

Walther, M. R., Flessner, C. A., Conelea, C. A., & Woods, D. W. (2009). The Milwaukee Inventory for the Dimensions of Adult Skin Picking (MIDAS): Initial development and psychometric properties. *Journal of Behavior Therapy and Experimental Psychiatry*, *40*, 127–135.
WorldCat

Welkowitz, L. A., Held, J. L., & Held, A. L. (1989). Management of neurotic scratching with behavioral therapy. *Journal of the American Academy of Dermatology*, *21*, 802–804.
WorldCat

Wilhelm, S., Keuthen, N. J., Deckersbach, T., Engelhard, I. M., Forker, A. E., Baer, L., O'Sullivan, R. L., & Jenike, M. A. (1999). Self-injurious skin picking: Clinical characteristics and comorbidity. *Journal of Clinical Psychiatry*, *60*, 454–459.
WorldCat

Wolpe, J., & Lazarus, A. A. (1966). *Behavior therapy techniques: A guide to the treatment of neuroses*. Elmsford, NY: Pergamon Press.
Google Scholar Google Preview WorldCat COPAC