

Skin Picking Disorder:
Diagnostics, Trigger and Treatment

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1. Summary

Manipulating one's skin is a natural behavior observed in both animals and humans – often serving as a stress-relieving and/or hygienic act (Feusner et al., 2009). However, for some individuals, this behavior escalates into a compulsion they find difficult to resist. This can result in excessive manipulation of the integumentary system (skin, hair, nails), which may cause skin damage, lesions, or hair loss (International Classification of Diseases [ICD-11], World Health Organization [WHO], 2024). The description of such behaviors has historical root. Hippocrates mentioned them as early as 400 BCE: „Next, we must note whether he plucks his hair, scratches or weeps “(Lloyd 1983, p. 100). Compared to well-established mental disorders like anxiety, classified in one of the first versions of ICD-10 (ICD-10-SGB-V Version 1.1; WHO, 1995) and Diagnostic and Statistical Manual of Mental Disorders (DSM-III; American Psychiatric Association [APA], 1980), body-focused repetitive behaviors (BFRBs) such as dermatillomania (skin picking disorder [SPD], excoriation disorder; DSM-5; APA, 2013) and onychophagia (nail biting; DSM-5, APA, 2013) have only recently been formally recognized in diagnostic manuals. An exception to this is trichotillomania (hair pulling disorder), which was acknowledged as early as DSM-III (APA, 1980).

Interest in BFRBs has grown significantly in recent years, as reflected by an increase in research publications (see table 1). Despite this progress, public and professional awareness about BFRBs and their treatment options remain limited (Gallinat et al., 2019; Loftus et al., 2024). More than half of the participants in two studies reported not seeking help for their SPD, citing reasons such as doubts about severity, uncertainty about whom to approach, and concerns over whether medical professionals possess adequate expertise in this area (Gallinat et al., 2019; Tucker et al., 2011). Addressing this gap in professional knowledge and promoting evidence-based treatment strategies represent critical efforts undertaken in this dissertation.

Table 1

Number of Published Articles on “Dermatillomania” and “Skin Picking” (Google Scholar; retrieved October 28, 2024)

Time Period	Dermatillomania	“Skin Picking”
1980-1989	1	58
1990-1999	2	356
2000-2009	30	2,090
2010-2019	356	5,990
2020- Oct. 2024 ¹	385	3,980

¹ Data retrieved on October 28, 2024.

2. General Introduction and Integration

2.1. Symptomatology

This section highlights firsthand accounts from individuals of their picking behavior and resulting impairment. The quotes, provided voluntarily by participants of an online self-help program, were translated and modified for anonymity and privacy rights.

„I just realized that my behavior – picking at even the smallest blemishes on my face or scratching spots on my shoulders – has gone beyond simply ‘popping a pimple’. I often feel an uncontrollable urge to scratch or pick and find myself standing in front of the mirror in the evening – sometimes for hours. “

„I never sought help, because I didn’t realize this was a mental condition and there’s something you can do about it. I thought it is my personal failure – a stress outlet I lacked the willpower to ‘just stop’. “

“I can’t count how often I got in an argument with my father, who kept telling me to stop by saying ‘just leave it alone! You are like your mother [who bites her nails]!’.

He'd ask, 'What did you do to yourself? You could look so pretty.'. But no matter how hard I tried, I couldn't stop. Finally, someone helped me understand and manage it."

„My girlfriend is very distressed by my habit, and I often hear her say, 'Just stop'. Of course, that doesn't work. I recently explained to her that I've learned skin picking is a recognized mental health condition."

„Thinking about it, this picking habit has been with me since my teenage years and has increasingly weighed on me. Stress and performance pressure keep growing (school, work, family, ...), and the pandemic certainly hasn't helped. “

“I just googled a bit and came across a video where you were talking about dermatillomania...and I broke down crying. I'm 32 years old, and for as long as I can remember, I've been peeling the skin next to my fingernails – probably starting around the age of 14 or 15. Over time, it has spread to other areas, including my hands, face, lips, scalp, back, feet...reaching a level that is truly distressing and painful.”

These accounts reflect key diagnostic criteria outlined in DSM-5 (American Psychiatric Association, 2013): recurrent skin picking, strong urges to pick, unsuccessful attempts to stop, psychosocial impairment (e.g. cancelling dates, staying at home) and emotions accompanying the behavior such as shame and guilt. Excoriation disorder is now included in the 11th version of the International Statistical Classification of Diseases and Related Health Problems (ICD-11; WHO, 2024) under body-focused repetitive behavior disorders (BFRBDs) within the obsessive-compulsive spectrum.

Lifetime prevalence is estimated to range from 1.4% (APA, 2013) to 3.35% (Farhat et al., 2023). In a systematic review of 38,038 individuals, the female-to-male odds ratio was 1.45 (95% CI: 1.15 - 1.81; $p = .001$; Farhat et al., 2023). Comorbidities often include depression, anxiety (generalized anxiety disorder, panic disorder), obsessive-compulsive disorders, and substance use disorder (Grant & Chamberlain, 2020). In a retrospective case-

control study involving 250 patients with SPD Kwon et al. (2020) found increased odds of co-occurring conditions such as obsessive-compulsive disorder, substance use disorder, post-traumatic stress disorder, depression, bipolar disorder, attention-deficit/hyperactivity disorder, and anxiety. However, most findings rely on self-reported data, highlighting the need for more rigorous and objective research.

2.2. Etiology

The development of SPD is best understood through a multifactorial model incorporating genetic, neurobiological, psychological, and social influences (Alfahaad et al., 2024), which are conceptualized as predisposing, triggering, and maintain factors in symptomatology.

From an ethological perspective, excessive grooming behavior, beyond its functions of cleaning and maintaining healthy, may represent an early form of stress management (Feusner et al., 2009; Keuthen et al., 2005).

There is evidence for the heritability of SPD, with studies indicating familial aggregation (Monzani et al., 2012; Monzani et al., 2014; Odlaug & Grant, 2008). In a large sample of twins with skin picking symptoms ($n = 2,191$), genetic factors accounted for approximately 40 % of the variance, while non-shared environmental factors, including measurement error, explained 60% (Monzani et al., 2012).

Neuropsychological studies also offer some insight into symptoms reported by individuals with SPD. Impaired inhibitory control (Odlaug et al., 2010), involvement of the reward system (Grant et al., 2021; Roos et al., 2015), and structural and functional abnormalities in specific subregions of the cerebellum related to motor and affective-cognitive functions have been identified (Wabnegger & Schienle, 2019). These findings support a model of pathological skin picking as the consequence of maladaptive regulation strategies (Wabnegger & Schienle, 2024).

Regarding predisposing and/or triggering factors, skin conditions such as acne, atopic dermatitis, eczema, or psoriasis frequently co-occur with SPD (Dixon & Snorrason, 2019; Odlaug & Grant, 2008; Wilhelm et al., 1999). This aligns with the predominant onset of SPD during adolescence, with an average age of 13.6 years (Ricketts et al., 2018).

Environmental influences may also trigger or exacerbate picking behavior. Media representation of skin and beauty ideals play a significant role in shaping perceptions of attractiveness, with skin appearance being a key factor (Jones et al., 2004). In a qualitative Australian study, individuals with acne, eczema, and psoriasis identified flawless skin as a societal beauty ideal, heavily influenced by media portrayals. Participants observed that falling short of this ideal exacerbated their mental health challenges (Magin et al., 2011).

2.3. Psychological Factors

While biological and environmental factors may explain the onset of SPD, reinforcing behavioral patterns play a pivotal role in understanding its persistence. Typical cognitive patterns in SPD include permission-giving thoughts, dysfunctional beliefs and negative self-evaluations, which perpetuate picking behavior (Gallinat et al., 2021). Skin picking often serves as a maladaptive coping mechanism for regulating emotions, providing temporary relief from stress, boredom, or other negative states. During a picking episode, individuals report a loss of control, trance-like states, and even positive feelings. However, these are followed by shame, guilt, and anger, reinforcing the cycle of behavior through both positive and negative reinforcement (Gallinat et al., 2021). Effective interventions must target this complex interplay to disrupt these cycles and foster long-term behavioral change (Alfahaad et al., 2024).

2.4. Circular Model of Picking Episodes

The interplay between triggers and maintenance factors can be illustrated in a circular model. Analog to similar models used to explain hair pulling behavior in trichotillomania (compare Hunger, 2009) different stages of a picking episode can be described. Typically, the cycle begins with a difficult situation or a negative emotion that triggers the urge to pick at one's skin, e.g., looking in the mirror when removing one's make-up and/or feeling exhausted at the end of the day. Once the impulse to manipulate the skin arises, resisting becomes nearly impossible, often resulting in a picking episode. The immediate consequences are a short-term gratification in form of pleasure, or a sense of relief. However, in the long term, this behavior results in negative consequences, including feelings of anger, embarrassment over perceived weakness, and significant skin deterioration. Excessive picking can lead to the formation of new scabs, which may in turn reignite the urge to pick. In addition to physical damage, individuals experience emotional consequences, such as frustration over their lack of control, feelings of shame, guilt, low self-esteem, and dissatisfaction with their appearance. Both physical and emotional consequences increase the likelihood of a new picking episode (see Figure 1).

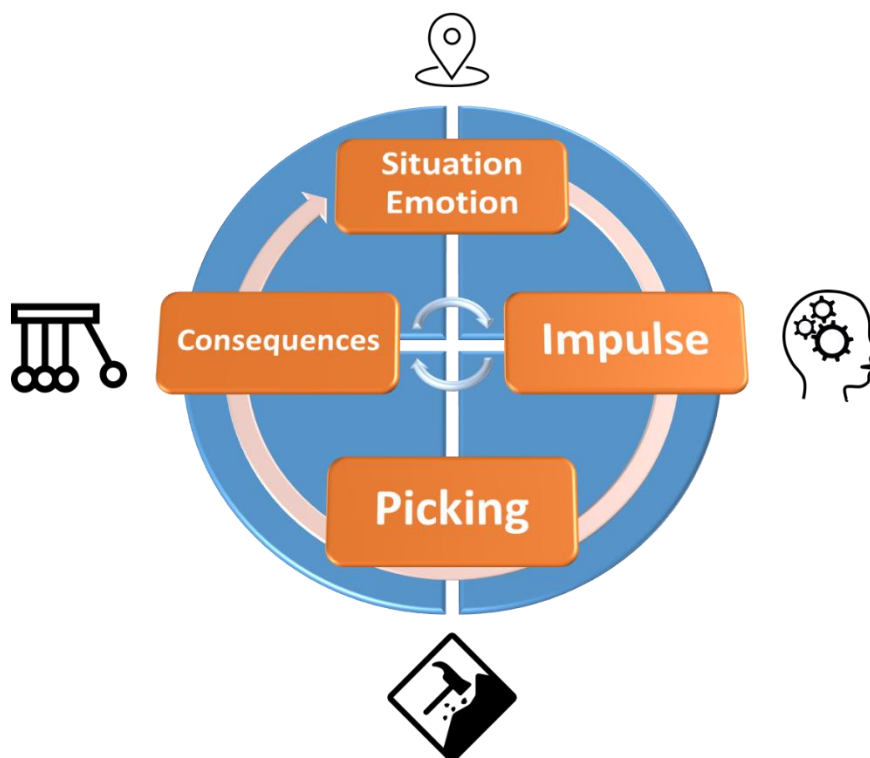


Figure 1. Cycle of a picking episode. Adapted from *Ratgeber Skin Picking: Hilfe bei Dermatillomanie* (p. 31), by L. M. Mehrmann & A. L. Gerlach, 2020, Springer. Copyright 2020 by Springer-Verlag GmbH Deutschland, part of Springer Nature. Adapted with permission. Icons made by Freepik from flaticon.com.

In summary, this pattern creates a vicious cycle, where short-term relief is followed by medium-term negative consequences, which then drive further attempts to reduce these negative feelings -temporarily- through more picking. Over time, the long-term negative consequences become more severe, resulting in significant distress and impairments in critical areas of functioning, such as relationships, work, and mental health.

2.5. Treatment Approaches

Research on treatments for SPD has evaluated both pharmacological and non-pharmacological options (Gelinas & Gagnon, 2013; Loftus et al., 2024; Schumer et al., 2016; Selles et al., 2016). In a combination of a systematic review of literature and evidence from

treatment outcomes, Selles et al. (2016) found a large overall treatment effect size (*Hedges' g* = 1.13). Behavioral treatments ($g = 1.19$), lamotrigine ($g = 0.98$), and selective serotonin reuptake inhibitors (SSRIs; $g = 1.09$) demonstrated significant efficacy.

In the latest systematic review on non-pharmacological treatment options for SPD (Loftus et al., 2024), 11 treatment studies involving a total of 2,068 participants were analyzed, including the pilot study of the self-help program presented in this dissertation (Mehrmann et al., 2023). The most effective treatments for SPD were found to be cognitive behavioral therapy (CBT), Habit Reversal Therapy (HRT), Acceptance and Commitment Therapy-Enhanced Group Behavioral Therapy (AE-GBT), online self-help modules, and Expressive Writing (EW). However, there is a notable lack of studies investigating the effectiveness of combined pharmacological and non-pharmacological treatments for SPD. Many individuals with SPD reported inadequate access to treatment options. The authors concluded, that online programs offer a promising solution to bridge this gap and offer more accessible treatment options (Loftus et al., 2024).

3. Introduction to the Empirical Work

Diagnostics form the crucial first step in identifying the nature and causes of a disorder. After accurately assigning symptoms to a specific diagnosis, knowledge about etiology and treatment can be systematically advanced. This foundation enables the creation of adequate and effective treatment approaches. The overall aim of the presented research was to deepen the understanding of SPD and to develop targeted, effective treatment interventions.

To achieve this overall goal, one of the first steps was to establish a solid foundation for further research of SPD in German-speaking populations through the translation and adaption of English assessment instruments. Until 2017, no diagnostic tools specific to SPD were available in German. Addressing this critical lack, study 1 of this dissertation focused on the initial analysis of disorder-specific assessment instruments (**Excoriation Disorder [Skin**

Picking] – A First Analysis of Disorder-Specific Assessment Instruments; Mehrmann, Hunger, & Gerlach, 2017). This paved the way for further research projects.

The next objective was to gain better understanding of specific triggers associated with SPD, as preparation for the development of tailored treatment interventions. The German diagnostic tools from study 1 (Mehrmann, Hunger, & Gerlach, 2017) made it possible to assess many German-speaking SPD affected individuals via an online survey. Study 2 (**Visual Triggers of Skin Picking Episodes: An Experimental Study in self-reported Skin Picking Disorder and Atopic Dermatitis;** Mehrmann et al., 2020) specifically investigated the role of visual triggers in skin picking episodes. This experimental study focused triggers, such as seeing one's skin in the mirror or noticing skin irregularities. Participants were exposed to picking-related visual content to measure its impact on the urge to pick skin, e.g. pimples, scabs, or loosening skin flakes. Similar to the “contagious itch” effect observed in individuals with atopic dermatitis, participants with SPD reported heightened sensitivity to visual stimuli. These findings provided valuable insights into potential mechanisms driving picking behaviors and highlighted opportunities for developing targeted interventions.

The final objective of this dissertation was to identify effective treatment interventions to improve SPD symptomatology. Since initial studies on cognitive-behavioral treatments demonstrated moderate to large effects in reducing symptoms (Schumer et al., 2016), we developed an accessible self-help program, *Knibbelstopp – Mir selber helfen bei Skin Picking*, and evaluated its efficacy (study 3: **Efficacy of an Internet-Based Self-Help Program Treating Skin Picking Disorder with a Multiple Baseline Design: A Pilot Study;** Mehrmann et al., 2023). This program integrates effective cognitive-behavioral techniques with SPD-specific interventions, from previous studies into a comprehensive approach. In addition to general components such as psychoeducation, self-awareness, goal setting, and motivation, the program includes targeted interventions to address picking behavior. These

strategies include stimulus control, habit reversal training, cognitive restructuring, emotion regulation, and relapse prevention.

The program is structured around the circular model of picking episodes, as a central framework that visually illustrates the stages of the pathological behavior and their corresponding intervention strategies (see Figure 2). These strategies aim to disrupt the cycle at specific stages to reduce picking behavior. While no single intervention is likely sufficient to eliminate picking entirely, combining multiple approaches can significantly increase the likelihood of achieving lasting change.

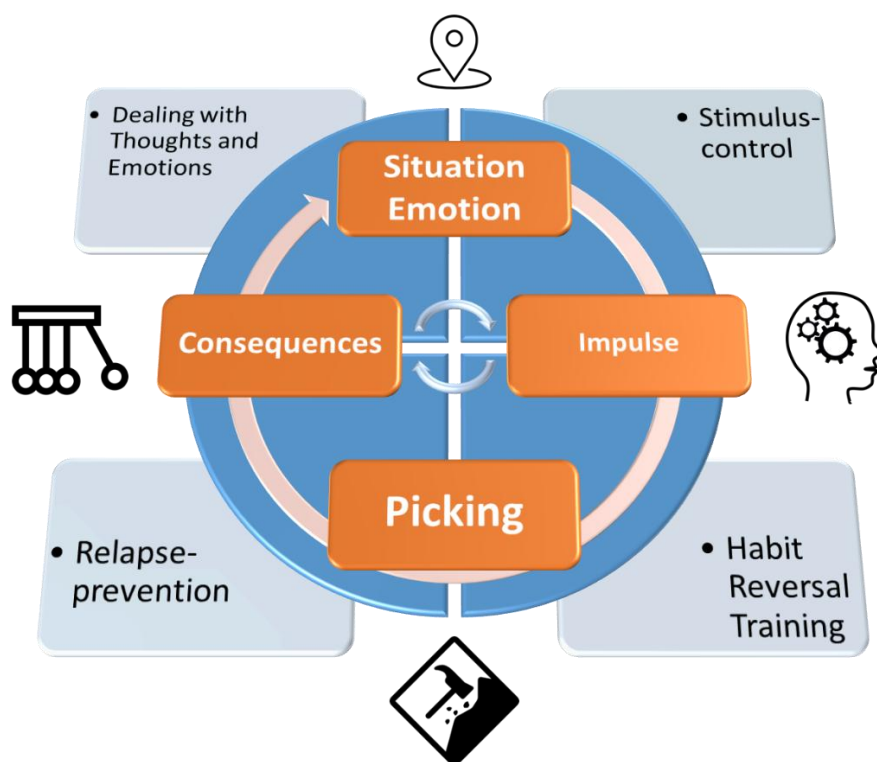


Figure 2. Cycle of a picking episode with targeted intervention strategies. Adapted from *Ratgeber Skin Picking: Hilfe bei Dermatillomanie* (p. 34), by L. M. Mehrmann & A. L. Gerlach, 2020, Springer. Copyright 2020 by Springer-Verlag GmbH Deutschland, part of Springer Nature. Adapted with permission. Icons made by Freepik from flaticon.com.

To enhance the self-help program, knowledge from study 2 (Mehrmann et al., 2020) on the impact of visual triggers was integrated into the development of stimulus control

techniques, to help individuals manage and reduce urges to pick. For example, participants were guided on how to modify their environments to reduce triggering stimuli such as dimming lights in the bathroom, wearing clothing that covers affected areas, or limited mirror time.

Symptomatology was assessed at the beginning of the program and throughout its duration using the German modified Skin Picking Scale validated in study 1 (Mehrmann, Hunger, & Gerlach, 2017). Effects from the self-help program on skin picking symptomatology were large and lasted throughout the six-month follow-up period. Thus, this effective program may help to improve the healthcare situation for German-speaking individuals with SPD.

3.1. Excursus: Participatory Research

The 2024 update to the Declaration of Helsinki emphasized the importance of participatory research, stating: "6. [...] Researchers should enable participants and their communities to share priorities and values; participate in research design, implementation, and dissemination; and engage with results in meaningful ways" (World Medical Association, 2024). From the outset, the research presented here benefited from collaboration with Ingrid Bäumer, founder of the first German self-help group for skin picking. Her insights guided the development of the self-help program and ensured it addressed the needs of the community. Feedback from the self-help network helped with the selection of skin imagery used the study on visual triggers for picking episodes (Mehrmann et al., 2020) and modeled the psychoeducational materials for the self-help program (Mehrmann et al., 2023). This collaboration highlights the importance and value of participatory research in promoting thoughtful and respectful approaches to sensitive topics.

3.2. Summary of the Empirical Work

This research contributes to understanding and managing SPD through the development of diagnostic tools, insights into etiological factors (i.e., behavioral triggers), and the development of an accessible, easy to disseminate online self-help treatment program.

- **Study 1: Excoriation Disorder (Skin Picking) - A First Analysis of Disorder-Specific Assessment Instruments**
- **Study 2: Visual Triggers of Skin Picking Episodes - An Experimental Study in Self-Reported Skin Picking Disorder and Atopic Dermatitis**
- **Study 3: Efficacy of an Internet-Based Self-Help Program Treating Skin Picking Disorder with a Multiple Baseline Design - A Pilot Study**

A brief summary of each study is provided below. The respective publications are presented in chapter 6.

3.2.1. Study 1: Excoriation Disorder (Skin Picking):

A First Analysis of Disorder-Specific Assessment Instruments

Background: Since its inclusion in DSM-5, Dermatillomania (Skin-Picking) Disorder is an officially acknowledged diagnosis.

Objective: This study presents a psychometric evaluation of two questionnaires: The modified German translation of the Skin Picking Scale (mSPS-D) and the German translation of the Skin Picking Impact Scale (SPIS-D).

Methods: Based on an online survey with self-reported skin-pickers both questionnaires were examined by means of psychometric and factor analysis.

Results: The mSPS-D had good to very good reliability on three subscales and the total scale ($\alpha = .76 - .81$). For the SPIS-D the original short-version factor structure was replicated ($\alpha = .81$). Thus, both instruments can be considered to be reliable, valid and economic questionnaires assessing pathological skin picking.

Conclusions: These instruments offer a good basis for future investigations of pathological skin picking.

3.2.2. Study 2: Visual Triggers of Skin Picking Episodes:

An Experimental Study in Self-Reported Skin Picking Disorder and Atopic Dermatitis

Background: Skin Picking Disorder (SPD) is a new diagnosis with limited information available about triggers of picking episodes. Itch can be induced via audio-visual stimuli and the effect of contagious itch is stronger for those affected by atopic dermatitis. We examined if picking-related visual stimuli can trigger the urge to pick skin in self-reported SPD. We compared itch and the urge to pick in a sample of AD and/or SPD-affected to controls without either.

Method: Urge to pick skin and/or scratch when viewing 24 itch-related, picking-related or neutral online pictures was assessed in adult females, who self-report skin-picking (SPD-only, $n = 147$) and/or atopic dermatitis (AD-only, $n = 47$; AD+SPD: $n = 46$) as well as in skin healthy controls (HC, $n = 361$).

Results: All participants reported a stronger urge to pick for picking-related pictures compared to neutral content ($F[1, 597] = 533.96, p < .001, \eta^2 = .472$) and more itch for itch-related pictures compared to neutral stimuli ($F[1, 597] = 518.73, p < .001, \eta^2 = .465$). SPD-all (SPD-only & AD+SPD) reported stronger urges to pick for picking-related vs. other stimuli compared to the AD-only and HC group ($p < .001, \eta^2 = .047$). Likewise, AD-all (AD-only & AD+SPD) reported significantly stronger itching for itch-related vs. other stimuli compared to SPD-only and HC ($p = .001, \eta^2 = .019$).

Conclusions: Analog to visual provocation of itch, the urge to pick can be triggered by visual stimuli. Treatments for SPD and AD may profit from addressing visual stimuli.

3.2.3. Study 3: Efficacy of an Internet-Based Self-Help Program

Treating Skin Picking Disorder with a Multiple Baseline

Design: A Pilot Study

Background: People affected by skin picking disorder (SPD) feel a strong urge to manipulate their skin and feel incapable of stopping. First studies on cognitive-behavioral treatments found moderate to large effects on the reduction of symptomatology. We developed an easy to access cognitive-behavioral self-help program and tested its efficacy on SPD.

Method: The program includes modules on self-awareness, psychoeducation, strategies to control picking and relapse-prevention. In a multiple baseline-design 43 women diagnosed with SPD accessed the online program. Symptomatology was assessed via skin picking scales before, throughout, and after the completion of the intervention. We analyzed the data using a repeated measurement ANOVA and planned contrasts.

Results: We found significant large effects for skin picking symptom reduction throughout a 6-month follow-up ($.325 \leq \eta_p^2 \leq .430$) for completers ($n = 25$). In planned contrasts the significant reduction of symptoms (after baseline self-monitoring) to 6-month follow-up was large ($.281 \leq \eta_p^2 \leq .375$).

Conclusions: With the internet-based self-help program *Knibbelstopp* we implemented an efficacious self-help tool for SPD, which requires further investigation regarding generalizability of this effect. Our self-help program is accessible online and may help to improve the health care situation for German speaking individuals with SPD.

4. Conclusions and Implications

There is still a considerable lack of awareness about SPD among health care professionals, and numerous questions with regard to etiology and treatment of this burdensome disorder are unanswered. However, the growing research interest in BFRBs over the past decade has started to expand this important body of knowledge. The studies presented in this dissertation aimed to contribute to this progress. With continued and future research, information about diagnosing and treating SPD can be disseminate among professionals, ultimately improving the situation for affected individuals seeking help (compare Mehrmann, Gerlach, & Hunger, 2017).

The results of study 1 (Mehrmann, Hunger, & Gerlach, 2017) have facilitated the advancement of research within German-speaking populations, allowing for international comparisons of epidemiological data. Although no clinical cut-off scores have yet been established for German assessment tools (e.g., mSPS-D: Mehrmann, Hunger, & Gerlach., 2017; SPS-R: Gallinat et al., 2016, Snorrason et al., 2022) investigated the diagnostic accuracy of the Skin Picking Scale – Revised (SPS-R). Comparing university students with SPD to patients in a psychiatric partial hospital with and without SPD, they demonstrated good diagnostic accuracy of the scale across groups. A total cut-off score of 9 was proposed, considering sensitivity, specificity, and positive and negative predictive values for identifying SPD (Snorrason et al., 2022). In English-speaking populations, several validated tools are available for diagnosing and monitoring SPD symptoms with good reliability and validity, including the SPS-R (Keuthen, Wilhelm, et al., 2001), the Skin Picking Impact Scale (SPIS; Keuthen, Deckersbach et al., 2001; Snorrason et al., 2013), and the Skin Picking Symptom Assessment Scale (SP-SAS; Grant et al., 2007). To improve the effectiveness of screening and treatment for SPD globally, these tools require further validation across diverse populations and languages (Sapuppo et al., 2024). The mSPS-D has the potential to enhance diagnostics and symptom monitoring for German-speaking individuals with SPD. However,

given the inherent biases of self-report measures, we developed a BFRB-specific module (compare Mehrmann & Gerlach, 2022) for the *Diagnostic Interview for Mental Disorders* (*Diagnostisches Interview für psychische Störungen – Open Access*; DIPS-OA; Margraf et al., 2017). Further validation and publication of this tool are forthcoming.

Research into the triggers for skin picking episodes is still in its early stages, with various gaps remaining in our understanding of underlying mechanisms. Two recent studies focused on ecological momentary assessment (EMA) of picking behaviors and its antecedents (Gallinat et al., 2024) and sensory processing (Collins & Grant, 2024). The first study of 57 individuals with SPD revealed that focused and automatic episodes occur evenly throughout the day, with different triggers preceding each type (Gallinat et al., 2024). Focused episodes were often triggered by visual and tactile cues, as well as a conscious desire to pick. In contrast, automatic episodes were more frequently linked to boredom or difficulty concentrating. Building on previous findings (Houghton et al., 2018), Collins and Grant (2024) compared sensory processing in 118 individuals with SPD to healthy controls. They examined relationships between sensory processing abnormalities and subjective measures of symptom severity, quality of life and functional impairment. Results revealed heterogeneity among individuals with SPD. Some experienced sensory overstimulation (high sensory sensitivity and sensation avoidance), while others reported understimulation. Those with overstimulation reported greater symptom severity and reduced quality of life compared to the understimulated group. Additionally, participants with higher sensory sensitivity exhibited greater functional impairments (Collins & Grant, 2024). These findings highlight the need for further research into sensory processing, triggers and patterns of picking behavior differences and their implications for tailored interventions.

While developing effective treatments is crucial, it is equally important to disseminate information about SPD diagnostics and evidence-based treatments to healthcare providers. Capel et al. (2024) found that licensed mental health providers in Utah had limited knowledge

of SPD, including its diagnostic criteria and evidence-based treatments, as well as personal treatment experience. This stresses the need for enhanced training and education. A perceived lack of knowledge among health care providers, combined with feelings of shame, were significant barriers preventing individuals with SPD from seeking professional help (Gallinat et al., 2019). Many affected individuals turn to online resources for solutions, which highlights the potential of online self-help programs to address these gaps by offering low-threshold interventions.

To fulfill their protective role, therapists should ensure that online programs are evidence-based and, whenever possible, accessible and affordable. However, it is essential to consider potential negative side effects of digital self-guided interventions, such as high attrition rates (Cavanagh, 2010). Baumeister and colleagues (2024) identified several unwanted effects of internet-based self-help intervention for BFRBs. In addition to at least one positive effect of the intervention, reported by the majority of participants (70%), negative effects were identified by 14–92% of respondents. These included, for example, a lack of positive goal-orientation, insufficient focus on personal issues, feelings of time or performance pressure, experiences of shame, and concerns regarding data privacy.

In a follow-up study on the efficacy of our self-help program (Mehrmann et al., 2023) we examined its effectiveness and the impact of non-adherence on symptomatology, motivation to change, and self-efficacy (Mehrmann & Gerlach, 2024). Results showed a significant decrease in skin picking symptomatology post-intervention (12 weeks after starting the program). Among the 208 completers (those who accessed both intervention strategies HRT and stimulus control), symptom reduction was significantly greater compared to the 192 non-completers (*Cohen's d* = -0.39). Completers also reported higher skin picking related self-efficacy compared to non-completers (*d* = 0.66), while skin picking related motivation to change decreased in both groups. These findings suggest that discontinuing unguided self-help intervention may negatively impact treatment-oriented self-efficacy and

potentially reduce help-seeking behaviors. It is essential to consider how these potentially adverse effects can effectively be addressed. Consideration should be given to strategies for mitigating these potentially adverse effects.

The *Knibbelstopp* program is currently available free of charge to anyone interested (<https://www.knibbelstopp.de>). To address challenges in maintaining adherence as highlighted in both studies on the self-help program (Mehrmann et al., 2023; Mehrmann & Gerlach, 2024), we plan to develop a shorter version of the program, which may facilitate consistent engagement. Although initially designed for individuals with SPD, we received positive feedback from individuals with other BFRBs who have used the program. Future iterations of the program could expand the content to address a broader range of BFRBs by incorporating examples beyond SPD. Further ideas for enhancing the program include addressing specific potential challenges associated with working independently through an online program, such as fostering motivation to change and strengthen perceived self-efficacy.

While there remains much to be done to improve the mental health care landscape for BFRBs in Germany, this dissertation aspires to contribute meaningfully to advancing knowledge in this field, supporting efforts to enhance diagnostics, treatment, and awareness of SPD and related disorders.

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6. Original Publications with Individual Author Contributions

6.1. An Initial Analysis of Disorder-Specific Assessment Instruments

(Study 1)

Original publication: Mehrmann, L. M., Hunger, A., & Gerlach, A. L. (2017).

Pathologisches Hautzupfen/-quetschen (Skin Picking): Erst Ergebnisse zur Psychometrie störungsspezifischer Messinstrumente. *Zeitschrift für Klinische Psychologie und Psychotherapie*, 46 (1), 23–31. <https://doi.org/10.1026/1616-3443/a000386>

My contribution to the study conducted in this work, as outlined in the CRediT author statement, include: Conceptualization, methodology, validation, formal analysis, investigation, resources, data curation, writing (original draft), writing (review and editing), and visualization.

Prof.in Antje Hunger and Prof. Alexander L. Gerlach also contributed to the study through conceptualization, methodology, validation, formal analysis, resources, and writing – review and editing. Additionally, Prof Gerlach provided supervision and project administration.

6.2. Experimental Study on Visual Triggers of Skin Picking Episodes

(Study 02)

Original publication: Mehrmann, L. M., Urban, A., & Gerlach, A. L. (2020). Visual Triggers of Skin Picking Episodes: An Experimental Study in Self-Reported Skin Picking Disorder and Atopic Dermatitis. *Clinical Psychology in Europe*, 2(4), 1-19.

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My contribution to the study conducted in this work, as outlined in the CRediT author statement, include: Conceptualization, methodology, validation, formal analysis, investigation, resources, data curation, writing (original draft), writing (review and editing), and visualization.

Alice Urban also contributed to the study through conceptualization, methodology, validation, formal analysis, investigation, resources, and data curation.

Prof. Alexander L. Gerlach also contributed to the study through conceptualization, methodology, validation, formal analysis, resources, writing (review and editing), supervision, and project administration.

6.3. Efficacy of an Internet-Based Self-Help Program Treating Skin

Picking Disorder with a Multiple Baseline Design: A Pilot Study

(Study 03)

Original publication: Mehrmann, L. M., Hunger, A. & Gerlach, A. L. (2023). Efficacy of an internet-based self-help program treating skin picking disorder with a multiple baseline design: A pilot study. *Journal of Obsessive-Compulsive and Related Disorders*, 38, 100811.

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