Correspondence

Exacerbation of onychophagia and onychotillomania during the COVID-19 pandemic: a survey-based study

Dear Editor,

Body-focused repetitive behavior (BFRB) includes hair pulling, skin picking, onychophagia, and onychotillomania, with significant psychosocial and functional impact.1 BFRBs are associated with comorbid psychiatric conditions, including anxiety disorders and obsessive-compulsive disorder (OCD).1 Therefore, we hypothesized that the coronavirus disease 2019 (COVID-19) pandemic and accompanying strict social isolation mandates would increase anxiety, and we aimed to assess whether nail pickers or biters experienced worsening of symptoms during the pandemic.

After approval by the Weill Cornell Medicine Institutional Review Board, the survey was shared among members of nail-BFRB Facebook and Reddit groups and with the HabitAware community (consumers of a wearable device that assists with cessation of BFRBs). Survey responses were collected 11/2021–4/2022. The modified Massachusetts General Hospital Hair Pulling Scale (MGH-HPS) was used to assess changes in behaviors before, during the peak, and post-peak of the COVID-19 pandemic. The modified MGH-HPS was chosen because of the lack of validated nail picking/bitning scales in the literature and was found to have good internal consistency in a recent study.2 Means were compared using paired-sample t-tests, with significance set at an adjusted $P$ value of $\leq 0.0036$ for multiple comparisons.

A total of 300 participants were enrolled, with 105 completing the survey (response rate 35%) and included in the final analysis. The median age (IQR) of participants was 32 (17.5) years, with 92% females ($n = 97$) and majority Whites ($n = 94, 90\%$) (Table 1). The most common psychiatric comorbidities were depression ($n = 72, 69\%$) and anxiety ($n = 68, 65\%$). Forty-one (39%) participants reported nail-picking, eight (8%) nail-biting, and 56 (53%) both. Fifty-three (50%) participants self-rated BFRB worsening during the pandemic peak. Thirty-three (31%) participants received treatment before COVID-19, increasing to 42 (40%) during the pandemic peak. Twenty-six percent ($n = 27$) reported that COVID-19 prevented them from seeking treatment, and 49% ($n = 51$) reported wanting treatment during COVID-19. Before the pandemic, 13 patients (12%) had virtual treatment or counseling, increasing to 32 patients (30%) during the pandemic. Increased anxiety ($n = 47, 45\%$) and screen time ($n = 37, 35\%$) were the most commonly self-reported contributors to symptom worsening during COVID-19.

Participants with nail-picking/biting during the pandemic compared to pre-pandemic reported increased frequency of urges

| Table 1 Demographics and nail-BFRB therapy ($n = 105$) |
|------------------------------------------------------|
| Age, median (IQR) | 32 (17.5) |
| Location, $n$ (%) |
| United States | 71 (68\%) |
| Outside of the United States | 32 (30\%) |
| Not answered | 2 (2\%) |
| Race/ethnicity, $n$ (%) |
| Asian | 0 (0\%) |
| American Indian or Alaska Native | 1 (1\%) |
| Black or African American | 2 (2\%) |
| Latino, or Spanish origin | 2 (2\%) |
| Middle Eastern or North African | 2 (2\%) |
| Native Hawaiian or Other Pacific Islander | 0 (0\%) |
| White | 94 (90\%) |
| Other | 2 (2\%) |
| Not answered | 2 (2\%) |
| Gender, $n$ (%) |
| Female | 97 (92\%) |
| Male | 3 (3\%) |
| Nonbinary | 4 (4\%) |
| Did not disclose | 1 (1\%) |
| Nail-BFRB classification, $n$ (%) |
| Nail-picking | 41 (39\%) |
| Nail-biting | 8 (8\%) |
| Both | 56 (53\%) |
| History of other psychiatric disorder, $n$ (%) |
| OCD | 21 (20\%) |
| Anxiety disorder | 68 (65\%) |
| Depression | 72 (69\%) |
| Bipolar disorder | 3 (3\%) |
| Schizophrenia | 0 (0\%) |
| Other* | 13 (12\%) |
| Self-rated impact of COVID-19 on BFRB, $n$ (%) |
| Improved | 13 (12\%) |
| No change | 39 (37\%) |
| Worsened | 53 (50\%) |
| Type of therapy received before COVID-19, $n$ (%) |
| In-person medical treatment | 11 (10\%) |
| In-person counseling/therapy | 18 (17\%) |
| Virtual medical treatment | 4 (4\%) |
| Virtual counseling/therapy | 11 (10\%) |
| Other | 2 (2\%) |
| No treatment | 72 (69\%) |
| Type of therapy received during COVID-19, $n$ (%) |
| In-person medical treatment | 8 (8\%) |
| In-person counseling/therapy | 12 (11\%) |
| Virtual medical treatment | 11 (10\%) |
| Virtual counseling/therapy | 31 (30\%) |
| Other | 4 (4\%) |
| No treatment | 63 (60\%) |
| COVID interrupted ability to obtain treatment, $n$ (%) |
| Yes | 27 (26\%) |
| No | 76 (72\%) |
| Not answered | 2 (2\%) |
COVID-19 had a detrimental effect on individuals with nail-BFRBs. Post-peak pandemic, participants may continue to experience higher levels of associated distress and intensity of urges to nail pick/bite compared to pre-peak levels, suggesting people with nail-BFRBs may not have returned to baseline levels and may require additional follow-up. In our study, many participants wanted but did not receive treatment, which may be partially due to in-person visit restrictions. Telemedicine can be used to manage dermatologic conditions, but the efficacy of virtual vs. in-person visits for management of nail-BFRBs requires further study. Dermatologists should become comfortable using telemedicine to treat and follow patients with BFRBs, which is time and cost saving. Nail picking/biting can be challenging to treat and usually requires a multidisciplinary approach.

Limitations include small sample size, low response rate, recall bias, utilizing a scale not designed for nail-BFRBs, and self-reported survey design.

In summary, the COVID-19 pandemic has negatively impacted patients with nail-BFRBs. Dermatologists should be aware of the impact of COVID-19 and ensure that these patients are adequately treated, particularly in the post-peak pandemic setting.

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IRB approval
This study was approved by the Weill Cornell Medicine Institutional Review Board under protocol number 20-12023079.

Table 2 Modified Massachusetts General Hospital Hairpulling Scale for Nail-BFRBs mean scores before, peak, and post-peak of COVID

| Nail picking or biting          | Pre-COVID-19 | Peak of COVID-19 (Δ, P value)* | Post-peak (11/2021-3/2022) (Δ, P value)9 |
|---------------------------------|--------------|--------------------------------|---------------------------------------|
| Frequency of urges              | 2.33         | 2.60 (0.32, P = 1.47E-04*)     | 2.27 (0.11, P = 2.22E-01)             |
| Intensity of urges              | 2.19         | 2.57 (0.38, P = 6.80E-08*)     | 2.40 (0.20, P = 1.07E-02)             |
| Ability to control urges        | 2.30         | 2.62 (0.32, P = 8.47E-05*)     | 2.47 (0.16, P = 7.68E-02)             |
| Frequency of nail picking       | 2.33         | 2.59 (0.26, P = 1.37E-03*)     | 2.32 (0.01, P = 9.48E-01)             |
| Attempts to resist nail picking | 2.08         | 2.26 (0.18, P = 1.41E-02)      | 2.09 (0.01, P = 8.83E-01)             |
| Control over nail picking       | 2.91         | 3.04 (0.14, P = 8.58E-02)      | 2.82 (0.09, P = 3.53E-01)             |
| Associated distress             | 1.95         | 2.24 (0.29, P = 8.87E-04*)     | 2.17 (0.22, P = 1.66E-02)             |

The Modified Massachusetts General Hospital Hairpulling Scale for Nail-BFRBs is on a scale of 0-4, with higher values indicating increased frequency or severity of symptoms and decreased ability or attempts to control symptoms.

*Mean change in scores between pre-COVID-19 and peak of COVID-19 and associated P value.

9Mean change in scores between pre-COVID-19 and post-peak and associated P value.

*Denotes significance, with an adjusted P value of ≤0.0036 for multiple comparisons.
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A full-thickness skin graft forms a new vermillion lip following surgical repair suggesting metaplasia

Dear Editor,

This case highlights the viability of a full-thickness skin graft (FTSG) for surgical repair of a vermillion lip defect and how epidermal metaplasia enhances our ability to reconstruct the vermillion border. An 80-year-old man with a history of keratinocyte skin cancers attended for Mohs micrographic surgery (MMS) of a squamous cell carcinoma (SCC) on his lower lip. The patient was a non-smoker and not immunosuppressed.

The tumor was excised, and negative margins were obtained after two stages of MMS. The residual defect from the vermillion border, cutaneous lip, and underlying musculature measured 28 × 13 mm (Fig. 1a).

An FTSG harvested from his right clavicular area was used for repair. It was sized using a template, fenestrated, and sutured in position with a 5-0-polyglactin 910 running suture. Petrolatum ointment, paraffin gauze, and a cushioned bolster were employed to dress the wound. This was removed a week later, and the wound was left open (without a dressing), and petrolatum ointment was applied several times a day to keep the wound moist.

During recovery, the graft underwent some superficial necrosis, and sharp debridement was needed to remove this tissue. The base of the graft remained viable and continued to heal without further complication. Time to full re-epithelialization and functional repair was 4 weeks. A clinical review of the scar site shows a barely perceptible suture line on the skin and faint erythema at the “corner” of the graft insertion site along the mucosal lip. There was a minor degree of scar line hypertrophy, which the patient declined to have revised (Fig. 1b).

A punch biopsy of the healed lip showed a transition from an area of complex rete ridges with a granular layer in the epidermis to mucosa without a granular layer and a gentle undulating junction to the underlying lamina propria. The dermis was uniform and showed some mild scarring and neovascularization (Fig. 2a, b).

The concept of “mucosalization” describes the histological metaplasia of skin to mucous membrane, usually in the oral cavity, following surgical grafting. This includes a loss of the stratum corneum and granulosum, a reduced amount of basal pigmentation, a change in architecture of the connective tissue, and an alteration of skin appendages at the transition border. Our sample demonstrates an obvious point at which the epidermis transitions to mucosa histologically with associated changes suggesting metaplasia. The continuous dermis is consistent with the body of the graft and has strong revascularization indicating graft in-growth.

Transgenic keratinocyte cultures have shown remarkable success in repairing areas of skin loss. It is the holoclones (colony-forming stem cells) that ultimately form the regenerated epidermis. The use of an FTSG provides an autologous source of epidermal holoclones for wound repair. The underlying stroma guides the eventual epidermal differentiation, akin to a scaffolding matrix.

A variety of flaps are most often used for surgical repair of lip defects after the excision of tumors by MMS. Local mucosal advancement flaps are favored for vermillion defects. Skin grafts are rarely employed due to concerns regarding texture, color, and impaired imbibition due to movement. If choosing to