

FEATURE ARTICLE

Transforming Chained Behaviors: Case Studies of Overcoming Smoking, Eczema, and Hair Pulling (Trichotillomania)^a

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The authors describe the format of a holistic health class provided to undergraduates at San Francisco State University in California. The class initially emphasizes self-monitoring and record keeping to enhance the students' self-awareness of negative emotions, symptomatic behaviors, and other "chained behaviors" leading to various problems, such as smoking or eczema. The students cultivate a variety of positive self-care behaviors and self-regulation skills, such as mindfulness, relaxation skills, visualization techniques, and seeking social support. Finally, they learn to substitute these self-care practices for the negative emotions and behaviors, in the moments of emerging awareness, thus interrupting the "chain of behaviors" leading to problems. The authors provide case narratives of three students implementing this program to address personal illnesses or problems (smoking, eczema, and trichotillomania).

I am proud to label myself a nonsmoker ... diligently performing practices has profoundly helped me eliminate my troublesome craving. ... The conscious efforts I have made over the past month have helped me regain control of my life and helped me gain a newfound feeling of security and peaceful bliss. (L.F., a college student who became a nonsmoker after smoking up to two packs a day since age 11. At 6-month follow-up L.F. is still a nonsmoker)

I have been struggling with eczema for most of my life and up until I began this course, I was feeling very hopeless with regard to managing this condition without the use of potent, costly, and potentially dangerous drugs. My self-healing project also proved to be empirically successful, as evi-

^aAdapted from Gilbert, Gubbala, Ratkovich, Fletcher, Peper, and Harvey (2012); Ratkovich, Fletcher, Peper, and Harvey (2012); and Klein and Peper (2013).

denced by the fact that my eczema shrunk in size from 72 mm in length and 63 mm in width as measured at baseline to 0 mm in length and 0 mm in width by the final day of this project. (L.C., a college student who experienced recurring scaly skin patches since childhood)

It's not Dr. Peper, or a psychiatrist, or Prozac that can heal me; it's I. Not only can I heal myself, but I can do it better than anyone else! Knowing I have the power to heal myself is such an inspiring feeling, a feeling that can't adequately be put into words. I'm grateful that I've had this opportunity. (G.M., a 32-year-old student with trichotillomania, who reduced her hair pulling, anxiety, and stress)

Background

In 74% of the patients surveyed in an internal medicine clinic, there was no identifiable physical cause of the symptoms; the patients' complaints were of unknown etiology (Kroenke & Mangelsdorff, 1989), suggesting that the biological cause of many ailments described by medical patients is not clearly understood. It has been suggested by the American Psychological Association (2013) that most of these psychophysiological symptoms are a manifestation of stress, anxiety, and depression. Yet, many patients are not offered the option of stress management even though learning cognitive and somatic skills to reduce stress can help reverse the felt sense of powerlessness and hopelessness, and decrease symptoms (Peper, Harvey, Takabayashi, & Hughes, 2009).

McGrady and Moss (2013) suggested that self-regulation and stress management approaches should be offered as the initial treatment/teaching strategy in health care instead of medication. This article summarizes the results of teaching stress management to students as part of a holistic health class at the university and describes three case studies of

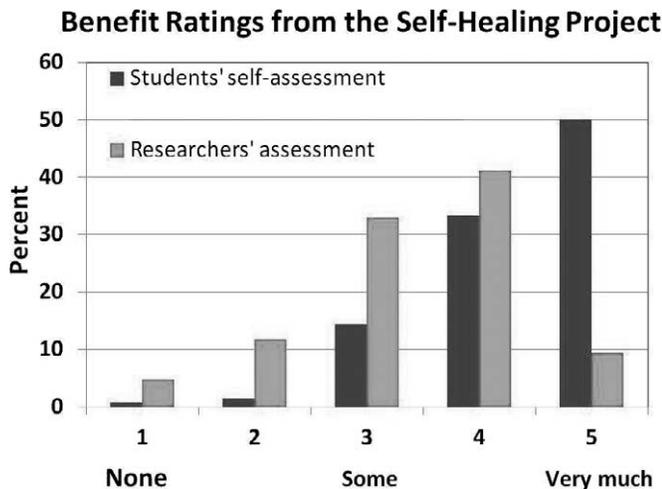


Figure 1. Ratings of self-healing benefits through students' self-assessment and researchers rating of students' self-report papers.

students who were successful in reducing their self-defined problem/illness: smoking, eczema, and hair pulling. The health class took place at San Francisco State University, a large, diverse urban campus in Northern California. Every semester since 1976, up to 180 undergraduates have enrolled in a three-unit Holistic Health class on stress management and self-healing. Students in the class are assigned self-healing (Peper, 2013) projects using techniques that focus on awareness of stress, dynamic regeneration, stress reduction imagery for healing, and other behavioral change techniques adapted from the book, *Make Health Happen* (Peper, Gibney, & Holt, 2002).

Method

The benefits of these self-regulation and stress management practices have been regularly assessed by an anonymous questionnaire. Here we will report on the data gathered from students in Spring 2011. The questionnaire used a scale from 1 to 5 (not successful, a little successful, somewhat successful, mostly successful, and very successful, respectively) to rate each aspect in the self-healing project. Researchers also provided independent ratings of these same outcomes described at the end of the semester in student "self-healing" papers.

Results

During the Spring 2011 assessment of questionnaires and papers, there were 66 female and 44 male students with an average age of 24.0 years (*SD* = 5.8). In prior years, the demographics of the group as well as the positive benefits have been similar. For example, students have consistently

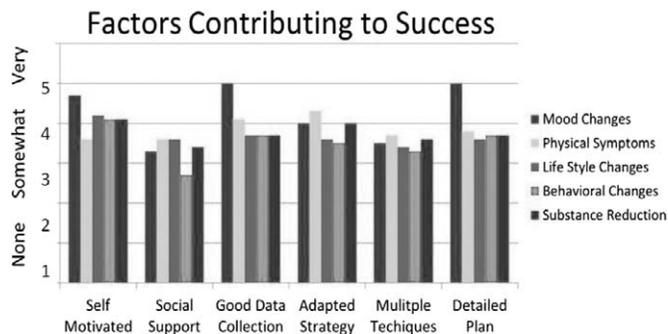


Figure 2. Factors that students described as having significantly contributed to the success of their self-healing project.

reported achieving positive benefits such as increasing physical fitness, changing diets, reducing depression, anxiety, and pain, eliminating eczema, and even reducing substance abuse (Bier, Peper, & Burke, 2005; Peper, Sato-Perry, & Gibney, 2003; Ratkovich, Fletcher, Peper, & Harvey, 2012).

Regarding the 2011 papers, 82% of students self-reported that they were "mostly successful" in achieving their self-healing goals (*M* = 4.1; *SD* = 0.85). Regarding the researcher assessments of the papers, there was a high interrater reliability of the papers. In contrast to the "mostly successful" student self-report, the researchers independently rated the papers on average modestly as "somewhat successful" (*M* = 3.4; *SD* = 0.98), as shown in Figure 1.

There were numerous factors that contributed to student success in benefiting from their self-healing projects, as shown in Figure 2.

There were also a variety of techniques that the students reported practicing or implementing during their self-healing project, as shown in Figure 3.

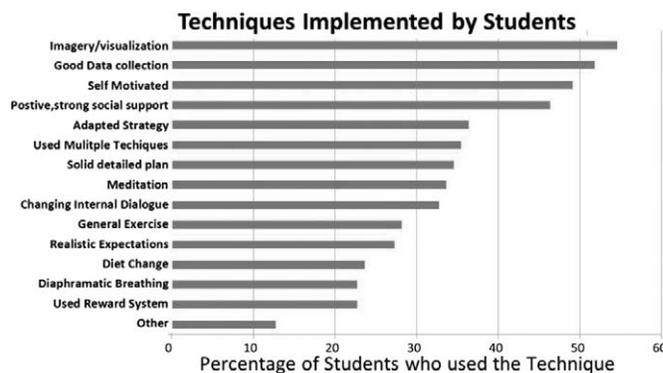


Figure 3. Percentage distribution of various techniques utilized by the students in achieving their self-healing goals.

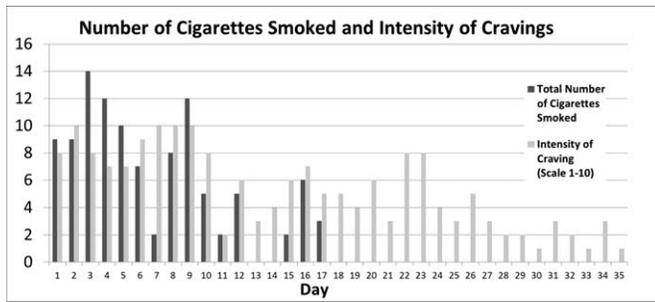


Figure 4. Student’s record of cigarettes consumed and, intensity of cravings experienced. The intensity of cravings was recorded on a scale of 1–10, where 1 = very little and 10 = intense craving.

Overall, the major factors that contributed to the students’ improvement were:

- Daily behavioral self-practices, regular data collection recording and monitoring of subjective and objective experiences, which facilitated self-awareness and documented actual changes.
- Mindful imagery/visualization practices, which encouraged mindfulness and an accepting attitude (Ludwig & Kabat-Zinn, 2008).
- Positive social support and self-motivation: Sharing subjective experiences in small group sessions of about six students, which reduced social isolation, normalized experiences, and encouraged hope. In addition, a few students reported rapid benefits such as abating a headache, being able to get good sleep, or reducing menstrual cramps, which helped motivate other students to continue their practices.
- Writing a reflective paper, which summarized and described their experiences and reported how the practices affected them.

The dynamics of the self-healing process are illustrated by three case examples: (a) becoming a nonsmoker after smoking since age eleven, (b) eliminating eczema, and (c) healing a hair pulling habit (trichotillomania).

Case Illustration 1: Becoming a Nonsmoker

A 22-year-old female student, L.F., had been dealing with her addiction to smoking cigarettes for the past nine years. Her cravings had consumed her life, and she felt trapped because no matter how hard she tried, the cigarettes always found a way back into her life. After gaining knowledge of the self-healing techniques, the student felt confident that she would be able to eliminate her habit once and for all and become a nonsmoker.

Results

She was successful in achieving her goal and became a nonsmoker by the end of the project. Her progress throughout the semester with controlling her cravings and eliminating her smoking habit is graphed in Figure 4. At a 1-year follow-up, she has continued to be a nonsmoker.

L.F. identified the following reasons why she was successful in stopping smoking as well as why she has remained a nonsmoker. She reports that she:

- Identified a healing project that she wanted to do, so was self-motivated, and continuously practiced skills as the project progressed;
- Reframed her internal language from being a smoker to being a nonsmoker;
- Received positive social support from her roommates for becoming a nonsmoker;
- Developed substitute habits for smoking, such as using a pen as a cigarette, regularly engaged in hand-warming exercises, and practiced the “quieting reflex” (a relaxation technique) whenever she became aware of the cravings;
- Experienced the physical benefits of being able to walk up the stairs without running out of air; and
- Kept daily logs and charts that she filled out and that provided her with feedback on her progress.

Case Illustration 2: Eliminating Eczema

Ever since she was a young child, L.C. has had to deal with eczema. After visiting a dermatologist, the student found that the prescribed creams only helped relieve the symptoms temporarily. She was so concerned with the long-term side effects of taking powerful prescriptions on a daily basis that she began to look for alternative treatment options. After visiting numerous doctors and seeing no results, the student decided to take matters into her own hands by choosing to focus her self-healing project on improving the eczema on her left elbow.

Results

Her progress with healing her eczema is shown in Figures 5 and 6.

L.C. identified the following reasons as to why she was successful in reducing her eczema. She reports that during her project that she consistently:

- Ate a healthy, unprocessed, vegetarian diet rich in omega-3 fats;
- Exercised (running) three to four times per week;

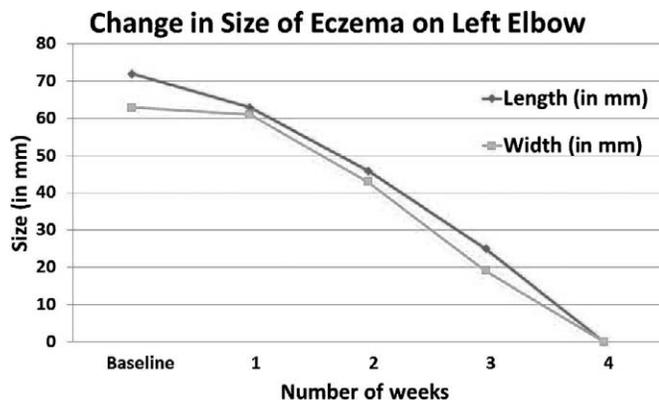


Figure 5. Self-measurement of change in eczema while performing the self-healing project.

- Practiced self-healing imagery every morning upon waking up as well as right before going to bed at night;
- Practiced the quieting reflex (QR) throughout the day as she experienced stressful moments;
- Kept a detailed daily journal to observe patterns and draw connections between eating and exercise habits, and eczema flare ups; and
- Made the conscious decision to take her health and healing into her own hands.

Case Illustration 3: Overcoming Trichotillomania

A 28-year-old female student, G.M. has habitually pulled her hair since she was eight. Although she has attempted to stop countless times by telling herself not to do it, and asking for support from some of her closest friends, stopping never worked. “It seemed that the more I’d tell myself not to, the more I did it,” and she continued to pull her hair in secret. It was reported that only a few people including her husband were aware of it. She was diagnosed in 2008 with trichotillomania. She was unsuccessfully treated with Prozac as prescribed by a psychiatrist.

Her self-healing project included the following behavioral steps:

- Recorded detailed data of baseline and physiological changes. “*Taking baseline photographs of my balding spots on my head, which gave me motivation to change. Every time I reach for my hair I’d give myself a short neck massage instead.*”
- Kept a small notebook to track the amount of time spent pulling out hair as well as tracking associated anxiety levels. “*I didn’t realize how much time I actually spent.*”
- Practiced self-healing imagery of a glowing light. “*My inner guide, a bright glowing light, helped me become aware of the fact that when I would pull out my hair, I’d*

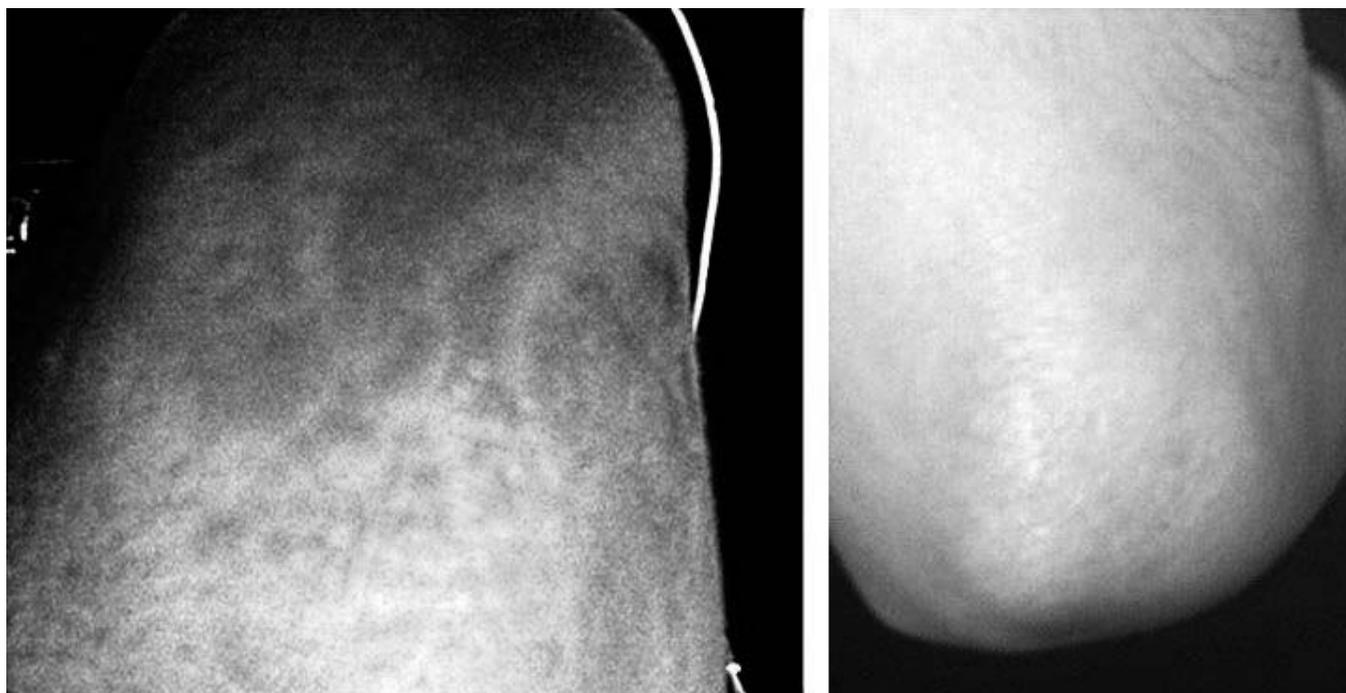


Figure 6. Pictures depicting the prevalence of eczema before and after performing the self-healing project.

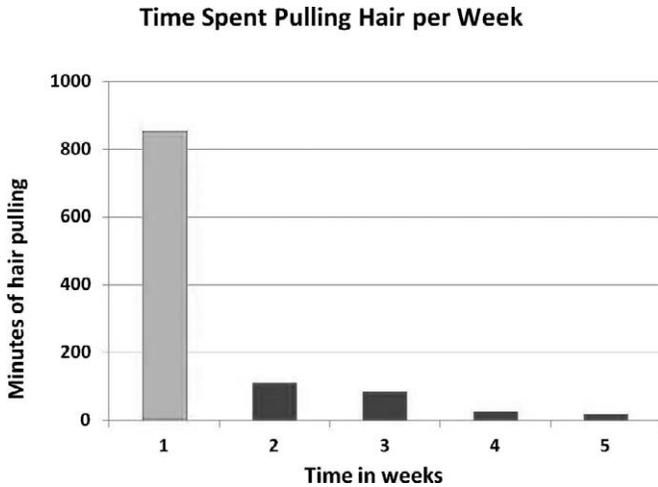


Figure 7. Self-recorded minutes of hair pulling per week.

fall into a trance-like, almost meditative, state. This was enlightening! Before this, I never really understood the reasons behind my obsessive hair pulling.”

- Requested social support. She informed her husband and in-laws of her plan, so that they could provide social support, especially because she typically only pulls out her hair at home.
- Incorporated a conditioning cue of wearing lavender scented oil on her wrist to relax and massage her neck rather than pull her hair.

- Analyzed her recorded baseline data and photographs of her scalp and hair.
- Listed the advantages of neck massage (for example, it eases her anxiety and helps her enter a meditative state) and the disadvantages of hair pulling.

Results

After two weeks of performing these self-care practices, the student had reduced her hair pulling from 855 minutes per week to 19 minutes per week as shown in Figures 7 and 8. At the 1-year follow-up she reported pulling her hair less than 10 minutes per week.

G.M. reported the following major reasons for her successful self-treatment, which she has continued for more than a year. She reported that she:

- Accepted her condition and realized that she has the power to change;
- Practices faithfully and implemented the behavior changes, such as massaging her neck instead of pulling her hair; and
- Sharing her project in class with students. Initially, she was hesitant and embarrassed, but she agreed to do it anyway. After she did, she felt a sense of great relief. It also gave her motivation to prove to herself as well as the rest of the class that she can and will be successful.



Figure 8. Pre and post photos of same location on the scalp. Note that the hair has significantly grown back in.

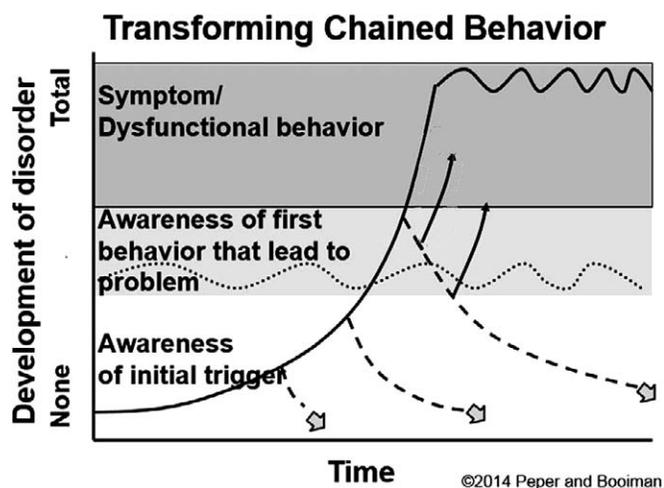


Figure 9. Interrupting and transforming the chained behavior. The moment students become aware of the trigger or behavior that is chained to the development of a symptom, they interrupt and perform active new health-promoting behaviors, as illustrated by the dashed lines.

Discussion and Conclusion

The underlying process that forms the basis of these practices is interrupting chained behaviors that lead to dysfunction and substitute a health promoting behavior, as shown in Figure 9. Thus, the student identifies the chain of behavior that leads to the symptom such as feeling bored or stressed, or having negative thoughts, and then substitutes a new self-healing behavior.

The challenge for students was to recognize and interrupt the beginning of the “chain of behavior” all the time. The longer the person waited to interrupt the chain, the more difficult it was to redirect the chained behavior. Awareness and immediate interruption appeared to be major factors in achieving success. This is different from just practicing a skill for 20 minutes a day. It is very similar to the commitment that athletes exhibit in their skill mastery. It takes practice, practice, practice; not mindless practice, but practice with intent (Wilson & Peper, 2011).

Students benefited in their self-healing projects through active participation and the practice of self-healing techniques on a daily basis. Graphs and numbers made the changes believable and increased motivation. Detailed log-keeping demonstrated that changes occurred over time. Without accurate log keeping, it is more difficult to confirm that changes have occurred.

The authors recommend that universities offer semester-long classes based upon the strategies described in the *Make Health Happen* program (Peper, Gibney, & Holt, 2002) to promote student self-awareness of stress, leading to stress

management, self-healing and an improvement in overall health and well-being. Furthermore, it is recommended that holistic health classes dealing with a variety of alternative and complementary health practices be offered at universities so that students can benefit from health skills that will persist throughout life. Through direct experience, they come to KNOW that change is possible. For many students this was the first time that they experienced mastery and empowerment over their own health.

I will continue to do the practices outlined in this assignment not only to overcome trichotillomania but also to control my anxiety and, therefore, lead a less stressed and happier life. Knowing I have the power to heal myself is such an inspiring feeling, a feeling that can't adequately be put into words. (G.M., a 32-year-old student with trichotillomania, who reduced her hair pulling, anxiety, and stress).

I have gained much wisdom from this project ... I am ultimately responsible for my own health and well-being ... I feel empowered, optimistic, and appreciative of every moment. (L.C., a college student who experienced recurring scaly skin patches since childhood)

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References

- American Psychological Association. (2013). *Stress in America: Are Teens Adopting Adults' Stress Habits?* Washington DC: Author. Retrieved October 2, 2014, from: <http://www.apa.org/news/press/releases/stress/2013/stress-report.pdf>
- Bier, M., Peper, E., & Burke, A. (2005, March–April). *Integrated stress management with Make Health Happen: Measuring the impact through a 5-month follow-up.* Poster presentation at the 36th Annual Meeting of the Association for Applied Psychophysiology and Biofeedback, Austin, TX. Abstract in *Applied Psychophysiology and Biofeedback*, 30(4), 400.
- Gilbert, M., Gubbala, P., Ratkovich, A., Fletcher, L., Peper, E., & Harvey, R. (2012, October). *Make Health Happen: A model university class where students learn lifelong skills to improve their health status such fitness, increase energy, stop smoking, and overcome Trichotillomania.* Poster presented at the 2012 Meeting of the American Public Health Association, San Francisco, CA.
- Klein, A., & Peper, W. (2013). There is hope: Autogenic biofeedback training for the treatment of psoriasis. *Biofeedback*, 41(4), 194–201.

Kroenke, K., & Mangelsdorff, D. (1989). Common symptoms in ambulatory care: Incidence, evaluation, therapy, and outcome. *American Journal of Medicine*, 86(3), 262–266.

Ludwig, D. S., Kabat-Zinn, J. (2008). Mindfulness in medicine. *JAMA*, 300(11), 1350–1352.

McGrady, A., & Moss, D. (2013). *Pathways to illness, pathways to health*. New York: Springer.

Peper, E. (2013, March). *There is hope: Biofeedback in context of an ancestral perspective*. Distinguished Scientist Award lecture, presented at the 44th Annual Meeting of the Association for Applied Psychophysiology and Biofeedback, Portland, OR.

Peper, E., Gibney, K. H., & Holt, C. (2002). *Make health happen: Training yourself to create wellness*. Dubuque, IA: Kendall-Hunt.

Peper, E., Harvey, R., Takabayashi, N., & Hughes, P. (2009). How to do clinical biofeedback in psychosomatic medicine: An illustrative brief therapy example for self-regulation. *Japanese Journal of Biofeedback Research*, 36(2), 1–16.

Peper, E., Sato-Perry, K., & Gibney, K. H. (2003, March). *Achieving health: A 14-session structured stress management program—Eczema as a case illustration*. Poster presented at the 34th Annual Meeting of the Association for Applied Psychophysiology and Biofeedback, Jacksonville, FL. Abstract in *Applied Psychophysiology and Biofeedback*, 28(4), 308. Retrieved October 2, 2014, from: <http://biofeedbackhealth.files.wordpress.com/2013/2003-aapb-poster-peper-keiko-long1.pdf>

Ratkovich, A., Fletcher, L., Peper, E., & Harvey, R. (2012, March). *Improving college students' health-including stopping smoking and healing eczema*. Poster presented at the 43rd Annual Meeting of the Association for Applied Psychophysiology and Biofeedback. Baltimore, MD.

Wilson, V. E., & Peper, E. (2011). Athletes are different: Factors that differentiate biofeedback/neurofeedback for sport versus clinical practice. *Biofeedback*, 39(1), 27–30.



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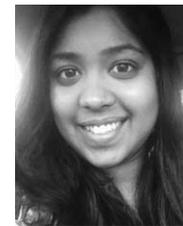
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