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Understanding the Context of Novel Interventions for Self-Injurious Thoughts and Behaviors: A Reply to Nielsen et al.

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In this response to the commentary by Nielsen, Kirtley, & Townsend (in press), the authors note several points of agreement related to further testing of therapeutic evaluative conditioning (TEC) for self-injurious thoughts and behaviors (SITBs), navigating logistical and ethical issues surrounding mobile interventions, and integrating such interventions into traditional practice. They also note a common mission held by Nielsen et al., themselves, and the SITB research community more broadly: the large-scale reduction of SITBs. Given that national rates of SITBs have never declined appreciably and have been on the rise in recent decades, there is an urgent need for progress toward this goal. However, they also highlight several unsupported or inaccurate assumptions and specific points made by Nielsen et al. that are important to correct for the sake of accuracy and progress in the prediction and prevention of SITBs. These include an overly narrow conceptualization of what constitutes an intervention; an unsupported model of the causes of SITBs and how to best prevent them; an erroneous belief about the iatrogenic effects of SITB stimulus exposure; and inaccuracies in their description of the development, testing, and release of TEC. The authors hope that this brief discussion of the evidence will facilitate progress toward the mission of large-scale reductions in SITBs.

Keywords: self-injury, suicide, app, therapeutic evaluative conditioning, NSSI

We appreciate Nielsen, Kirtley, and Townsend's (in press) the commentary on our article (Franklin et al., 2016) and are thankful for the opportunity to reply. We share a common mission with Nielsen et al. and self-injurious thought and behavior (SITB) researchers more broadly: the large-scale reduction of SITBs. Despite several decades of theory, research, practice, and policies, we have made limited progress toward this goal. The United States suicide rate was estimated to be around 10.0 per 100,000 people in the year 1900, 10.7 per 100,000 people in the year 2000, and 13.8 per 100,000 in the year 2015 (CDC, 2016; Massey, 1965). Other SITBs seem to be following a similar pattern, with nonfatal SITB rates increasing despite greater treatment usage among those reporting SITBs (e.g., Kessler, Berglund, Borges, Nock, & Wang, 2005). Echoing these patterns, recent meta-analyses have found that science's ability to identify SITB risk is at near-guessing levels and did not improve across 50 years of research (Fox et al., 2015; Franklin et al., 2017), and that no treatment has been shown to consistently and reliably reduce SITBs compared to an active control group (Brown & Jager-Hyman, 2014; Glenn, Franklin, & Nock, 2015; Ward-Ciesielski & Linehan, 2014). Moreover, most SITB treatments are intensive in-person interventions, limiting their scalability. Although tangible progress toward large-scale SITB reductions has been elusive, recent developments give reason for optimism: several new theories have been proposed (e.g., Joiner, 2005); machine learning technologies may provide the first accurate and scalable SITB risk detection methods (e.g., Walsh, Ribeiro, & Franklin, in press); and there has been an increasing focus on scalable prevention strategies (e.g., Anestis & Anestis, 2015).

It is against this backdrop that we began developing therapeutic evaluative conditioning (TEC) for SITBs. We reasoned that, to make progress toward the goal of large-scale SITB reductions, a psychological intervention must draw on a novel theoretical perspective, effectively reduce SITBs, and be accessible to millions of people for no cost. As described in Franklin et al. (2016), the initial evidence suggests that TEC may meet these criteria. Nonetheless, we believe that TEC and the initial studies on TEC only represent the first steps toward developing the tools necessary to accomplish the goal of large-scale SITB reductions.

We accordingly agree with Nielsen et al. that TEC and similar mobile interventions raise many important issues that must be considered as we make progress toward this goal. For example, should such technologies be used as standalone interventions or adjuncts to traditional interventions? In our view, Franklin et al. (2016) demonstrates that TEC can be effective as a standalone

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intervention, but we also believe it can be helpful as an adjunct to traditional therapy (see Franklin et al., in press). Given that most traditional SITB interventions have questionable efficacy and limited scalability, it could be argued that standalone mobile treatments will be the best way to produce large-scale SITB reductions (cf. Kazdin & Blase, 2011). This remains an open question, and ultimately, consumers will determine the preferred style of intervention, not researchers. We also agree with Nielsen et al. that further testing of TEC is necessary. As described throughout the General Discussion section of Franklin et al. (2016), further replication is needed, the mechanisms of TEC's effects require more study, TEC's playability must improve, and alterations must be made to expand the durability of TEC's effects. We also emphasize here that TEC is just one example of a potentially effective and scalable SITB intervention that might help make progress toward the goal of large-scale SITB reductions. It is not our hope that TEC will become a staple of SITB intervention work for many years to come; rather, it is our hope that future researchers with greater knowledge about SITBs and more advanced technologies will build on the example of TEC to produce far more effective interventions.

At the same time, it is important to highlight several unsupported or erroneous assumptions and specific points raised by Nielsen et al. that, if uncorrected, could actually slow progress toward this goal. These points are based on traditional views that decades of evidence show are either overly narrow or simply false. We briefly address each in turn below.

First, Nielsen et al. declare that "interventions ought to build skills that can be subsequently and consciously recruited to manage distress" (p. 5), and because TEC used conditioning procedures (rather than teaching skills) to decrease SITBs, it is not an intervention. We would caution against using such a narrow definition of what constitutes an intervention, and by extension what methods psychologists should use to change behavior. Traditional skill-building interventions are of course of enormous value; however, the past few decades have brought extraordinary advances in the ways in which psychological interventions can change human behavior to improve the lives of the people involved (Kazdin & Blase, 2011). A few examples include using exposure and response prevention to decrease the symptoms of obsessive–compulsive disorder (e.g., Foa & McLean, 2016), modifying the social networks of high school students to decrease bullying (e.g., Paluck, Shepherd, & Aronow, 2016), and modifying food labels and advertising to increase healthy eating (e.g., Roberto et al., 2015). The armamentarium of interventions available to treat psychopathology and improve human functioning has expanded far beyond teaching patients cognitive and behavioral skills, and clinical psychologists should know about and make full use of them.

Such an armamentarium may be particularly important for the challenge of SITB reductions. Many tests of the skills- and distress-based interventions promoted by Nielsen et al. have reported null findings (e.g., Carter et al., 2010; Katz et al., 2004; McMain et al., 2009; Rathus & Miller, 2002), and meta-analyses of such approaches show clear evidence of publication bias, with the largest and most precise studies showing effects around zero for such interventions (Tarrier et al., 2008). Relatedly, the constructs that Nielsen et al. point to as the central causes of SITBs—distress and maladaptive coping—are weak risk factors for SITBs (Fox et al., 2015; Franklin et al., 2017) and are thus unlikely to play meaningful, direct causal roles in SITBs (cf. Kraemer et al., 1997). Accordingly, we disagree with Nielsen et al.'s recommendation that all SITB interventions be built around these constructs and focus on skill building. Instead, we advocate for a broader set of SITB intervention and prevention strategies, particularly scalable strategies such as mobile apps (e.g., Franklin et al., 2016) and changes in public policy (e.g., means restriction; Anestis & Anestis, 2015).

Second, Nielsen et al. suggest that conditioning people to have an aversion to SITBs is harmful because it might increase stigma and leave people "unable to cope and without options" (pp. 4–5). We disagree with this point for four reasons. First, our analyses suggest aversive conditioning with SITB stimuli was the primary reason for SITB reductions in Franklin et al. (2016). Removing this component of TEC may remove the active ingredient from one of the few interventions that has been shown to reduce SITBs compared to an active control group. Second, there is little empirical support for the general distress/coping model of SITBs (Fox et al., 2015; Franklin et al., 2017), and no evidence for Nielsen et al.'s extreme version of this model where individuals have a complete inability to cope and lack of options outside of SITBs. Likewise, we are aware of no empirical evidence for Nielsen et al.'s related "replacement behavior" hypothesis (p. 5). Third, the cessation of SITBs is the top priority of many SITB interventions, including skills-based interventions (e.g., Linehan, 1993); we agree with the perspective of these interventions that, whatever the sequelae of SITB cessation, it is preferable to SITBs. Fourth, across three studies, Franklin et al. (2016) found no evidence of the potential negative effects noted by Nielsen et al.

Third, Nielsen et al. suggest that exposing people to SITB stimuli may be harmful and they highlight the importance of informed consent, content warnings, and pretesting of stimuli with patients and members of the public with the target condition. It is a common misconception that asking people about SITBs or showing them words or images related to these behaviors increases distress and the likelihood that a person will then become suicidal/self-injurious. Several studies have tested this directly and found that exposing people to questions, words, or images related to SITBs does not increase distress or the likelihood of engaging in these behaviors (e.g., Cha et al., 2016; Gould et al., 2005; Muehlenkamp et al., 2015; Rudd et al., 2006; Whitlock et al., 2013). Nielsen et al.'s other concerns in this domain constitute inaccurate descriptions of the development, study, and public release of TEC. We were a bit puzzled by Neilsen et al.'s characterization of TEC given that accurate information about its development and delivery is presented in Franklin et al. (2016) and provided on all TEC app store entries. Nevertheless, we appreciate the opportunity to correct the inaccurate characterizations of this work: (a) we of course received informed consent from all participants in all three studies reported in the original paper; (b) the public versions of TEC have always included content warnings and age restrictions, as well as written descriptions of the app, a link to a video of a full instance of TEC (which also includes a content warning), and extensive terms and conditions that describe in great detail the purpose, appropriate use, and nature of the app; and (c) the stimuli used in the Franklin et al. (2016)

study were extensively tested on individuals both with and without a history of self-injury (e.g., Franklin, 2014; Franklin, Lee, Puzia, & Prinstein, 2014a, 2014b).

We are grateful to Nielsen and colleagues for their commentary and for the opportunity to respond, and we look forward to working alongside Nielsen and all of our other colleagues toward the large-scale reduction in SITBs.

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