Behavioral Assessment of Self-Injury

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INTRODUCTION

Self-injurious behavior (SIB) is a behavior disorder that can range in severity from self-inflicted mild bruising and abrasions, to life-threatening tissue damage (Carr, 1977). The focus of this chapter is on SIB displayed by individuals with developmental disabilities (DD), including autism. Although SIB occurs in psychiatric patients (e.g., self-mutilation) and in some otherwise typically developing adolescents and adults (e.g., self-cutting), these variations of SIB are not the focus here. In addition, this chapter focuses on assessment rather than treatment. Finally, the specific focus is behavioral assessment rather than medical, biological, or psychiatric (diagnostic) assessment.

The numerous forms (topographies) of SIB described in clinical reports and scientific publications include self-hitting, head banging, self-biting, self-scratching, self-pinching, self-choking, eye gouging, hair pulling, and many others (Iwata et al., 1994b). Although there are clear genetic and biological correlates with the disorder (e.g., Lesch & Nyhan, 1964), the majority of SIB appears to be learned behavior. Not including tics and related behavior, most of human behavior can be compartmentalized as either operant or reflexive (and respondent) behavior. There is no empirical evidence that SIB occurs in a fashion similar to a tic or nervous twitch.
The vast majority of evidence suggests that SIB is operant behavior controlled by either automatic (nonsocially mediated) or socially mediated consequences. There is some evidence that a minority of SIB could be reflexive, but that evidence is indirect and not the focus of this chapter. The only evidence to date supporting SIB as reflexive behavior is found in the research on biting by various species that occurs in response to severe aversive stimulation (e.g., Hutchinson, 1977). Specifically, laboratory research has shown that many species of animals, including humans, will bite down on virtually whatever is available when certain kinds of aversive stimulation such as shock or loud noise are presented. Conceivably then, some self-biting might occur in response to either unconditioned or conditioned aversive stimuli.

The clearest evidence supports the notion that SIB is operant behavior strengthened (reinforced) by consequences to the behavior. The behavior is often so severe and so disturbing that care providers tend to act immediately and decisively to end an episode or bout of self-injury. Although well meaning, actions to end an episode of SIB might inadvertently reinforce the behavior. For example, one common care provider response is to give attention in the form of reprimands or comfort statements when severe behavior occurs (e.g., Sloman et al., 2005; Thompson & Iwata, 2001).

Social attention might serve as a source of socially mediated positive reinforcement for the SIB. Research has shown that even reprimands can serve as positive reinforcement, despite a clear intent of the care provider to scold or punish the behavior (e.g., Fisher, Ninness, Piazza, & Owen-DeSchryver, 1996). Other care providers may be inclined to comfort or nurse the individual following episodes of SIB (e.g., Fischer, Iwata, & Worsdell, 1997). Similarly, care providers may attempt to figure out what the individual “is upset about” and begin handing over tangible items including food, drinks, favorite toys or activities (e.g., Marcus & Vollmer, 1996).

Conversely, escape from or avoidance of social interaction might serve as a source of socially mediated negative reinforcement for SIB. A common response of care providers is to move away from and terminate ongoing activity when SIB occurs, thus allowing escape or avoidance of an interaction that normally would have ensued. For example, dozens of behavioral assessment studies have shown that escape and avoidance of instructional activities, self-care activity, and daily living activity can reinforce SIB (e.g., Iwata, Pace, Kalsher, Cowdery, & Cataldo, 1990; Steege et al., 1990; Vollmer, Marcus, & Ringdahl, 1995). Similarly, some studies have shown that escape from close proximity during medical examinations (Iwata et al., 1990) or even during regular social interaction can reinforce SIB.

Not all SIB is reinforced by the actions of other people. In some cases, SIB produces its own source of reinforcement, independent of the social environment. In fact, some individuals with SIB will sit in a room alone for extended time periods engaging in repetitive SIB, even though the behavior produces no social reaction. In these cases, SIB is maintained by automatic reinforcement, meaning that no social mediation is required for the reinforcement. The specific sources of automatic reinforcement are not as well understood as the specific sources of socially mediated reinforcement, but there is some evidence that SIB can be automatically reinforced by pain attenuation (e.g., Fisher et al., 1998), attenuation of itching skin