Chapter 5

Oral Habits and Their Management

Oral habits have occupied the attention of psychologists, psychiatrists, and dentists for more than 100 years. Unfortunately, little knowledge of etiology is based on sound scientific data.

Wolfenstein (1953) has reviewed and charted the course of advice given in the editions of the bulletin Infant Care which have appeared regularly since the first edition in 1914. She has charted how child health experts have emphasized or deemphasized the pernicious nature of thumb sucking, for example. Initially, there were strong psychoanalytic interpretations of meaning and treatment, which have now been replaced by learning theory formulations.

Thumb-sucking and finger-sucking habits have received considerable attention from dentists because of their possible cause or contribution to malocclusions and deformities of the teeth and associated structures. Chandler (1878) felt that thumb sucking caused "considerable space to intervene between the upper and lower incisors, but the principle permanent irregularity that results from this habit from its continuance after the eruption of the permanent teeth" (p. 204). Similar interpretations continue even today.

Bruxing and grinding habits seem to have escaped the attention of most psychologists. In dentistry, literature has largely been confined to adults who exhibit these habits and had a strong psychodynamic orientation. Tongue thrust and self-injurious behaviors to the oral cavity have received diverse attention.

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ETIOLOGY AND DEVELOPMENT OF THUMB AND FINGER SUCKING

Etiology of thumb- and finger-sucking habits is unknown. A number of investigators have indicated that sucking habits are reflexes whose precursors appear during intrauterine life as early as the fifth month (Hooker, 1942). Gessel (1954) concluded that beginning of full swallowing and suckling was evident at the thirty-two to thirty-six weeks fetal stage with full maturation occurring during the last two months of fetal life. After birth, extranutritive sucking activities appear to increase from three to about seven months and then spontaneously decrease in significance (Brazelton, 1956). Brazelton noted that the decrease was coincident with motor accomplishments such as creeping, crawling, and sitting. Of the seventy babies he followed, four continued rather intense extranutritive sucking into the second year and were considered problem suckers. Brazelton’s definition of a problem sucker was “one who sucks his fingers beyond infancy to such an extent that it becomes a problem to his environment, hence to himself” (p. 401). This is the definition which will be used here.

Crump, Gore, and Horton (1958) examined the development of the sucking reflex in premature infants and whether the response approximately paralleled that of other aspects of growth and development. They suggested that a premature infant of approximately 7.5 months gestation age could be expected to reach maturity at forty-five days postnatal, based on the assumption that the reflex is completely developed in full-term infants. One of the activities related to sucking behavior has been termed the “rooting reflex.” If the infant’s cheek is stimulated by an object such as a finger, the infant turns his head toward the stimulus and opens his mouth (Gentry and Aldrich, 1948), an activity which was first described by Samuel Pepys in 1667 and later by Jensen (1932) and others. The rooting reflex is frequently accompanied by sucking movements and has been considered related in some fashion. The rooting reflex would appear to have adaptive value in that it would likely increase sucking and sucking opportunities particularly of a nutritive nature, since suckling would occur whenever the lips were stimulated by the nipple. However, the findings of Gentry and Aldrich (1948) would suggest that before sucking, the rooting reflex could not be elicited or that there was considerable delay be-
fore it could be. Thus, using the rooting reflex as a variable in explaining the development of thumb-sucking activities may not be justified.

The rooting reflex or directed head-turning response has been studied most extensively by Prechtl (1958), from both a behavioral pattern and an underlying physiological mechanism approach. He has reported that the entire complex of infant behavior disappears because of the integration of new functional complexes occurring with the development of the central nervous system.

Of some interest is the observation that grasping of the nipple during feeding is frequently disturbed by the rooting reflex (or directed head movement), which the mother usually corrects by grasping and fixing the head of the infant to receive the nipple. Prachtl has also reported that the response is inhibited by drowsiness and satisfaction, but facilitated by hunger. In addition, proprioceptive information appears important as demonstrated by positioning the infant on its back facing upward. In this position, the response is greater when the stimulated side is held up and weaker when held down.

**PSYCHOANALYTIC AND LEARNING THEORY MODELS**

Freud (1938) postulated that thumb sucking was a manifestation of infantile sexuality and that persistent thumb sucking was a symptom of emotional disturbance which should not be treated without attention to the underlying psychological problems (Kaplan, 1950; Kanner, 1950; Pearson, 1948). Suffice it to say that despite the voluminous amount of literature available, no scientific data support the psychoanalytic position. More recently, investigators have conceptualized such habits in learning theory terms (Palermo, 1956) and the evidence provides support for a learning theory approach to their etiology and treatment (Benjamin, 1967; Davis et al., 1948; Sears and Wise, 1950; Davidson et al., 1967; Larsson, 1972; Baer, 1962; Graber, 1958).

**PREVALENCE AND POSSIBLE EXPLANATIONS**

**The Extent of the Problem**

Precise estimates of the prevalence of thumb and finger sucking are difficult to establish. Traisman and Traisman (1958) followed
2,650 infants and children from birth to sixteen years of age and reported that approximately 46 percent of them had engaged in sucking activities at some time during this period. Olson (1929) observed children in classrooms from six to thirteen years of age and estimated that from 48 percent to 58 percent engaged in sucking habits.

**Digital Sucking and Malocclusion**

Chandler (1878) was among the first dentists to assert that a relationship existed between digital sucking and facial deformities. He believed that in addition to the displacement of teeth, there occurred a frequently elongated and narrowed nares which resulted in respiratory problems. Lewis (1930) and Rakosi (1959) reported that these habits might result in malocclusions in the primary dentition, but as the habit was abandoned by the age of four or five, the malocclusions tended to correct themselves. The studies of Ruttle and his colleagues (1953) along with those of Lamont (1978) and Popovich and Thompson (1973) tend to support these conclusions.

**Personality Differences**

It has been speculated that there are significant personality differences between those who engage in persistent sucking habits and those who do not. The studies which have been carried out have concluded that there are no statistically significant differences between the two groups (Freeden, 1948; Davidson et al., 1967).

**Sex Differences**

No data exist which show a disproportionate amount of non-nutritive sucking activities by gender.

**METHODS OF CONTROLLING SUCKING HABITS**

The experimental literature provides a number of approaches for managing these habits. They fall into three categories: (1) prevention, (2) positive reinforcement, and (3) aversive conditioning.
Prevention of the Habit

If one believes that thumb and finger sucking should not be permitted to develop, some relatively simple techniques can be instituted shortly after birth to discourage the habit. The insignificance of the habit during the first four or five years of life does not seem to justify intervention. However, for the sake of completeness, the techniques will be discussed.

Chandler (1878) recommended a behavioral approach to management by suggesting that the infant or child sleep in a gown without openings for the arms. Levin (1958) suggested a similar modification to the child’s pajamas.

Benjamin (1967) placed mittens on the hands of neonates during the first month of life and observed that they engaged in significantly fewer sucking activities than did a no-mittens control group, thus offering support for the notion that these habits can be prevented. Johnson (1938) had previously recommended using a miniature version of boxing gloves as a way of preventing or curing the habit.

Sears and Wise (1950) found that early-weaned infants showed less sucking behavior than later-weaned infants and concluded that a carefully selected weaning schedule might reduce or eliminate sucking habits.

The use of bitter-tasting substances applied to the digits has been recommended for some time (Chandler, 1878; Johnson, 1938) but this approach has been discouraged almost from the beginning.

Positive Reinforcement

Use of positive reinforcement or positive rewards to change behavior requires almost complete environmental control. Considerable effort on the part of the clinician is thus required. Baer (1962) treated a five-year-old boy by permitting him to view cartoons when he was not sucking his thumb and stopping cartoons while he was sucking. When he removed his thumb, the cartoons resumed. The more the child refrained from sucking, the more cartoons he was permitted to watch.

Following Baer’s report, a number of others (Knight and McKenzie, 1974; Skiba, Pettigrew, and Alden, 1971; Martin, 1975) reported
successes with reinforcements such as attention, praise, or reading bedtime stories contingent upon nonsucking behavior. Although effective, because of the control (and time) required, the use of positive reinforcement is used less routinely than other existing measures.

**Aversive-Conditioning Techniques**

On the basis of the available evidence, the most efficient techniques of eliminating undesirable sucking behaviors employ the aversive-conditioning techniques or the so-called punitive appliances. Although they have been used for many years (e.g., Massler and Wood, 1949; Massler and Chopra, 1959; Teuscher, 1940), these methods continue to generate controversy largely because of dentists' incomplete understanding of their theoretical justifications. The first conclusive studies on aversive conditioning (i.e., use of the palatal crib) were undertaken by Haryett and colleagues (1967) and Davidson et al. (1967) in children aged four years and older. The group (twenty-two subjects) that had worn the palatal crib had all stopped sucking activities compared to only six in the remaining five control and treatment groups. Although many of the children developed transient speech problems (which would be expected), there were no significant personality effects on any of the children.

**BRUXISM: CHARACTERISTICS AND TREATMENT**

**Definition of Bruxism**

Ramfjord, Kerr, and Ashe (1966, p. 21) have defined bruxism as "the clenching and/or grinding of teeth when the patient is not masticating nor swallowing." Pathologic grinding may result in tooth wear, periodontal breakdown, and facial pain. Ayer and Levin (1973) have pointed out that for most individuals the symptoms are so mild as not to warrant intervention.

**Prevalence**

Bruxism has received considerable attention in dental literature. However, the reports regarding the prevalence of this condition show
wide variations. Rieder (1976) reported that more than one-third of his sample (aged ten to seventy-nine years) reported clenching and grinding habits. Reding, Rubright, and Zimmerman (1966) reported that 15 percent of a sample of three to seventeen-year-olds had a history of nocturnal grinding habits. Lindqvist (1971) reported that parents indicated that 14.9 percent of them had heard their children grinding their teeth.

Several investigators have examined bruxism in children with brain damage, mental retardation, and cerebral palsy (Lindqvist and Heijbel, 1974; Siegel, 1960; Swallow, 1972; Rosenbaum, McDonald, and Levitt, 1966) and have concluded that such children suffer from bruxism significantly more than normal children.

**Treatment of Bruxism**

Treatment of pathologic bruxism has involved the application of massed practice exercises and biofeedback (see Bailey and Rugh, 1979, for an extensive review of these treatment modalities). The basis for massed practice is based on the learning theory notion that repeatedly engaging in an activity with very short rest intervals increases the likelihood that the activity will be perceived as fatiguing and eventually because of this, the activity will be eliminated because of the positive reinforcement for not engaging in it.

Biofeedback assumes that one can teach the patient to reduce muscle tension that is believed responsible for the habit and eventually reduce or eliminate it. The evidence for both of these approaches is promising but insufficient to recommend them for reliable routine clinical use.

**SELF-MUTILATING BEHAVIORS: THE ORAL CAVITY**

Self-mutilating, self-inflicted, or factitious injuries are apparently quite common and their prevalence has probably been underestimated (Lester, 1972). Some of these injuries appear to be motivated and sustained by secondary gains and are found frequently among certain groups such as soldiers, prison inmates (Claghorn and Beto,
1967), and other institutionalized persons (Green, 1967; Matthews, 1968).

Lewis (1962), Schoenwetter (1967), and Hasler and Schultz (1968) have described cases of children aged three to ten years with self-induced injury to the gingival mucosa. Goldstein and Dragon (1967) described a severely psychotic sixteen-year-old boy who extracted his upper right central incisor and who six months later, removed his lower right canine, fracturing the right mandible in the process. The case of a nine-year-old girl with a history of auto-extraction has been reported by Plessett (1959).

**Etiology of Self-Injurious Behavior (SIB)**

There are two broad categories of etiological factors for SIB—organic and functional. The organic category refers to self-mutilative behaviors which seem to occur in syndromes in which biochemical or enzymatic deficiencies have been identified. Probably the most well-known of these is the Lesch-Nyhan syndrome (Lesch and Nyhan, 1964; Dizmang and Cheatham, 1970), which is considered an X-linked recessive characteristic. Behaviorally, these children are extremely aggressive and display bizarre self-mutilative behaviors, usually developing before the age of two years. The fingers of these children often are extensively scarred because of constant biting. Also, various degrees of injuries to the tongue, lips, and cheeks may be observed.

Additional syndromes have been reported by Shear et al. (1971) with similar symptoms. Although these investigators believed that the self-injurious behaviors were associated with these syndromes, it must be cautioned that no evidence indicates that the syndrome causes the self-injurious behavior.

Conceptualization of these behaviors in terms of a functional etiology seems more appropriate than the organic approach. A functional analysis of SIB has the advantage in that specific undesirable behaviors can be identified. Once identified, it can be determined which factors in the environment sustain (reinforce or strengthen) the SIB episodes. These parameters are subject to manipulation and can be used to modify or eliminate the unwanted behaviors. For example, some children may learn that when they are injured or in pain, they get their parents’ attention and perhaps some expressions of sympa-
thy and affection. If the parents are ordinarily cold and distant and display concern only when the child is injured or sick, this attention may become rewarding and thus reinforce and contribute to the further development of this behavior. In such a situation, the behavioral scientist might train the parents to reward the child for noninjurious behaviors, thereby reducing and eventually eliminating SIB episodes. This is essentially the model for treatment methods that are practiced today.

REFERENCES


