CHILD BEHAVIOR AND THE DENTAL EXPERIENCE

by

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# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>REVIEW OF THE LITERATURE</td>
<td>1</td>
</tr>
<tr>
<td>SOME FACTORS INVOLVED IN THE PSYCHOLOGY OF THE CHILD</td>
<td>23</td>
</tr>
<tr>
<td>PSYCHOLOGICAL PRINCIPLES, DIRECTLY PERTINENT TO THE RESEARCH</td>
<td>39</td>
</tr>
<tr>
<td>STATEMENT OF THE PROBLEM</td>
<td>44</td>
</tr>
<tr>
<td>METHOD</td>
<td>47</td>
</tr>
<tr>
<td>PRESENTATION OF DATA</td>
<td>52</td>
</tr>
<tr>
<td>SUMMARY</td>
<td>61</td>
</tr>
<tr>
<td>CONCLUSIONS</td>
<td>66</td>
</tr>
<tr>
<td>REFERENCES</td>
<td>69</td>
</tr>
</tbody>
</table>
TABLES

Table | Description                                                                 | Page |
------|------------------------------------------------------------------------------|------|
1     | Per cent of Problem Children in Each Age Group                               | 57   |
2     | Child Behavior After Introduction to Dental Experience                       | 58   |
3     | Control Procedures                                                           | 59   |
4     | Incidence of Oral Habits and Psychological Problems                          | 60   |
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INTRODUCTION
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One of the basic considerations of dentistry, if not the very foundation, is the creation of a patient, who is receptive to the dental experience. The child's adaptation to dentistry is paramount, for here it is determined how he will accept dental care and what may be his lifelong attitude toward dental health.

There must be a reason and justification for treatment rendered, or dentistry will not find its way into the values established in the culture in which it operates. The need for dentistry is the result of the civilization of man, and as this social process has become intricate so have the problems of the dentist. Dentistry is not an essential of life, but the teeth certainly facilitate the necessity of receiving food into the body. Although in the past, the dental experience may have been considered a fringe benefit in comparison to schools and churches, it can become an important step in the child's socialization by helping him to step out into the world alone and accept his individual problems more gracefully. The principles of dentistry may be incorporated early in the life of the child, a process difficult in a fear-conditioned adult. The satisfactory adaptation to dentistry not
only benefits the child, but it also benefits the profession, for
the dentist’s position in society is greatly enhanced when his
patients find that he is a person rather than an object of fear.

It will be revealed that in the earliest years of modern
dentistry there did not seem to exist a child management problem.
This may have been due to a number of reasons. It was reported
that during this era the incidence of dental caries was low, which
might indicate fewer dental problems among the children of that
time. In the Victorian era there was a general attitude that "the
child should be seen and not heard," which may have influenced his
attitude in the dental office. Some writers have expounded on the
theory that there was not as much importance placed on pain during
this era as there is now. Even today some primitive cultures in-
flict physical punishment upon themselves which our society would
consider unbearable.

Not until the late 19th century was the child observed to
offer psychological difficulties in accepting dental care. It may
be that operative techniques were so underdeveloped or crude in the
light of our knowledge today that operative care on the child was
met with resistance.

Evolving with the apprehension of the child was an attitude
of rejection or escape on the part of the dentist when it came to
children's dental care. The earliest educators begged and implored
their contemporaries to accept children into their practices. It is likely that the philosophy of "wait until it bothers him, they are only baby teeth" was created by some in the dental profession to rationalize their rejection of dentistry for children.

In the early 20th century many ideas were presented on what the child is or what he should be. Some believed the child was all "good" and should be treated likewise; others felt the child could be conditioned through the laws of learning into the kind of individual desired. Some authors presented the idea that there were mysterious components of the human mind that were not to be thwarted or frustrated. This confusion is evident in the dental literature in articles on child management which present generalized, unproved ideas from other professional fields as factual information. Without exception these articles have been written from a "how to" approach in dealing with child management problems.

Currently there is a trend in the dental literature to accept the responsibility of ferreting out the problems that exist specifically in the dental situation and employing such techniques as are available to study the child’s role in the dental situation. Case histories, collection of data, interviews, and psychological testing, while sometimes limited, may be used in the study of the dental experience. Psychological data gathered outside the dental situation and then generalized to it is not necessarily always
valid or useful to the dentist.

Although modern dental technics are refined and materials better than ever, an important part of dentistry, the interrelation of the dentist, his service, the community and the creation of a general positive attitude toward dentistry still lag behind technical advancement.
REVIEW OF THE LITERATURE
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A review of the early literature was made to see whether it would reveal any information pertinent to the child and his psychological adaptation to the dental experience. It was hoped that this review might answer the questions, whether the child has always been considered a problem to the dentist and when was the psychological significance of dental care revealed for the first time. John Hunter (1) probably contributed more to the organization of modern dentistry than any other man of his time, in the late 18th Century. In regard to dentistry for children he made several rather interesting observations on growth and development, on caries, and formulated some elementary treatment plans; but other than these observations, little was known regarding the care of children's teeth in 1778. The child's psychological response to treatment was not considered.

Some years later, in 1818, it became apparent to Parry (2) that the parent must be educated in order for the child to have proper home care during the development of the permanent dentition. He developed one of the first fundamental tooth eruption charts, and the eruption sequence it contains is almost identical to the accepted development today. He reported such things as congenital absence of teeth, referring to this condition as "natural deficiency." He recommended that "children's teeth be carefully
examine frequently by the dentist. This will help prevent pain, and when children attain the age of reason and reflection they will be more grateful for this attention." However, he did not mention what techniques he used or whether the child accepted the treatment without incidence.

Robertson (3) in 1825 referred to John Hunter as being "the first to have entered upon this (the subject of diseased teeth) investigation, and within the last thirty years that dental surgery has become the exclusive profession of a distinct class of medical men." So, from a contemporary of that time, we may assume that we are in the vicinity of the beginning of modern trends in dentistry. Robertson stated that "the temporary teeth, although not as liable to decay as the permanent set, are nevertheless subject to decay." He referred to preventive measures for caries and made several observations on growth and development of the dentition. He did not mention whether there was a problem in managing children.

In 1837 Sanders (4) acknowledge the need for early dental care and felt the parent performed an invaluable service in having the child's teeth cared for. However, he made no reference to management problems, whether they existed or not. Two years later, Harris (5) in his treatise discussed the care of children's dental problems with many interesting recommendations for treatment, such as never attempting to restore deciduous teeth once absorption had commenced and the use of leeches on the children's inflamed gums. Again no
reference was made to management problems. In 1848 Smith (6) felt that teething was the most common complaint in children and that diseased temporary teeth were both unesthetic and injured the general health; but again there was no mention of management problems.

Continuing to 1873 Meridith (7) was still expounding upon the detrimental effects of teething, claiming as high as 25% of early childhood deaths might be attributed to it. Little mention was made of operative procedures or management. Subsequently in 1875 Raymond (8) acknowledged the need for management procedures. He observed that children were usually timid at the first and that first visit procedures should be simple, such as "rubbing the teeth with a soft stick." Apparently, children were apprehensive of the dental procedures of this time. He recommended trying to form a good first opinion, for he felt that if the child were hurt he would not return. He formulated several general concepts which are referred to today, such as early loss was due to neglect and dental care should begin at 2½ to 3 years of age. He noted at this time that caries were due to the inroads of civilization and that prevention of decay is more important than skillful dental treatment. This seems to be the beginning of the era of the recognition of the psychological aspects of child dental care. In 1885 Biglow (9) again suggested certain rules, such as be frank, limit appointment times, allow the child to examine the equipment, and to use a local
anesthetic if possible. This latter statement indicates an awareness of dental pain and also an air of hesitancy about injections.

In 1888 an unsigned article (10) described the child bravely entering the dental office, proceeding to "overhaul" everything then return gaily to the parent. The Author's solution to these problems was the use of a "well developed club" before treatment. He also recognized that he had become hardened by many "violent" conflicts so that he couldn't give a just opinion. This man expressed an attitude toward children's dentistry common today and probably responsible for limiting the spread of pedodontics.

Three years later Stein (11) suggested gaining the child's confidence when he is brought to the office. He theorized that some psychological problems pertaining to dentistry may arise from undesirable stories told the child by older persons, a theory that has been substantiated over and over again. He suggested the child be treated as a rational being and that a child of five or six has more intellect than credited, and said the dentist should be gentle, honest and reasonable.

In 1894 Haley (12) stated that knowledge of the child's nature - "its tendencies and requirements, and of the influences that operate in modifying them" - is necessary in the practice of children's dentistry. She felt that to deal with children, "we must direct our efforts from a psychological standpoint." "In no other capacity do
we need clearer conception of the nature of the mind, knowledge of
its development, and the related tendencies of its faculties." She
also acknowledged that while we "may not say that the child has been
taught to fear a dental operation we may safely assume that all he
has heard on the subject at home and abroad has tended in that di-
rection." She felt "to overcome this feeling and eliminate fear is
difficult and not always successful, but if accomplished it is the
principal element in success with children." She believed that each
operator must work within his own individual abilities, but that we
must all start from the same basis - "a knowledge of the emotion of
fear, its cause, relation and effects." She explained, "the fear
of physical pain is innate and expresses itself in a manner corres-
ponding to the temperamental tendencies of the individual." She
continued to apply these psychological principles to various tech-
niques in handling the child. She brings out a most important
point, that "the feeling and attitude of the operator toward the
patient is very significant" in the child-dentist relationship.
She states that "the whole train of mental machinery may be set
forth in related motion by the force of positive suggestion," and
concludes, "the one who discusses it (psychological problem) from
a too material basis is criticised in turn by him who advances it
to spiritual infinities."

In 1895 McElroy (13) stated that to the majority the words
"dentistry for children" were synonymous with pain," and the parents
should create a healthy attitude toward dentistry. To accomplish dentistry on children "requires a heart full of love and head full of wisdom." She explained "that pain produces fear, but fear, while it renders sensations more acute, doesn't produce pain." "The child's mind is easily impressed; hence the attitude of the operator toward the child is of utmost importance as upon it depends the success or failure of the operation. A child may be coaxed into submission and a filling inserted perfectly, but if he departs in tears and quivering, the sitting may be called a failure." She includes such admonition to the dentist as be kind, truthful, sincere, firm, gentle, honest, etc.

In 1896 Maxfield (14) felt that parents were not solely to blame for the behavior of the children in the dental chair and dentist should incorporate techniques which are simple to perform and reduce pain in the dental situation. The following year Nichol (15) again stressed the importance of the dentist's attitude when he said that the dentist dreads an extraction as much as the child does. He, too, said the dentist should be honest, truthful, and kind.

Two years later Belcher (16) devoted an entire paper on the merits of excluding the parent from the operating room. He felt this was very desirable in the control of the child. The same year, Long (17) gave his rules for handling timid children i.e., make the procedures like a game. In 1899 Welch (18) suggested "the dentist
become popular with the parents in order to become popular with the children."

At the turn of the century Rowley (19) noted that the tendency had been to avoid operative care on children's teeth and not in his thirty years practice had he found a dentist devoting his time and study in caring for children's teeth. He felt that the failure in children's dentistry was within the profession itself and was due to trying to follow techniques not intended for children, such as rubber dam, modern cavity techniques, etc. He did advocate starting dental care early in life to gain the child's confidence and said, "Dentists should be lovers of babies." In 1903 Taylor (20) implies that despite advancement in the preceding ten years, dentistry for children was still "lagging" behind. The need was for early care and prevention of early loss. The same year Cox (21) felt that in controlling children during dental procedures "all persons handling children should understand them, be able to classify them, and know what kind of men they are to become." He felt that the dentist could not have one rule for handling all children. He emphasized the importance of children as practice builders and felt his bitterest enemies were former dissatisfied child patients who were now adults.

Noyes (22) in 1903 advocated control of the mental condition of the patient and said the operator must not present a feeling of antagonism to the patient but should divert his mind to other things.
The operator must not only do the work but "carry" the mental condition of the patient. Most children resent idle talk from a stranger and dislike to break down in front of a stranger. Never push an operation to the point where the child loses his poise. Stop and then go on.

Ames (23) in 1908 stated that in managing nervous children "our hearts should be full of love," and that strict scientific methods in treating temporary teeth should not be employed. He believed "the great secret" in managing children was in gaining their confidence and then maintaining it at any sacrifice, and that "timidity cannot be thralled out of a child." The parents should be excluded from the operator. He said that cavity preparation should not be done too thoroughly because it might traumatize the child permanently.

In 1910 Seybold (24) felt that the first impression of the child in the dental office was important, for the child had an inborn fear of a doctor and his office. He presented the familiar "how to" suggestions in managing the child and said he did not use his dental engine unless absolutely necessary. He advocated not to deceive the child or use force because "fear would be indelibly imprinted on the child's mind for life."

Strawn (25) was one of the first to make the observation that "in order to get the best results with out little patients, there are two principal factors to be considered, ourselves and the child."
He believed there could never be any set rules or system for managing children; that the parents and the child's environment are largely to blame for the unpleasant picture the child has of dentistry. In 1912 Stiles (26) referred to a test done in Cleveland showing "the mental, moral, and physical improvement to be gained by children through keeping the teeth and gums in a healthy condition." He stated that "the dentist who conducted the test proved without a doubt that many of our delinquent and unreliable children can be cured of their abnormal tendencies by proper care of the mouth." He implored parents and relatives not to speak detrimentally of dentistry in front of the child. Lester (27) felt that he could gain the child's confidence by placing himself on the level with the child. He explained procedures to the child, gave him assurance, and had the other usual suggestions. He advocated excluding the parent from the operatory and never using force. Latham (28) stated "that the God-given gift of tact, in the handling of children, comes to some and is denied to others." He suggested that tact and truthfulness were paramount in controlling children. He observed that neurotic children had neurotic parents and that the parents should be excluded from the operatory. He had many suggestions as to what the attitude of the operator should be in handling the child.

In 1918 Mann (29) reviewed several articles pertaining to the general psychological development of the child in regard to behavior
and perception. Mann felt that since the dentist worked on children during these "crucial" years of development, "he should endeavor to exert a good influence on them at all times. He pointed out that professional people were considered by some to be tense and rigid and he felt that the operator should find a release for his tension so that his attitude would not be reflected to the child patient. Mann believed that each dentist should realize his responsibility in molding the child. He concluded that love of the children was paramount.

McRae (30) observed that children can be better educated than adults, so it's necessary to give them a right impression at an early age. In his opinion, you should never force a child, but create the desire for dentistry, and suggested that if the parent were present, fear would be avoided. In conclusion he said, "No one should work for children who doesn't love child life." Boardman (31) felt that the first point in managing children was to instruct the parent in the importance of deciduous teeth. In his practice he conducted his operations as though they were a game, since "life to the child is a big game." In order to accomplish this without pain he, left decay in cavities, did no extension of the preparation, and used soft restorative material. For he felt it was better to do a poor job over than to hurt the child and destroy his confidence forever.

In 1923 Webster (32) considered all the excuses used for
neglect of children's dental care and believed that these ideas had originated from dentists at one time or another, and stated that dentists avoided children, mainly because they had had no training in psychology. Bridgeman (33) in 1924 expounded on practical child psychology and its relation to dentistry, describing the child's psychological development from birth through his early years. This paper differs from most of the contemporary writers in injecting personal opinion. In 1926 Lyons (34) further extended dentistry into the psychological field by stating that the management of children was usually difficult, because the practitioners did not understand the underlying principles of child psychology. He observed that defense, fear, and mimicry were the three main components of instinct that govern a child's reactions, and he attempted to formulate new techniques which could utilize these symptoms.

McBride (35) in 1930 stated that it wasn't necessary for a dentist to engage in idle play to establish friendship with a child. He systemized his practice to treat the child as a person as well as a patient, and yet at the same time he conducts his office on a businesslike basis. To be successful with children, in his opinion, one must be methodical and reserved. He had suggestions on how to conduct the appointments and was one of the first to include a classification of the various types of children and how to handle each type, although he admitted that it was difficult to have a fixed procedure and, in his opinion, possibly the greatest asset in
a juvenile practice is an operator who is a good disciplinarian.

In 1931 Karmin (36) stated that it requires no intense study into the mechanism of behavior to handle a child in an expedient manner. All that is required is tact, common sense, and patience. She suggested ignoring the child the first appointment and confining the attention to the parent. She felt that the child should be offered a reward after treatment. She also classified different types of unruly children to help clarify the management problems involved. Woodcock (37) classified mental behavior in four categories—the appetites, the emotions, adjustment attitudes, and self-tendencies and self-negation. Such a classification, she felt, would answer the "why" of conduct, at least, philosophically. She also believed the "how" of conduct should be considered. She observed that no child is always gentle and docile. "To understand maladjusted behavior and involve an operative psychotherapy is a goal to be set on the horizon of the healing profession."

She pointed out that the behavior problems confronting the pedodontist usually manifest themselves as habits, such as thumb-sucking, nail biting, sexual misconduct, feeding problems, enuresis, etc. Thumb-sucking, fear, temper-tantrums "are responses to such stimuli as instrumentation, physical irritants and bleeding," which may be related to the dental situation. She explained the factors influencing development of fear and temper were: (1). social media of the child, (2). parent-child interaction, (3). environment of
operating room, (h), operator himself. She explained the technique of changing behavior patterns, which follow the laws of learning. This consisted of blocking the undesirable conduct and rewarding desirable conduct.

In Morris' (38) opinion, regardless of how much had been written about child psychology no dentist could hope to gain full control of the situation.

In 1932 Hagen (39) believed that no one could cope with children unless he knew something about the underlying causes of their emotional responses. He derived his ideas of behaviorism from the writings of John B. Watson. He explained that at this time there were two psychological schools of thought. One believed there were many original emotions in man and each could be aroused by definite stimuli, while the behaviorists believed that there were three primary emotions—fear, love, and rage, and these may be conditioned to certain responses during childhood.

Wilson (40) in 1933 again explained the attitudes of the dentist should be truthfulness, sincerity, etc. He classifies children into behavior groups and recommends management procedures for each. The same year Sands (41) claimed that pedodontia is "a study in child psychology in its truest sense and is an ideal field to put the theories of psychology to practical application and to further one's study of these principles." He believed that under-
standing the human element is as important as technical procedures. He also describes the attitude the dentist should assume and classifies children into management groups. He includes the usual list of suggestions, such as be friendly, explain, provide a playroom, create a good first impression, etc.

Borowiak (12) in 1939 used a different approach from some of his contemporaries, in that he often gave the child one or two appointments before any work was started, and tried to follow a good patient with a new one, so that the child could see what a good patient the last child was. He would tell the child that he must not cry, make a scene, etc., and would let him join his "Mickey Mouse honor roll." He would approach a child with a prophylaxis brush in the handpiece, then switch to a bur without the child seeing it. If the child were particularly unruly he was allowed to watch a good patient being worked on, perhaps for several appointments. If he felt the "towel treatment" was necessary, he asked the parent to hold it, so that he wouldn't seem brutal.

In 1941 Bull (13) made an entirely new suggestion that some children who come to the dental office are beyond management and should be referred to a mental hygienist for diagnosis and treatment. The dentist was considered in a position to do this because he is frequently the first to see these problems. Those children to be referred to the mental hygienist were (1), those with nervous
fainting spells, severe headaches, etc., (2) those who were excessively restless, uncooperative, hostile, etc., (3) those who were chronically irritable, (4) any child with a speech impediment, (5) any child with the characteristics of a moron. In order to follow Bull's recommendations for mental diagnosis, the dentist would need considerable training in clinical psychology.

In 1945 Ritsert (44) took a more realistic view of the problem when he stated that the dentist was not to take the place of the psychiatrist, but should have sufficient knowledge to carry out his responsibilities. He classifies children, gives his techniques in handling them and uses case histories to illustrate his points. In addition to this, he suggested that we should analyze ourselves as practitioners, "for we must understand ourselves before we can understand others." The same year Zuckerman, (45) along the same line, said that understanding and appreciating children's fears and reactions were fundamental. He contended that the handling of all children was essentially the same, even though there is individuality in each child. He classified the groups of problem children as had been done in the past, and for those that were difficult recommended voice and physical control; but then he concludes by saying that success lies in the careful psychological management of the child.

In 1949 Gray (46) reiterates many of the same ideas concerning
child-dental relationships, such as classifying children into groups, attitudes of dentist toward child, etc. He did point out that the dentist's best weapon in control is his voice. However, he advocated "scolding of a brutal nature and threats of intentional hurt" to control the hysterical child, which is carrying this method of control to the extreme. The same year Dunn (47) questioned whether child management in dentistry was really a problem; a point to consider. Although he claimed that he would not write a "how to" paper, he expounded at great lengths on how to conduct oneself in the office.

Street and Street (48) in 1950 elaborated further on voice control, when they suggested that the dentist precipitated difficulties with children in the office by his actions. Psychology, in the form of "good" conversation, according to them would allow the dentist to bring the child completely under control. Although they felt that this was a simple process, they recommended the use of sedation until the patient has a chance to establish confidence, a recommendation which conflicts with their previous statement concerning "good" conversation.

At the same period Klien (49) was advocating obtaining a "transfer of confidence from the parent to the dentist. In order to develop confidence and trust, he allowed the child to raise his arm to start and stop the dental operation and exclaimed that the dental chair is an unknown and consequently the child has fear of it.

January (50) in 1951 thought the psychological principles of
human motivation and control would solve management problems and suggested that the operator could obtain patient cooperation by being "a human being." He felt there was a real need in adolescence for affection, adequacy and recognition. Fritschman (51) in 1952 also allowed the child to control the operative procedure. She believed the parent should accompany the child. Concurring with other writers of the past, she felt there are no hard, fast rules, but that some problem children would respond to firm handling. The same year Gardner (52) expressed more theoretical views about the child patient when he stated that "fear is the extreme form of disintegration." He further hypothesized that there is greater fear response in older children and practically no fear at two, a little at three, and definite response at four. He also theorizes that whether a child becomes fearful in the dental situation or not depends on how he is treated. This story excludes environmental influences. An important point he suggests is that fighting, kicking, and biting are not fear, but anger. Also anger response is an attack to remove the situation; fear response is retreat from the situation. He gives several basic motives of the child's office conduct and suggests remedies for eliminating the child's fear and apprehension.

Lamons and Morgan (53) suggest that the dentist become familiar with the abilities of the child as he develops at the various ages,
and that the dentist should adjust his personality to the child's needs. They did not speak of the child adjusting his personality to the dental situation. They recommended adequate histories on new patients, and when behavior problems do arise between dentist and child they may be handled without bringing the parent into the matter.

May (54) believed mostly in the use of good common sense in dealing with children, a theory supported currently by some psychologists. He believed that general confusion exists because so many formulae have been devised on child development and that there is no one method for handling children.

At various times in recent years it has been suggested by various authors that unruly children could be handled by a therapeutic approach. One author, Reid, (55) suggested in 1945 using short-acting barbiturates; but it should be observed that technically this does not approach the problem of teaching the child to accept the dental situation, a situation he should meet biannually the rest of his life.

In 1935 Fisher (56) theorized that fear is a primitive action involving the hypothalamic and autonomic system rather than one of the cortical lobe. He feels this is why reasoning usually fails in eliminating fear. He makes the important observation that cortical control over emotion is possible. He considered three factors about fear; (1) the unexpected doesn't allow for preparation, (2) the un-
familiar might create apprehension, (3) and in the same vein as un-
familiar, isolation from parent, creates anxiety. It seems, how-
ever, in error to generalize about fear of isolation at all age levels.
The same year Young and Schmitt (57) made the statement that the over-
protected child has too much security (a point to question) and they
state that irrational fears may be conditioned, i.e., may be over-
come by training. According to Andrews (58) in 1956, there is a
need to continue the psychological study of managing children in
the dental office; for a survey of the present literature is in-
adequate concerning the child in the dental situation. He shows
concern when he says that it is difficult to find actual case re-
ports concerning management. However, isolated case reports would
add little to understanding of the problem. He also made the state-
ment that "too many children who are afraid of the dentist are treat-
ed as if they were incorrigible, although this may be far from the
truth and can lead to deep seated emotional disturbances in the
child handled improperly." He produces no evidence, however to
support this theory. As a result of his study Andrews observed that
(1) waiting for a child to outgrow an undesirable emotional response
before continuing dental care would give disappointing results,
(2) the method of frequent application of a positive stimulus may
work with some children to eliminate negative responses temporarily,
(3) the result of scorn and ridicule he believed to be "the pro-
duction of an uncooperative and antisocial individual, (4) social imitation, that is, allowing the child to imitate an older child having dental work done is "safer than scorn but not foolproof."

Sweet (59) was one of the first men to use a simple experiment to elaborate on the psychological implications of dental office procedure. Although he may not realize their importance, the positive findings in regard to the power of suggestion deserve consideration. He also brings out three interesting points: (1) the child "can be both angel or wildcat depending on the dentist; (2) the operator must master himself before he can master others; (3) positive thinking and actions are a must.

Davies (60) in 1957 felt that the dentist tries to make the child's behavior fit in with his conventions; however understanding behavior permits the dentist to recognize the child's limitations, and he must be prepared to suit his manner to the physical and emotional maturity of each child. There are times when the dentist must compromise treatment. The authors believed that genuine affection for children will help to suit oneself to the child. The dentist should never show anger, regardless of how provoked. They made a good point when they stated that within limits the child must conform to society. If a tantrum is rewarded at home, it may become a habit. The dentist must distinguish between acute fear and tantrum. If the reaction is fear, he should be sympathetic, but if it is a tantrum "show the child you are the master."
The same year it was the opinion of Woolman (61) that child management is an unfortunate term, for it implies "manhandling the obstreperous when we are also concerned with handling good children." He believes that the principles of child psychology are so extensive that most dentists in general practice cannot devote time to this study. It is regrettable that there is so little in the field of psychology that can help the dentist practically. He pointed out that the psychiatrist holds the mouth in very high regard. From the mouth are produced "the very earliest signs of perception, the earliest signs of anger and self defense, the earliest signs of speech. He first perceives his relation to love through the mouth." He recommends an attitude of "adequate firmness" for the "child recognizes a masterful person." Emotional interplay of personalities is important in controlling the child. He recognizes that the child's fears may be the same as the parents', and in order to control the child the parents may have to be treated first. In spite of recognizing the need for adjusting the child to the dental situation, he recommends sedation for the child with fears we cannot analyze. He believed that "if we do not love children we should not accept them as patients," but he points out that love can be expressed in many ways and firmness is one of them. Most problems could have been solved if the parents had used adequate firmness, and many children will resort
to unruliness for the pleasure of punishment. When he made the statement that "it has been scientifically proved that children up to eleven, twelve and thirteen have certain perceptions in relation to adults which is usually lost after that age "he steps beyond the bound of scientific reasoning, for it is questionable if there are any 'proved' facts in the field of psychology."
SOME FACTORS INVOLVED IN THE PSYCHOLOGY OF THE CHILD
Some Factors Involved in the Psychology of the Child

In order to establish an understanding of some of the principles of child psychology, there are some ideas with which we should deal. Even today the scientific knowledge of the child is incomplete. The field is complex; there is no accepted prescription for how to rear a child, and certainly no prescription for how to manage him in the dental office. It is necessary before attempting to do research on the psychological effects to review this field of psychology of dental work on the child.

Until 1850, a philosophical attitude governed the study of child psychology. It was fascinating, but not a scientific enterprise. Certain groups felt that the child was inherently good; others believed the child was bad and must have correct attitudes forced upon him. Today there is still some philosophy that governs the psychological trends which not infrequently colors or distorts interpretation of the results of empirical efforts in the field. (62)

In the middle of the 19th century the "baby biographies" appeared. These represented the beginning of an empirical science, yet they were not accurate because they were based on single cases and were usually offered by relatives with biased opinions. After the biographies came G. Stanley Hall, who, with his questionnaire method, was the first to collect systematically general information on the child. By the end of the 19th century people were interested in
children's charts, graphs, and norms. These are still being used today but are of limited value.

Overlapping this period came Freud, the father of clinical psychology, who attempted to find out why people feel and act as they do. This may have been the era during which confusion in the dental management of children evolved; for until this time the dentist did not pay particular attention to classifying and analyzing children's reactions in the dental office.

As the first man to attempt, in at least a partially scientific way, to discover principles of personality development, Freud attracted a large following. Due to the crudity of his research techniques, however, his data were accepted more through authority than through controlled verification. That many of his ideas were incapable of either proof or disproof has contributed to their persistence even to the present time. The very great majority of research effort in the recent years, however, has failed to support his specific ideas concerning the influence of early events on personality development. (63)

Following is a review of principles of psychological development which are accepted by most psychologists, regardless of theoretical position, and which are supported by well-controlled research findings. (64)

Birth is the psychological beginning of life. Before birth the
child is physically far removed from psychological influences of the external environment. The neonate has all its sense receptors acting or intact, although taste may not be in full function. The neonate's behavior consists of sleeping most of the time, and some of the time he appears to be half asleep. The neonate responds in a mass way; everything moves at once. This is referred to as "mass-action."

As the child grows older he moves to more and more individual responses. He develops the ability to integrate these actions. We can only speculate about what the neonate experiences. This experience has been defined as a booming; buzzing confusion, just a mass of a new stimulation. It is often speculated that in the neonate, probably, the key to perception is that it is a learned process. Stratton's visual experiments (65) fairly well uphold this theory. There are so many elements that enter into perception that it is hard to distinguish among them. Perception is the response to all the stimuli acting on the sense receptors of the body. The neonate probably can't be affected by the various stimuli because he can't distinguish the difference. He probably has no conception of time or continuity of events. Even in two- or three-year-old the time element is very vague. He is a creature of the moment. The neonate and young infant do not localize the sensation of objects, but merely receive the impulses. It is quite possible that the infant does not
clearly discriminate between what is himself and what is around him.

At first the mother-eat response is probably the most important in the neonate's life. Within a few weeks, or up to two months, the infant gradually learns some things that are himself and some that are not. Gradually he begins to discriminate among external objects, particularly people. He begins to lump things together. He will at first treat all people and objects alike. Finally he begins to separate them.

Since it is known that the fetus and neonate can be conditioned, contemporary authorities feel that what happens very early in life can, under some conditions, be important to later learning. A person's reactions are largely the result of his experience with people. An interesting study along this vein was done by Clarke with dogs. (67) He found that when deprived of certain experiences, his animals reacted in very peculiar and unusual ways. This study supported the idea that it isn't necessarily negative experience that causes people to withdraw, but the absence of experience. This hypothesis has a very good counterpart in the dental situation, since it seems better if a child can be introduced to dentistry early and care continued regularly throughout the years, for those children seem to have a more positive response to dental care than do those with no previous experience at all.

Bowlby's study (68) with orphanage-reared children further supports this hypothesis. He found that children learned to get
along in a specific environment, depending on the experiences they had been subject to. The children in his experiment had been reared devoid of love and affection and subsequently did not seem to respond to those cues. However, they did not seem to miss them since they had not had these experiences. This might lead to the supposition that the child reared without the cues of the experience in the dental office may not know how to arise to the dental situation when finally exposed to it.

Until six months of age the child’s needs are mostly physical, but from six months to two years they become more selective. It makes a difference who holds him. He has learned a need for contact with his mother. By two and after he learns that other people can fulfill the needs that up until now only his mother could take care of satisfactorily. Dentists who have had the experience of working on two-year-olds will know that communication with them is very difficult. As the child approaches the age of three the dentist can apparently take a place in the child’s life and experience a certain amount of emotional contact with him.

No discussion of psychology would be complete without including some of Freud’s ideas, (69) which were based on self-analysis and patients that he interviewed. It is not generally known that his ideas were not representative, based on a sample that was small and selective, mostly middle-class male Viennese. Though his studies lacked evidence, Freud did break the sound barrier for child psychol-
Being a medical man, Freud tried to compartmentalize the mind. He hypothesized that the mind was composed of the conscious, the pre-conscious (the part of the mind that is not immediately conscious but that we can become aware of), and the unconscious (the part of the mind we cannot become aware of, that is repressed).

Freud referred to the individual at birth as id, nothing but instinct, totally un-social and totally unconscious. As the individual grows he develops an ego. As he is confronted with his environment he is able through learning to be conscious of selecting differences. The super-ego is the next to appear. It is, in effect a conscience that has learned from others what is right and wrong and what he should or shouldn't do.

Freud explained anxiety as some unconscious threat to the person's being, and described "defense mechanisms" as means by which the ego avoids the unconscious that tries to come out. He theorized that one may project, sublimate, rationalize, repress, substitute or develop a reaction formation as part of this defense. He referred to transference as that element in the individual that transfers his feelings and fears to the therapist. It has been intimated that this occurs in the dental office, and that the dentist may be able to get the child to transfer his feeling to him, thereby gaining some emotional rapport.
Freud felt the human being is an organism of sex and that sex makes him move and operate as he does. He further expounded on the psycho-sexual stages of growth, stating that the child always proceeds through the oral, anal, and genital periods in this order. He felt that what happens in these stages fixes the child’s psyche and absolutely determines his later personality. Freud’s idea of sex was not specific sex itself, but any kind of physical contact that produced erogenous feeling and bodily activity that is satisfying. He believed that in the oral stage the infant is "all mouth"—that he is more mature around the mouth and his sensitivity in this area is high. Freud felt it was necessary to stimulate the mouth, though this is not needed for existence. He deduced that the unsatisfied child becomes orally fixated either from a lack of or overactive oral stimulation. If he were unhappy in either the anal or genital stages, the child might return to the oral stage if this were more satisfying. Theoretically, examples of oral fixation in the adult may be exhibited by smoking, gum chewing and excessive talking, or by personality characteristics such as passivity and dependency.

Freud held that breast feeding is necessary and demand feeding is important to avoid oral frustration. The child must be fed when he demands it. Weaning was considered a major factor, since the child is given less opportunity to satisfy his desires. It should
be done gradually and gently. Thumbsucking was thought to be the bridge across the gap of dissatisfaction. The child was discharging a need to suck, whereas pacifiers were thought to lead to overgratification and made the child overly dependent on oral satisfaction.

The next stage, according to Freud, is the anal stage. The child is ready to be toilet-trained. This phase is theoretically characterized by the anal-expulsive and the anal-retentive periods; one who retains an anal personality will have either a very messy form of life, if anal-expulsive, or be very neat if his anal personality is formed during the anal-retentive period.

The last phase is the genital stage, and the child was not considered mature until he passed through this. (About the age of five, according to Freud). It is a period that involves sex play and Oedipus complex, in which the child considers himself in competition with the same-sexed parent for the affections of the opposite parent. The child feels hostility and anxiety toward the parent of the same sex. During this period the male child may develop castration anxiety. Finally the Oedipus complex is resolved not by competition, but by withdrawal of the child and identification with the like-sexed parent and a desire to be like him.

There is no evidence to support Freud's thinking and theories concerning these stages of child development, but it is important that people who deal with children know what has influenced some contemporary trends in the management of children. Though many
modern psychologists are skeptical of Freudian theories, they do believe that feeding, toilet training, and sex training are an important part of development. We do know that children are variable about their eating habits. When they are hungry they want to eat immediately. There is no evidence that frustration at eating time produces long-term trouble. Tests show that children, left alone, apparently eat the food that is being demanded by their bodies at the time. If a child is forced to eat a certain food, he may dislike it forever. A child may eat a lot or a little, but he seldom seems to undereat. Parents are probably more anxious over eating habits than is necessary.

A new study on a weaning (70) has produced evidence that, contrary to Freud, the earlier the weaning (under six months) the less the stress. After the age of one there is more difficulty in weaning, and the longer the weaning period the more difficult it might be. Also contrary to Freud's views on sucking and oral gratification, these habits seem to be learned rather than inborn, e.g., the child learns that it is satisfying to suck his thumb or to use a pacifier. Dentists are interested in thumb sucking because of the distortion of the mouth. Because thumbsucking is frowned upon in this culture, people may make fun of the child with poor psychological results, or the parents may feel uncomfortable and relate their anxiety to the child.
In summary, the act of feeding is tremendously important, but it is hard to trace problems directly to feeding. Feeding is perhaps the first way a child learns the way of the world. It is his first most important early major experience.

In regard to toilet training there is little information as to specific techniques. An important factor in toilet training is that until the child has neuro-muscular control, there is very little likelihood that he can be toilet trained. It is felt by some that the child will train himself when he has his control. The American culture is very punitive toward toilet training, but there is little evidence to support Freud's views of anal fixation during this period. Toilet training is important for other reasons. It is during this time that the child is learning attitudes about himself. It is among the first series of incidents in which people react to him in one way or another. It is during this time that he may first experience guilty feelings. Toilet training is the epitome of socialization in our culture. It probably confuses a child, because toilet function is basically pleasurable and the child probably wonders why parents should pick on this. The parental attitude may create a feeling in a child that "part of me is bad" and cause a shyness toward certain parts of his body. There are some symptoms evolving from aversion of the child to toilet training techniques, probably caused by tension. They are constipation, encopesis and enuresis resulting from punishment the parents have inflicted during
this period. Sex training is similar to toilet training in most aspects.

Early in the child's life there seems to be a need for independence. Keeping him from his own spontaneous action seems to interfere with this feeling for independence. There apparently is a need for autonomy. When he begins to walk, it seems to interfere with this feeling for independence. There apparently is a need for autonomy. When he begins to walk, it seems that the parent's chief job is to inhibit him. It is at this time that the parent's thwarting reaches a peak and the child's exploratory independence reaches its ultimate, and the two meet head on. The child wants to move and explore by himself. To be thwarted is very frustrating to him at this time. He dislikes authority, for it keeps him from doing what he wants to do and may represent punishment to him. To overcome this authority, some children try tantrums, fussing, and holding their breath. They try to find a weapon to fight the parent. These phenomena have been characterized as the "power struggle" the period is often referred to as the "terrible two's."

Between two and four the child seems to expect this struggle of what he can and can't do. He develops such defense mechanisms as temper tantrums and learns "no" and uses it. He sometimes appears just plain feisty for no specific reason. Out of this power struggle can come some important influences on his personality. He may develop passive resistance. For instance the parent may carry the
child to the table, but he can't make him eat. Or he may put him to bed, but he can't be forced to sleep or kept from wetting the bed. The child may force vomiting or hold his breath. Punishment may be involved in this struggle. Parental values influence their attitudes toward the child, and they may be very punitive or very permissive, either extreme being considered undesirable. Rewarding the good is usually the most effective technique to assure long-term learning of standards of conduct, but there are many times when the child has to be simply restrained from certain behavior.

Words have little effect on very young children. They may not understand the words, or they may have a "sticks and stones" philosophy. When a child enters a new situation there seems often to be a strong impulse to find out what he may or may not do. This is referred to as "testing limits." Over a period of time he will inevitably test what he can do—another example of "power struggle." It is curious that if reasonable limits are not set, the child misbehaves, and the further he goes beyond limits, the more uncomfortable and insecure he becomes. After limits are set for the child he seems to retire and become more relaxed.

Overpermissiveness on the part of parents tends to lead the child to more and more unsocialized limits-testing; consequently the parent then becomes less and less certain what to do with the child. It takes a high degree of effort for a parent to stick with the child, and often when the permissive parent does punish the
child the parent then feels guilty. In this situation the child does not seem to be very happy. When a child is doing something wrong, he should be stopped regardless of how much effort it takes. Discipline is often felt to have the implicit meaning, hostility. In other words, it is felt that if you discipline you must be upset. This is not necessarily showing irritation or frustration, that is, through voice control. Expression of hostility in this society is frowned upon, particularly hitting or spanking the child. However, it may be necessary and wise to express anger when you feel it. Again this opinion is a matter of values, but in the long run it may be better for the correcting one to get off his chest that which is bothering him.

The process of socialization doesn’t just unfold; it comes from those around him. There are two factors involved. One is identification, both unconscious and conscious, which is not connected directly with reward and punishment but is the result of observing the example of people around him. Some of the phenomena of Gesell’s (71) feral children and Bowlby’s (68) studies fit here. The second factor in socialization is conscious teaching. There is much that children are taught that is indirect and that they are unaware of. The process of reward and punishment enters here.

Reward may be expressed as positive reinforcement of the child’s action or behavior, whereas punishment involves negative reinforcement of behavior. Extinction of a given behavior comes when an act
is repeated over and over without reinforcement. This may work with temper tantrums. The sooner it follows the activity, the more effective the reinforcement will be.

Parental behavior is an important factor in the socialization of the child. Parents may be overcoercive (directing, pushing, prodding the child) overpermissive (allowing the child to do as he wishes), overprotecting, overindulgent, and oversolicitous. The extreme is referred to because it is more easily observed, but all these characteristics are present in all parents in varying degrees. If the child is reared under any of these extremes, this will be reflected in the child's attitude toward his siblings, and peers, and his social adjustments.

The identification process is difficult to explain. Historically it originated with Freud. This process may involve the feeling of being emotionally identical with someone else, or result from the imitation process in which the child attempts to copy others. The child mirrors the emotional state of the home and the surrounding environment. In his early life things that affect the parents will affect the child.

Later the child will identify himself with his school, clubs, and peers. As he increases his sources of identification, he increases his knowledge of what he is himself. The emotional aspect of identification accounts for a large proportion of the determining factors of personality. These factors are not "taught"; the child
just picks them up. It might be said that the child is learning by example. He usually ends up with the same generalized attitudes as the parent. The basic attitudes evolve from the social environment around him. He forms ideas about the world, and when something comes along that is different, it may seem to him to be something strange or unreal. The personality of the child is probably established fairly early in life, if not so early and totally as Freud believed.

Personality develops through contact with people. It is affected by the kind of contact, and reflects the pattern of the culture in which the child lives. The evolution of social behavior has no clear-cut stages. New stages emerge and the earlier ones are retained for a while. The neonate and young infant have no social experience, only the direct satisfaction of needs. From this stage the child branches out into the phase in which he recognizes some objects, reacts somewhat consistently to being held and to some elements in the surrounding environment. After this stage he begins to sort out his experiences and discriminates between himself and other things. Next he begins to be aware of his own behavior and he reacts to people differentially. Until now it has made little difference who people were. During the second year of life social behavior begins. The child starts to react to peers in a curious and exploratory manner. Later the child enters into parallel play. (By the age of four or five the child begins to play cooperatively.) At three and four the child is concerned with what he is and where
he fits in, and has an urge to grow up. At five or six the child begins to be concerned about where he stands in the group and how the group feels about him. This feeling continues through adolescence and into adulthood.

These are some of the factors that enter into the psychological development of the child. This discussion has been limited to the pre-school period, for it is generally accepted that it is during this time that the child should be introduced to dentistry. Some of the material is elementary and speculative but is intended to give the dentist a background in dealing with children, parents, psychologists, and pediatricians.

*Outline of text from lecture notes on child psychology. Presented in the summer of 1958 at Purdue University. By M. W. Stephens Ph.D.*
PSYCHOLOGICAL PRINCIPLES, DIRECTLY PERTINENT TO THE RESEARCH
One of Freud's chief concepts was that of Psychological trauma. In the theorizing of Freud, and of his followers since him, Psychological trauma is a direct parallel of physical trauma: it results from injury (frustration or punishment) or low-level noxious states, (e.g., subtle rejection); endures in the manner of a "scar" weakness, "tender spot", or area in which pain in the future is readily elicited; and leads therefore to pathological development (largely through compensation for and defense against such pain) of the organism. It was the influence of early traumas, notably those in the oral, anal, and Oedipal stages of development, which fully accounted for the major structure of personality according to Freud.

Virtually all psychologists have accepted parts of this conception. Other parts of it, however, have seemed not to hold up under the scrutiny of controlled research. As with virtually all his ideas, Freud based this concept strictly on the model of physical, and/or medical phenomena; and as with his other conceptions, it has gradually become apparent that his analogy in many places was stretched too far. As noted above, Freud's specific ideas concerning what constituted trauma in oral, anal, and Oedipal stages have failed to be confirmed; and his sweeping conclusions about the ever-ending and all-pervasive effect of trauma at this time have similarly failed to be verified.
One specific aspect of Freud's theory of trauma must be discussed before pursuing the present research. In Freud's conception, there is no clear means of detecting or measuring the presence or degree of trauma consequent to an event. It could be assumed that the individual experiencing the trauma would certainly know it; but, in Freud's conception, he might "repress" his awareness of the trauma, so that even subjective reports are to be questioned. It might be expressed by avoidance of the presumably traumatic event; but even this is not an infallible criterion in Freud's theory, since its expression can be quite subtle, devious, and delayed. By the Freudian conception of trauma, the result may fail to be apparent except in personality structure at adulthood and may then be detectable only by a skilled (and Freudian-trained) psycholanalyst.

Because of the nature of this concept, then, one is in a position in which he cannot feel certain that trauma has not occurred. Even if the patient reports no pain and seems not to be afraid, "trauma" may still exist. Its existence has been assumed to be "real" and unchallengable through the authority of Freud and the faith of his followers in his unassailable correctness. As noted above volumes of research have failed to confirm this conception; and yet his followers have clung to it without question. It is perhaps for this reason that dentists have been highly concerned about the "psychological trauma" inflicted by their work, even
when there is no direct indication of the trauma itself. Freudians have maintained that any pain has deep and damaging psychological effects—particularly pain to the teeth, with their sexually symbolic significance. Without training in psychology, dentists have accepted this theory even when their own observations contradict it.

Because of the nature of the concept, it can never be proved that trauma does not occur; accordingly, through absolute truth in Freud, one maintain his beliefs ad infinitum. Aside from Freudians, however, contemporary psychologists feel that unless a phenomenon can be demonstrated to exist, and/or unless it can account for things which cannot otherwise be explained, there is no basis for accepting it. The fact that few psychologists, other than Freudians have turned their attention to dentistry may explain why the Freudian concept of trauma in the dental experience has not been challenged.

To test adequately Freud's hypothesis, nothing short of a full-scale adult psychoanalysis of dental patients would suffice to determine whether, or how much, the dental experience was traumatic. Even then, the previous belief of the analyst in this hypothesis would color the results. In any case, such research is obviously not feasible. Other techniques, largely satisfactory to Freudians and much more acceptable to other psychologists, could be substituted: various projective tests, and dreams after dental
work; incidence of stress symptoms, such as nightmares, bedwetting, thumbsucking, nailbiting, temper tantrums, and irrational fears; reactions to other dentist-like people on next contact, such as doctors and barbers; and fear of the dentist himself on succeeding visits. Many of these techniques are not feasible for the present research. The criteria of trauma, which will be used in this study are: 1) the child's behavior in successive visits; 2) anxiety symptoms, as reported by mothers, during and after the period of dental work; and 3) more specifically, increase or decrease of oral anxiety symptoms, again as reported by mothers.
STATEMENT OF THE PROBLEM
Statement of the Problem

Despite the abundance of theoretical writing on the subject of the child's reaction in the dental situation a review of the literature reveals a lack of specific studies regarding the effect of dental procedures on the child. Many of these hypothetical discussions are concerned with the speculation that the dental situation may inflict psychic trauma on the child. The purpose of this study is to formulate and test a hypothesis that the dental experience is not, or need not be one causing or leading to the production of fear, and that it certainly need not be a traumatic experience of a psychopathic nature.

Incidental to collecting the data for this specific problem an effort will be made to determine if there is a relationship between age and sex and management problems. The incidence of oral habits and recordable psychological problems will be recorded in an attempt to attain a measure of the effect of the dental experience. Some authors have implied that oral habits are more frequently found in children with problems. Other writers also believe that there may be an exacerbation of psychological problems following a disturbing experience.

In this study parental comments concerning the child's oral habits and other problems before and after the dental experience will be recorded in an effort to measure the positive or negative
effect of this experience. It is the sincere desire of the author
to bring the student of dentistry closer to the problems confronting
the pedodontist.

It is not the object of this survey to determine how a child
should react, how a child should be, or how he should be managed in
the dental situation. The data to be presented will arise from the
observations of the behavior of a specific group of children in a
specific situation, managed by one operator.

The observations will be made with full realization that there
must be caution in generalizing the findings of the study to other
practices.
METHOD

A group of eighty-eight children ranging in age from three to twelve years was included in this study. Thirty-eight of the children were males and 50 were females. They came from middle class culture and were represented by White, Negro and Oriental races. These children were divided into two groups. One consisted of twenty-eight children who had been referred to a pedodontist as behavior problems, acknowledged as such by the parent, and classified ultimately as such by their overt behavior in the pedodontic office. Eight of the children in this group were males and 20 were females. In the other group were sixty who were new, routine patients accepted for treatment during the course of the study. These sixty children had not, to the knowledge of the observer, previously presented a management problem or rejected the treatment attempted by another dentist. The sex of the children in this group was equally divided.

The twenty-eight children will be referred to hereafter as the "referred" group and the remaining sixty as the "routine" group. This is not a direct correlative study of similar groups under different circumstances, but a companion study attempting to compare two groups under similar circumstances.

It was decided that each child should be unaccompanied by the parent into the operatory even though this parent-child separation
is an issue with some psychologists and dentists. During the first appointment the child was subjected to minimal dental procedures including visual examination, dental radiographs, and in some cases emergency relief of pain. The children were introduced to the dental situation gradually in accordance with the idea that anything new and strange is disturbing.

Each child was subjected to an atmosphere of consistent discipline, that is, the emotional atmosphere of the office was as uniform as possible. Reasonable limits were set for the child by means of voice and physical control. In other words, the child was prohibited from exhibiting emotional extremes and running emotionally rampant.

The observations of the referring dentist, the parents, and the experimenter were recorded at the initial appointment and the following data were listed for each child in the study:

A. Age

B. Oral habits
   1. Thumbsucking
   2. Fingersucking
   3. Nail biting

C. Other psychological problems
   1. Enuresis
   2. Temper tantrums
3. Speech problems
4. "Nervous"
   a. Receiving sedatives
   b. Tranquilizers

D. The degree of control necessary for the child to accept treatment.
   1. Voice
      a. Used a command
   2. Physical contact
      a. Restraining child
      b. Suppressing noise
      c. Force
   3. No control necessary

E. The attitude of the child
   1. Positive (accepting care)
   2. Negative (rejecting care)

F. Parental comment
   1. Child's attitude toward dentistry
   2. Conduct at home, school, etc.
   3. General medical and psychological history

A series of appointments were made without regard to a special hour, the length of time, or the amount of work to be performed. The following observation were recorded for each child at the end of
the series of appointments.

A. Degree of change of oral habits
   1. Habit improved
   2. No exacerbation
   3. Habit more profound

B. Degree of adjustment to dental situation
   1. Negative
   2. Positive
   3. No change

C. Parental observations
   1. Adjustment to dental situation
   2. Change in
      a. Habits
      b. Other psychological problems
   3. Social maturation

A comparison was made of the data of each child in the study before and after the series of appointments to determine whether there was an increase or decrease in the child's acceptance of the dental situation.
PRESENTATION OF DATA
PRESENTATION OF DATA

The observation group in this study was composed of twenty-eight children in the referred group and sixty in the routine group. The mean age for all patients in the referred group was 6.07 years. In the routine group the mean age was 4.9 years. In the referred group only 12% were three year olds, while in the routine groups, of the nineteen patients considered management problems, 42% were three year olds.

A low incidence of negative attitude was observed among the four year children in this study. Fifteen percent of the referred children demonstrated this attitude as did 5.3% of those routinely appointed.

There was an increase in management problems at the age of five years in the routine group and ages five and six in the referred cases. (Table 1) Twenty-seven percent of the management problems were five year olds and 27% were six year olds. In the routine group, however, the percentage of behavior problems in the six year old children dropped to 10.5%. After the age of six management problems in both groups suddenly decreased. In the referred group 81% of the management problems were in the three to six year age range and 91% in the routine group were within this age.

In the referred group it was determined that in the beginn-
ing 93% of the children were not receptive to dental care. Of the routine cases 32% were difficult to manage at the onset of care. After a series of appointments in which dental care was rendered, each group revealed that 93% of the children had a positive attitude change in their overt behavior toward the dental situation. (Table 2)

During the course of treatment the parental comments pertaining to the child’s habits, social development, and attitude at home toward dentistry were recorded. In the referred group 93% of the parents commented positively in regard to the child’s acceptance of dental care. In the routine group parental comment was 95% positive. (Table 2)

The incidence of the use of disciplinary procedures was tabulated, and it was found that these measures to gain the attention and cooperation of the child, were employed in the referred group in 93% of the cases and in the routine group in 77% of the cases. This was further divided into voice and physical control to express the degree of punitiveness. The author considered the more physical contact used the more punitive the action. In the referred cases 5 children (12%) received voice only while 21 (31%) had both voice and physical control. Two of the children (7%) responded to the usual instructions. In the routine group of those receiving management procedures 28 (47%) had voice control only, 18 children
(30%) also had physical contact, and 14 (23%) of this group responded to the usual commands. The number of children requiring control procedures is represented by the shaded columns in Table 3.

In addition to office atmosphere and adjustment of the child to the dental situation, the oral habits and psychological problems were listed. It was found that 9 (32%) of the children in the referred group practiced oral habits while this was true in 26 (43%) of the routinely appointed children. Psychological problems were noted in 17 (63%) of the referred group but in only 20 (33%) of the routine cases. Eight (29%) of the referred cases and 9 (15%) of the routine had both oral and psychological problems. (Table 4) At the end of the series of treatments 89% of the referred group remained the same or improved in their habits or other problems and ninety-two percent of the routine group showed some improvement or at least no exacerbation of habits. (Table 2)

One hundred per cent of those in the referred group with oral habits and psychological problems responded negatively to the dental situation at the onset of treatment. Of those with oral habits 89% demonstrated positive adjustment and 94% with other problems adjusted satisfactorily. In the routine group those with oral habits were found to be 27% negative at the onset and those with other problems were 47% negative. There was a 96% positive
adjustment of those with oral habits and 25% change in those with other problems.

It should be pointed out that in the referred group 39% of those with oral habits also had some other problems while in the routine cases 53% had both oral and other psychological problems.

Of those referred by other dentists because of a management problem 93% had been accompanied to the operatory by a parent and had had restorative work attempted at the first visit.
| TABLE 1 |
PERCENT OF PROBLEM CHILDREN IN EACH AGE GROUP

--- REferred

--- Routine

AGE OF CHILDREN

PRECENT OF CHILDREN
CHILD BEHAVIOR AFTER INTRODUCTION TO DENTAL EXPERIENCE

- REferred
- ROUTINE

PERCENT OF POSITIVE RESPONSE

- POSITIVE OVERT BEHAVIOR
- POSITIVE PARENTAL COMMENT
- POSITIVE ORAL HABIT & OTHER PROBLEM RESPONSE
| **TABLE 3** |
CONTROL PROCEDURES

Voice Control Procedures

Voice & Physical Control Procedures

Total Control Procedures

Number of Patients

- Referred
- Routine
INCIDENCE OF ORAL HABITS & PSYCHOLOGICAL PROBLEMS

NUMBER OF PATIENTS

ORAL HABITS

PSYCHOLOGICAL PROBLEMS

BOTH ORAL & PSYCHOLOGICAL PROBLEMS

REFERRER

ROUTINE
SUMMARY

This study has been undertaken to determine one specific hypothesis that the dental experience need not be one inflicting trauma of a psychopathic nature but may be a social and psychological experience of benefit to the child. The study involved a total of eighty-eight children. One group, composed of 28 children, had been referred to the pedodontist by other dentists as behavior problems. These children were compared to a companion group of 60 children who were routine patients in the author's office and who, to the knowledge of the experimenter, had not reacted adversely to the dental experience previously.

These two groups were subjected to a specific dental situation in which (1) the parent did not accompany the child into the operatory, (2) no operative procedures were performed during the first visit other than emergency care, and (3) consistent discipline was maintained by setting reasonable behavior limits for the child.

The data were obtained for the study by recording the overt behavior of each child in the experimenter's office and determining through interviews with the parents the status of each child's personality patterns, psychological problems or oral habits. After a series of dental appointments these data were again recorded and compared with the original information. Each child was then scored
as having a positive or negative acceptance of the dental situation. Because exacerbation of oral habits and psychological problems such as thumb sucking, nightmares, and bedwetting have been considered expressions of psychological trauma, this investigator considered it a positive finding if there were no exacerbation of these.

The average age of the children in the referred group was approximately one year older than the average of the routine group. This may be due to the fact that the general practitioner does not attempt to work on the younger children. Further support of this was the finding that only 12% of the management problems in the referred group were 3 year olds while there were 42% of the 3 year olds with negative attitudes in the control group. In the referred group there were 20 females referred as management problems, but only 8 males. However, in the routine group the sex was equally divided.

In the referred group there was an increase in the negative response to dentistry in the immediate pre-school period and the first year of school. This was also true in the control group with the greater proportion being 5 year olds. This evidence does not seem unusual since this is a period when the child is undergoing and learning to deal with many new experiences. At five and six most children are making the transition from the sheltered home environment to a larger and more complicated world. There is a significant acceptance of dentistry after this period with fewer management problems.
In this study it was observed that 67% of the routine group accepted dental care at the onset of treatment, indicating that the majority of routine pediatric patients may not be considered management problems. On the other hand in the referred group, all sent to a specialist because of behavior problems, only 7% were not considered problems by the experimenter.

The children in both groups were subjected to an office discipline which was punitive in nature, that is, most of the problem children required either voice control or voice plus physical control.

Oral habits often considered an indication of a disturbed child, were found less in the referred group than in the routine cases. The routinely appointed children, however, while having more oral habits, had fewer psychological problems. The referred group consists of a large number of children with psychological problems. Thus the referred group of children not only had a high proportion who had difficulty adjusting to the dental situation but these same children apparently had problem in making other social adjustments.

Ninety-three per cent of the children in the referred group had been accompanied by the parents into the operator and operated on the first visit at the previous office. This was an interesting observation, however, there was no control for this particular set of circumstances. This phase of the study needs further investigation.
The main text of the hypothesis tested in this study revealed that there was, regardless of the degree of negativity at the onset of care, positive acceptance of the dental situation by almost all of the children in the routine and referred groups. The results were overwhelmingly positive as noted in the change in attitude between the onset and completion of dental treatment, the parent's comment on the child's adjustment before and after care, and improvement of, or at least no exacerbation of oral habits or other problems during the course of treatment.
CONCLUSIONS
CONCLUSIONS

The psychological aspect of the child in the dental experi-
ence presents no absolute factors; however, we may, from the re-
sults of this study, make the following conclusions which were sub-
stantiated in both the referred and routine groups.

1. In both the referred and routine groups the four year old
children presented a low incidence of management problems.

2. Children between the ages of three and six years presented
the most management problems. Eighty-one per cent of those in the
referred group and 91% in the routine group reacted unfavorably.
However, after the age of six the incidence of management problems
was considerably less.

3. In both groups there was a positive attitude change of the
overt behavior of the management problems in 93% of the children
toward the dental situation.

4. The parental comment in regard to the change in overt be-
behavior verified the observations in 93% of the referred group and
95% of the routine group.

5. The majority of the children with oral habits and/or other
psychological problems showed some improvement or at least no ex-
acerbation of these factors following the dental experience.

6. The positive findings of this study made as a result of
observation of the child's overt behavior, parental comments, and
effects on oral habits and other psychological problems, substan-
tiate the hypothesis that the dental experience is not, or need not be, one producing fear or trauma of a psychopathic nature. It indeed may be a socially beneficial experience for the child.
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ABSTRACT

CHILD BEHAVIOR AND THE DENTAL EXPERIENCE

William L. Craxton
CHILD BEHAVIOR IN THE DENTAL EXPERIENCE

Despite the abundance of theoretical writing on the subject of the child's reaction to in the dental situation, a review of the literature reveals a lack of specific studies regarding the effect of dental procedures on the child. Many of these hypothetical discussions are concerned with the speculation that the dental situation may inflict psychic trauma on the child. The purpose of this study is to formulate and test an hypothesis that the dental experience is not, or need not be one connoting or leading to the production of fear, and that it certainly need not be a traumatic experience of a psychopathic nature.

The method used was to collect data through interviews with the parent (medical history, oral habits, psychological problems, and social background), observations of the referring dentist, and recordings of the child's overt behavior in the pedodontic office. The increase or decrease of oral habits and psychological problems were used as one of the factors in determining the child's adjustment to the dental situation. This was done because some authors have expressed an opinion that oral habits and psychological problems become more predominant in stressful situations. The data were collected at the beginning of dental care and again at the completion of a series of appointments.

The observation group consisted of eighty-eight male and female children ranging in age from three to twelve years. Twenty-
eight of the children were referred to the pedodontist as behavior problems, while the remaining sixty were routine new pedodontic patients who, to the knowledge of the observer, had not previously presented a problem or rejected treatment by another dentist.

This was a companion study of these two groups of children who were subjected to the same dental circumstances in order to compare the reaction of the "problem" child with the reaction of the routine child patient. From the data was determined the percentage in each group that adjusted positively to the dental situation.

The median age of the observation group in this study was five years. There was a low incidence of management problems among four year old children. In the referred group 81% of the management problems were in the three to six year age range; 91% in the routine group were within this age. In both the referred and routine groups there was a positive attitude change in the overt behavior of 92% of the children toward the dental situation. Ninety-three per cent of the parents in the referred group commented positively in regard to the child's acceptance of dental care, as did 92% of the parents in the routine group. The incidence of oral habits was found to be higher in the routinely appointed children than in the referred group, but psychological problems were higher in the latter group. Eighty-nine per cent in the referred group either improved or remained the same in regards to their habits or other problems. This was also true of 92% of the children in the routine group.
It was concluded from the observations and data collected in this study that hypothetically the dental experience is not, or need not be, one producing fear or trauma of a psychopathic nature.