DECLARATION

This is to declare that this dissertation contains my own unaided work, except where otherwise acknowledged and that it has not previously been submitted for the purpose of obtaining credit for any degree at any other university.

Signed: .....

Date: 30-6-71

AN INVESTIGATION OF THE FEAR RESPONSES OF CHILDREN IN THE DENTAL SITUATION

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To my wife and children, whose unfailing support and encouragement helped to make this thesis possible.

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CONTENTS

A supplement to this dissertation containing the Summary and Appendix will be found under separate cover at the back of this volume.

CHAPTER I

THE AIM OF THE STUDY

The aim of this study is to investigate the fear responses of children in the dental situation.

This situation is potentially or actually traumatic for many people. Since pain is a central feature of certain dental procedures, we may expect fear responses to be elicited. This in fact occurs and they may often be observed in their overt state. Such characteristics as pallor, fainting, sweating and other physiological phenomena may be present, which may or may not be accompanied by overt emotional reactions.

Emotionality, although often not easily discernible in adults unless explicitly verbalised, is very often observable in children. This emotionality may be expressed in many different forms, the most frequent being resistance to entering the surgery - a resistance accompanied by crying.

On the basis of observation alone by the investigator of the present study, it seems that a wide range of physiological and emotional responses are associated with the dental situation in general and certain aspects of it in particular. It has been observed, furthermore, that persons with no previous dental experiences (usually young children) also exhibit varying degrees of fear responses, when subjected to the dental situation. These fears may be manifest in the pre-operative period, i.e., while the child is in the waiting room and/or during the operative period when they may become intensified. These responses may range from little or no fear to extreme fear.

Since pain, either its direct experience or its anticipation, appears to be the commonest and most frequent cause of fear in the dental situation, it is suggested that persons who have had no previous dental experience, but still show fear, derive these responses from some other source or sources.

In a study by Hagman (1932), it was found that a distinct tendency existed for a child to have the same fears as his mother. This study showed a correlation of .60 and above, of children's and mothers' fears, thus suggesting that the stimuli for fear are learned by what Hagman describes as a process of identification of children with their mothers.

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This is not so in all cases, for it has been observed by the investigator of the present study that mothers who are afraid have children who are not, and that unafraid mothers have children who are afraid.

It is the purpose of this study to investigate these various possible differences and similarities between mother and child with regard to fear in the dental situation. In as much as mothers can and do exert strong influences on their children, particularly during their formative years, the emphasis in this study lies more in the direction of investigating the mother-child relationship, rather than in determining whether common fears do, or do not, co-exist. It is to be noted, therefore, that those being investigated will be the child, and his mother. Also of importance is their on-going relationship and the manner in which this relationship is expressed in the dental situation. Thus the child, who is in fact the central object of study, is seen in relation to a potentially or actually fear-evoking situation (or non-fear evoking) and as the product of a mother-child relationship.

It is important to stress the nature of these relationships, since it is suggested by the investigator of the present study that the differences in these relationships may account for differences in child behaviour in general and fearfulness of the dental situation in particular. Since mothers can both produce and help to eliminate fear, whether they themselves are fearful or not, it is suggested that mothers' attitudes in this regard, therefore, also become the focus of attention.

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CHAPTER II

REVIEW OF THE LITERATURE

It may seem pertinent to begin with what appears to be an obvious question. Are children afraid when faced with the dental situation, ? Based upon the observations of the investigator of the present study, it appears that some are, and some are not afraid. **Observation of the children indicates that certain characteristic behaviour emerges which seems to denote fear.** The most frequent and dominant of these is crying and is manifested particularly by young children. Other features of their behaviour which may be considered negative, include such characteristics as:

(a) unwillingness to enter surgery; and
(b) clinging to mother.

Together with these forms of behaviour may be an accompanied verbalisation of their fears; and such statements as "I don't want to go in there", or "I want to go home", or "I don't want to go first", may sometimes be heard.

While these characteristics are observable, it does not follow that the child who does not express verbal or behavioural fearfulness is not afraid. It is likely that his fear may be expressed physiologically. Changes in respiratory rate, pulse rate, etc., may be shown to be present. The present study in fact provides for this contingency and is described in a later section.

For whatever reasons, then, and whatever their possible sources, it may be assumed that where such negative characteristics such as crying, clinging to mother, etc., are observed, the child may be considered afraid.

Before continuing with the general problem of why the child is afraid, particularly for those children who have not been exposed to the dental situation before, it is as well to note the role of previous experiences. By this is meant reference to situations (other than dental), but which are similar to, or not dissimilar from, the one to which the subject is exposed.

Often mothers volunteer information, or readily answer if asked, whether the child has responded negatively to similar situations. In some cases there has been a history of trauma associated either with

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hospitals or doctors, which may therefore explain the child's present fear. While attention will be given to certain aspects of the dental situation as one possible source of fear, other possible sources of fear (not necessarily related to the dental situation) may also exist. These different possible sources of fear will be treated separately.

A) ASPECTS OF THE DENTAL SITUATION WHICH MAY CAUSE FEAR

1) STRANGENESS OF PEOPLE AND SITUATIONS

For the child who has not faced the dental situation before, the unfamiliarity of such an experience may be one possible source of fear. Care must be taken, however, to differentiate between the dental situation as a totality and certain aspects of it to which a child may respond with fear. It would be difficult to know with any certainty, for example, whether the child is afraid because the situation is new to him, or whether it is the dentist or nurse, who may be strangers to him, who evoke the fear.

In a study by Holmes (1935), it was discovered, for example, that a relationship exists between fearfulness of strangers and age. Between the ages of early infancy and two years, nearly 25% of fears shown by these children were in relation to strange objects, situations and persons. In four to six year-old children, however, the percentage fears had decreased to less than 10%. Furthermore, a new or strange situation which could provoke fear may not necessarily do so if the child is with a familiar adult.

While it seems that at any age level in the case of the same child, circumstances that elicit fear are complex, there is a suggestion that these features, (strangeness, unfamiliarity, etc.) were predominant in the total situation that confronted the child when he was afraid. There is also a suggestion that in a situation which would "normally" be frightening to any given child, his fear becomes "less than" the influence, (the reassuring presence of an adult) that may reduce or eliminate the fear.

The author of the present study has observed that in such cases the fear is not always eliminated. Young children who have shown overt signs of fear, although not intensely, have acceded to the request to enter the surgery (which to them is a new situation) if accompanied by their mothers, but have refused to sit on the chair for example, if only for the "ride". It is assumed that the fear has in it an element of strangeness; but, clearly, there may be other factors.

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2) NOISES

The modern dental surgery is equipped with a high-speed drill, which, when functioning, emits a high pitched, penetrating whine. While it is generally felt (for example by Watson, 1920 and Jersild, 1935) that noise as a fear stimulus must be loud, sudden and unexpected, the drill sound does not always fulfil these requirements. The point is made, however, because the investigator of the present study has observed that when switching on the drill, just prior to using it in the mouth, the patient has sometimes reacted with a startle response.

In these cases, however, where young children find themselves in the dental situation for the first time, the drill sound may act as an unconditioned stimulus, which may elicit a startle response followed by crying, and in some cases, attempts to withdraw from the source of the stimulus. This reaction pattern has been observed by the investigator of the present study and suggests that this stimulus therefore may have fear-evoking potential.

In most cases, however, noise does not function as a fear stimulus in the manner described by Watson and Rayner (1920), but has evoked comment rather than reaction from children and adults alike. Such statements as "I can't stand that sound", or "the noise bothers me", etc., have been made, which suggests that the drill sound may have been referred to as a source of irritation rather than a source of fear.

3) HEARING OR SEEING FEARFUL BEHAVIOUR SHOWN BY OTHERS IN THE DENTAL SITUATION

Fear seems to be fairly easily "transmitted" from one person to another. Observations made by the author of this study seem to indicate that this may be so. Bandura and Walters (1963) who tend to confirm this observation, state "..... that undoubtedly learned responses are released through 'behaviour contagion' ". This term is taken from Thorpe (1956). In one case, for example, while the author was working on a young child in the presence of her mother and a younger sibling, the patient cried. In a short while the younger sibling started crying and clung to her mother. She eventually stopped crying when the older sibling - that is the patient - had also stopped crying. Previously, the younger child had shown no apparent signs of fear or distress, thus suggesting that she had "picked up" the fear response from her older sister.

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Seeing or hearing fearful behaviour may also include the behaviour of adults in the dental situation. While most adults do not regress to childish or infantile levels in manifesting fear responses, they do, however, often verbalise their dislike, antipathy or fears of this situation, and often in front of their children.

A study by Shoben and Borland (1954) seems to confirm this. Their investigation centred around the investigation of four central hypotheses, namely:

(a) Pain tolerance
(b) Traumatic experiences
(c) Parental attitudes and family background
(d) Certain aspects of personality.

Interestingly, the hypothesis concerning traumatic experience was not borne out, which seems contrary to expectation. A suggested interpretation may be that many people in spite of these experiences consistently return for dental attention. What was borne out, however, was the hypothesis regarding parental attitudes and family background. The results of this study showed a significant correlation with these factors and fearfulness in the dental situation, thus lending weight to the noting that experiences within one's family "..... is highly important in determining whether or not one will react fearfully to dental procedures".

In this regard the importance of modelling as discussed by Bandura and Walters (1967) may be noted. They make the following comment: "Inhibitory effects are more likely to be produced through the observation of painful consequences resulting from a model's behavior or of fearful reactions of the model that the observer has already learned to recognise as dangerous signals. This latter effect undoubtedly explains in part the tendency for children to exhibit the same fears as those shown by their mothers (Hagman, 1932)." This has further been confirmed by the author of the present study who has observed mothers' fearful behaviour in the dental situation in the presence of their children.

4) THE DENTIST PORTRAYED AS AN AGENT OF PAIN

Consistent with the findings outlined above are adult attitudes which have been heard expressed by the investigator of the present study. Such statements as "If you don't behave, I will tell the dentist to pull your teeth out", or "I will tell him to give you an injection", possibly imply or evoke in the mind of a child an image of the dentist as an agent of pain and hence a possible source of fear. In what appears to us a rather poor

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attempt by mothers to insist on their children being co-operative, these statements are not infrequently heard. Needless to say, the desired effect is not always achieved, for the children become apparently more afraid and not less. While it is not their intention, the threatening and punitive attitudes expressed by parents may in fact help to create the "bogey-man" image of the dentist as an agent of pain.

It is not infrequent, further, for children themselves who have sometimes confessed to being afraid (these are usually older children) to comment that they have heard from other children that "Doctor X hurts you, don't go to him". Thus we see that the peer group also provides a source of fear stimuli from which the child may learn to be fearful of the dental situation.

5) PAIN AND TRAUMA

Certainly the most dominant feature of certain dental procedures is pain and it becomes, perhaps, more than just an assumption to state that pain is probably the greatest single factor to cause fear. For the person who has not had previous dental experience, this obviously does not apply, but for those who have had previous dental experience, particularly of a traumatic nature, this may well be the case. It may also be stated that while not all dental procedures are necessarily painful, the dental situation may for some people still constitute a traumatic event. Certain other aspects of the dental situation which could provide unpleasant stimuli are the sensation of being trapped in a chair, handling of soft tissues in and around the mouth, gagging and nausea when subjected to certain dental procedures, etc. The implication is that a traumatic experience may vary from individual to individual, and that not all traumatic experiences are necessarily physically painful. Seen from a phenomenological point of view, a traumatic experience may be any experience to which a subject may respond with intense discomfort and possibly fear. The possible consequences of these reactions may be an avoidance of the fear-evoking situations and/or manifestation of these responses in future similar situations.

B) THE FEAR RESPONSE

1) FEAR AS AN INSTINCT

In trying to answer the question "why are children afraid of the dental situation?" which has also been dealt with in the previous section, we now turn our attention to the fear response itself. To answer the

question by stating that fear may be instinctive or unlearned is perhaps more of academic than practical interest, but it will nevertheless be considered since a great deal of animal experiments, e.g. Ginsburg and Hovda (1947) and Lehrman (1962), indicate that there is a link between genes and behaviour. While one cannot safely generalise from animals to humans, the point is made, however, in order to acknowledge that certain aspects of fear at least may be inherently based.

If this were completely so, however, one would expect that with an instinctive fear of the unfamiliar, for example, all children would be afraid of the new dental situation. If on the other hand fear is not instinctive, then many children may not be afraid of the new dental situation. Observations by the author of the present study confirm that some children are afraid and others are not, which tends, therefore, to place some doubt on the concept of fear as an unlearned drive.

Earlier writers, such as McDougall and Thorndike, felt that human behaviour was best understood in terms of instinctive drives and needs. One of the difficulties with such thinking, however, is that it often leads to the "nominal fallacy" (to quote Beach, 1955) - the tendency to confuse naming with explaining.

Current thinking, however, seems to be in the direction away from instinct theories; and a critical analysis of instincts as a motivational theory appears in a paper by Beach (1955).

Beach states that at least three serious criticisms can be levelled against the current treatment of instinctive behaviour. They are:

1) Little is known about most of the behaviour patterns which are classified as instinctive.

2) There is a tendency to categorise as yet un-analysed patterns of behaviour.

3) The reliance upon the current classification dichotomy, viz. of learned and unlearned behaviour. This does not take into account all the added factors since recognised, that may influence behaviour. These include pre-natal environment (Ginsburg and Hovda, 1947), hormonal influences (Lehrman, 1962), and the interaction between hormonal and experiental influences (Lehrman, 1962).

The problem, to quote Beach, may be summed up as follows: "The analysis that is needed involves two different types of approach. One rests upon the determination of the relationship existing between genes and behavior. The other consists of studying the development of various behavior

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patterns in the individual and determining the number and kinds of factors that normally control the final form of the response.

Thus, while it cannot be denied that the fear response or certain aspects of it may be innate in origin, the question still remains unanswered. Even if there may be an element of genetic influence in the total fear response, it is still difficult to know what aspect of it is innate and what is not. Since we remain unaware of the nature of the link between genes and behaviour, evidence up to this point must be regarded as inconclusive. Furthermore, whether or not there is an innate component of a child's fear of the dental situation, we are still left with the problem that he is, in fact, afraid.

2) FEAR AS A CONDITIONED EMOTIONAL RESPONSE

The pioneer studies of Watson and Rayner (1920; 1924) on little Albert, although designed to determine whether the range of stimuli which evoke fear could be increased, was nonetheless based on the assumption that unexpected loud noises and the sudden removal of support provide the stimuli to evoke an unconditioned fear response.

English (1929), however, questions the claims of Watson and Rayner and in discussing three cases of conditioned fear responses, makes the following comments: "It may not be amiss to raise the question as to whether the native stimulus to the fear response has been properly stated. That in young infants a loud noise will elicit a fear response is fairly certain. As psychologists, however, we have no right to rest with a description in such physical terms ..... A sound is sudden only in relation with a responding organism, that is, only when the sound is taken not only as physical stimulus, but as psychological object. This change makes readily understandable how a child (fourteen and a half months), inured to the din of older children (subject had three older brothers), no longer responds to loud sound, as at an earlier period she had. No unconditioning process is called for at all; the adequate object - a sudden noise which is sudden for the responding organism - is simply not present."

Doubt seems to be cast therefore in the way that conditioned emotional responses are formed and also on the native stimuli which are necessary to form them. Brown and Jacobs (1949) state: ".... The assumption that fear is a learned response stems from the fact that it can be elicited by (conditioned) stimuli which in the past have been closely associated with, or have been followed by, noxious (unconditioned) stimuli."

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Whether or not the dental situation provides the conditions for the formation of fear as a conditioned emotional response in all cases seems doubtful. That it may do so in some cases is possible, since the presence of a noxious stimulus (pain) may, albeit fortuitously, evoke a fear response. This response may then become associated with the noxious stimulus, thus establishing fear as a conditioned emotional response.

But it does not follow, however, that the presence of pain as part of the total dental situation will necessarily ensure that this association will in fact take place. This is partly due to the fact that the unconditioned stimulus does not occur in isolation, but forms part of a general constellation of stimuli. Further, since the dental situation is not an experimental one, the rigid control that is necessary is absent, which means that the reproducibility and predictability of this situation is virtually non-existent.

We are never sure, therefore, in what order the stimuli may occur or whether in fact a fear reaction may be evoked at all - and if it is, whether pain has been the stimulus. It probably has been so in many cases, but it does not explain the presence of fear, where pain, as the unconditioned stimulus for fear, has been absent from the dental situation.

In those cases where pain is present, the situation is complicated by the fact that we are never certain of the intensity of the stimulus nor of the degree of intensity which is required to evoke a fear response. Furthermore, the level of pain tolerance may vary from individual to individual and until all these factors can be placed under more rigid experimental control we cannot be sure that fear of the dental situation is a conditioned emotional response.

Thus, while it is possible that this may be so in some cases, particularly where there is a history of previous painful dental experiences, it clearly cannot be so in the case of fearful patients who have not been exposed to a painful dental situation.

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c) INTERPERSONAL RELATIONS AND FEAR

One of the important influences that determines our behaviour is the behaviour of others, and where the others are "significant adults" in relation to a child, we can expect these influences to be strong determinants of child behaviour. This is partly due to the fact that the significant adult-child relationship in general and the mother-child relationship in particular, is of unequal status, assymmetrical and of necessity a dependent relationship.

In considering the mother-child relationship in the dental situation it is necessary therefore to isolate if possible certain personality traits of a mother which could be significant in relation to her child and the kind of child behaviour patterns they could be expected to elicit.

1) THE "IDEAL" MOTHER (THE ACCEPTING PARENT)

Although is is not possible to describe in any comprehensive and accurate manner what constitutes the "ideal parent", Jersild (1968) suggests that "..... there are many qualities that are interwoven with the idea of an ideal parent", and he indicates that they are expressed as an attitude of acceptance. They include affection for the child, sensitivity to his needs, respect for the child's rate of learning and growth, accepting the consequences of the child's immaturity, amongst others.

While these parental attitudes of acceptance help to provide the most favourable climate in which a child may grow and develop towards a well adjusted adulthood, it does not necessarily ensure that it will in fact take place. But clearly, however, there are many advantages. Jersild expresses them in the following manner:

(a) While helpless and weak, the child can count on protection.

(b) In an atmosphere of affection, the child develops an attitude of confidence and trust in those who rear him.

(c) He will have freedom to grow, venture and express his feelings.

(d) The child will have a better chance to learn to accept himself.

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These are only some of the consequences of possible child reactions to the attitudes of acceptance by parents, and one may well speculate that a child's response in the dental situation, where he is the product of such a relationship, could well be favourable. Because of the greater psychological freedom he has, which permits him to venture and explore, to subject himself to many and varied experiences, he learns to increase his repertoire of responses. His ability, therefore, to cope with his environment, realistically and successfully, is enhanced and the chances are that he will approach and respond to the dental situation in like manner.

While the above describes in general terms what we may expect child behaviour to be when the parent is accepting and understanding, we are as much concerned with the responses of a child whose background is related to negative parental behaviour.

2) THE REJECTING PARENT

According to Jersild (1968), the rejecting parent is characterised by "..... a consistent attitude of accusation and condemnation". In extreme cases, such as those described by Fitz-Simons (1935), the child is deserted or placed in an institution, the parent only seeing the child's faults and often using severe punishment. While this form of behaviour is not often seen, it has been noticed by the author of the present study that some mothers have displayed milder forms of rejection. While a study of rejecting mothers will be undertaken in a later section, it may be pertinent to mention at this point, however, some of the effects of rejection. Briefly stated, they may include an inability to give and receive affection, a low self-concept, a sense of failure and a lack of worth as an individual, a relatively small and stereotyped repertoire of responses. Also, the rejected typically have a history of maladjustment to what they perceive as a threatening and hostile environment.

3) THE OVER-PROTECTIVE MOTHER

Levy (1943), has demonstrated that over-protective mothers who are highly permissive with their infants (breast feed for a long time, cuddle them, etc.), may actually retard their acquisition of mature responses. These mothers, to quote Levy, "..... use the techniques of 'infantilisation' and the prevention of independent behavior to maintain close dependent infant-mother relationships." According to Levy, the over-protective mother sees the child's growing independence as a threat to her domination and possession of him. She tends to restrict exploratory and experimental activities of her child and hence minimizes her youngster's opportunities

to learn new responses. It is reasonable to speculate, then, that the dental situation may be one of many situations with which he may be unable to cope. It is also suggested that the likelihood exists that this inability to cope with the dental situation may manifest itself as fearfulness.

4) THE MOTHER-CHILD RELATIONSHIP

A variety of adjectives has been used to describe the complex nature of mother-child interaction in terms of the consequents of maternal behaviour (Mussen, Conger & Kagan, 1963). These include warmth, rejection, acceptance, hostility, punitive, etc., amongst others. According to Schaefer (1959), however, regardless of the sample of mothers used or the psychologist doing the assessment, two basic dimensions of maternal behaviour seem to be important in describing the mother-child interaction. These are hostility versus love and over-control versus granting of autonomy. It is the latter concept which seems to be more pertinent to this study.

The dental situation, in common with many others, must be dealt with by the subject since nobody else can deal with it for him. It is suggested that the child who is the product of a mother-child relationship which encourages autonomous behaviour will be more likely to deal adequately with the dental situation than the child who is a product of a submissive, dependent relationship. It is further suggested that any maternal behaviour which may include anxiety, being a poor model, over-protectiveness, restrictiveness, punitiveness, etc., which traits tend to interfere with, or prevent the acquisition of autonomy by her child, is more likely to result in him (the child) becoming a more fearful dental patient than the child who acquires autonomy.

Up to this point, a number of issues have been raised about fear and its possible relation to the dental situation. We have considered the nature of fear itself, i.e., whether it is innate or a conditioned emotional response, certain aspects of the dental situation which may be fear-evoking, and the mother-child relationship as a setting for the possible origins and maintenance of fear.

The emphasis in this study is upon the mother-child relationship. Referring back to the study by Shoben & Borland, it was stated that of a number of hypotheses tested, two emerged as being fairly conclusive. These were related to parental attitudes and family background. The hypotheses were more explicitly stated as follows:

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(a) Fearful dental patients come from families whose dental experience has been unfavourable.

(b) Fearful dental patients come from families in which unfavourable attitudes towards dental work are typically expressed.

While these hypotheses give a lead and some direction in terms of the purpose of the present study, they are nevertheless couched in terms which are too vague and operationally difficult to test. What we need to know is the manner in which these fears are transmitted; but not in the "amorphous but effective emotional learning situation the home provides", as described by Shoben and Borland. Rather is our interest focused within the specific context of mother-child behaviour as it occurs in the dental situation. The significant fact that emerges from the Shoben and Borland study is the fact that the problem of dental fear is not necessarily specific to the dental situation. In this study, however, it is within the context of the dental situation that mother-child behaviour is studied in the hope of finding an explanation with regard to the fears of their children.

A study by Lafore (1945) of parent practices in dealing with their children showed that on the basis of parent behaviour, mothers could be arbitrarily and loosely classified into four groups. They were:

(a) Dictators - these mothers were characterised by their behaviour which emphasised authority and obedience.

(b) Co-operators - these mothers were characterised by participating in the everyday events and lives of their children and were essentially seen as problem-solvers.

(c) Temporisers - these mothers dealt with problems situationally and were characterised by a general lack of consistency in their behaviour.

(d) Appeasers - these were mothers who were predominantly conciliatory towards their children. They tended to avoid issues and circumvent problems, their apparent aim being to prevent trouble rather than face issues.

This study provides a fairly useful classification of parent-child behaviour and the author of the present study can confirm that to a greater or lesser degree the majority of parent-child interaction as observed in the dental situation fell into these categories. It may

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also be worth noting that, according to the study by Lafore, children who were frequently threatened tended to show a greater deal of fearfulness than those who were not. This, furthermore, seems to be borne out by the present investigator's observations, which suggested that where children who were fearful of the dental situation were subjected to threatening and punitive parental attitudes, the fearfulness tended to increase.

To the extent then that Lafore's classification shows differences in parent behaviour towards their children, we can expect child responses to differ in relation to their parents' responses. Further, to the extent that parent behaviour is, in some cases, not problem-centred and thus the mother cannot help her child to overcome his fears and deal with the dental situation, to that extent does the mother become an active agent in the "transmission" and possible maintenance of fear in her child.

How then is the fear transmitted? It has been earlier suggested that a study by Hagman (1932) showed that children tend to have the same fears as their mothers and that these fears were acquired by a process of "identification". This term, however, does not serve as an adequate explanation for mother-child behaviour and it therefore becomes necessary to operationalise it as far as possible. It is suggested, therefore, that where a mother and child both show the same fear, the mother has served as a model which the child has imitated. Bandura and Walters (1963) state that ".... if a model's behavior shows fearful reactions which an observer has already learned to recognise as danger signals" , this effect could in part explain the tendency for children to exhibit the same fears as their mothers exhibit.

This point may be taken a step further. It is not always likely that the dental situation will provide the setting for a mother to show fearful reactions, i.e., when she is herself a dental patient and presuming she is fearful. What has often occurred, though, is that the mother has verbalised her fears in front of her child and in this manner, we assume, she has "transmitted" her fears to her child. Thus, where both mother and child are fearful of the dental situation, it is hypothesised that the mother serves as a model for her child by either

(a) herself showing fearful reactions, or

(b) verbalising her fears to which the child may respond by developing similar fears.

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Allied to this is the possibility of other maternal characteristics which may be included as possible factors in developing fear in their children. These may be hostile and aggressive attitudes which, as mentioned earlier, are factors which may lead to fearfulness in children.

Unsystematic observations by the investigator of the present study have also suggested, however, that mothers who are not fearful of the dental situation sometimes have children who are. How then in these cases can the mother-child relationship be considered the vehicle for the development of a child's fears? A number of possibilities suggest themselves:

(a) A child's source of fear may be totally unrelated to his mother, but a negative attitude by the mother, such as belittling, condemning, being aggressive towards her child, may serve as a reinforcer of her child's existing fears. Although the origin of these fears may not be specific to the dental situation, they may find expression there.

(b) In terms of Lafore's classification of mothers, any mother not classified as a co-operator, and who therefore fails as a problem-solver for her child, may, because of this failure, help to maintain his fears. The child may then perceive his mother, who is seemingly unfearful but who may be inadequate, as one who cannot understand his problem, and as one who is unwilling or unable to help.

(c) The mother may be a generally anxious person, but not necessarily a fearful dental patient. In as much as the pervasiveness of her anxiety may tend to dominate her relationship with her child, the likelihood exists that she would act as a poor model for him and that fears learned from her, although not necessarily specific to the dental situation, would be carried into it.

A third possible pairing of mothers and children, with regard to dental fears, may be a fearful mother and a non-fearful child. While the present study is essentially concerned with the manner in which parent-child behaviour becomes a medium for acquiring dental fears, part of its scope is also to consider how mothers may prevent or eliminate these fears. This category of mother-child behaviour is suggested as one possibility. While the mother is fearful, because she is perceived to be so, or says she is so, and would therefore be assumed to be a poor model, it does not necessarily follow that she would transmit this fear. She may, for example, exhibit fear of the dental situation as one of an hierarchy of fears which may be relatively

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few, but generally presents as the type of individual who is relatively free of fears. Perceived by her child as such, she may therefore be seen as a source of protection and security (for she may generally behave so in other areas of the mother-child relationship), and may in fact be a relatively stable and secure person herself.

Alternatively, we may be dealing with a mother who is fearful of the dental situation, but who does not express this fear overtly. Her child then may not perceive her as a fearful person.

Another possibility which suggests itself is that this kind of mother who, in recognising her own fear, exposing it, and dealing with it realistically, may have established herself as a good model for dealing with and overcoming fear. It is assumed further that this mother may be insightful particularly of herself, and may therefore provide the basis of a relationship which the child sees as problem-solving both for herself and others.

The final pairing where both mother and child are non-fearful conjures up as a first possibility the "ideal" mother-child relationship with the mother seen as a co-operator according to Lafore's classification. It is assumed that this relationship may be characterised by a mother who is sensitive to her child's needs, displays warmth and affection towards him, and is stable and well-balanced; and it is assumed that the child's responses therefore may also be positive.

A further possibility, however, suggests itself. This may be a relationship in which the mother may place a premium upon, and emphasise, fearlessness as a value to uphold. The child, in turn, may be rewarded for exhibiting non-fearful responses and therefore has successfully learned, either, to overcome, or to suppress his fear. If the latter, it may be assumed that if the mother's attitude also shows insistence in bidding her child to gain independence, the fear of his mother may become greater than the fear of the dental situation.

In order that he may not be deprived of parental approval, the child learns to successfully suppress the fear of the dental situation and may in fact reach the position where he is afraid of being afraid.

5) PERSONALITY FACTORS AND FEAR

What clearly emerges from the previous discussion is that the single characteristic of fearfulness, or lack of it, in a mother cannot alone be

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responsible for its presence or its absence in her child. Fearfulness is probably part of a general interweaving of characteristics and attitudes essentially displayed by the mother and whose personality in general seems to determine in far greater measure the nature of the mother-child relationship.

If we discuss fear in the dental situation, therefore, it must be seen in relation to what appears to be dominant mother personality characteristics or dominant patterns of behaviour. For example, where we have two fearful children, one whose mother is fearful, and the second, whose mother is unfearful, the characteristics of aggression and hostility towards their children may be common to both mothers. The presence of this behavioural "catalyst", therefore, may in fact be the factor responsible for fear in the child. It is therefore the purpose of the present study to isolate if possible, personality factors of mothers as possible vehicles through which their children may become fearful.

In general terms, then, likely hypotheses may be conceptualised in more or less the following manner. Fearful mothers who are also threatening and hostile to their children are likely to transmit fear to them. Alternatively, fearful mothers who are warm and affectionate towards their children may prevent or help to overcome fear in their children. Another likely hypothesis may be, that non-fearful mothers who are aggressive toward their children, may transmit fear to them.

The above statements are not intended to serve as hypotheses, which clearly need to be operationalised and testable, but merely suggest in general terms some of the broader concepts used in this study.

These include patterns of behaviour and personality factors of the mother, and responses of the child to these factors. A common link is in relation not to fear in general, but to fear of the dental situation in particular.

It is for a number of reasons that the mother-child relationship is emphasised as opposed to a father-child, sibling, or peer relationship. In general, it can be said that the person who interacts most with the child from birth up to the age of approximately five or six, i.e., when the child is ready to go to school, is the mother. She is the one adult who spends most time with him and is the one, therefore, most likely to exert the strongest influence. It is with her that the first and most significant interpersonal relationship is formed, and in which is rooted the "basic" behaviour patterns characteristic of both mother and child.

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The mother, therefore, is the person who is most likely to be, and who most often actually is, the one to accompany the child on visits to the dentist. In consequence, she becomes the person on whom to focus in the present study.

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CHAPTER III

STATEMENT AND JUSTIFICATION OF HYPOTHESES

In the preceding chapter, the nature and possible sources of childrens' fears were discussed. Of these possible sources of fear, the one that was emphasised and which becomes the focus of attention in the present study, is the mother-child relationship. A second possible source of fear, namely previous traumatic dental experience, is also to be singled out for investigation.

Evidence by Shoben and Borland (1954) has suggested that in some cases, fear of the dental situation may be related to unfavourable attitudes towards dental work which are expressed within the framework of the home environment. It was then argued that if members of a family could influence one another's attitude towards dental work, then the likelihood of a mother influencing her young child would seem to be greater. The reasons on which this assumption is based are given on the preceding page.

There is little doubt that mothers do influence their children, and that the quality of their relationship is to some extent determined by the manner in which this influence is exerted. This quality, furthermore, is expressed by a wide variety of behaviour patterns by both mother and child in a wide variety of situations and usually encompasses the total relationship. A study by Bishop (1951) has indicated the intricate complexities and the numerous variables which operate in a mother-child relationship, and it becomes necessary therefore to concentrate only on those aspects of the relationship which are relevant to the present study.

It is proposed then, to abstract from the totality of the mother-child relationship certain characteristics and behaviour patterns of the mother which may be related to her child's fears (or lack of them), and to study this relationship as it occurs in the dental situation.

From the arguments presented in Chapter II, the following hypotheses were abstracted:

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Hypothesis 1

Children who are fearful are more likely than non-fearful children to have mothers who are fearful.

This hypothesis is based on a study by Hagman (1932) referred to earlier. He showed that children tend to have similar fears to their mothers, and found, in fact, a correlation of .60 and above. Furthermore, initial observations of children's fearfulness which prompted the present study, showed that many children, who exhibited fearfulness, had not had previous dental experience. It was postulated, therefore, that among other things, a likely source of this fear could be attributed to the mother and the nature of the mother-child relationship.

The notion, that fear of the dental situation by children is attributable to social and/or interpersonal factors, is given added weight by Shoben and Borland (1954) in a study of a more specific nature. They postulated eleven hypotheses which included such factors as pain tolerance, previous traumatic dental experience, previous traumatic medical experience, facial injuries, personality factors, family background and family attitudes towards dental work. It is often almost automatically assumed that those situations which are associated with pain and trauma are the most likely ones to be associated with, or the "causative" agents of fear in the dental situation.

Contrary to expectations, these hypotheses, i.e., those associated with pain and trauma, were not borne out. The two hypotheses that emerged with a fairly convincing conclusiveness were those relating to family background and family attitudes towards dental work. If family background and attitudes are related to dental fears, it seems, then, that within the context of interpersonal experiences, and emotional learning situations both provided by the home, fears of the dental situation (among others) may be learned. What is further implied is that a child's fear of the dental situation is not necessarily specific to that situation.

It is not difficult to imagine, therefore, how a fearful mother, in discussing or referring to the dental situation in a negative manner, may make her child aware of that situation as something unpleasant as well as something to be feared.

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Hypothesis 2

Non-fearful children are more likely than fearful children to have mothers who are positive.

Definition of Positive

For the purposes of the present study, which is confined to the dental situation, positive mother behaviour may be defined as a mother who is comforting, re-assuring, encouraging, praising and consoling.

This definition is seen against a background of acceptance of the child by the mother, who rewards her child's behaviour which is socially and personally desirable, but does not punish behaviour that is socially and personally undesirable.

Evidence presented by Bishop (1951), gives a strong indication of the wide variety of behaviour patterns and the many different levels on which the mother-child relationship may occur. The relationship is intimate, on-going, reciprocally influential, and exists over a long period of time. Furthermore, the fact of daily contact, close proximity and widely overlapping areas of mutual functioning, makes this a relationship of considerable significance. It is not without justification, then, that this relationship is emphasised and becomes, in fact, the main focus of attention in this study. If the mother within the context of the mother-child relationship exerts a considerable influence in the general social and personality development of her child, it is not unreasonable to suppose that this influence will no doubt manifest itself in the dental situation as well.

The previous hypothesis dealt with mother's fearfulness and its expression in a variety of situations which may or may not affect her child, and which is not necessarily directed towards him. An investigation of positive mothers, however, focuses attention on mother behaviour within the specific context of the dental situation where she is involved with her child and participates in a situation in which she also wishes to influence his behaviour. The differences of mother behaviour as stated in the two hypotheses may be seen in broad terms as the difference between what mother is, on the one hand, and what mother does, on the other.

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In the first case, the nature and quality of mother behaviour is casual, undirected, and uninvolved and occurs in a variety of situations; while, in the second case, there is conscious involvement and a purposeful effort is made to evoke a particular response in her child in a given situation. An investigation of positive mothers, furthermore, tends to concentrate on a specific aspect of the mother-child relationship as it occurs in the dental situation.

In a study by Bishop (1951), referred to earlier, the following comments with regard to the mother-child relationship are pertinent, ".....the mother of the young child is typically oriented towards developing certain types of behavior which are compatible with her own set of standards. In her attempts to guide the child's present or future behavior, she can use any of a variety of methods depending on her personality and/or the reward effects of previously tried methods which have proved successful. ..... the child learns to react in certain ways to these various forms of stimulation. The mother's behavior provides stimulus cues which are generalised from previous situations to the present, and call forth a similar response. In addition, the type of stimulations which are employed by the mother, present the child with a model for his own behavior in controlling both himself and others. ..... the child then is developing patterns of behavior both as an individual response to the particular behavior which the mother evidences in her relationship with him and as a direct incorporation of certain aspects of her behavior."

While it may be generally true to say, based on the preceding discussion, that a mother with a positive "style of life" may be desirous of creating a similar style of life in her child, the kinds of positive behaviour expressed by her would be determined and modified by:

(a) The nature of any given situation;

(b) The needs of her child.

In the dental situation, with which we are here concerned, a fearful child may, for example, evoke a comforting response from his mother and a non-fearful child, perhaps, a response of praise. While both responses by the mothers are evoked for apparently different reasons, the responses are nevertheless seen as positive in nature, suggesting that all such responses are specifically designed to help create in the child adaptive behaviour patterns which in the dental situation may be manifested as a lack

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of fearfulness. A mother's response, therefore, may be directed towards allaying her child's fears if he has any, or reinforcing existing non-fearful attitudes which it is suggested may be rooted in her positive behaviour in other situations, and on which, therefore, her child's lack of fearfulness in the dental situation may be based.

The author of the present study has, in a number of cases, observed mothers who have exhibited positive behaviour towards their children and th[illegible] (the children) have been unfearful in the dental situation. It is suggested that a relationship exists between positive mothers and lack of fearfulness in their children.

Before proceeding with the problem of negative mothers and their possible relationship to fearful children, it is as well to consider for a moment the nature of the "interactive" process (raised in the preceding discussion), that occurs between mother and child. Is the mother responding to the child, or the child responding to the mother? Is a fearful child, for example, "causing" his mother to respond in a comforting manner, or is a fearful child the "effect" of an overprotective mother? On the nature of such possible cause--effect relationships, based on the co-existence of certain types of behaviour in both mother and child, Bishop has this to say:

".... It appears likely that circular causation is prominent in the area of interpersonal relationships owing to the intricate and reciprocal pyramiding effect of the behavior of two individuals. This point is particularly applicable in evaluating the positive relationship found in this study between the negative responses by the mother and strong and aggressive stimulations by the child, and between negativism on the part of the child and a high proportion of strong stimulations by the mother. In the first case, the mother may be non-co-operative, owing to the unreasonableness and emotionality of the child's demands, or the child's attempt at strong control and resistance may represent an aggressive reaction to the mother's non-acceptance of his stimulation. Both factors are undoubtedly operative. Similarly, the child may be negativistic in rebellion against the mother's excessive use of controls, or the mother may find it necessary to be highly directive and firm towards the child, in order to control effectively the behavior of an aggressive and resistant child."

Implicit in this hypothesis is also its reverse, namely, that fearful children are more likely to have mothers who are negative than non-fearful children. It must be noted and it is important to state that differences between positive and negative are quantitative and not qualitative and the terms negative and positive, therefore, may be seen as the two ends of a single continuum.

Definition of Negative

For the purposes of the present study, which is confined to the dental situation, negative mother behaviour may be defined as aggressive (verbal and/or physical), hostile, punitive, sarcastic, humiliating and condemnatory.

This definition is seen against a background of non-acceptance of the child by the mother, who makes socially and personally desirable behaviour contingent upon parental approval and who punishes socially and personally undesirable behaviour.

Like the positive mother, the negative mother is also directly involved with her child and seemingly is motivated by the same intentions, but tends, rather, to manifest negative characteristics more often than does her positive counterpart. Furthermore, whereas the negative mother will respond negatively to her child when he is fearful, the positive mother is more likely to respond positively whether her child is fearful or not.

In both cases, it seems that the mothers are reacting to their children which suggests that the child's behaviour is not necessarily a consequence of his mother's behaviour. If this is so, it may reasonably be assumed that if the mothers are reacting to their children, the children are also reacting to their mothers.

Thus while a mother may consistently respond positively to her child's desirable behaviour, thereby making her approval contingent upon his "good behaviour", he in turn has learnt that his desirable behaviour will evoke a favourable response from his mother. Likewise, a mother who is aggressive towards a resistant child may be so because of the

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unreasonableness and emotionality of the child's responses and thus may use strong measures in an attempt to control him. The child's resistance on the other hand may be a rebellion against the strict and punitive measures she employs to keep his behaviour within acceptable bounds.

Quoting again from the work of Bishop (1951), she has stated that "..... the mother of the young child is typically oriented towards developing certain types of behavior which are compatible with her own set of standards." This statement is not without significance in terms of the present hypothesis, for it suggests that the mother is both the dominant and controlling force in the relationship with her child. It is she who is the agent and instrument of reward and punishment. It is she who withholds or gives affection, and certainly in the earlier developmental stages is almost entirely responsible for the wellbeing of her child. Studies on maternal deprivation by Spitz and Wolf (1946) and by Burlingham and Freud (1943) lend strong support to the notion that the mother is influential and important during the growth and development of her child.

Because the relationship of the mother with her young child is assymetrical, in the sense that the mother is dominant and the child submissive, the child's behaviour may be seen as a "product" of their relationship. It is the mother who influences rather than is influenced It is she who determines and lays down acceptable patterns and standards of behaviour. She is the authority, teacher, and "director", and it is for these reasons, then, that the following postulate is made - namely that since the child is seen as a "product" of the mother-child relationship, his fearfulness or non-fearfulness as expressed in the dental situation may be related to the positive or negative behaviour exhibited by his mother.

Hypothesis 3

Mothers who verbalise their fears in front of their children are more likely to have fearful children than mothers who do not verbalise their fears in front of their children.

This hypothesis deals again with fearfulness of mothers, but in a narrower sense and more explicit manner. A mother for example may say in front of her child "I'm terrified of the dentist", which statement, and statements of a similar nature, the investigator of the present study has heard on several occasions. The effect of these verbalisations may be to make the child see the situation through the eyes of his mother, as it were,

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