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ATTITUDES TOWARD AND THE CONSEQUENCES  
OF INFANT ORAL PACIFICATION

by

Faye M. Preece

A thesis submitted in partial fulfillment  
of the requirements for the degree

of

MASTER OF SCIENCE

in

Family and Child Development

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Faye M. Preece

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## ABSTRACT

Attitudes Toward and the Consequences  
of Infant Oral Pacification

by

Faye M. Preece, Master of Science

Utah State University, 1972

Major Professor: Dr. Jay D. Schvaneveldt  
Department: Family and Child Development

The purpose of this study was focused in two specific objectives: (1) to determine attitudes of professionals, namely pediatricians, general practitioners, and orthodontists toward the use of the oral pacifier; and (2) to determine the attitudes of primiparous mothers toward the use of the pacifier.

The mothers were chosen from the McKay-Dee Hospital in Ogden, Utah. They were divided into three groups: (1) 17 mothers with three-month-old babies, (2) 15 mothers with six-month-old babies, and (3) 15 mothers with nine-month-old babies, for a total of 47 mothers.

The professionals were divided into three groups: 7 pediatricians, 10 general practitioners, and 9 orthodontists, for a total of 26 professionals.

An instrument was developed to measure the attitudes toward the use of the oral pacifier, thumbsucking, and the consequences of their use. The instrument was called the Infant Oral Behavior Scale.

The hypotheses for the study were tested and sustained as follows:

1. The pacifier is interpreted as a positive non-nutritive device in child rearing.
2. The pacifier is preferred by physicians and orthodontists to prevent any malocclusion and other oral problems caused by thumbsucking.
3. The pacifier is preferred by mothers in soothing fretful and colicky babies.

The Infant Oral Behavior Scale proved to be a useful instrument as indicated by item analysis of the scale. All but 5 of the 30 items discriminated between the high and low scores.

Thirty-six of the 47 mothers breast fed their infants an average of 11 to 13 weeks. Thirty-two of the 47 mothers bottle fed their infants. Many of the mothers favored both the breast and the bottle in nourishing their infants. Thirty-four of the 47 mothers gave their infants an oral pacifier for an average length of 11 to 28 weeks. Physicians had recommended the use of the oral pacifier to 8 of the 34 mothers who used the pacifier. Of the 34 infants using a pacifier, 10 sucked their thumbs. Twenty-four of the infants did not suck their thumbs after using an oral pacifier. Eleven infants sucked their thumbs who had not been given an oral pacifier. The average length of thumbsucking of these infants was 6 to 32 weeks.

Twenty-one of the 26 professionals personally preferred infants to be breast fed. Two professionals personally preferred the infant to be bottle fed and three professionals believed it was the mother's choice, depending on her personality, age, and other factors. Professionally, 18 professionals preferred breast feeding while 4 preferred infants to be bottle fed. Four believed this was an individual choice of the mothers.

CHAPTER I  
INTRODUCTION

There is limited research evidence on the usage of and attitudes toward the oral pacifier. This study has focused on how physicians, orthodontists, and mothers with their first baby feel about the pacifier and to what extent the pacifier is used and the subsequent consequences.

There are basically two problems involving the pacifier. The first is the need of non-nutritive sucking in newborn infants. The sucking reflex is probably the most important volitional motor activity of the newborn infant. This is one patterned activity present at birth and perhaps even before birth. If this function is absent after birth there is a great deal of concern to all who have interest in the infant, since survival depends upon his ability to suck. It is through this function that he is able to ingest food. Sucking serves such an important function in the life of the infant that it is reasonable to state that it is an expression of a basic impulse--the instinct of self-preservation (Kaplan, 1950).

The second problem is thumbsucking. This is at the very best a nuisance to children, parents, and physicians (Rittelmeyer, 1955). At its worst, it can lead to personality and dental disorders. Perhaps the answer to the prevention of thumbsucking has been overlooked, because pacifiers seem to be the answer to this most anxiety-ridden problem. Some feel they are dirty. Barton (1930) has shown in bacteriologic studies that children's thumbs are 10 times dirtier than

the pacifier. Others say they cause air-swallowing and colic. The literature fails to reveal a single scientific objection to the use of pacifiers.

Spock (1969) feels that there are two basic problems that interfere with the most efficient use of the pacifier. In most cases where its use would be helpful, mothers are reluctant to use it at all or more often they introduce it too late, and the baby will not take it as he would have in his first few weeks. The second problem is that mothers who successfully use the pacifier for colic and fretfulness are apt to develop such dependence on it that every time the baby whimpers, it is "popped" into his mouth.

It is a general opinion that if the pacifier is used early in the baby's life and used when the mouthing and sucking reflex is most necessary to the infant, it can be discarded at age three or four months and almost always by one year. There is almost no danger of the baby sucking his thumb.

#### Statement of the Problem

The problem for investigation stems from the fact that little is actually known about the extensive use of the oral pacifier and the consequence of variable use of the same. Some doctors, especially orthodontists, have recommended the use of the pacifier in preventing many oral problems. Some physicians recommend the use of the pacifier for fretful and colicky infants. Many young mothers seem to use the pacifier for no apparent reason than as a convenience to them.

There seems to be a definite need in some children for added pacification. Many bottle-fed infants do not acquire the needed sucking

action when being fed because of the speed at which they are able to consume their formula. An oral pacifier is needed for the required sucking action to give the infant a feeling of well being. Many fretful and colicky infants need added pacification because of the tranquilizing effect it gives the baby. In most circumstances, however, the infant should not need added pacification after the age of three or four months. At this age they are able to find other ways of meeting their needs.

#### Purpose

The central purpose of this study was to ascertain general attitudes toward and consequences of the use of the oral pacifier. The general purpose was focused in the following specific objectives: (1) to determine the attitudes of new mothers with their first babies toward pacifiers; and (2) to determine attitudes of physicians, namely pediatricians, general practitioners, and orthodontists toward the use of pacifiers.

#### Hypotheses

1. The pacifier is interpreted as a positive non-nutritive device in child rearing.
2. The pacifier is preferred by physicians and orthodontists to prevent any malocclusion and other problems caused by thumbsucking.
3. The pacifier is preferred by mothers in soothing fretful and colicky babies.

CHAPTER II  
REVIEW OF LITERATURE

The infant during his first months of life obtains his greatest pleasurable sensation by means of the oral area. This is, of course, associated with other pleasurable sensations as being held, fondled, and spoken to while being prepared for, and during the nursing process. Karner (1969) noted that rhythmical mouthing occurs during regular sleep and can occur during irregular sleep. This bears no relation to hunger. Therefore, it would seem that sucking also occurs in response to a second impulse tending toward the satisfaction of another need. Kaplan (1950) described this as a need for sensual gratification and that, associated with its satisfaction, the infant experiences a sensation of pleasure. Wolff and Simmons (1967) stated that rhythmical mouthing may be classified among the spontaneous motor actions.

It appears that sucking is a normal phenomenon and in specific manifestations may show no relationship to hunger. Rhythmical mouthing persists beyond the first few weeks, remaining unchanged well into the sixth month of life.

Gessell and Ilg (1937) and others have described a hand-to-mouth pattern characteristic to all infants. In all the random movements that an infant makes with his limbs, he quickly establishes this hand-to-mouth pattern. When the maturation of the nervous system has advanced as far as the age of three or four months the infant can then manipulate its hands and arms. Then there appears a normal tendency to raise them to the mouth and there liberate the sucking reflex.

Thumbsucking, according to Gesell and Ilg, is an entirely normal function-- a stage of development that should pass by the second or third year.

At least in part, the infant seems to explore his world by means of the oral area. Considerable evidence suggests that during the first several months of the infant's existence, the mouth is utilized more frequently than all other sensory modalities for the perceptual recognition of environment (Starr, 1955).

Probably the major fact which determines the concrete establishment of why the baby sucks his thumb is found in the tranquilizing effect of the habit. Its pacifying effects account for the frequent use after the infant is put to bed. It may be concluded that chronically anxious infants find a most welcome haven in the activity of thumb-sucking which effectively dilutes and reduces anxiety.

Orthodontists feel that the use of artificial pacifiers is the lesser of the two evils and is preferred over the infant's use of the thumb. From a practical point of view, the child can be more easily separated from such an artificial device by its physical removal than from his thumb which serves as a built-in pacifier (Starr, 1955).

Klackenberg (1949) stated the satisfaction of the sucking activity is a factor but not the only factor in the etiology of thumbsucking. None of the 28 children who used the pacifier during the major part of the first year of life were thumbsuckers. The reason for this, besides the gratification of the sucking requirement, may be that the pacifier eliminates the rooted reaction patterns which are developed in finger-sucking by the need for solace and sucking. If the same need should arise in those who give up the pacifier after the age of one year, they do not have the same rooted habits at their command as do the thumbsuckers.



The child who had a pacifier will seek solace more adequate for his age.

Benjamin (1967) feels that thumbsucking arises from the rooting-placing reflexes which last about three months in infants. The results of her study suggest that those who wish to prevent or inhibit thumbsucking should follow the procedure of covering the hands of the babies. These coverings or mittens should be used until the placing and rooting have nearly stopped and can be discontinued thereafter. This would be around three months of age. It must be emphasized that this treatment depends on covering the hands before the habit begins. If the mother waits until the baby has been observed to thumbsuck before following the procedure, it probably will be too late. Folklore has well established that the covering of hands is ineffective in stopping thumbsucking once it has appeared (Benjamin, 1967).

Soentgen, Pierce, and Brenman (1969) showed two characteristic patterns of sucking activity. One pattern consisted of periods of relatively constant sucking activity with short pauses between bursts. The second pattern showed short periods of sucking activity with longer pauses between bursts. Infants exhibiting the latter pattern obtained less volume per sucking movement. One or two sucking movements occurred per respiration. Swallowing occurred most often at the end of inspiration or the beginning of expiration. Heart rate increased in most infants during sucking activity. The authors concluded, therefore, that the establishment of a library of normal sound patterns could be an aid in early diagnosis of pathological conditions reflected in the feeding act. Gesell (1945) has used sucking as one criterion for evaluating neurological developments in infants. It is, therefore,

believed that measurement of neural interrelationships as reflected by the sucking, respiratory, and swallowing complex can be helpful in evaluating not only the neurological state of the newborn infant but also establish a relationship between neonatal patterns and subsequent growth and development.

Sucking is a form of behavior which appears early in fetal life. It seems that the fetus can suck its thumb in utero at the age of four and one-half months (Dubignon, Campbell, and Partington, 1969). Even very small premature babies are able to suck before they can feed effectively. Dubignon, Campbell, and Partington (1969) studied "non-nutritive" sucking in a group of premature babies in order to find out when the sucking pattern of the full term baby appears and wished to assess the influence of maturity and post-natal experience on the sucking behavior of premature babies. Their study showed that as post-conceptual age increased the sucking scores of the premature babies rose toward those of full term babies. Sucking scores were related to maturity and were little affected by post-natal age of feeding experience. Non-nutritive sucking in premature infants appears to be a type of reflex motor behavior which matures steadily irrespective of post-natal age or feeding experience.

Cohen (1967) stated that non-nutritive sucking (e.g., on a rubber nipple pacifier) reduces the baby's general activity. The most recent observation shows that the newborn infant sucking on a pacifier becomes calm more quickly when a pacifier is given, and becomes more active or agitated when it is removed.

Mothers in many different cultures have known for a long time that crying, fretting, and agitated babies will relax when given a pacifier

to suck. It is generally accepted that the sucking response inhibits the babies' discomfort and distress even if the sucking is not associated with hunger and food ingestion (Kaplan, 1950).

It is easy to see how the baby can begin to suck his thumb, as this is a normal drive at birth. The persistent thumbsucker, however, indicates he is unable to obtain necessary satisfaction by means of his accustomed ways of interacting with other people and has at least for the time being given up his attempts to obtain gratification through and with others. To this extent he has withdrawn within himself. This activity with associated fantasies can be regarded as the prototype of other forms and even more severe degrees of withdrawal. Looking at thumbsucking this way, one can see it as a symptom along with others which indicates an emotional disturbance, or in other words, a disturbance in interpersonal relations. When viewed in this perspective, the problem becomes more comprehensible and leads to a therapeutic approach based upon this etiology (Kaplan, 1950).

Traisman and Traisman (1958) studied 2,650 infants and children. There were 1,208 thumbsuckers, 45.6 per cent of the total group. There were no differences in sex distribution. Seventy-five per cent of the infants who sucked their thumbs started to do so during their first three months of life, and the other 25 per cent during the remainder of the first year of life. Thumbsucking was frequently noticed in the newborn and during the neonatal period. The majority of the babies took less than 20 minutes to feed. Of the fast and average group, 41.7 to 45.8 per cent were thumbsuckers. This is probably significant in that the babies did not receive enough oral satisfaction. The higher incidence of thumbsucking, 62.7 per cent, in the slow group

taking 60 minutes or longer couldn't be explained. This study showed that the average age to stop thumbsucking was 3.8 years--some as late as 12-15 years.

Pacifiers were not recommended in this study; however, there were 28 infants who were given pacifiers and of these, 8 sucked their thumbs. In the thumbsucking group, 9.7 per cent developed malocclusion compared to 6.5 per cent of the non-thumbsuckers. It is interesting to note that of the 1,208 infants who sucked their thumbs, 976, or 80.8 per cent, still persisted at this habit at two years of age. Only 48 infants, 3.7 percent of those who sucked their thumbs, stopped this habit prior to, or at, one year of age. Feeding time was probably significant in the incidence of thumbsucking, as 81.6 per cent of the total group took 30 minutes or less to feed.

Wolff and Simmons (1967) studied the motor response of tickling in 24 healthy four-day-old infants. They were tested during ordinary restful sleep. The infants were sucking on a pacifier in sleep, and during sleep when they had a pacifier in their mouth but were not sucking. The results indicated that sucking renders the sleeping infant unresponsive to an external stimulus. It was of interest that a similar but less marked rise in response threshold was observed when a pacifier was in the baby's mouth, but the baby was not sucking. In this case, the infant usually responded to the stimulus with a new burst of sucking rather than a burst of diffuse motility, as in ordinary sleep. Various interpretations for these findings are being considered; but as Starr (1955) stated, the pacifier or thumbsucking has a very tranquilizing effect on an infant. Even in the very young infant, increased sucking action can be observed. During ritual circumcision, for example, the

infant is often given something to suck on. It can be compared to increased food intake which occurs in some adults during periods of emotional stress or strain (Kaplan, 1950).

With the review of habits typical of infancy and early childhood (the first three years of life), the sucking phenomenon would appear to rank highest from the point of view concerning incidence. This prevalence of sucking activities is not a chance or coincidental occurrence; instead, it is significantly related to important aspects of the psycho-physiological development of the infant (Starr, 1955). It is well to remember that the mouth serves the newborn as the "primary sense organ." During the first several months of the infant's existence, it may be utilized more frequently than all other sensory modalities for the perceptual recognition of its environment. To a major degree, the infant's discovery of parts of its external world is mediated through the hand-to-mouth exploratory mechanism. This coordinated movement which represents an early phase in its neuro-physiological and psychological maturation also sets the stage for the infant's early discovery of its fingers and thumb. This results in predisposing the infant toward the habit formation of thumbsucking (Starr, 1955).

Klackenberg's (1949) study would seem to recommend the use of pacifiers. In his research none of the children given an artificial pacifier developed the thumbsucking habit in later life. The wider acceptance and liberal use of the rubber pacifier in infancy would reduce the number of situations needing both orthodontic and psychological correction in later childhood.

### Summary

In summary, it would seem that perhaps 50 per cent of newborns do not need added pacification; they will probably never suck their thumbs or need an oral pacifier. The other 50 per cent will either suck their thumbs or be given an oral pacifier (Spock, 1969).

A general theme of the research suggests that pacifiers are the lesser of two evils and are better than the use of the thumb. It appears that it is much easier to throw the pacifier away than to break the thumbsucking habit. Orthodontists especially seem to prefer the pacifier over thumbsucking.

Why do so many people now use the pacifier when very few used them 10 to 20 years ago? Is it as Spock (1969) wondered--are mothers becoming more dependent on pacifiers than the children? The investigator believes there is a need to know how extensively the pacifier is used, the time length it is used, and with what results. There has been very little written on the problem. This research has attempted to provide answers to some of these questions in order to help fill this gap in the literature.

CHAPTER III  
PROCEDURE

The method and procedure followed in conducting this study is described as follows: (1) selection of the subjects, (2) description of the instrument, (3) measurement of reliability, (4) measurement of validity, (5) personal background sheet, (6) administration of the questionnaire, and (7) treatment of the data.

Selection of the Subjects

The subjects for this study were selected from two categories: (1) new mothers with their first babies, and (2) physicians and orthodontists.

The mothers were chosen from the McKay-Dee Hospital in Ogden, Utah. They were divided into three groups: (1) mothers with three-month-old babies, (2) mothers with six-month-old babies, and (3) mothers with nine-month-old babies. The questionnaires were ready to be sent in March, 1972; therefore, it was decided to use the months of December, September, and June (1971). The third week was picked at random, the dates falling between the seventeenth and the twenty-fourth days of the month. There were 25 mothers with three-month-old babies, 21 mothers with six-month-old babies, and 29 mothers with nine-month-old babies. Permission was given to the investigator by the hospital administration to check the Log Book of deliveries. It was possible to get a complete list of all mothers with their first babies and to get their addresses from the hospital records. It was decided

to use a complete sampling of all the mothers who gave birth to a baby during the week intervals previously described.

The physicians were divided into two groups: pediatricians and general practitioners. There were 9 pediatricians, 10 orthodontists, and 35 general practitioners in the Ogden, Utah, area. All of the pediatricians and orthodontists were used in the sample and 11 of the general practitioners. The general practitioners were not selected in a random fashion, but only in terms of the geographical area that feeds into the McKay-Dee Hospital. The 11 were selected in order to have approximately the same number in each of the three professional groups, but it should be noted that the sample is small and provides only a small scale profile of professionals in these three areas. It was assumed that the 11 general practitioners would be representative of the general practitioners in the Ogden area. When the questionnaires were sent, one pediatrician had retired, leaving a total of eight pediatricians.

#### Administration of the Questionnaire

The questionnaire, along with a letter of introduction and a background information sheet, was sent through the mail on March 6, 1972, to all those participating in the study. Two weeks later, cards were sent to all participants asking them to return the questionnaire. Two weeks later cards were sent to all the orthodontists thanking them for their interest and cooperation in returning the questionnaire. There were 10 orthodontists with 9 returning the questionnaire, which gave a 90 per cent response.



Personal calls were made to all pediatricians and general practitioners thanking them for their help and cooperation. There were 11 general practitioners with 10 returns, giving a 91 per cent response. Eight pediatricians were sent questionnaires with seven being returned, giving an 88 per cent response. This gave a 90 per cent average return from the three groups of professionals.

Mothers in the Ogden area participating in the study were personally called and thanked for their interest and cooperation. Those who did not have telephones or lived out of the city were sent cards thanking them for their interest and cooperation. The mailing and return of the mothers' questionnaires went as follows:

1. For mothers with three-month-old babies, 25 questionnaires were sent. One was returned marked address unknown. Seventeen were completed and returned. This gave a 71 per cent response.

2. For mothers with six-month-old babies, 21 questionnaires were sent. Three were returned marked address unknown. Fifteen were completed and returned. This gave an 83 per cent response.

3. For mothers with nine-month-old babies, 29 questionnaires were sent. Five were returned marked address unknown. Fifteen were completed and returned. This gave a 63 per cent response. This was the hardest group to contact. Many lived out of the Ogden area and could not be reached by telephone or had moved and had not left a forwarding address.

The average return for the three groups of mothers was 72 per cent. The total average return for both mothers and professionals was 81 per cent.

### Description of the Instrument

Attitudes of primiparous mothers, coupled with physicians and orthodontists, towards oral behavior were under assessment. This required the development of a scale for the measurement of attitudes toward the use of the oral pacifier, thumbsucking, and the consequences of their use. Three areas were selected which seemed to be typically ones of concern: (1) the use of the oral pacifier, (2) importance of the sucking reflex, and (3) attitudes on thumbsucking.

The non-nutritive sucking reflex cannot be separated from the use of the pacifier, so this area had to be included in the scale. Thumbsucking was also important because it, too, cannot be separated from the need and dependency of the sucking reflex and the use of the pacifier; therefore, questions concerning thumbsucking were added to the scale.

The second step in developing a scale was to list a variety of possible attitudes toward the three selected areas of concern to be used as scale items.

The third step was to have two professionals in the Field of Education and Family and Child Development from Utah State University and three professionals in the Field of Nursing, Family and Child Development, and Psychology from Weber State College examine the list of possible items for specific criteria and then accept, reject, revise, or add to these items.

The completed instrument was a Likert-type scale of 30 items: 20 items in the area of oral pacifiers, 2 items in the area of non-nutritive sucking, and 8 items in the area of thumbsucking. This scale was called

the Infant Oral Behavior Scale. The items were interspersed in the scale in order to avoid obvious disclosure of the attitudes they were testing. The subjects responded to the items in the following way: "strongly agree," "mildly agree," "mildly disagree," "strongly disagree." No undecided or neutral opinion was offered the subjects.

#### Reliability

Reliability was determined by test-retest. Fifty undergraduate students at Weber State College in a Marriage and Family Living class were asked to respond to the scale. Two weeks later the subjects were asked again to respond to the same scale. The results were then examined for consistency by measuring the percentage of agreement in the answers from each questionnaire. The measure of reliability was found to be 88 per cent. This per cent was found by checking the exact answers in the two correlating tests given each student.

#### Validity

Validity of the scale was examined as follows. Two specialists from Utah State University in the Departments of Education and Family and Child Development and three specialists from Weber State College in the Departments of Nursing, Child Development, and Psychology evaluated the possible scale items. The list of possible scale items had been previously compiled by the investigator and the major professor for this study. The two specialists from Utah State University were each given the list of suggested items and instructions for evaluating them several days prior to the meeting of the graduate committee. At the meeting the specialists were instructed to accept, reject, or revise

each item on the basis of: (1) validity (does this item test the attitude it is intended to test?), (2) appropriate wording (is the item so worded that it is understandable and clear to the reader?), and (3) singularity of purpose (does this item test only one concept or attitude?). The two members of the committee were in agreement with the scale and only minor word changes were made. The three specialists from Weber State College were given the same instructions and were in agreement with the two specialists from Utah State University. The items of this scale were judged to be valid by the specialists.

#### Personal Background Information

A background information sheet was completed by the mothers and the doctors. The purpose was to acquire some information needed in interpreting the data. For the doctors this included the following: (1) specialty, (2) age, (3) years practicing medicine, (4) number of children, (5) preference, both professionally and personally, in breast feeding or bottle feeding babies, (6) religious preference, and (7) attitude toward the use of an oral pacifier. For further information see the Appendix.

The general information for the mothers was the following: (1) age, (2) occupation of husband, (3) years married, (4) age of child, (5) whether the child was breast fed or bottle fed and the length of time, (6) whether a pacifier was used and if so, how long and did a physician recommend it, (7) whether the baby was a thumbsucker, (8) education of the mother, and (9) religious preference of the family.

### Analysis of Data

Since the groups are independent and the data are in terms of frequencies in discrete categories, the chi square test of independence was used. Significance level was set at .05. Other descriptive statistics were used as needed to analyze and classify the data.

#### CHAPTER IV FINDINGS

The purpose of this study was to assess the attitudes and behavior in regards to the oral pacifier and related oral behavior of infants who were three months, six months, and nine months of age. A sample composed of 47 primiparous mothers with babies in each of the three categories and three groups of medical personnel were used in order to fulfill this purpose.

Birth dates were selected from the McKay-Dee Hospital in Ogden, Utah, based on weekly records. Three such week intervals were selected in a random fashion and included June 17-24, September 17-24, and December 17-24. The McKay-Dee Hospital serves the metropolitan area of Ogden and adjacent cities. Each mother completed a background information sheet and responded to the Infant Oral Behavior Scale. Table 1 depicts the background information of the three groups of mothers.

Mothers of six-month-old infants made up the oldest group of mothers, being two years older than the mothers with three-month-old infants and one year and ten months older than mothers with nine-month-old infants.

The mothers of six-month-old infants had more education than the other two groups of mothers and more were married to professional men.

The total sampling of mothers was predominantly members of the Latter-day Saint Church.

Table 2 describes the background information pertaining to the number of babies that were breast fed and/or bottle fed. It is

Table 1. Personal background information of the three groups of mothers

Mothers	$\bar{X}$	$\bar{X}$	$\bar{X}$	Employment	%	N	Religion	%	N
	Age	Months married	Years of education	station of husband					
(N=17) 3-month-old babies	22	32	14.2	Professional	30 - 5	L.D.S.	82 - 14	6 - 1	6 - 1
				Business	24 - 4		Baptist		
				Blue Collar	24 - 4		Other		
				Students	22 - 4		None		
(N=15) 6-month-old babies	24	31	14.4	Professional	33 - 5	L.D.S.	87 - 13	13 - 2	7 - 1
				Business	27 - 4		Protes-		
				Blue Collar	27 - 4	tant			
				Students	13 - 2				
(N=15) 9-month-old babies	22.2	31	13	Professional	13 - 2	L.D.S.	93 - 14	7 - 1	
				Business	7 - 1		Catholic		
				Blue Collar	60 - 9				
				Students	20 - 3				

Table 2. Breast and bottle feeding behavior of the three groups of mothers

Mothers	Breast fed			Bottle fed		
	%	N	(Weeks) Length	%	N	(Weeks) Length
(N=17) 3-month-old babies	82	14	11	73	11	12
(N=15) 6-month-old babies	87	13	8	67	10	12
(N=15) 9-month-old babies	60	9	13	73	11	36

important to notice in Table 2 that many of the responses total more than 100 per cent. Many of the subjects favored two categories and some did not express an opinion on some items.

In this study the mothers were predominantly Latter-day Saints; however, four of the six mothers who were not Latter-day Saints did breast feed their babies and two did not.

Table 3 describes the background information in regards to the use of the oral pacifier and thumbsucking. Mothers of six-month-old infants had the highest number of infants using the oral pacifier because it had been recommended by a physician. Reasons given by the four mothers for the need of a pacifier were: "The baby needed added pacification." "The pacifier would benefit the child's mental and oral health." "The baby had colic." "A fretful baby who was allergic to milk."

Of the six-month-old babies that used a pacifier as recommended by a physician, only one sucked its thumb later--this being a fretful baby who was allergic to milk. Three of the 47 mothers stated the reason they used an oral pacifier was because it had been recommended in the prenatal class. This class was taught at the McKay-Dee Hospital, under the direction of a registered nurse.

Three mothers with three-month-old infants gave their babies a pacifier because it had been recommended by a physician. Reasons given were the following: "Baby had a feeding problem." "To get rid of excess saliva and to calm her down." "Baby was colicky."

One mother with a nine-month-old infant gave her baby an oral pacifier because it had been recommended by a physician. The reason given was: "The baby had colic." The mother stated her baby was still



Table 3. Use of the oral pacifier and thumbsucking information from the three groups of mothers

Babies	Used pacifier		(Weeks) Average length use	Recom- mended by physician		Sucked thumb		(Weeks) Average length thumb-sucking	Did suck thumb; used pacifier		Didn't suck thumb; used pacifier	
	%	N		%	N	%	N		%	N	%	N
(N=17) 3-month-old	71	12	11	18	3	29	5	6	33	4	58	8
(N=15) 6-month-old	67	10	12	27	4	13	2	12	13	2	80	8
(N=15) 9-month-old	80	12	28	7	1	27	4	32	27	4	67	8

using it as a convenience to her. Three of the 12 infants in the nine-month-old group used the pacifier only at night. These mothers were the only ones who stated their babies used the pacifier only at night.

Table 4 explains the personal background information about the physicians and orthodontists. It is interesting to note that the pediatricians are the oldest group in the professional sample and also have practiced the longest period of time. The orthodontists make up the youngest group in the professional sample, possibly because it is the youngest profession.

Table 5 shows the preferences of physicians and orthodontists regarding breast and/or bottle feeding.

Some categories total more than 100 per cent, as multiple responses were expressed by the group. "Personally," two general practitioners

Table 4. Personal background information of the physicians and orthodontists

	Mean age	Mean years practicing medicine	Mean number of children	Religion	%	N
Pediatricians	54	25	5	L.D.S. Protestant	86 - 6 14 - 1	
General practitioners	49	17	4	L.D.S. Protestant	80 - 8 20 - 2	
Orthodontists	39	11	3	L.D.S.	100 - 0	

Table 5. Preferences of physicians and orthodontists regarding breast and/or bottle feeding

Professional group	Professionally prefers babies to be breast fed		Professionally prefers babies to be bottle fed		Personally prefers babies to be breast fed		Personally prefers babies to be bottle fed	
	%	N	%	N	%	N	%	N
(N=7) Pediatrician	86	6	29	2	71	5	None preferred	
(N=10) General practitioner	60	6	20	2	80	8	10	1
(N=9) Orthodontist	67	6	0	0	89	8	11	1

and two pediatricians believed that breast feeding a baby depended on several personal factors concerning the mothers, such as age and personality; it should, therefore, be individualized. "Professionally," five general practitioners preferred both breast feeding and bottle feeding and believed it was the mother's choice. Three pediatricians "professionally" preferred both breast and bottle-fed babies, believing it was the mother's choice.

Following are personal comments made on the Background Information Sheet sent to each pediatrician regarding the pacifier: "Use when necessary but not all the time." "It helps mothers a great deal temporarily, but it does require weaning. I often wonder if it should be started in the first place." "In certain cases the pacifier is necessary, but should not be overused." "Do not get hooked." "Favorable to the use of the pacifier." "Tolerant to the use of the pacifier." "Optional--use as determined by the mother."

The general practitioners made the following comments about the use of the pacifier: "The pacifier is tolerated but prefer the Nuk-Sager variety." "If the pacifier is once started it should be thrown away at four months." "I prefer to get along without it." "I don't recommend them, but don't discourage them when they are already using them." "A necessary evil in some cases." "The pacifier can be thrown away--a thumb cannot." "I have found no harm in their frequent use by mothers." "They ordinarily do not ask your advice." Three general practitioners were indifferent to the pacifier.

The orthodontists stated the following in regards to the use of the pacifier: "Oral pacifiers are awful things--but often necessary and more often with bottle fed babies than breast fed babies. If a pacifier

is needed, then it should be one that encourages the normal growth and development of the oral-facial structures, i.e., bone and soft tissues as well as dental development. Presently, there is only one type of pacifier designed to complement and encourage normal growth and development, and that is the Nuk-Sager Oral Exerciser." "I prefer the pacifier over thumbsucking, but should not be over done and should be weaned early." "I do not discourage the pacifier." "The pacifier is much better than thumb or finger." "If necessary, but wean early." "Prefer the pacifier if the child sucked its thumb." "If the child needs one, let him or her have one. They will out grow it." "O.K.--with time limitations." "I do not like them."

The general opinion of the pediatricians is favorable to the use of the pacifier. They believe the pacifier is necessary in some cases, but should not be overused; weaning the infant early is important.

The majority of the general practitioners are tolerant toward the oral pacifier. They have found no harm in mothers using them; however, they believe they should not be used after four months. They also favor the pacifier over thumbsucking.

All orthodontists favor the oral pacifier over thumbsucking. They feel it should not be overused, however, and that weaning the baby early is important. One orthodontist feels a baby needs added pacification, especially bottle-fed infants, and a pacifier is preferred over thumb or finger sucking.

Orthodontists and general practitioners favor a certain oral pacifier which is called a Nuk-Sager Oral Exerciser. This pacifier will complement and encourage normal growth and development of the

oral-facial structure; this includes dental development as well as the bone and soft tissue structure of the face.

Responses of the Subjects to the  
Oral Infant Behavior Scale

A comparison was made of each item in The Infant Oral Behavior Scale as to responses made by the professional groups and the three groups of mothers. For this analysis, the four-point scale was collapsed into a single dichotomy of "agreement" and "disagreement." When the mothers and professional groups were compared on raw scores of agreement or disagreement on each of the 30 items, only 5 of the items showed a significant difference in responses. Table 6 includes the five significant items, corresponding level of significance, and chi square value. See the Appendix for further details.

Table 6. Items on which mothers and professionals differ in regard to agreement and disagreement

Item	Chi square value	Level significance
15. Pacifiers are more sanitary than sucking a finger or thumb.	11.0	.001
18. Pacifiers should be recommended for infants with colic.	17.9	.001
23. Pacifiers are beneficial in supplying needed sucking reflex for normal growth and development.	10.06	.01
28. An infant will not use a pacifier after he has started thumbsucking.	8.77	.01
29. Pediatricians should recommend pacifiers for most children.	5.88	.02

It is interesting to note in regards to item 15 which states, "Pacifiers are more sanitary than sucking finger or thumb," that more professional men disagreed with the statement, with the mothers agreeing. According to Barton's (1930) research, the thumb was more contaminated than the pacifier. The bacterial colonies were 10 times more frequent in smears from the thumb than from the pacifier. The thumb is a dirty, bacterially contaminated organ, most of all when the hands begin to be used for the purpose of examination.

In regards to item 18 which states, "Pacifiers should be recommended for infants with colic," mothers agreed and the professional men disagreed. Yet Levin and Kaye (1964) recommended their use to treat infant colic; and his results were excellent.

Item 23 states, "Pacifiers are beneficial in supplying infants with needed sucking reflex for normal growth and development." Fifty per cent, or 13, of the professional men agreed and 50 per cent, or 13, of the professionals disagreed. Thirty-nine of the 47 mothers agreed to this statement.

Item 28 states, "An infant will not use a pacifier after he has started thumbsucking." The three groups of mothers strongly agreed to this statement. The professionals, however, disagreed. It is interesting to note that Spock (1969) agrees with the mothers. He feels that unless the pacifier is started early the child will not take it as he would have in his first few weeks. Babies become opinionated very young. However, one mother with a three-month-old infant stated her baby preferred the pacifier over the thumb, even though the baby had started to suck his thumb first.

Item 29 states, "Pediatricians should recommend pacifiers for most children." In responding to this statement, the professionals strongly disagreed, with 22 disagreeing and 4 agreeing. Twenty-eight of the mothers disagreed, while 19 agreed that the pediatricians should recommend the pacifier. According to Spock (1969), many babies--50 per cent--never try to thumbsuck at all.

Orthodontists favor pacifiers over the thumb, but feel the pacifier should only be used when necessary. The wider acceptance and liberal use of the rubber pacifier in infancy would reduce the number of situations needing both orthodontic and psychological correction in later life, according to many orthodontists and pediatricians (Starr, 1955).

#### Item Analysis of the Infant

##### Oral Behavior Scale

A key was developed according to the criterion of negative or positive content of an item in regard to oral behavior. For example, item 1 states, "Thumbsucking is a nuisance." It was classified as positive if the respondent disagreed with the statement and negative if agreement was given. All items on the scale were keyed in this fashion. It should be noted that a keyed response was not always the correct or logical response to an item, but it did constitute a systematic method of scoring each subject's responses for purposes of item analysis. Each completed scale was scored by assigning a two if the subject responded in a pronounced manner or one if a mild response was given. An example of this method can be illustrated with item 7 which states, "Pacifiers are useful in the care of fretful or crying

babies." Agreement with this item was keyed a positive response and "strongly agree" was given a value of two while "mildly agree" was given a one. Any phrase of disagreement was given a zero. It was not assumed that a single dimension of measurement existed in the four-point scale.

The scores were tabulated for each mother in the three groups and each professional and then ranked from high to low for the 73 completed scales. The upper quartile and lower quartile of 18 each were then compared to determine which items on the scale would discriminate between high and low scorers. The results of this item analysis are presented in Table 7.

The Infant Oral Behavior Scale was proven to be a discriminating and useful measurement of oral behavior attitudes as determined by the item analysis. Of the 30 items in the scale, only 5 failed to differentiate between the high and the low scores.

#### The First Hypothesis

The first hypothesis stated: The pacifier is interpreted as a positive non-nutritive device in child rearing. Item 6 in the Infant Oral Behavior Scale stated: "Non-nutritive sucking is necessary for the infant's normal development." Table 8 shows the results of the raw scores in evaluating the two sample groups in the scoring of item 6.

Thirty-four of the 47 mothers agreed to item 6. Three pediatricians agreed, while four disagreed. Seven general practitioners agreed, while three disagreed. Five orthodontists agreed, while four disagreed. A total of 15 professionals agreed, while 11 professionals disagreed.



Table 7. Item analysis of the Infant Oral Behavior Scale

Item	Chi square level	Level of significance
1. Thumbsucking is a nuisance.	12.82	.001
2. Thumbsucking is necessary for the well-being of an infant.	7.95	.01
3. Thumbsucking is an unclean habit.	1.98	n.s.
4. A tranquilizing effect is found when a baby sucks his thumb.	2.48	n.s.
5. Thumbsucking can cause protruding teeth.	26.79	.001
6. Non-nutritive sucking is necessary for the infant's normal development.	30.03	.001
7. Pacifiers are useful in the care of fretful or crying babies.	19.9	.001
8. Pacifiers can be used in preventing thumbsucking.	28.3	.001
9. All babies such their thumbs at one time or another.	3.3	n.s.
10. The habit of sucking a pacifier is easier broken than thumbsucking	13.04	.001
11. The mother is more dependent on the pacifier than the baby is.	3.9	.02
12. Pacifiers are useful to control a crying or fretful infant.	16.1	.001
13. Mothers should avoid the use of a pacifier unless the infant is a thumbsucker.	1.85	n.s.
14. It is difficult to break the baby of the pacifier habit.	13.62	.001
15. Pacifiers are more sanitary than sucking a finger or thumb.	20.79	.001
16. Pacifiers are not medically safe.	16.9	.001

Table 7. Continued

Item	Chi square level	Level of significance
17. Cracked lips and sore mouths are associated with the use of pacifiers for children	5.0	.02
18. Pacifiers should be recommended for infants with colic.	10.2	.01
19. Anxiety is one factor behind thumbsucking in older children.	8.8	.01
20. The value of pacifiers is to prevent thumbsucking.	7.62	.01
21. Children will voluntarily give up the pacifier before the age of two.	11.0	.001
22. There is no harm in letting a child use a pacifier in going to sleep.	24.0	.001
23. Pacifiers are beneficial in supplying infants with the needed sucking reflex for normal growth and development.	41.8	.001
24. From the dental health point of view, a pacifier is preferred over thumb-sucking.	9.2	.01
25. Sucking is the major reflex of a newborn infant.	2.80	n.s.
26. An infant does not need a pacifier after the age of three months.	14.1	.001
27. A child sucking his thumb after five years of age could have emotional problems.	14.2	.001
28. An infant will not use a pacifier after he has started thumbsucking.	30.5	.001
29. Pediatricians should recommend pacifiers for most children.	14.03	.001
30. Pacifiers are less apt to cause children to have problems with their teeth than is thumbsucking.	12.1	.001

Table 8. Responses to item 6

	Agree	Disagree
<u>Mothers with</u>		
3-month-old infants	13	4
3-month-old infants	10	5
9-month-old infants	11	4
Total	34	13
<u>Professionals</u>		
Pediatricians	3	4
General practitioners	7	3
Orthodontists	5	4
Total	15	11
Combined total	49	24

It is, therefore, evident that the majority of the subjects agree that "non-nutritive sucking is necessary for the infant's normal development."

Item 23 states, "Pacifiers are beneficial in supplying infants with needed sucking reflex for normal growth and development." Table 9 shows the raw scores in evaluating the two sample groups in scoring item 23.

Forty of the 47 mothers agreed that "Pacifiers are beneficial in supplying infants with needed sucking reflex for normal growth and development." However, three pediatricians agreed and four disagreed; four general practitioners agreed, while six disagreed; and six orthodontists agreed, while three disagreed. Thirteen professionals agreed and 13 disagreed. In comparing the total sampling of subjects, 53 agreed that "Pacifiers are beneficial in supplying infants with

Table 9. Responses to item 23

	Agree	Disagree
<u>Mothers with</u>		
3-month-old infants	16	1
6-month-old infants	10	5
9-month-old infants	14	1
Total	40	7
<u>Professionals</u>		
Pediatricians	3	4
General practitioners	4	6
Orthodontists	6	3
Total	13	13
Combined total		

needed sucking reflex for normal growth and development." There is sufficient evidence to accept the first hypothesis.

#### The Second Hypothesis

The second hypothesis stated: The pacifier is preferred by physicians and orthodontists to prevent any malocclusion and other oral problems caused by thumbsucking. The following scale items are concerned with the second hypothesis. Item 5 states: "Thumbsucking can cause protruding teeth." Table 10 shows the raw scores in evaluating the three groups of professionals in scoring item 5.

The general practitioners and the orthodontists agreed that "Pacifiers are preferred by physicians and orthodontists to prevent any malocclusion and other oral problems caused by thumbsucking." The

Table 10. Responses to item 5

	Agree	Disagree
<u>Professionals</u>		
Pediatricians	3	4
General practitioners	8	2
Orthodontists	9	0
Total	20	6

pediatricians disagreed four to three with the above statement. However, 20 of the 26 professionals agreed that pacifiers are preferred.

Item 24 states: "From the dental point of view, a pacifier is preferred over thumbsucking." Table 11 shows the raw scores in evaluating the three groups of professionals in scoring item 24.

Table 11. Responses to item 24

	Agree	Disagree
<u>Professionals</u>		
Pediatricians	7	0
General practitioners	9	1
Orthodontists	9	0
Total	25	1

Twenty-five professionals agreed that, "From the dental point of view, a pacifier is preferred over thumbsucking," while one disagreed. There is sufficient evidence that the above statement is strongly endorsed by the professionals in this study.

Item 30 states: "Pacifiers are less apt to cause children to have problems with their teeth than is thumbsucking." Table 12 shows the raw scores in evaluating the three professional groups.

Table 12. Responses to item 30

	Agree	Disagree
<u>Professionals</u>		
Pediatricians	4	3
General practitioners	9	1
Orthodontists	9	0
Total	<u>22</u>	<u>4</u>

Twenty-two professionals agreed that "Pacifiers are less apt to cause children to have problems with their teeth than is thumbsucking," while four disagreed. Three pediatricians disagreed with the above statement, while one general practitioner disagreed and no orthodontists disagreed. It is evident there is sufficient evidence to accept the second hypothesis stating that "Pacifiers are preferred by physicians and orthodontists to prevent any malocclusion and other oral problems caused by thumbsucking."

#### The Third Hypothesis

The third hypothesis states: The pacifier is preferred by mothers in soothing fretful and colicky babies. The following scale items are concerned with the third hypothesis. Item 7 states: "Pacifiers are useful in the care of fretful or crying babies. Table 13 shows the

raw scores in evaluating the three groups of mothers. Forty-four of the 47 mothers agreed that "Pacifiers are useful in the care of fretful or crying babies."

Table 13. Responses to item 7

	Agree	Disagree
<u>Mothers with</u>		
3-month-old infants	17	0
6-month-old infants	13	2
9-month-old infants	14	1
Total	44	3

Item 12 states: "Pacifiers are useful to control a crying or fretful infant." Table 14 shows the raw scores in evaluating the three groups of mothers.

Table 14. Responses to item 12

	Agree	Disagree
<u>Mothers with</u>		
3-month-old infants	15	2
6-month-old infants	13	2
9-month-old infants	15	0
Total	43	4

Forty-three of the 47 mothers agreed that "Pacifiers are useful to control a crying or fretful infant."

Item 18 states: "Pacifiers should be recommended for infants with colic." Table 15 shows the raw scores in evaluating the three groups of mothers.

Table 15. Responses to item 18

	Agree	Disagree
<u>Mothers with</u>		
3-month-old infants	15	2
6-month-old infants	10	5
9-month-old infants	10	5
Total	35	12

Thirty-five of the 47 mothers agreed that "Pacifiers should be recommended for infants with colic."

The preceding evidence seems conclusive to accept the third hypothesis: "Mothers do prefer the pacifier in soothing fretful and colicky infants."



CHAPTER V  
SUMMARY AND DISCUSSION

The central purpose of this study was to ascertain general attitudes toward and consequences of the use of the oral pacifier. The general purpose was focused in the following specific objectives: (1) to determine attitudes of professionals, namely pediatricians, general practitioners, and orthodontists toward the use of the oral pacifier; and (2) to determine the attitudes of primiparous mothers toward the use of pacifiers.

The hypotheses for this study were the following:

1. The pacifier is interpreted as a positive non-nutritive device in child rearing.
2. The pacifier is preferred by professionals, namely pediatricians, general practitioners, and orthodontists, to prevent any malocclusion and other oral problems caused by thumbsucking.
3. The pacifier is preferred by mothers in soothing fretful and colicky babies.

The mothers were chosen via the delivery log of McKay-Dee Hospital in Ogden, Utah. They were divided into three groups: (1) 17 mothers with three-month-old babies, (2) 15 mothers with six-month-old babies, and (3) 15 mothers with nine-month-old babies. This resulted in a total of 47 mothers who returned the questionnaires.

The physicians were divided into two groups: pediatricians and general practitioners. There were 9 pediatricians and 35 general practitioners in the Ogden area. There was a total of 10 orthodontists

in the Ogden area. It was deemed advisable to have approximately 30 doctors; therefore, 11 general practitioners were selected. This was 31.4 per cent of the general practitioners in the Ogden area. When the questionnaires were ready to be sent, one pediatrician had retired leaving a total of eight pediatricians. Twenty-nine doctors were sent questionnaires, with 26 returning them. This gave a 90 per cent return from the physicians and odontologists.

The 47 mothers coupled with the 26 professionals resulted in a total of 73 subjects responding to the questionnaire. This gave a total of 81 per cent for both groups.

An instrument, the Infant Oral Behavior Scale, was developed to measure attitudes toward the use of the oral pacifier, thumbsucking, and the consequences of their use. Three areas were selected which seemed to be typically ones of concern: (1) the use of the oral pacifier, (2) the importance of the sucking reflex, and (3) attitudes on thumbsucking. The scale consisted of 30 items to which the subjects responded, "strongly agree," "mildly agree," "mildly disagree," and "strongly disagree." During the development of the scale, checks were made of reliability and validity of the scale items. Reliability was determined by test-retest, and was found to be 88 per cent. Validity of the scale was examined by specialists from Utah State University and Weber State College who evaluated possible scale items with regards to specific criteria.

The data were analyzed through the use of the chi square test of independence. The level of significance was placed at the .05 level.

### Findings and Conclusions

The physicians and orthodontists preferred the pacifier over thumb-sucking. The professionals felt it was much easier to break an infant of using an oral pacifier than to break the infant of sucking his or her thumb. They felt a thumb was a built-in pacifier and was very hard to separate from the child. The professionals felt that an infant should be weaned early, between three and four months, from the pacifier. It was believed by the majority of professionals that children could use a pacifier at night up to the age of two years without any notable problems. A certain type of pacifier was recommended. This pacifier was called the "Nuk-Sager Oral Exerciser." This pacifier encourages the normal growth and development of the oral-facial structures.

It is interesting to note that 80 per cent of the professional men personally preferred breast feeding over bottle feeding of infants. Seventy-one per cent of the professionals professionally preferred breast feeding to bottle feeding infants. The majority of mothers agreed with the doctors in that 78 per cent of the mothers breast fed their infants. Of those who did not, several mothers stated they would have breast fed their babies, but were unable to do so because they were working. Of the 35 mothers who breast fed their infants, it was found that they nursed their babies an average of three to four months.

The mothers in the three groups agreed that thumbsucking was a nuisance. They preferred using the oral pacifier to having an infant sucking his or her thumb. The mothers felt it is easier to wean the infant from sucking the pacifier than to wean the infant from thumbsucking.

A majority of the mothers agreed that pacifiers are useful in the care of fretful and colicky infants. They felt pacifiers can be used in preventing thumbsucking. The mothers strongly agreed that pacifiers are beneficial in supplying infants with the needed sucking reflex for normal growth and development. However, they did not feel that every child needed a pacifier and that pediatricians should not recommend an oral pacifier for all children.

Three hypotheses were developed and examined:

1. The pacifier is interpreted as a positive non-nutritive device in child rearing. Forty of the 47 mothers agreed with the first hypothesis. Thirteen of the 26 professionals agreed. In totaling the scores of the mothers and the professionals, the total score was 53 subjects agreeing while 20 subjects disagreed. It would seem evident that the majority of subjects sampled agreed to the first hypothesis.

2. The pacifier is preferred by physicians and orthodontists to prevent any malocclusion and other dental problems. The evidence in this study seems conclusive in stating that there is agreement among the professionals that pacifiers are preferred over thumbsucking to prevent any malocclusion or other dental problems.

3. The pacifier is preferred by mothers in soothing fretful and colicky babies. The evidence is conclusive that mothers strongly agreed that pacifiers are preferred in soothing fretful and colicky babies.

The Infant Oral Behavior Scale was proven to be a systematic and useful measure of oral behavior attitudes as determined by the item analysis. Of the 30 items in the scale, only 5 failed to differentiate between the high and low scores.

In conclusion, the 73 subjects agreed to the following:

1. An oral pacifier is preferred over thumbsucking.
2. Pacifiers are beneficial in supplying infants with needed sucking reflex for normal growth and development.
3. The 26 professionals agreed that an oral pacifier is preferred over thumbsucking to prevent any malocclusion or dental problems.
4. The 47 mothers preferred the pacifier in soothing fretful and colicky babies.

#### Discussion

In reviewing the background information, it is important to note that 36 of the 47, or 77 per cent, of the mothers breast fed their babies. Two mothers stated they wanted to breast feed their babies, but because of financial problems it was necessary for them to work. In comparison to the national average this is a high percentage of mothers breast feeding their babies. The following questions arise:

1. Could the reason be that the mothers are predominantly Latter-day Saints?
2. Could the reason be that these are young mothers with their first baby and they have more time to spend with their baby?
3. Could the reason be that the majority of these young mothers have had at least one year of college and perhaps have taken a Family and Child Development class? The answers to these questions could make some interesting follow-up studies.

Mothers with six-month-old babies are the oldest group of mothers, being two years older than the mothers with three-month-old babies and one year and ten months older than the mothers with nine-month-old

babies. Mothers in this group have had more education and more are married to professional men in comparison with the other two groups of mothers. Much interest was shown in this group--10 mothers requested the results of this study be sent to them.

Mothers with nine-month-old babies had less education than the other two groups of mothers. Nine mothers, or 60 per cent, were married to blue collar workers. This group was the most unresponsive in replying to the questionnaire.

#### Suggestions for Added Research

1. A complete sampling of general practitioners on attitudes toward the oral pacifier.

2. A follow-up study of mothers with more than one child on attitudes toward the oral pacifier.

3. A study of mothers with different religious beliefs, to determine if this influences their attitudes toward breast feeding and pacification.

4. Further study on the educational level of the mothers to see if this does influence their attitude toward breast feeding and pacification.

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## APPENDIX

March 6, 1972

Dear \_\_\_\_\_,

I have found that in teaching my student nurses at Weber State College, I need a better and a more current background to meet the questions and challenges I face in my profession. Therefore, I am involved in the preparation of a thesis for a Master's degree.

It would help me a great deal if you would fill out the questionnaire and return it promptly to me. If any of the material I have would help you, I would be happy to share it with you.

When my thesis is completed and published, you will know that it was a cooperative effort and without your assistance it would not have been virtually possible.

Sincerely,

Faye M. Preece  
Instructor, Weber State  
College

FMP:ra

Encl.

Questionnaire

## I. General Information for the Physicians

What is your specialty? \_\_\_\_\_

Year of birth \_\_\_\_\_

How many years have you practiced medicine? \_\_\_\_\_

How many children do you have? \_\_\_\_\_

Do you personally prefer babies to be breast fed? Yes \_\_\_\_\_ No \_\_\_\_\_

Do you personally prefer babies to be bottle fed? Yes \_\_\_\_\_ No \_\_\_\_\_

Professionally, do you recommend babies to be breast fed?

Yes \_\_\_\_\_ No \_\_\_\_\_

Professionally, do you recommend babies to be bottle fed?

Yes \_\_\_\_\_ No \_\_\_\_\_

Religious preference:

\_\_\_\_\_ Catholic

\_\_\_\_\_ L.D.S.

\_\_\_\_\_ None

\_\_\_\_\_ Protestant

\_\_\_\_\_ Other

What is your own attitude toward the use of an oral pacifier?

\_\_\_\_\_

Questionnaire

## II. General Information for Mothers

Year of birth \_\_\_\_\_

Occupation of husband \_\_\_\_\_

Years married \_\_\_\_\_

Age of child(ren):

MalesFemales

1. \_\_\_\_\_ 1. \_\_\_\_\_

2. \_\_\_\_\_ 2. \_\_\_\_\_

3. \_\_\_\_\_ 3. \_\_\_\_\_

Did you breast feed your children? Yes \_\_\_\_\_ No \_\_\_\_\_

How many did you breast feed? \_\_\_\_\_

How long did you breast feed them? \_\_\_\_\_

Did you bottle feed your children? Yes \_\_\_\_\_ No \_\_\_\_\_

How many did you give the bottle to? \_\_\_\_\_

How long did you give them the bottle? \_\_\_\_\_

Did you use a pacifier for any of your children? Yes \_\_\_\_\_ No \_\_\_\_\_

If yes, how many? \_\_\_\_\_

How long did each use the pacifier? \_\_\_\_\_

\_\_\_\_\_

Did your physician recommend the use of a pacifier? Yes \_\_\_\_\_

No \_\_\_\_\_

If yes, why was the pacifier recommended? \_\_\_\_\_

Did any of your children suck their thumb? Yes \_\_\_\_\_ No \_\_\_\_\_

If yes, how many? \_\_\_\_\_

how long? \_\_\_\_\_

Were they the ones on the pacifier? Yes \_\_\_\_\_ No \_\_\_\_\_

Amount of Education:

\_\_\_\_\_ Less than high school

\_\_\_\_\_ College junior

\_\_\_\_\_ High school graduate

\_\_\_\_\_ College graduate

\_\_\_\_\_ Some school after high school

\_\_\_\_\_ Some post graduate work

\_\_\_\_\_ College freshman

\_\_\_\_\_ Advanced degree

\_\_\_\_\_ College sophomore

\_\_\_\_\_ Other

Religious Preference:

\_\_\_\_\_ Catholic

\_\_\_\_\_ L.D.S.

\_\_\_\_\_ None

\_\_\_\_\_ Protestant

\_\_\_\_\_ Other

SA-Strongly Agree  
 MA-Mildly Agree  
 MD-Mildly Disagree  
 SD-Strongly Disagree

### Key to the Infant Oral Behavior Scale

This key was developed according to the criteria of negative or positive content of an item in regards to oral behavior. The responses have been graded according to the negative or positive response as: N = Negative Response, P = Positive Response.

- |  |  |
|--|--|
| 1. Thumbsucking is a nuisance.   | $\begin{array}{c} N \quad P \\ \wedge \quad \wedge \\ SA-MA-MD-SD \end{array}$ |
| 2. Thumbsucking is necessary for the well being of an infant.              | $\begin{array}{c} P \quad N \\ \wedge \quad \wedge \\ SA-MA-MD-SD \end{array}$ |
| 3. Thumbsucking is an unclean habit.                                       | $\begin{array}{c} N \quad P \\ \wedge \quad \wedge \\ SA-MA-MD-SD \end{array}$ |
| 4. A tranquilizing effect is found when a baby sucks his thumb.            | $\begin{array}{c} P \quad N \\ \wedge \quad \wedge \\ SA-MA-MD-SD \end{array}$ |
| 5. Thumbsucking can cause protruding teeth.                                | $\begin{array}{c} N \quad P \\ \wedge \quad \wedge \\ SA-MA-MD-SD \end{array}$ |
| 6. Non-nutritive sucking is necessary for the infant's normal development. | $\begin{array}{c} P \quad N \\ \wedge \quad \wedge \\ SA-MA-MD-SD \end{array}$ |
| 7. Pacifiers are useful in the care of fretful or crying babies.           | $\begin{array}{c} P \quad N \\ \wedge \quad \wedge \\ SA-MA-MD-SD \end{array}$ |
| 8. Pacifiers can be used in preventing thumbsucking.                       | $\begin{array}{c} P \quad N \\ \wedge \quad \wedge \\ SA-MA-MD-SD \end{array}$ |
| 9. All babies suck their thumbs at one time or another.                    | $\begin{array}{c} P \quad N \\ \wedge \quad \wedge \\ SA-MA-MD-SD \end{array}$ |
| 10. The habit of sucking a pacifier is easier broken than thumbsucking.    | $\begin{array}{c} P \quad N \\ \wedge \quad \wedge \\ SA-MA-MD-SD \end{array}$ |

11. The mother is more dependent on the pacifier than the baby is. N P  
SA-MA-MD-SD
12. Pacifiers are useful to control a crying or fretful infant. P N  
SA-MA-MD-SD
13. Mothers should avoid the use of a pacifier unless the infant is a thumbsucker. N P  
SA-MA-MD-SD
14. It is difficult to break the baby of the pacifier habit. N P  
SA-MA-MD-SD
15. Pacifiers are more sanitary than sucking a finger or thumb. P N  
SA-MA-MD-SD
16. Pacifiers are not medically safe. N P  
SA-MA-MD-SD
17. Cracked lips and sore mouths are associated with the use of pacifiers for children. N P  
SA-MA-MD-SD
18. Pacifiers should be recommended for infants with colic. P N  
SA-MA-MD-SD
19. Anxiety is one factor behind thumbsucking in older children. N P  
SA-MA-MD-SD
20. The value of pacifiers is to prevent thumbsucking. P N  
SA-MA-MD-SD
21. Children will voluntarily give up the pacifier before the age of two years. P N  
SA-MA-MD-SD
22. There is no harm in letting a child use a pacifier in going to sleep. P N  
SA-MA-MD-SD
23. Pacifiers are beneficial in supplying infants with the needed sucking reflex for normal growth and development. P N  
SA-MA-MD-SD

24. From the dental health point of view, a pacifier is preferred over thumbsucking.

$$\begin{array}{c} P & N \\ \wedge & \wedge \\ SA-MA-MD-SD \end{array}$$

25. Sucking is the major reflex of a newborn infant.

$$\begin{array}{c} P & N \\ \wedge & \wedge \\ SA-MA-MD-SD \end{array}$$

26. An infant does not need a pacifier after the age of three months.

$$\begin{array}{c} N & P \\ \wedge & \wedge \\ SA-MA-MD-SD \end{array}$$

27. A child sucking his thumb after five years of age could have emotional problems.

$$\begin{array}{c} P & N \\ \wedge & \wedge \\ SA-MA-MD-SD \end{array}$$

28. An infant will not use a pacifier after he has started thumbsucking.

$$\begin{array}{c} N & P \\ \wedge & \wedge \\ SA-MA-MD-SD \end{array}$$

29. Pediatricians should recommend pacifiers for most children.

$$\begin{array}{c} P & N \\ \wedge & \wedge \\ SA-MA-MD-SD \end{array}$$

30. Pacifiers are less apt to cause children to have problems with their teeth than is thumbsucking.

$$\begin{array}{c} P & N \\ \wedge & \wedge \\ SA-MA-MD-SD \end{array}$$



The five items that show significant difference when comparing the mothers and the doctors on the Infant Oral Behavior Scale are as follows:

Item 15. Pacifiers are more sanitary than sucking a finger or a thumb.

	Agree	Disagree
Professionals	5 (11.8)	21 (14.2)
Mothers	28 (21.2)	19 (25.8)

$$x^2 = 11.0$$

Level of significance .001

Item 18. Pacifiers should be recommended for infants with colic.

	Agree	Disagree
Professionals	6 (14.6)	20 (11.4)
Mothers	35 (26.4)	12 (20.6)

$$x^2 = 17.9$$

Level of significance .001

Item 23. Pacifiers are beneficial in supplying infants with the needed sucking reflex for normal growth and development.

	Agree	Disagree
Professionals	13 (18.8)	13 (7.2)
Mothers	40 (34.2)	7 (12.8)

$$x^2 = 10.06$$

Level of significance .01

Item 28. An infant will not use a pacifier after he has started thumbsucking.

	Agree	Disagree
Professionals	8 (13.9)	18 (12.1)
Mothers	31 (25.1)	16 (21.9)

$$x^2 = 8.77$$

Level of significance .01

Item 29. Pediatricians should recommend pacifiers for most children.

	Agree	Disagree
Professionals	4 (8.2)	22 (17.8)
Mothers	19 (14.8)	28 (32.2)

$$\chi^2 = 5.88$$

Level of significance .02

## VITA

Faye M. Preece

Candidate for the Degree of

Master of Science

Thesis: Attitudes Toward and the Consequences of Infant Oral Pacification

Major Field: Family and Child Development

## Biographical Information:

Personal Data: Born at Salt Lake City, Utah, April 24, 1925, daughter of W. Morgan and Myrtle Petersen Miller. Married to Edson E. Preece January 17, 1947. Mother of three children: Karen, Dennis, and David.

Education: Graduated from Bear River High School in Tremonton, Utah, in 1943; graduated from the Thomas D. Dee School of Nursing in 1947 with a Registered Nurse degree; received the Bachelor of Science Degree from Weber State College in 1965 with a major in Elementary Education and a minor in Health; completed requirements for the Master of Science degree, specializing in Child Development, at Utah State University, in 1972.

Professional Experience: Staff nurse on the Pediatrics Division, Thomas D. Dee Hospital; taught second grade at the Plain City School for seven years; instructor of nursing at Weber State College, Ogden, Utah.