ASSESS THE PREVALENCE OF THUMB AND DIGIT SUCKING
AND ITS RELATIONSHIP WITH PREDISPOSING FACTORS
AND PARENTAL PRACTICES AMONG MOTHERS WITH
3-6 YEARS CHILDREN IN SELECTED AREA AT
DHARAPURAM WITH A VIEW TO CONDUCT AN
AWARENESS PROGRAMME AND TO DEVELOP
AN INFORMATION BOOKLET.

A DISSERTATION SUBMITTED TO THE TAMILNADU DR. MGR
MEDICAL UNIVERSITY, CHENNAI, IN PARTIAL FULFILLMENT
OF THE REQUIREMENT FOR THE DEGREE OF
MASTER OF SCIENCE IN NURSING

2010 – 2012
A STUDY TO ASSESS THE PREVALENCE OF THUMB AND DIGIT SUCKING AND ITS RELATIONSHIP WITH PREDISPOSING FACTORS AND PARENTAL PRACTICES AMONG MOTHERS WITH 3-6 YEARS CHILDREN IN SELECTED AREA AT DHARAPURAM WITH A VIEW TO CONDUCT AN AWARENESS PROGRAMME AND DEVELOP AN INFORMATION BOOKLET.

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A DISSERTATION SUBMITTED TO THE TAMILNADU DR. MGR MEDICAL UNIVERSITY, CHENNAI, IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE DEGREE OF MASTER OF SCIENCE IN NURSING 2010 – 2012
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2010 – 2012
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ACKNOWLEDGEMENT

I am whole heartedly grateful to the god almighty who strengthened, accompanied and blessed me throughout the study.

I extend my heart full thanks and gratitude to the Management, Bishop’s College of Nursing for providing an opportunity to undergo to uplift my professional life.

With deep sense of gratitude, I express my sincere thanks to our beloved principal, Prof. Vijayarani Prince M.Sc(N)., M.A., M.A., M.Phil(N), Bishop’s College of Nursing for her expert guidance, thoughts, comments, invaluable suggestions, constant encouragement and support, efforts in the area of research kindled my spirit and enthusiasm to go ahead throughout the period of study.

I express my thanks to Mr. John Wesley, Administrator, Bishop’s College of Nursing for given me an opportunity to study in this esteemed institution.

I owe my profound gratitude to Head of Department Mrs. Vasantha mani, M.Sc(N)., Associate Professor, Department of child Health Nursing for her patient guidance, concern, and valuable suggestion throughout my study.

It gives me immense pleasure to thank with deep sense of gratitude to the research guide Mrs. Lakshmi Priya, M.Sc(N)., PGDHA, Reader, Department of Child Health Nursing for her Valuable Suggestions, encouragement, perfect direction, personal interest, constant support and prayers till the completion of the study.

I would like to extend my deepest gratitude to class co-ordinator, Prof. Mrs. Glory Suramanjary, M.Sc (N), Associate Professor for her expert guidance, constant support to accomplish this study successfully.

I thank to all the experts who have contributed their suggestions by validating the tool.
I acknowledge my genuine gratitude to Dr. Arivanand, M.B.B.S, D.Ch., MD(Ped.Med), for granting permission to conduct the study in maharishi nursing home and his extensive guidance, treasured help and experts opinion in successful completion of the study.

I acknowledge my genuine gratitude to Dr. Selva Ilankumaran, M.B.B.S, D.Ch., for granting permission to conduct the study in Srinithi clinic and his extensive guidance, treasured help and experts opinion in successful completion of the study.

I would like to thank Mr.Durai, M.A for granting permission to conduct the study in Nanchiyampalayam.

I would like to exclusively thank all the participants of the study for their co-operation.

I express my genuine gratitude and obligation to Dr.M.R.Duraisamy, Ph.D, Associate Prof. (Stat) for his patience, valuable suggestions, constant support in analysis and presentation of data.

I extend my gratitude to Mr.P.Sampath,M.A.,M.Phil.,M.Ed., (English) for his valuable English editing.

I extend my thanks to Mrs.D.Siranjivi Mary, M.A., M.Ed., M.Phil., (Tamil) for her valuable Tamil editing.

I extend my sincere thanks to Library Staff for rendering their support and help during the time of my study.

I extend my special gratitude to Mr.Vijayakumar, Vijay Xerox for their patience, co-operation, understanding the needs to be incorporated in the study and timely completion of the manuscript.

I continue to be indebted to all for their support, guidance and care who are directly and indirectly involved in my progress of work and for the successful completion of this study.
ABSTRACT

Thumb-sucking may begin before birth. Thumb has been observed in the mouth of fetus as young as 18 weeks of gestational age, and true sucking movements and protrusion of the lips may occur by 24 weeks. During infancy, it is the most well-developed sensation. Thumb and digit sucking beyond the age of 3 years may arise as malocclusion and misalignment of teeth, difficulty in mastication and swallowing, deformity of thumb, facial distortion and speech difficulties. Persistent and compulsive sucking of thumb in children is a sign of insecurity, dependence, boredom, tired, frustrated and while sleeping.

The study was aimed to assess the prevalence of thumb and digit sucking and its relationship with predisposing factors and parental practices among mothers with 3 – 6 years children in selected area at Dharapuram with a view to conduct an awareness programme and to develop information booklet.

The research approach used for this study was descriptive approach. The research design used for the study was descriptive survey design which was conducted in pediatric OPD (Maharishi Nursing Home and Srinithi Clinic) and Nanchiyampalayam at Dharapuram. Conceptual frame work adopted for the present study was modified “Revised Health belief Model (Rosenstock (1974) and Becker (1988)”. The samples were selected by non probability convenience sampling technique. The prevalence of thumb and digit sucking behaviour was 105 out of 440 3 - 6years children.

The predisposing factors and parental practices of thumb and digit sucking was assessed by using checklist. The information booklet was given to the mother which consists of causes, predisposing factors and preventive measures to stop thumb and digit sucking. After the data collection an awareness programme was conducted in Nanchiyampalayam. The data were analyzed and tabulated using descriptive and inferential statistics by using SPSS package (16.0 version).
The results of the study was the mean score and standard deviation of predisposing factors and parental practices of thumb and digit sucking were 18.14 (SD ± 2.58) and 7.84 (SD ± 1.77) respectively. An negative (inverse) relationship (r = - 0.217) was found between predisposing factors and parental practices among thumb and digit sucking children. The ‘z’ test value for predisposing factors and parental practice of thumb and digit sucking and non thumb and digit sucking were 3.29 and 1.53 respectively. The association between predisposing factors and thumb and digit sucking was 0.499 and the association between parental practices and thumb and digit sucking was 2.284 among mothers with 3 – 6 years children.

Logistic regression showed that there was a significant impact of predisposing factors (B = 0.373) and level of parental practices (B = 0.188)on thumb and digit sucking and the interaction of both predisposing factors and parental practices (B = 1.071) on thumb and digit sucking was significant among 3 – 6 years children. There was no significant association between predisposing factors with their demographic variables except education of the father ($X^2 = 12.507$), monthly income ($X^2 = 7.624$) and type of family ($X^2 = 8.226$).

The study concluded that there was a sound impact of parental practices on children’s behavioural problems and their developmental process.
"Children are great imitators. So give them something great to imitate."

Barbara Bush

BACKGROUND OF THE STUDY

Every child should have tender loving care and sense of security about protection from parent and family members. Children should have opportunity for the development of independence, trust, confidence and self respect. There should be adequate social and emotional interaction with discipline. Childhood period is paramount importance in determining and patterning the future behaviour and character of the children.

Normal children are healthy, happy and well adjusted. This adjustment is developed by providing basic emotional needs along with physical and psychological needs for the mental wellbeing of the children. The emotional needs are considered as emotional food for healthy behaviour. The children are dependent on their parents, so parents are responsible for fulfillment of emotional needs.

All needs required to be satisfied to ensure optimal behavioural development. Sometimes children show wide variety of behaviours which create problems to the parents, family members and society. Most of the problems are minor and not to have any permanent disturbances but produce anxiety to the parents. Major behavioural problems are significant deviations from socially acceptable normal behaviour. The main problems are bedwetting, rumination, thumb sucking, nail biting, lip sucking among children.

Dutta (2009)

Among these problems thumb sucking is a serious and sometimes lifelong problem for some children. Thumb sucking may begin before birth. The thumb has been observed in the mouth of fetus as young as 18 weeks of gestational age,
and true sucking movements and protrusion of the lips may occur by 24 weeks. Newborns often have blisters on their hands and arms, indicating the portable occurrence of sucking before birth. After birth, infants have a strong rooting reflex. Finger sucking usually reaches its peak at 18 – 24 months and gradually disappears by the age of 3 years.

Meharban singh (2006)

During infancy, it is the most well-developed sensation. Helps with sustenance as well as deriving sensory pleasures. Gives a feeling of security, warmth, and euphoria. An impatiently nursed baby loses the warmth and feeling of well being and is therefore deprived of the suckling pleasures. This deprivation may motivate the infant to suck on the thumb or finger for additional gratification.

Kohli. D (2009)

Thumb and digit sucking is indulged by some children to satisfy their sucking needs were denied adequate sucking experience on breast or bottle. Bottle fed babies are more likely to suck the thumb because the child are able to finish the feed quickly from a bottle and resort to thumb sucking to fully satisfy the sucking urge.

Meharban singh (2006)

One rationale behind thumb-sucking is that when a baby has not had its fill of sucking at the breast or bottle, it instinctively turns towards its thumb. Babies who were fed every three hours did not suck thumbs. This is because breastfeeding usually satisfies the baby's need to suck.

Spock (2002)

Thumb and digit sucking can be related to the socioeconomic status of the family. Families living in high socioeconomic status are blessed with ample of sources of nourishment. The mother is in a better position to feed the baby and within a short time the baby’s hunger is satisfied. Mothers belonging to the low socio-economic group unable to provide the infant with sufficient breast milk. Hence, in the process the infant suckles intensively for a long time to get the required nourishment, thereby also exhausting the sucking urge.
The development of a sucking habit is commonly observed and to be as a way of rechanneling the surplus sucking urge. The sucking habit is commonly observed and to be present in children with working parents. Such children brought up in the hands of a caretaker may have feelings of insecurity. Therefore, the child use their thumb to obtain a secure feeling.

Digit sucking has also been proposed as an emotional based behaviour related to difficulty with social adjustment or with stress. Although sucking for psychological satisfaction as well as for food is considered normal in infancy, digit sucking in older children has been told to be associated with abnormal psychological development. The psychological effects may be compounded by the emotional impact of peer pressure and punitive and scolding parents.

Report of Department of Pediatric dentistry (2010)

Thumb-sucking need not be cause for concern if the baby just sucks thumb for a few minutes before mealtimes. It is because the baby is hungry. However, if the baby reaches the thumb immediately after feeding or snacks constantly between meals, it is a sign to distract the child from thumb-sucking. Ordinarily, a baby sucks most of the milk from the mother's breast in a space of 5 or 6 minutes. Sucking beyond this point is just to satisfy the craving to suck. If a breastfed baby sucks the thumb, allow the baby to nurse for a longer period of time.

Thumb-sucking develops in the average bottle-fed baby when the baby can finish a bottle in 10 minutes rather than 20. This happens because as the baby grows older sucking becomes stronger, and the nipples become weaker.

Spock (2002)

The development of the habit can be indirectly related to the number of siblings. As the number increases the attention met out by the parents to the child gets divided. A child neglected by the parents may attempts to compensate the feelings of insecurity by means of this habit.
It has been noticed that in later, the birth order of a child, the greater the chance of having an oral habit. It has been speculated that to some extent siblings imitate one another in sucking.

**Casey L. Holley**(2011)

Thumb and digit sucking beyond the age of 3 years may arise as malocclusion and misalignment of teeth, difficulty in mastication and swallowing deformity of thumb, facial distortion and speech difficulties. Persistent and compulsive sucking of thumb in children is a sign of insecurity, dependence, boredom, tired, frustrated and while sleeping.

**Datta (2009)**

Longer thumb sucking continues, the more likely it is that orthodontic treatment will be needed to correct any resulting dental problems. A child may also develop speech problems, including mispronouncing Ts and Ds, lisping, and thrusting out the tongue when talking.

Thumb sucking may entail certain risks to physical health. It pushes the upper incisors out and the lower incisors in. Malocclusion resolve spontaneously if thumb sucking stops before the permanent teeth erupt. Other undesirable effects can include problems with jaw movements, narrowing of the cheek bones due to the contractions of the cheek muscles, ulcerations beneath the tongue and root resorption. More commonly, the thumb may develop calluses or an irritant eczema, and the digit itself may become deformed.

Some preschoolers who suck thumbs may feel ashamed if children are teased by other children. Don't shame or punish the child for thumb-sucking. This will only lower the self-esteem of the child. Thumb-sucking can cause many serious future dental problems.

Parents may be able to help with positive reinforcement to stop thumb sucking. The child can be given a sticker or small reward for a day spent without
thumb sucking. Parents can also help the child find something else to do with hands when the child has the urge to suck the thumb.

Parents should avoid negative pressure on children to stop sucking the thumbs; this habit is eventually outgrown by all children. Praise children for not sucking, instead of scolding when child do. If a child is sucking its thumb when feeling insecure or needing comfort, focus instead on correcting the cause of the anxiety and provide comfort to child.

If a child is sucking on its thumb because of boredom, try to get the child's attention with a fun activity. Involve older children in the selection of a means to cease thumb sucking. The pediatric dentist can offer encouragement to a child and explain what could happen to its teeth if it does not stop sucking. Only if these tips are ineffective, remind the child of its habit by bandaging the thumb or putting a sock/glove on the hand at night.


In today’s fast paced world, almost every mother complaints that the child has thumb sucking behaviour. But this is really not the case –one has to face basic problems and tensions while bringing up the child. Due to economical need mothers are employed and unable to meet the child’s desire. These undesirable needs may develop severe behavioural problem one among is thumb and digit sucking.

NEED FOR THE STUDY

Finger and thumb sucking is a normal developmental feature but may become a habit in some children. Persistent and compulsive sucking of thumb in older children is sign of insecurity, dependence, boredom and sleep ritual.

Meharban singh (2006)

According to WHO (2003) the habitual problems are more common in children. (25-50%) of two year old children have thumb sucking, (15-20%) 5-6 year old children in United States.

Cynthia R Ellis (2010)
The most comprehensive study was done by the United States Division of Health Examination Statistics and published in 2008. It included 8,000 children are 6 to 11 years of age and estimated 10% or 2.5 million children, in those age groups and living in the United States at that time, had active digit-sucking habits. A very high incidence, however, it would have been much higher had this survey included individuals over 11 years of age. In addition, although stress is not the only cue that stimulates the sucking behavior, it is very significant.

**The International Association of Orofacial Myology (IAOM) (2008)**

A survey done by the Division of Health Examinations Statistics, "An assessment of the Occlusion of Children Ages 6 to 11 Years Old, in America" concluded that an estimated 2.4 million children suck a thumb/finger. Regarding the frequency of sucking, it was estimated that 60% suck "almost every day or night and 40% "just once in awhile." In simple terms, half the children sucked almost every day or night, and about two out of five just once in awhile. It was also estimated that of these every day, or night suckers, 79.4% produced an open bite and 56.6% produced an over jet dental malocclusion. The survey was initiated to assess the occlusion of children ages 6 to 11 years old. The examinations were conducted at 40 randomly selected locations in 25 states by dentists, psychologists, physicians, nurses, and technicians. Over 50% produced a malocclusion when thumb/finger sucking occurred every day or night.

**Christine Stevens Mills (2006)**

In United States, thumb sucking is common in infancy and in as many as 25-50% of 2-year-old children. However, it is observed in only 15-20% of 5- to 6-year-old children. Thumb sucking is suspected to occur slightly more often in girls than in boys.

**Cynthia R Ellis (2010)**

According to Traisman, 45.6% of 2,650 middle-class American children under four years of age sucked their thumb with no significant differences between the sexes.
According to Baalack and Frisk in a retrospective study of Swedish children found that 30.7% in the same age group had been, or still were, thumb-sucking at the time of the study. Between 5 and 20% of children continue thumb sucking beyond six years of age.

Curzon. M. E. J (2001)

According to the American academy of pediatrics (2005) 2 researchers have identified the incidence of thumb sucking among children

<table>
<thead>
<tr>
<th>Age</th>
<th>According to Kantorowicz</th>
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<tr>
<td>0 - 1</td>
<td>92%</td>
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<td>1 - 2</td>
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<td>2 – 3</td>
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<td>3 – 4</td>
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<td>4 - 5</td>
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<td>Over 6</td>
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Between 75% and 95% of all infants sucks their thumb, making thumb sucking the most prevalent kind of nonnutritive oral activity in infants and young children. Thumb sucking continues in approximately 45% of American preschool children, but I only 30% of Swedish children of the same age. In a significant percentage of American 7 – 11 years old, thumb sucking persists. Among Inuit, American Indian, and African children thumb sucking is rare.


A number of studies conducted in Canada, indicated an increased incidence of malocclusion in individuals with persistent sucking habits when compared with children with no history of the habit. According to Bowden, the proportion of Skeletal Class II relationships was higher among the digit suckers (40%) and dummy suckers (35%) than among the non-suckers (29%). In addition, there was a significant increase in the incidence (62%) of the Skeletal Class II relationship in children where digit sucking persisted until eight years of age.

Bonnie Blank (2007)
Finger or thumb sucking is reported to occur between 23% and 46% of typically developing children aged 1-4 years old, 13% of 6-year-olds, and 6% of 7-11 year-olds in Pennsylvania.

**Sam D. Stansbery (2008)**

Gellin reported the prevalence rate for thumb sucking to be 13.6 percent in children six years old and 5.9 percent in children 7 to 11 years of age in Pennsylvania. Although most studies have noted no significant sex difference in the prevalence of thumb sucking, some investigators have found the activity to be more common among females.

Malocclusion in 24 of 30 children who sucked their thumb. Of the 9 children in whom the malocclusion corrected itself, 8 had discontinued thumb sucking by five years of age. Malocclusion in 834 of 1,567 thumb-sucking children in Mexico. Malocclusion was significantly more common among children with earlier or persisting sucking habits (61.6 percent) than among children without such habits (23.0 percent).

**Alexander K.C (2003)**

India, WHO statistical report of digit sucking habit was actively present in (6.4%) of the children who were less than 49 months the old, (2.2%) of the children 49 and 60 months old and (2.8%) of the children above 60 months old. (P=0.026). Digit sucking, pencil biting, tongue thrust are more prevalent between ages 3 and 6 years.

Some studies suggest that 19.8% indulged in thumb or finger sucking, 9.1% nail biting 8.3% bruxism, 2.3% lip sucking or biting. According to Indian academy of Pediatrics results are 18% children had tongue thrusting, 12.7% had nail biting habit, bruxism 6.2%, pencil biting 9.8%.

**Cynthia R Ellis (2010)**
In Chandigarh, an unselected population of 4-year-old children, 66.4% were found to have mal-occlusion, and 10.7% were considered in need of treatment by an orthodontist. Previous or present sucking habits were reported for 77.9% of the children. 10.7% still used a dummy, 30.1% were sucking on their fingers and 13.2% used both dummy and fingers.

Lennart Kouhler, (2008)

Katz et al. (2004) assessed the relationship between non-nutritive sucking habits, facial morphology, and malocclusion in 330 Brazilian 4-year olds. The results demonstrated that a large percentage (67.9 per cent) of children exhibited non-nutritive sucking habits at some point in their lives. Anterior open bite and posterior cross bites were found in 36.4 and 12.1 per cent of the children, respectively. An association was also observed between malocclusions and non-nutritive sucking habits.

Lack of love and affection by the parents towards the child plays a major role in making the child emotionally insecure and thus making the child to resort the thumb and finger sucking. In this money world, both the parents are working and not concentrating the child. The child is under the control of caretaker may be servant or relatives. There is a deterioration of the love and affection may develop this behaviour in the child.

Kohli. D (2009)

When the researcher posted in the pediatric posting there were several babies sucks their thumbs and fingers. The researcher asked the parents regarding the thumb and digit sucking behaviour of the child. The parents are unaware regarding the causes, effects and treatment of the behaviour. Parents were ignored that behaviour. This probed the researcher to select this study to create awareness regarding thumb and digit sucking behaviour of the children among parents.
STATEMENT OF THE PROBLEM

A study to assess the prevalence of thumb and digit sucking and its relationship with predisposing factors and parental practices among mothers with 3 – 6 years children in selected area at Dharapuram with a view to conduct an awareness programme and to develop an information booklet.

OBJECTIVES

1. To assess the prevalence of thumb and digit sucking among 3 – 6 years.

2. To assess the predisposing factors of thumb and digit sucking and non thumb and digit sucking among mothers with 3 – 6 years children.

3. To assess the level of parental practices of thumb and digit sucking and non thumb and digit sucking among mothers with 3 – 6 years children.

4. To find the correlation between predisposing factors and parental practices of thumb and digit sucking among mothers with 3 – 6 years children.

5. To find the correlation between predisposing factors and parental practices of non thumb and digit sucking among mothers with 3 – 6 years children.

6. To find association between thumb and digit sucking and predisposing factors among mothers with 3 – 6 years children.

7. To find association between thumb and digit sucking and parental practices among mothers with 3 – 6 years children.

8. To find the significant difference of predisposing factors and parental practices of thumb and digit sucking and non thumb and digit sucking of mothers with 3 – 6 years children.

9. To find the impact of predisposing factors and parental practices on thumb and digit sucking and non thumb and digit sucking among 3 – 6 years children.

10. To find association of the predisposing factors and level of parental practices of thumb and digit sucking among mothers with 3 – 6 years children with their selected demographic variables.
OPERATIONAL DEFINITION

Prevalence

The term prevalence refers specifically to all current cases (old and new) existing at a given point at time or over a period of time in a given population.


In this study it refers to find out the presence of thumb and digit sucking behaviour among mothers with 3 – 6 years children.

Thumb sucking

Thumb sucking is the habit of sucking the thumb for oral gratification.

Mosby's Medical Dictionary (2009)

Digit Sucking

Sucking the fingers except thumb.


Predisposing factors

Predisposing factors defined as susceptibility to cause disease.

Wiktionary (2011)

In this study it refers to the factors such as primary care giver, education of the mother, occupation of the mother, number of children, space between two children, birth order of the child, socio economic status, feeding practices that promotes the thumb and digit sucking behaviour of children which is assessed by using check list and its scores.

Parental practices

It means the way of doing something by parents.

Kirpatrickbetty (2004)

In this study it refers to the parental actions to prevent or to stop the thumb and digit sucking behaviour of the children which is assessed by using check list and its scores.
Mother

Mother is a person who has given birth to a child.


In this study mothers who are having the child aged between 3 – 6 years.

Awareness programme

It is planned, orderly framed content to educate an individual or group purposefully.

Sanatombi Devi Elsa (2009)

In this study it is systematically developed instruction and teaching with posters, charts, pamphlets and models used to provide information regarding the causes, predisposing factors, guidance for parents, feeding habits and preventive measures to stop the thumb and digit sucking behaviour of the child.

The awareness programme was conducted from 9.00am to 6.00pm for one day. 10 sessions were conducted with the duration of 30 minutes for each session. 10-15 members had attended each session.

Information booklet

Booklets are the printed material, small in size, covered or bound containing information on a subject or specific topic and providing opportunity for reading, learning and referring.

Subammal (2000)

In this study, a booklet is prepared by the researcher to provide the information regarding the causes, predisposing factors, guidance for parents, feeding habits and preventive measures to stop the thumb and digit sucking behaviour of the child.
HYPOTHESES

H1: There will be a significant correlation between predisposing factors and parental practices among mothers with thumb and digit sucking children.

H2: There will be a significant correlation between predisposing factors and parental practices among mothers with non thumb and digit sucking children.

H3: There will be a significant relationship with predisposing factors and thumb and digit sucking among mothers with 3 – 6 years children.

H4: There will be a significant relationship with parental practices and thumb and digit sucking among mothers with 3 – 6 years children.

H5: There will be a significant association between predisposing factors and parental practices among mothers with 3 – 6 years children with their selected demographic variables.

ASSUMPTION

- Thumb and digit sucking behaviour is a serious problem which cause dental malocclusions.
- The paediatric nurse has the role to educate the parents regarding thumb and digit sucking behaviour and its consequences of the children developmental process.

DELIMITATION

The study was delimited to:

- Data collection period 5 weeks.

PROJECTED OUTCOME

Thumb sucking and digit sucking is not a serious problem in early childhood period. But beyond this age group, prolonged thumb sucking can cause dental malocclusion, speech impairment, social and psychological stress and body
image disturbances. Early detection and prevention of this behaviour can promote the child’s developmental status. The parents play an essential role to promote their child’s developmental status. The awareness programme and information booklet may widely disseminate the information to mothers through which in future this problem may reduce which turns into children may enjoy their childhood with positive emotional health.
CONCEPTUAL FRAMEWORK

The conceptual framework adopted for this study was the “Health belief model Rosenstock (1974) and Becker (1988)” address the relationship between a person’s beliefs and behaviours. It provides a way of understanding and predicting how client will behave in relation to their health and how they will comply with health care therapies. It is concerned with what people perceive, or believe to be true about themselves in relation to their health.

Health belief model has 3 components:

- Background
- Perception
- Action

BACKGROUND

According to theorist, background for one’s health beliefs include demographic variables such as age, race and socio psychological variables such as personality, peer group pressure and socio economic factors.

In this study it refers to age of the child, sex of the child, education of the father, monthly income, religion, type of family and area of residence.

INDIVIDUAL PERCEPTION

Perceived susceptibility

According to theorist, people will not change their health behaviours unless they believe that they are at risk. Perceived susceptibility is an individual assessment of their risk of getting the condition.

In this study it refers to children may have chance of getting thumb and digit sucking behaviour due to poor parental practices and related predisposing factors.
**Perceived severity of illness**

According to theorist, the probability that a person will change his/her health behaviours to avoid a consequence depends on how serious he or she considers the consequences to be.

In this study it refers to prolonged thumb and digit sucking behaviour may cause teeth malocclusion, infection to fingers, speech problems and learning difficulties.

**EXPECTATIONS**

**Perceived benefits**

According to theorist, it is difficult to convince people to change a behaviour if there isn’t something in it for them. Perceived benefits are one’s belief in efficacy of the advised action or seriousness of impact.

In this study it refers to the mothers can take recommended action to stop thumb and digit sucking behaviour which prevent the child to get consequences of prolonged thumb and digit sucking behaviour.

**Perceived barriers**

According to theorist, one of the major reasons people don’t change their health behaviours is that they think that doing so is going to be hard. Perceived barriers are the individual’s assessment of the influences that facilitate or discourage adoption of the promoted behaviour.

In this study it refers to checklist was used to assess the predisposing factors and parental practices. The parents had lack of knowledge, inadequate parental practices to prevent the thumb and digit sucking behaviour of the children.

**Perceived self efficacy**

According to theorist, self efficacy looks at a person’s belief in his/her ability to make a health related change. It refers to confidence in one’s ability to take action.
In this study it refers to mothers take action to prevent thumb and digit sucking behaviour by following preventive measures like treatment, preventive care which was given through information booklet.

CUES TO ACTION

According to theorist, these are external events that prompt a desire to make a health change. External influences promoting the desired behaviour, may include information provided or sought, reminders by powerful others, persuasive communications and personal experiences.

In this study it refers to an awareness programme was conducted to create awareness and information booklet was provided to the mothers regarding thumb and digit sucking behaviour which may promote a desirable change in mothers attitude and children’s behaviour.

BEHAVIOUR

According to theorist, it refers to likelihood of taking recommended preventive health action to reduce the threat based on expectations.

In this study it refers to proper or good parental practices may prevent or stop the thumb and digit sucking behaviour of the child.
**BACKGROUND**

- Socio demographic variables:
  - Age of the Child
  - Sex of the Child
  - Education of the father
  - Monthly Income
  - Religion
  - Type of Family
  - Area of Residence

**PERCEPTIONS**

- Threat
  - Perceived Susceptibility - Children may have chance of getting thumb and digit sucking behaviour due to poor parental practices and related predisposing factors.
  - Perceived severity of illness - Prolonged thumb and digit sucking behaviour may cause teeth malocclusion, infection to fingers, speech problems, learning difficulties.

- Perceived benefits - The mothers can take recommended action to stop thumb and digit sucking behaviour which prevents the child from experiencing consequences of prolonged thumb and digit sucking behaviour.

- Perceived barriers - Checklist was used to assess the predisposing factors and parental practices. The parents had a lack of knowledge, inadequate parental practices to prevent the thumb and digit sucking behaviour of the children.

- Perceived self efficacy - Mothers take action to prevent thumb and digit sucking behaviour by following preventive measures like treatment, preventive care which was given through information booklet.

**ACTION**

- Cues to action:
  - An awareness programme was conducted to create awareness and information booklet was provided to the mothers regarding thumb and digit sucking behaviour which may promote a desirable change in mothers attitude and children’s behaviour.

- Behaviour:
  - Proper/good parental practices may prevent or stop the thumb and digit sucking behaviour of the child.

**FIG - 1: CONCEPTUAL FRAMEWORK MODIFIED HEALTH BELIEF MODEL - REVISED**

ROSENSTOCK, STRECHER & BECKER, (1988)
CHAPTER II
REVIEW OF LITERATURE

The review of literature for the study has been from published articles, text books, reports and medline search and it is organized as follows;

PART A : Overview of thumb and digit sucking
PART B : Studies related to thumb and digit sucking

PART A : OVERVIEW OF THUMB AND DIGIT SUCKING

INTRODUCTION

Preschoolers are emerging as creative persons who are preparing for the future role in society. The family continues to have a significant influence and support. Preschoolers continue to need physical affection and love from the parents. Stability in relationship and in the environment is essential to preschoolers. Parents can provide positive environment that fosters growth and initiative.


According to Erickson, the psychosocial task of the preschoolers is acquiring a sense of initiative. Children are in stage of energetic learning. They play, work and live to the fullest and feel real sense of accomplishment and satisfaction in activities. Conflict arises when children overstep the limits of the ability and inquiry and experience a sense of guilt for not having behaved properly.

Wongs (2009)

Behavioural problems are the reactions and clinical manifestations, which are resulting due to emotional disturbances or environmental maladjustments. The emotional environment of the young child consists of entire relationship of the child with the parents and family members. Behavioural problems are less common, where the child is loved, accepted and who is living in favourable environmental conditions. Child’s basic emotional
needs like love, affection, good understanding, care, concern, a sense of belongingness and security has to be satisfied to ensure optimal development whereby child will attain emotional maturity and able to relate the life meaningfully with the society.

Parents have to train up the children to cultivate socially acceptable behaviour. In times of stress, child should be cared properly, touch the distressed child and hug the child in comforting and relaxing manner. If the children are often criticized, rejected not cared properly and often parents does not show keen interest among children, child will develop the feeling of insecurity and inferiority which will be reflected either one or other form of behavioural problem. Parents along with the children should enjoy conducive loving environment to prevent the occurrence of behavioural problem.


Common behavioural problem of preschoolers are breath holding spells, thumb sucking, nail biting, enuresis, encopresis, pica, tics, speech problems, sleep problems, school phobia, selfishness, jealousy, destructiveness and attention deficit disorders.

Datta (2009)

DEFINITION OF THUMB AND DIGIT SUCKING

Thumb sucking is the childhood habit of putting the thumb in the mouth for comfort or to relieve stress.

Thumb sucking is normal in babies and young children. A natural sucking instinct leads some babies to suck their thumb during their first few months of life, or even before birth. Babies may also suck on their fingers, hands or items such as pacifiers.

WHEN THE CHILD STARTS TO SUCK THE FINGER?

Thumb-sucking begins before birth. It has been observed in the mouths of fetuses as young as 18 weeks of gestational age, and true sucking movements and protrusion of the lips may occur by 24 weeks.

Babies have a natural urge to suck, which usually decreases after the age of 6 months. But many babies continue to suck their thumbs to soothe themselves. Thumb sucking can become a habit in babies and young children who use it to comfort themselves when they feel hungry, afraid, restless, quiet, sleepy, or bored.


CAUSES

Thumb sucking when the child is hungry, disturbed and lonely, or is satisfying his urge for sucking, is a perfectly acceptable and normal phenomenon in children less than a year old.

- Parent’s occupation
- Working mother
- Number of siblings
- Order of birth of the child
- Social adjustment and stress
- Feeding practices

PROBLEMS OF THUMB-SUCKING

- Emotional difficulties. Some preschoolers who suck their thumbs may feel ashamed if they are teased by other children. Don't shame or punish your child for thumb-sucking. This will only lower his or her self-esteem.

- Dental problems. Thumb-sucking can cause many serious future dental problems, such as improperly aligned teeth (malocclusion). Malocclusion usually corrects itself when the child stops thumb-sucking. But the longer thumb-sucking continues, the more likely it is
that orthodontic treatment will be needed to correct any resulting dental problems.

- **Speech problems.** The most common speech problems that develop because of thumb-sucking include mispronouncing Ts and Ds, lisping, and thrusting out the tongue when talking.
- **Calluses, sore and infected thumb nails and finger nails.**
- **Learning and socialization difficulties**

**Kristen.L.Zacharias (2004)**

**THUMB-SUCKING - EXAMS AND TESTS**

Thumb-sucking behavior before age 4 is normal and does not require medical tests or evaluation. Children who continue to suck their thumbs after age 4 or 5 may need a

- Dental exam, to identify any irregularities of the teeth, bite, or jaw.
- Speech evaluation, if word pronunciations are affected or other irregularities develop.

If the habit is severe and appears to be related to other behavioral disorders, such as anxiety, or a reaction from a traumatic event, a psychological evaluation may be needed.

**THUMB-SUCKING - SYMPTOMS**

A thumb-sucking child usually places the thumb in the mouth above the tongue, pressing forward against the upper front teeth or gums and backward against the lower front teeth or gums. A child may develop a callus on the thumb if he or she sucks often and very hard.

- Some children suck their fingers instead of their thumbs. They may have found their fingers more easily than their thumbs when they first started sucking.
- Some children finger a piece of cloth, pull on their ears, or twist their hair while sucking.
Thumb-sucking in children younger than 4 is not usually a problem behavior. Children who suck their thumbs frequently or with great intensity after the age of 4 or 5 may develop


TIMING TO INITIATE TREATMENT

Early treatment is important to prevent and minimize the problems associated with digit sucking. And, the longer the behavior persists, the more difficult it is to eliminate because the strength of the emotional dependency increases with time. However, emotional and intellectual development must be sufficient to enable the child to succeed with the task, minimize frustration, and facilitate effective communication and motivation.

Treatment to eliminate the habit is best initiated soon after the child reaches the age of five, prior to the arrival of permanent teeth, and ideally before the start of kindergarten to avoid the development of other detrimental oral habits as well as learning and socialization problems.

9 TIPS TO STOP THUMB SUCKING AND FINGER SUCKING

1. **DO** try to limit the time that the child sucks the thumb while the child is in bedroom or in the house, not in public. Explain to the child that this is a bed activity, during nap time and at night.
2. **DON'T** turn it into a confrontation. Try to recognize and praise when the child is not sucking the thumb, instead of criticizing.
3. **DO** talk to the child about thumb sucking or finger sucking.
4. **DON'T** prohibit the child if the child tries to suck thumb or fingers after being hurt or injured.
5. **DO** practice self-awareness with the child.
6. **DON'T** use the nasty-tasting stuff that is marketed to stop thumb sucking and finger sucking.
7. **DO** come up with creative ways to help the child to understand that children are growing up and one day won't suck their thumbs anymore.
8. DON'T try a glove or a mitten on the hand as a quick-fix to thumb or finger sucking.

9. DO remember that a child will grow out of the need for thumb sucking or finger sucking when the child is good and ready.

Heather Hatfield (2007)

EASY WAYS TO GET KIDS TO STOP SUCKING THEIR THUMB

a. Keep the child's hands occupied with a toy, puzzle or other activity.

b. Carefully remove the child's thumb from mouth during sleep

c. Give the example of the child’s friends that have managed to stop thumb sucking.

d. Don't put the child in a state of anxiety or fear. If the child has any emotional problems, or is under stress and needs comforting, parents may need to resolve those issues first before the child can successfully stop thumb- sucking.

e. Talk about the 'bad' germs that are on hands and how the child puts the germs in to the mouth while thumb sucking.

f. Avoid punishing or shaming the child.

g. Reward the child for not thumb sucking for a progressively increasing time period.

h. Ask the advice of a pediatric dentist.

i. Use a thumb sucking guard. - In difficult cases, the dentist might suggest the use of special devices to stop thumb sucking, called thumb guards. A **thumb guard** is a device with a plastic cover of the thumb that is attached to a child's wrist. The thumb sucking guard interrupts the process by breaking the vacuum created by sucking, thus removing the child's pleasure. Treatment with thumb guards usually lasts four weeks and helps children to stop thumb sucking successfully.
TREATMENT

Thumb-sucking problem is most often resolved with home treatment such as offering rewards and praise when the child is not thumb-sucking. When home treatments have not worked, other treatments may be necessary. These include:

- **Behavioral therapy.** Behavioral therapy helps a child avoid thumb-sucking through various techniques, such as substituting tapping fingers together quietly. Behavioral therapy works best if all people involved in the child's care follow the treatment plan.

- **Thumb devices.** Thumb devices, such as a thumb post, can be used for children with severe thumb-sucking problems. A thumb device is usually made of nontoxic plastic and is worn over the child's thumb. It is held in place with straps that go around the wrist. A thumb device prevents a child from being able to suck his or her thumb and is worn all day. It is removed after the child has gone 24 hours without trying to suck a thumb. The device is put back if the child starts to suck the thumb again. Thumb devices need to be fitted by a doctor.

- **Oral devices.** Oral devices (such as a palatal arch or crib that fits into the roof of the mouth) interfere with the pleasure a child gets from thumb-sucking. It may take several months for the child to stop sucking the thumb (or fingers) when these devices are used. When the child stops sucking, parents may choose to continue using the device for several months. This may prevent the child from starting the habit again. Oral devices need to be fitted by a dentist.


THUMB-SUCKING - HOME TREATMENT

Many experts recommend ignoring thumb-sucking in a child who is preschool age or younger. Home treatment to help a child stop sucking the thumb is not usually attempted until age 4 and then only if the behavior is frequent or intense. Beginning at age 4, dental and speech problems can develop as a result of thumb-sucking.
Home treatment for thumb-sucking is usually successful. Parents can set rules and help distract a young child from thumb-sucking. The child can take a more active role in controlling thumb-sucking as he or she matures and is able to understand cause-and-effect relationships, concepts of time, values (such as right and wrong, or sense of pride), and has some self-control.

**Parent-directed measures for a young child (around age 4)**

- Give child’s more attention and distract with their engaging activities.
- Limit the places and times for thumb-sucking.
- Put away items (such as blankets) that the child associates with thumb-sucking. At first, put the items away for short periods of time throughout the day. As your child learns other ways of self-comfort, gradually increase the amount of time these items are not available.

**Measures where the child takes an active role (beginning around age 5)**

- Talk to the child openly about the effects of thumb-sucking.
- Put gloves on the child's hands or wrap the thumb with an adhesive bandage or a cloth. Explain that the glove, bandage, or cloth is not a punishment, but is only there to remind the child not to thumb-suck.
- Develop a reward system, such as putting stickers on a calendar to record each day that the child does not suck his or her thumb. After an agreed-upon number of days, have a celebration for the child.
- Use a special nontoxic, bitter-tasting nail coating, such as Thumb. Apply it like fingernail polish to the thumbnail (or fingernail) each morning, before bed, and whenever you see your child sucking his or her thumb. This treatment is most successful when it is combined with a reward system.

PART B: STUDIES RELATED TO THUMB AND DIGIT SUCKING

Albuquerque.S.S, et.,al (2010) have conducted the study on the influence of feeding methods in the development of non nutritive sucking habits in childhood from 2 – 5 years of age, attending public nursery schools in the Paraiba state, Portuguese. The sample consisted of 292 children of both gender and the data were collected by interviewing the children’s mothers. The data were analysed through the statistical program SPSS, frequencies distribution and chi-square test and fisher exact. The results of the study is presence of non nutritive sucking habits, 69.2% of the children had some type of habit, being 61.6% the pacifier sucking and 8.2% the digital sucking. 10.2% presented exclusive breast feeding, 4.9% were just bottle- fed and 84.9% were breast fed and bottle fed. The feeding methods presented a significant association with the presence of non nutritive sucking habits as larger the duration of the exclusive feeding, smaller the prevalence of sucking habits.

Dimberg.L.et.al., (2010) have conducted a study on prevalence of malocclusion traits and sucking habits among 3 year old children in Sweden. A sample of 457 3-year old children (234 girls and 223 boys) was obtained from Public Dental Health clinics. Data from clinical examination and a questionnaire were used to determine malocclusion traits, sucking habits, snoring and breathing pattern including nocturnal breathing disturbances. The results showed that 70% had one or more malocclusion traits at 3 years of age. The most common malocclusion traits were anterior open bite (50%), Class II occlusion (26%), increased overjet (23%) and posterior crossbite (19%). The prevalence of sucking habit was 66% and dummy sucking was dominating and in connection with more malocclusion traits than finger/thumb sucking. A significant association was found between the sucking habits and the most prevalent malocclusions, anterior open bite, Class II occlusion, increased overjet and posterior crossbite. In conclusion, the prevalence of malocclusion traits in 3-year-old children was high.
**Jahanbin A.et al (2009)** have conducted a study regarding association between sociodemographic factors and nutritive and non-nutritive sucking habits among Iranian girls. Prolonged duration of finger- and pacifier-sucking may be a risk factor for maldevelopment of orofacial structures and dental occlusion. This study assessed the prevalence of nutritive and non-nutritive sucking habits and their association with some contributing factors among 6 year-old girls of Iran. Based on a questionnaire to the parents of 436 schoolgirls, the rate of current or previous pacifier-sucking was 26.6% and of finger-sucking was 10.6%. Child’s birth rank and number of siblings and parents’ educational level were significantly related to ever pacifier-sucking but not to finger-sucking. The highest prevalence of ever pacifier-sucking was among children who had been breast- and bottle-fed but finger-sucking was more common among exclusively breastfed children.

**Patrick C. Friman et al (2009)** have conducted a study on digit sucking and related factors. The sample of population consisted of 81 children, 52 females and 29 males aged 3-16 years who still actively digit were sucking. Findings in this group were compared with a control group made up of 80 children 2-16 years who were not digit suckers and have no history of habit. About 79% of non suckers had been breast fed for more than 6 months while only 42.2% digit suckers breast fed for the same duration. The digit sucking habit was observed more frequently in children with mothers in high cadre occupations (53.1%) compared to non suckers (23.8%). More digit suckers (22.2%) than non suckers (12.5%) were reported to have a history of pacifier use.

**Indhu Rockey, (2009)** have conducted a cross sectional study was done by interviewing a sample of 1011 school children of (5 – 12 year) age group from 10 primary schools in Bangalore to evaluate the prevalence of enuresis and common habit disorders like (thumb sucking, nail biting, teeth grinding, stammering) in school going children (5 – 12 year) of age and obtain details of
bed wetting including frequency/ treatment psycho-social implications so that burden caused due to these disorders on children and their families can be assessed. Results showed prevalence of primary enuresis was present in (72.9%) of affected children and nocturnal enuresis was in 57.2% (P<.001). Prevalence of other problems as teeth grinding (7.9%) nail biting (7.9%) bed wetting (6.9%) thumb sucking (1%) stammering (0.6%) pica (13.3%) children between age group of (7 – 10 year) has maximum problems.

**Clarita Barbosa, et.al, (2009)** have conducted a study on relationship of bottle feeding and other sucking behaviors with speech disorder in Patagonian preschoolers, Washington. A total of 128 three- to five-year olds were assessed, 46% girls and 54% boys. Children were breastfed for an average of 25.2 (SD 9.6) months and used a bottle 24.4 (SD 15.2) months. Fifty-three children (41.7%) had or currently used a pacifier for an average of 11.4 (SD 17.3) months; 23 children (18.3%) were reported to have sucked their fingers. Delayed use of a bottle until after 9 months appeared to be protective for subsequent speech disorders. There was less than a one-third lower relative odds of subsequent speech disorders for children with a delayed use of a bottle compared to children without a delayed use of a bottle (OR: 0.32, 95%CI: 0.10-0.98). A three-fold increase in relative odds of speech disorder was found for finger-sucking behavior (OR: 2.99, 95% CI: 1.10-8.00) and for use of a pacifier for 3 or more years (OR: 3.42, 95% CI: 1.08-10.81).

**Holanda AL, et.,al (2009)** have conducted a study on relationship between breast- and bottle-feeding and non-nutritive sucking habits among children aged 3 to 5 years. A case-control study was conducted with 1107 children from public and private daycare centres in Natal, Brazil: 450 in the case group (312 pacifier suckers and 138 thumb suckers) and 657 in the control group (habit-free). Data regarding sociodemographic conditions and duration of breastfeeding were obtained using a structured questionnaire. Breastfeeding for a duration of > 6 months (adjusted odds ratio = 0.311; 95% confidence interval
was an independent protective factor against persistent pacifier sucking. The use of pacifiers was more frequent among 3-year-old children and among those from a higher income family and a higher level of schooling of parents. The relation between duration of breastfeeding and thumb sucking was not statistically significant (P = 0.087). There was an association between the thumb sucking habit with sex (female), low level of schooling of father and the child being born as the last male child in the birth order.

Santos SA, et.,al,(2009) have conducted a study regarding nonnutritive sucking habits among preschool-aged children. A cross-sectional study was conducted with 1,190 children of both sexes, aged 3 to 5 years, enrolled in daycare centers and preschools in Natal, Brazil. Parents or guardians answered a structured questionnaire providing information on the institution, children's sex and age, parents' educational level, and habit-related questions. Data analysis was performed using the chi-square test and logistic regression. A prevalence of 40.2% of nonnutritive sucking habits was obtained; of these, 27.7% were pacifier-sucking and 12.5% were finger-sucking habits. Girls showed a higher percentage of sucking habits, especially finger sucking (p = 0.02); younger children showed a higher prevalence of pacifier-sucking habits (p = 0.0006). A higher frequency of pacifier- and finger-sucking habits was associated, respectively, with parents' higher education (p < 0.05) and elementary education (p < 0.05). Logistic regression revealed that younger individuals (p = 0.033) and secondary education level of parents (p = 0.035) are independent factors for habit persistence.

Ize-Iyamu. et.al (2009) have conducted a survey of methods and practices used to stop digit sucking in 2-5 year old children in Edo State, Nigeria. The objective of the study is to analyze the methods and practices used to stop digit sucking. A prospective study was carried out and the study group comprised 1031 pre-school children aged 2-5-years, selected from day care centres and pre-schools in three local government areas using stratified random sampling. The result showed that 15.4% of the children had a digit sucking
habit (thumb and finger sucking) which increased with age, with the highest number seen in the 3 and 5-year-old age group.

Jose Francisco Murrieta, et.,al (2009) have conducted a study on prevalence of non-nutritive buccal habits in a group of preschool children in Nezahualcoyotl City, Mexico. A questionnaire was completed for 211 preschool children from the information obtained in two stages: 1) parents of the children completed a questionnaire, and 2) the clinical evaluation of the children was registered by the examiner. Of the studied population, 68.2% showed at least one non-nutritive buccal habit. According to their age, we noted that the categories of 4- and 5-year-olds had the highest percentage of cases (29.0% and 30.0%, respectively). The relationship between these two variables had a significant result ($\chi^2 = 7.664, p = 0.02$). According to gender, males showed a higher percentage of cases of oral non-nutritive habits (35.0%), in comparison, for females it was 33.2%. However, these differences were not statistically significant ($\chi^2 = 0.101, p = 0.751$). The percentage of registered cases with the finger-sucking habit was 8.5%. The relationship between age and prevalence of non-nutritive buccal habits was statistically significant, whereas gender was not statistically significant.

Sarkar S, et.,al (2008) have conducted a study on prevalence of thumb sucking in children of Calcutta. The prevalence study of thumb digital sucking carried out on 3-12-year-old 2517 children, 1293 boys & 1224 girls, with different socio-economic status, belonging to villages, suburbs and city areas of Calcutta revealed that non-nutritional sucking habit was predominantly seen in cities, and bottle feeding was found to be the main cause of this habit; in 3-6-year-old children the prevalence of the habit was more in boys than girls but it persisted more in boys with increase in age.

Scavone. H, et.,al,(2008) have conducted a study on association between breastfeeding duration and non-nutritive sucking habits in Brazil. A cross-sectional survey was conducted on the mothers of 551 children aged 3 to 6
years, randomly selected from public pre-schools. Mothers were asked to complete a questionnaire includes children's age, gender, race, method and duration of infant feeding, as well as pacifier use and/or digit-sucking habits. According to the answers, children were assigned to five groups: 1--never breastfed, 2--breastfed for shorter than 3 months of life, 3--breastfed for 3 to 6 months, 4--breastfed for 6 to 9 months, and 5--breastfed for 9 months or longer. Data were submitted to the Fisher's exact test with Bonferroni correction for multiple comparisons to analyse possible associations between breastfeeding duration period categories and non-nutritive sucking behaviours.

Pacifier use frequency was high in groups 1, 2, 3 and 4 (85%, 87.6%, 78% and 70%, respectively), in comparison with that in group 5 (38.6%). The prevalence of non-nutritive sucking habits was significantly reduced in children who were breastfed for nine months or longer (p = 0.000). Children aged 3-6 years who were breastfed for nine months or longer had a lower prevalence of non-nutritive sucking habits.

Ngom PI, et.,al,(2008) have conducted a study on prevalence and factors associated with non-nutritive sucking behavior among 5- to 6-year-old children in Senegal. Data of this study were collected using a structured questionnaire administered by the investigators to mothers or caregivers of 443 children (231 boys and 212 girls) aged 5/6 years. Three types of data were collected: data on the social background of the children including place of residence (urban, suburban and rural) and the mother's occupation (workers, employee, executive, housewife), data regarding former and present sucking habits and information on the feeding pattern of the children when they were infants (breast feeding, bottle feeding or a combination of both). The results indicated a prevalence rate of 16.50% and 17.20% respectively for digit and pacifier sucking in this population. Also, a significant association was found between children's non nutritive sucking habits in one hand and the mothers' occupation and feeding pattern on the other hand. Breast fed children are less prone to develop a non nutritive sucking habit than bottle fed children.
Karin M. Dowidar, et. al (2006) have conducted a study on factors related to development of thumb sucking in a sample of Egyptian children. Mothers of 340 children (165 of high socioeconomic and 175 of low socioeconomic level) were interviewed to answer a questionnaire concerning the children's age, sex, mode of feeding. Results showed that children of low socioeconomic background practiced thumb sucking more than those of high socioeconomic background (p<.05). Thumb sucking was observed less frequently among children whose mothers received more than 9 years of education (p<.05) whereas pacifier sucking was higher among the same group (p<.05). Age of weaning did not influence the development of thumb sucking (p>.05). Mothers of the high socioeconomic group and those with more than 9 years of education were more aware of the effect of sucking (p<.05): Development of thumb sucking was noticed more among children whose mothers were unaware of the effect of sucking (p<.05). Professional advice was sought more among mothers who were aware of the effect of sucking (p<.05).

Shetty SR, et. al. (2006) have conducted a prevalence study on oral habits in children this epidemiological study was conducted upon 4,590 school children to find the prevalence of oral habits in Mangalore. The researcher noted that 29.7% of the population had habits of which 3.1% had digit sucking, 4.6% mouth breathing, 3.02% tongue thrusting, 6.2% bruxism, 6% lip/cheek biting, 12.7% nail biting, 9.8% pencil biting and 0.09% masochistic habits respectively. Digit sucking, pencil biting and tongue thrust were highly prevalent among Group 1 (3-6 years) children. Mouth breathing and bruxism were significant in Group 2 (7-12 years) cases whereas lip/cheek biting and nail biting were more common in Group 3 (13-16 years) cases. Digit sucking, tongue thrust, mouth breathing and bruxism were more prevalent among the boys whereas lip/cheek biting, nail biting and pencil biting were more prevalent among the girls.
Lydia M. Lopez, et. al (2006), have conducted a study regarding associations between a history of breast feeding, malocclusion and parafunctional habits in Puerto Rican children. The dental records of a sample of 540 children aged 6 to 72 months screened for oral conditions and behavioral risk factors were evaluated for variables such as a history of breastfeeding, malocclusion and parafunctional habits. The results showed that the mean age of the children was 28 months [ or -] 14. The mothers' mean age was 26.4 years [ or -] 6. The prevalence of breast-feeding was 34% with a mean breast-feeding time period of 3 m [ or -] 3.7. About 95% of the children had a history of bottle-feeding and 90% showed some evidence of malocclusion at the time of dental examination. The main malocclusion problems were space deficiency (closed contacts among incisors) (31%), open bites (6%) and crossbites (5%). A habit of thumb sucking was reported in 32% of the cases and pacifier use in 21%. there were significant differences for the following variables: mother's age and breast-feeding time period; number of children in family and breast-feeding time period; breast-feeding history and breast-feeding time with bottle use, malocclusion and thumb sucking habit; and gender and thumb-sucking habit.

Karen glazer peres, et.,al (2006) have conducted a study social and biological early life influences on the prevalence of open bite in Brazilian 6-year-olds. Little is known about the effects of social and biological risk factors for open bite on the primary dentition. A cross-sectional study using a birth cohort was carried out in Pelotas, Brazil. A sample of 400, 6-year-old children was employed. The Foster and Hamilton criteria were used to classify open bite. Unconditional bivariate and multiple logistic regression analysis were performed. The prevalence of anterior open bite was 46.3%. Risk factors included: a maternal age of between 30 and 39 years, as compared with children whose mothers were younger; breast-feeding for < 9 months; dental caries experience; pacifier sucking between 12 months and 5 years, as
compared to no sucking or a shorter duration of sucking; and the presence of finger-sucking at 6 years of age.

**Samir E. Bishara, et al (2006)** have conducted a study on changes in the prevalence of nonnutritive sucking patterns in the first 8 years of life in Iwoa. Sucking behavior data were initially collected from 797 children who were followed longitudinally from birth; the data came from periodic questionnaires completed by the parents. In addition, study models were obtained for 372 children at 4 to 5 years of age and assessed for posterior crossbite, anterior open bite, and overjet. The subjects were grouped according to the duration and type of habit (pacifier or digit, for less than 12 months or more than 48 months). Children with nonnutritive sucking of less than 12 months were further grouped according to the duration of breast-feeding. The McNemar nonparametric test was used to compare the changes in the incidence and effect of the habits with time. There was a significant ($P = .001$) decrease in the incidence of pacifier habits between 1 and 5 years of age, from 40% to 1%. There was a significant ($P = .01$) decrease in the incidence of digit habits between 1 and 4 years of age, from 31% to 12%.

**John J. Warren, et al (2006)** have conducted a longitudinal study on non-nutritive sucking behaviors in preschool children. The method used for this study is over 600 children were followed from birth to at least 36 months of age using mailed questionnaires sent when children reached the ages of 6 weeks, and 3, 6, 9, 12, 16, and 24 months, and then yearly thereafter. Parents answered questions concerning non-nutritive sucking behaviors including use of pacifier and digit sucking. The study categorized children who maintained habits to 36 months of age or older as having prolonged habits, and using multivariate analyses, compared them to children without prolonged habits on various socio demographic variables. The study found that for over 20% of the children, a non-nutritive sucking habit was prolonged to 36 months of age older.
Maja Ovsenik, et al. (2005) have conducted a follow-up study of functional and morphological malocclusion trait changes from 3 to 12 years of age. 267 children (132 boys, 135 girls) were randomly selected for a follow-up study from a previous cohort of 560 subjects. Five functional malocclusion traits: mouth breathing, atypical swallowing, thumb, pacifier sucking, and bottle feeding were assessed and evaluated. Intra-arch assessment involved measurements of incisor crowding, rotation of incisors, and axial inclination of the teeth. Sucking habits (finger- or dummy-sucking, bottle feeding) until 5 years of age were statistically significantly correlated with an atypical swallowing pattern from 6 to 9 years (Spearman $r = 0.178$, $P = 0.017$), which in turn was statistically significantly correlated with the morphological malocclusion severity score (Spearman $r = 0.185$, $P = 0.042$) at 12 years of age.

Johara A., et al. (2003) have conducted study on attitudes of Saudi mothers towards prolonged non-nutritive sucking habits in children. A cross-sectional study involved 181 mothers of preschool children currently engaged in non-nutritive sucking habits (digit and pacifier) were studied. The information was obtained from a self-administered questionnaire completed by the mothers. The majority of mothers (69.1%) were from high socio-economic families, (77%) had university or higher education and more than half of them (58.6%) were employed. About 75% of the children were pacifier users, and 25% of them habitually sucked their digits. Nearly half of the mothers (43.5%) thought that the reason of acquiring the habit was because their children cried a lot at night. The majority of studied mothers (88.7%) considered sucking a harmful habit to their children' teeth, and 69.1% never accepted the sucking habit. High percentage (80.8%) of mothers tried to intervene with these habits and 61.0% of them tried their intervention when children were one year old or less. Most proposed reasons for mothers' intervention with sucking habits were their concerns that the habit might continue until the child become older (53.3%) followed by their concern that the habit might affect their children's permanent teeth (45.3%). The methods used by mothers were mostly non-invasive
procedures which included restricting the use of pacifier to specific times in the day (63.0%), followed by reinforcement of positive behaviors and using rewards (26.0%). None of the mothers sought advice from pediatrician while only one mother (0.6%) consulted a dentist about sucking habits.

**Kharbanda OP, et al. (2003)** have conducted a prevalence study upon oral habits in school going children of Delhi. This study was conducted on 5554 children aged 5-13 years old with the objectives of recording the prevalence of oral habits among North Indian children according to sex. The sample represented the entire school-going population of Delhi in the age group of 5-13 years. The results showed that the prevalence of oral habits in Delhi school going children was 25.5%. Tongue thrust was the commonest habit (18.1%) followed by mouth breathing (6.6%). Thumb sucking was relatively less common habit and seen in only 0.7% of children. There were no significant differences between boys and girls for the prevalence of oral habits. Thumb sucking was more common in girls (1.0%) when compared with boys (0.4%) and this difference was statistically significant (P < 0.001). There was a reverse trend for the mouth breathing, which was more common (P < 0.001) in boys (7.8%) than girls (5.3%). There were no differences for tongue thrust habit between boys (17.5%) and girls (18.6%).

**DaCosta et al. (2002)** have conducted a study on dentofacial anomalies related to the digit sucking habit in Nigeria. In this study 81 children, 29 males and 52 females aged 3-16 years were examined. Each child was still actively engaged in the digit sucking habit. Subjects were divided into 3 age groups- 3-6 years, 7-10 years and 11 years and above. The dentofacial effects of the habit on each subject were assessed. Increased overjet was observed in 63-70% of the children in the different age groups while the occurrence of anterior open bite ranged from 33.3% to 80% declining in frequency with increase in age. Unilateral posterior crossbite was observed in 8.65 of children while no case of bilateral crossbite was observed. Lip incompetence occurred in 51.8% of children examined, occurring most frequently in the oldest age group. Class 2
skeletal pattern was observed in 22.2% of the sample population. Results show that malocclusion is a frequent result of digit sucking especially when prolonged. There is a need to increase social awareness of the detrimental effects of this habit and if necessary offer alternative non-nutritive sucking methods.
CHAPTER – III
METHODOLOGY

This chapter deals with methodology adopted for the study. It includes research approach, research design, setting of the study, population, sample, criteria for sample selection, sample size and sampling technique, validity, reliability, pilot study, data collection procedure and plan for data analysis.

RESEARCH APPROACH
Descriptive approach was used for this study.

RESEARCH DESIGN
Descriptive survey design was adopted to conduct the study.

SETTING OF THE STUDY
The study was conducted in various pediatric OPD (Maharishi nursing home and Srinithi clinic for child) and Nanchiyampalayam at Dharapuram. In Maharishi Nursing home, averagely 100 – 150 outpatient cases per day and in Srinithi clinic, 75 – 100 outpatient cases per day. Nanchiyampalayam is an urban area which is 2 km away from Dharapuram. Total population is 6770 out of which there are 254 children with in the age group of 3 – 6 years.

POPULATION
Mothers with 3 – 6 years children were population of the study.

SAMPLES
Mothers with 3 – 6 years children those who had thumb and digit sucking behaviour were the samples of the study.

CRITERIA FOR SELECTION OF SAMPLE
INCLUSION CRITERIA

- Both boys and girls
- Mothers who are willing to participate in the study.
Mothers who are able to understand and speak Tamil.

The mother and children available at the time of data collection procedure.

**EXCLUSION CRITERIA**

The mothers who are sick at the time of data collection.

**SAMPLE SIZE**

The sample size for the study was 440 out of which 105 cases are identified as thumb and digit sucking. The number of thumb and digit sucking samples taken from pediatric OPD was 66 samples and 39 samples from community.

**SAMPLING TECHNIQUE**

Non probability convenience sampling technique was used to select the sample.

**DESCRIPTION OF THE TOOL**

**Part I**

It consists of demographic data such as age of the child, sex of the child, education of the father, family income, type of family, religion and area of residence.

**Part II**

Check list for assessing the predisposing factors of thumb and digit sucking behaviour. It consists of 9 statements.

**Part III**

Check list for assessing the parental practices to preventive measures to stop the thumb and digit sucking. It consists of 16 dichotomous questions. 8 questions are positive and 8 questions are negative.
SCORING PROCEDURE

Part II

It consists of 9 questions and it was scored in 1, 2, and 3.

<table>
<thead>
<tr>
<th>SCORE</th>
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<tr>
<td>1 - 9</td>
<td>1 – 33 %</td>
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<tr>
<td>10 - 18</td>
<td>34 – 66 %</td>
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<tr>
<td>19 - 27</td>
<td>67 – 100 %</td>
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Part III

It consists of 16, 8 positive practice and 8 negative practices. The score was given according to their practices. The interpretation were

The item number 3, 9, 10, 12, 13, 14, 15, 16 was considered as positive practices to prevent thumb and digit sucking behaviour of the child. The score “1” was given if they are performed, if not the score “0” was given.

The item number 1, 2, 4, 5, 6, 7, 8, 11 was considered as negative practices to prevent thumb and digit sucking. The score “1” was given if they are not performed and if performed “0” score was given.

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<td>16</td>
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</tbody>
</table>

* - Negative statements
PRACTICES | SCORE | PERCENTAGE
--- | --- | ---
Adequate | 11 - 16 | 67 – 100 %
Moderately adequate | 6 - 10 | 34 – 66 %
Inadequate | 0 - 5 | 0 – 33 %

VALIDITY AND RELIABILITY OF THE TOOL

VALIDITY
The validity of the tool was established in consultation with 4 nursing experts in the field of pediatric nursing and one medical expert in the field of Paediatrics. No modifications were done.

RELIABILITY
The reliability of the checklist regarding parental practices were assessed by test retest method and internal consistency. In test retest method, Karl – Pearson correlation coefficient formula was used to find the stability and it was found to be reliable(r = 0.8). The Spearman’s Brown Prophecy formula was used to assess the internal consistency by using split half technique and it was found to be reliable(r = 0.94).

PILOT STUDY
The pilot study was conducted in Manakkadavu for a period of one week. Written permission was obtained from the municipality. The prevalence of thumb and digit sucking was identified with mothers of 3 – 6 years children. The 34 samples were selected by using non probability convenience sampling technique out of which 10 samples had thumb and digit sucking behaviour. Oral consent was obtained from the mothers by explaining the purpose of the study. The tool was administered to the mothers to assess the predisposing factors and level of parental practices regarding thumb and digit sucking behaviour. 20 minutes was spent for each sample and data was collected. The data were analyzed by using descriptive and inferential statistics.
The results of the pilot showed that the mean value of predisposing factors of thumb and digit sucking was 19.5 (SD ± 1.77) and the mean value of predisposing factors of non thumb and digit sucking was 19.37 (SD ± 2.48). The mean value of parental practices of thumb and digit sucking was 6.3 (SD ± 1.76) and the mean value of parental practices of non thumb and digit sucking was 7.2 (SD ± 1.64). There was a negative correlation (r = -0.12) between the predisposing factors and parental practices of thumb and digit sucking and the ‘z’ score of predisposing factors and parental practices was 15.34 and 13.98 respectively. The pilot study findings revealed that it is feasible to conduct major study.

**DATA COLLECTION PROCEDURE**

The main study was conducted in selected areas of Dharapuram. Data collection was done for a period of five weeks. The investigator obtained written permission from the municipality officer for Nanchiyampalayam community area and also from the medical officers for Srinithi clinic and maharishi nursing home. The oral permission was obtained from each participant and the purpose of the study was explained prior to the study. The samples were selected by using non probability convenience sampling technique. The checklists were administered to the mothers to assess the predisposing factors and level of parental practices regarding thumb and digit sucking behaviour. 10 – 15 samples were assessed per day. 20 minutes was spent for each sample to collect data. End of the data collection, the thumb and digit sucking behaviour prevalence rate was 105 out of 440 children. After the data collection the information booklet was given to the mothers which consists of causes, predisposing factors and preventive measures to stop thumb and digit sucking behaviour and also an awareness programme was conducted regarding thumb and digit sucking behaviour by using posters, charts, models and pamphlets at Nanchiyampalayam. The collected data were analysed by using SPSS package (16.0 version).
# PLAN FOR DATA ANALYSIS

<table>
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<th>Methods</th>
<th>Objectives or remarks</th>
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<td>Frequency and percentage distribution</td>
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<td>Logistic regression</td>
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<td>Karl pearson Correlation coefficient formula</td>
<td>To find the correlation between predisposing factors and parental practices of thumb and digit sucking and non thumb and digit sucking among mothers with 3 – 6 years children.</td>
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<td>‘z’ score</td>
<td>To find the significant difference of predisposing factors and parental practices of thumb and digit sucking and non thumb and digit sucking among mothers with 3 – 6 years children.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chi-square</td>
<td>To find the relationship between thumb and digit sucking and predisposing</td>
</tr>
</tbody>
</table>

44
<table>
<thead>
<tr>
<th>Factors among mothers with 3 – 6 years children</th>
<th>To find the relationship between thumb and digit sucking and parental practices among mothers with 3 – 6 years children</th>
</tr>
</thead>
<tbody>
<tr>
<td>To find association of the predisposing factors and level of parental practices of thumb and digit sucking among mothers with 3 – 6 years with their selected demographic variables</td>
<td></td>
</tr>
</tbody>
</table>

**PROTECTION FROM THE HUMAN SUBJECT**

The study was approved from the dissertation committee prior to conduct the pilot and main study. The written consent was obtained from the municipality. Verbal consent of each study participant was obtained after explanation of the purpose of the study. Confidentiality was maintained throughout the study.
CHAPTER IV
DATA ANALYSIS AND INTERPRETATION

This chapter deals with the analysis and interpretation of the data collected to assess the prevalence of thumb and digit sucking and its relationship with predisposing factors and parental practices among mothers with 3 – 6 years children.

Data were collected from selected pediatric OPD (Maharishi nursing home and Srinithi clinic) and Nanchiyampalayam at Dharapuram by using check list. The data were analysed by using SPSS (16.0 version) statistical package. Data were presented under the following headings.

ORGANIZATION OF DATA:

SECTION A Description of demographic variables of thumb and digit sucking among mothers with 3 – 6 years children.

SECTION B Assess the prevalence of thumb and digit sucking among 3 – 6 years.

SECTION C Assess the predisposing factors of thumb and digit sucking and non thumb and digit sucking among mothers with 3 – 6 years children.

SECTION D Find the mean and standard deviation of predisposing factors of thumb and digit sucking and non thumb and digit sucking among mothers with 3 – 6 years children.

SECTION E Assess the level of parental practices of thumb and digit sucking and non thumb and digit sucking among mothers with 3 – 6 years children.

SECTION F Find the mean and standard deviation of parental practices of thumb and digit sucking and non thumb and digit sucking among mothers with 3 – 6 years children.
SECTION G  Find the correlation between predisposing factors and parental practices of thumb and digit sucking among mothers with 3 – 6 years children.

SECTION H  Find the correlation between predisposing factors and parental practices of non thumb and digit sucking among mothers with 3 – 6 years children.

SECTION I  Find association between thumb and digit sucking and predisposing factors among mothers with 3 – 6 years children.

SECTION J  Find association between thumb and digit sucking and parental practices among mothers with 3 – 6 years children.

SECTION K  Find the significant difference of predisposing factors and parental practices of thumb and digit sucking and non thumb sucking of mothers with 3 – 6 years children.

SECTION L  Find the impact of predisposing factors and parental practices on thumb and digit sucking and non thumb and digit sucking among 3 – 6 years children.

SECTION M  Find association of predisposing factors and level of parental practices of thumb and digit sucking among mothers with 3 – 6 years children with their selected demographic variables.
SECTION A: Description of demographic variables of thumb and digit sucking among mothers with 3 – 6 years children.

Table 1: Frequency and percentage of demographic variables of thumb and digit sucking among mothers with 3 – 6 years children. 

<table>
<thead>
<tr>
<th>S.No</th>
<th>DEMOGRAPHIC VARIABLES</th>
<th>THUMB AND DIGIT SUCKING AND NON THUMB AND DIGIT SUCKING</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>FREQUENCY</td>
</tr>
<tr>
<td>01</td>
<td>Sex of the child</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a) Male</td>
<td>53</td>
</tr>
<tr>
<td></td>
<td>b) Female</td>
<td>52</td>
</tr>
<tr>
<td>02</td>
<td>Age of the child</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a) 3 – 4 years</td>
<td>47</td>
</tr>
<tr>
<td></td>
<td>b) 4 – 5 years</td>
<td>46</td>
</tr>
<tr>
<td></td>
<td>c) 5 – 6 years</td>
<td>12</td>
</tr>
<tr>
<td>03</td>
<td>Education of the father</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a) Graduate</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>b) Higher secondary</td>
<td>65</td>
</tr>
<tr>
<td></td>
<td>c) Illiterate</td>
<td>15</td>
</tr>
<tr>
<td>04</td>
<td>Monthly income</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a) Rs. 3000 – 5000</td>
<td>65</td>
</tr>
<tr>
<td></td>
<td>b) Rs. 5001 – 10000</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>c) Above Rs. 10000</td>
<td>10</td>
</tr>
<tr>
<td>05</td>
<td>Religion</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a) Hindu</td>
<td>83</td>
</tr>
<tr>
<td></td>
<td>b) Muslim</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>c) Christian</td>
<td>6</td>
</tr>
</tbody>
</table>
With regard to sex of the child majority of the mothers 53 (50 %) had male child and 52 (50 %) had female child. (Fig: 2)

With regard to age of the child majority of the children 47 (45 %) belonged to 3 – 4 years, 46 (44 %) belonged to 4 – 5 years and 12 (11 %) belonged to 5 – 6 years. (Fig: 3)

In education of the father majority of fathers 65 (62 %) had higher secondary education, 25 (24 %) had graduate education and 15 (14 %) were illiterate. (Fig: 4)

According to monthly income majority 65 (62 %) were Rs. 3000 – 5000 and 30 (29 %) were Rs. 5001 – 10,000 and 10 (9 %) were above Rs. 10,000. (Fig: 5)

With regard to religion majority 83 (79 %) belonged to Hindu and 16 (15 %) belonged to Muslim and 6 (6 %) belonged to Christian. (Fig: 6)

In type of family majority 46 (44 %) belonged to joint family and 59 (56 %) belonged to nuclear family. (Fig: 7)

With regard to area of resistance majority 68 (65 %) were in rural area and 37 (35 %) were in urban area. (Fig: 8)
SEX OF THE CHILD

FIG – 2 : Percentage distribution according to the sex of the child
AGE OF THE CHILD

FIG – 3: Percentage distribution according to the age of the child
EDUCATION OF THE FATHER

FIG - 4: Percentage distribution according to the education of the father
MONTHLY INCOME

FIG – 5: Percentage distribution according to the monthly income
FIG – 6 : Percentage distribution according to the religion
FIG – 7: Percentage distribution according to the type of family
AREA OF RESIDENCE

FIG – 8 : Percentage distribution according to the area of residence
**SECTION B:** Assess the prevalence of thumb and digit sucking among 3 – 6 years children.

**Table 2:** Frequency distribution of prevalence of thumb and digit sucking and non sucking thumb and digit among 3 – 6 years children

<table>
<thead>
<tr>
<th>Prevalence</th>
<th>Frequency (N)</th>
<th>Percentage (%)</th>
<th>Total</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thumb and digit sucking</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Thumb sucking</td>
<td>66</td>
<td>15</td>
<td>105</td>
<td>24</td>
</tr>
<tr>
<td>b) Digit sucking</td>
<td>39</td>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non thumb and digit sucking</td>
<td>-</td>
<td>-</td>
<td>335</td>
<td>76</td>
</tr>
<tr>
<td>Total</td>
<td>440</td>
<td>100</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2 depicts that 105 (24 %) of children had thumb and digit sucking out of which 66 (15 %) of children had thumb sucking and 39 (9%) of children had digit sucking and 335 (76 %) had no thumb and digit sucking. (Fig: 9)
PREVALENCE OF THUMB AND DIGIT SUCKING AND NON THUMB AND DIGIT SUCKING

FIG – 9 : Percentage distribution of prevalence of thumb and digit sucking and non thumb and digit sucking
SECTION C: Assess the predisposing factors of thumb and digit sucking and non thumb and digit sucking among mothers with 3 – 6 years children.

Table 3: Frequency percentage distribution of predisposing factors of thumb and digit sucking and non thumb and digit sucking among mothers with 3 – 6 years children

<table>
<thead>
<tr>
<th>S. No</th>
<th>PREDISPOSING FACTORS</th>
<th>Thumb and digit sucking</th>
<th>Non thumb and digit sucking</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Frequency</td>
<td>Percentage</td>
</tr>
<tr>
<td>01</td>
<td>Primary care giver</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a) Mother</td>
<td>79</td>
<td>75</td>
</tr>
<tr>
<td></td>
<td>b) Grand parents</td>
<td>22</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>c) Servant</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>02</td>
<td>Education of the mother</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a) Graduate</td>
<td>15</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>b) Higher secondary</td>
<td>90</td>
<td>86</td>
</tr>
<tr>
<td></td>
<td>c) No formal education</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>03</td>
<td>Occupation of the mother</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a) House wife</td>
<td>59</td>
<td>56</td>
</tr>
<tr>
<td></td>
<td>b) Self work</td>
<td>12</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>c) Working</td>
<td>34</td>
<td>33</td>
</tr>
<tr>
<td>04</td>
<td>Number of children</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a) 1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>b) 2</td>
<td>86</td>
<td>82</td>
</tr>
<tr>
<td></td>
<td>c) More than 2</td>
<td>18</td>
<td>17</td>
</tr>
<tr>
<td>05</td>
<td>Space between 2 children</td>
<td></td>
<td></td>
</tr>
<tr>
<td>----</td>
<td>--------------------------</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>a) More than 2 years</td>
<td>31</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>b) 1 – 2 years</td>
<td>65</td>
<td>62</td>
</tr>
<tr>
<td></td>
<td>c) Less than 1 year</td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td>06</td>
<td>Birth order of the child</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a) 1</td>
<td>22</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>b) 2</td>
<td>76</td>
<td>72</td>
</tr>
<tr>
<td></td>
<td>c) 3</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>07</td>
<td>Socio economic status</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a) High</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>b) Middle</td>
<td>36</td>
<td>34</td>
</tr>
<tr>
<td></td>
<td>c) Low</td>
<td>60</td>
<td>57</td>
</tr>
<tr>
<td>08</td>
<td>Type of feeding in the first 2 years of life along with complementary feeding</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a) Breast feeding</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>b) Bottle feeding</td>
<td>14</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>c) Both breast and bottle feeding</td>
<td>84</td>
<td>80</td>
</tr>
<tr>
<td>09</td>
<td>Duration of breast feeding</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a) More than 6 months</td>
<td>13</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>b) 3 – 6 months</td>
<td>53</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>c) Less than 3 months</td>
<td>39</td>
<td>37</td>
</tr>
</tbody>
</table>

Table 3 depicts that in thumb and digit sucking majority 79 (75 %) of primary care giver were mothers, 22 (21 %) were grant parents and 4 (4%) were servant. In education of mother majority of mothers 90 (86 %) had higher secondary education and 15 (14%) had graduate education. With regard to occupation of mother majority 59 (56 %) were house wife, 34 (33 %) were working mothers and 12 (11 %) were self working. In number of children majority of mothers 86 (82 %) had two children, 18 (17 %) had more than two children and 1 (1 %) had one child. With regard to space between two children
majority 65 (62 %) had 1 – 2 years, 31 (30 %) had more than 2 years and 9 (8 %) had less than one year. According to birth order of the child majority 76 (72 %) were 2nd child, 22 (21 %) were 1st child and 7 (7 %) were 3rd child. With regard to socio economic status majority 60 (57 %) belonged to low socio economic status, 36 (34 %) belonged to middle socio economic status and 9 (9 %) belonged to high socioeconomic status. In type of feeding in the first 2 years of life along with the complementary feeding majority of mothers 84 (80 %) given both breast and bottle feeding, 14 (13 %) given bottle feeding and 7 (7 %) given breast feeding. With regard to duration of breast feeding majority 53 (51 %) given for 3 – 6 months, 39 (37 %) given for less than 3 months and 13 (12 %) given for more than 6 months.

In non thumb and digit sucking majority 322 (96 %) of primary care giver were mothers and 13 (4 %) were grant parents. In education of mother majority of mothers 288 (86 %) had higher secondary education and 47 (14%) had graduate education. With regard to occupation of mother majority 281 (84 %) were house wife, 30 (9 %) were self working mothers and 24 (7 %) were working. In number of children majority of mothers 270 (80 %) had two children, 24 (17 %) had more than two children and 9 (3 %) had one child. With regard to space between two children majority 202 (62 %) had 1 – 2 years, 117 (36 %) had more than 2 years and 8 (2 %) had less than one year. According to birth order of the child majority 221 (66 %) were 2nd child, 103 (31 %) were 1st child and 11 (3%) were 3rd child. With regard to socio economic status majority 191 (57 %) belonged to low socio economic status, 127 (38 %) belonged to middle socio economic status and 17 (5 %) belonged to high socioeconomic status. In type of feeding in the first 2 years of life along with the complementary feeding majority of mothers 253 (76 %) given both breast and bottle feeding, 48 (14 %) given breast feeding and 34 (10 %) given bottle feeding. With regard to duration of breast feeding majority of mothers 255 (76 %) given for 3 – 6 months, 65 (19 %) given for more than 6 months and 15 (5%) given for less than 3 months.
SECTION D: Find the mean and standard deviation of predisposing factors of thumb and digit sucking and non thumb and digit sucking among mothers with 3 – 6 years children.

Table 4: Mean and standard deviation of predisposing factors of thumb and digit sucking and non thumb and digit sucking among mothers with 3 – 6 years children

<table>
<thead>
<tr>
<th>PREDISPOSING FACTORS</th>
<th>MEAN</th>
<th>STANDARD DEVIATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thumb and digit sucking</td>
<td>18.14</td>
<td>2.58</td>
</tr>
<tr>
<td>Non thumb and digit sucking</td>
<td>16.59</td>
<td>1.92</td>
</tr>
</tbody>
</table>

Table 4 depicts that the mean and standard deviation of predisposing factors of thumb and digit sucking and non thumb and digit sucking were 18.14 (SD ± 2.58) and 16.59 (SD ± 1.92) respectively.
SECTION E: Assess the level of parental practices of thumb and digit sucking and non thumb sucking among mothers with 3 – 6 years children

Table 5: Frequency percentage distribution on level of parental practices of thumb and digit sucking and non thumb and digit sucking among mothers with 3 – 6 years children

<table>
<thead>
<tr>
<th>Parental practices</th>
<th>Thumb and digit sucking and non sucking</th>
<th>Total</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Thumb and digit sucking</td>
<td>Non thumb and digit sucking</td>
<td>F</td>
</tr>
<tr>
<td>Inadequate</td>
<td>22</td>
<td>21 %</td>
<td>11</td>
</tr>
<tr>
<td>Moderately adequate</td>
<td>48</td>
<td>46 %</td>
<td>272</td>
</tr>
<tr>
<td>Adequate</td>
<td>35</td>
<td>33 %</td>
<td>52</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>105</td>
<td>100 %</td>
<td>335</td>
</tr>
</tbody>
</table>

Table 5 depicts that in thumb and digit sucking majority 48 (46 %) of mothers had moderately adequate practice, 35 (33 %) of mothers had adequate practice and 22 (21%) of mother had inadequate practice. In non thumb and digit sucking, majority 272 (81 %) of mothers had moderately adequate practice and 52 (16 %) of mothers had adequate practice and 11 (3 %) of mothers had inadequate practice.
SECTION F: Find the mean and standard deviation of parental practices of thumb and digit sucking and non thumb and digit sucking among mothers with 3 – 6 years children

Table 6: Mean and standard deviation of parental practices of thumb and digit sucking and non thumb and digit sucking among mothers with 3 – 6 years children

<table>
<thead>
<tr>
<th>PARENTAL PRACTICES</th>
<th>MEAN</th>
<th>STANDARD DEVIATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thumb and digit sucking</td>
<td>7.84</td>
<td>1.77</td>
</tr>
<tr>
<td>Non thumb and digit sucking</td>
<td>7.38</td>
<td>0.96</td>
</tr>
</tbody>
</table>

Table 6 depicts that the mean and standard deviation of parental practices of thumb and digit sucking and non thumb and digit sucking were 7.84 (SD± 1.77) and 7.38 (SD ± 0.96) respectively.
**SECTION G:** Find the correlation between predisposing factors and parental practices of thumb and digit sucking among mothers with 3 – 6 years children.

**Table 7:** Correlation between predisposing factors and parental practices of thumb and digit sucking among mothers with 3 – 6 years children.

\[ n = 105 \]

<table>
<thead>
<tr>
<th>S. No</th>
<th>Variables</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Coefficient of correlation</th>
<th>Table ‘r’ value</th>
<th>Inference</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Predisposing factors</td>
<td>18.14</td>
<td>2.58</td>
<td></td>
<td>0.19</td>
<td>S</td>
</tr>
<tr>
<td>02</td>
<td>Parental practices</td>
<td>7.84</td>
<td>1.77</td>
<td>( r = -0.217 )</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\[ \text{df (103)} \quad S \text{ – Significant} \quad P<0.05 \]

Table 7 depicts that the mean score and standard deviation of predisposing factors and parental practices were 18.14 (SD ± 2.58) and 7.84 (SD ± 1.77) respectively. A low negative (inverse) correlation (\( r = -0.217 \)) between predisposing factors and parental practices of thumb and digit sucking children which was significant at the level of \( P < 0.05 \).
PREDISPOSING FACTORS AND PARENTAL PRACTICES OF THUMB AND DIGIT SUCKING

FIG – 10: Correlation between predisposing factors and parental practices of thumb and digit sucking children
**SECTION H:** Find the correlation between predisposing factors and parental practices of non thumb and digit sucking among mothers with 3 – 6 years children.

**Table 8:** Correlation between predisposing factors and parental practices of non thumb and digit sucking among mothers with 3 – 6 years children.

\[ n = 335 \]

<table>
<thead>
<tr>
<th>S. No</th>
<th>Variables</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Coefficient of correlation</th>
<th>Table ‘r’ value</th>
<th>Inference</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Predisposing factors</td>
<td>16.59</td>
<td>1.92</td>
<td>( r = -0.458 )</td>
<td>0.109</td>
<td>S</td>
</tr>
<tr>
<td>02</td>
<td>Parental practices</td>
<td>7.38</td>
<td>0.96</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

df (333) S – Significant P< 0.05

Table 8 depicts that the mean score and standard deviation of predisposing factors and parental practices were 16.59 (SD ± 1.92) and 7.38 (SD ± 0.96) respectively. A low negative (inverse) correlation \( (r = -0.458) \) between predisposing factors and parental practices of non thumb and digit sucking children which was significant at the level of P < 0.05.
PREDISPPOSING FACTORS AND PARENTAL PRACTICES OF NON THUMB AND DIGIT SUCKING

FIG – 11 : Correlation between predisposing factors and parental practices of non thumb and digit sucking children
SECTION I: Find association between thumb and digit sucking and predisposing factors among mothers with 3 – 6 years children

Table 9: Association between thumb and digit sucking and predisposing factors among mothers with 3 – 6 years children

<table>
<thead>
<tr>
<th>Predisposing factors</th>
<th>1 - 9</th>
<th>10 - 18</th>
<th>19 - 27</th>
<th>Calculated Chi-square value</th>
<th>Table value</th>
<th>Inference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thumb sucking</td>
<td>1</td>
<td>33</td>
<td>32</td>
<td>0.499</td>
<td>5.99</td>
<td>NS</td>
</tr>
<tr>
<td>Digit sucking</td>
<td>0</td>
<td>19</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

df(2) NS – Not Significant p<0.05

Table 9 depicts that chi – square value of thumb and digit sucking and predisposing factors was 0.499 and the table value was 5.99 (P<0.05). There was no significant association between predisposing factors and thumb and digit sucking.
SECTION J: Find association between thumb and digit sucking and parental practices among mothers with 3 – 6 years children.

Table 10: Association between thumb and digit sucking and parental practices among mothers with 3 – 6 years children.

<table>
<thead>
<tr>
<th>Parental Practices</th>
<th>Thumb sucking</th>
<th>Digit sucking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inadequate</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Moderately Adequate</td>
<td>55</td>
<td>33</td>
</tr>
<tr>
<td>Adequate</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Calculated Chi-square value</th>
<th>Table value</th>
<th>Inference</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.284</td>
<td>5.99</td>
<td>NS</td>
</tr>
</tbody>
</table>

Table 10 depicts that chi-square value of thumb and digit sucking and parental practices was 2.284 and the table value was 5.99 (P<0.05). There was no significant association between parental practices and thumb and digit sucking.
SECTION K: Find the significant difference of predisposing factors and parental practices of thumb and digit sucking and non thumb sucking among mothers with 3 – 6 years children.

Table 11: Significant difference of mean, standard deviation and ’z’ score of predisposing factors and parental practices of thumb and digit sucking and non thumb and digit sucking among mothers with 3 – 6 years children.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Thumb and digit sucking</th>
<th>Non thumb and digit sucking</th>
<th>Mean difference</th>
<th>Calculated ‘z’ value</th>
<th>Table ‘z’ value</th>
<th>Inference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Predisposing factors</td>
<td>18.14</td>
<td>2.58</td>
<td>16.59</td>
<td>1.92</td>
<td>1.55</td>
<td>3.29</td>
</tr>
<tr>
<td>Parental practices</td>
<td>7.84</td>
<td>1.77</td>
<td>7.38</td>
<td>0.96</td>
<td>0.46</td>
<td>1.53</td>
</tr>
</tbody>
</table>

S – Significant  NS – Not Significant  P < 0.05

Table 11 depicts that the mean and standard deviation of predisposing factors and parental practices for thumb and digit sucking were 18.14 (SD± 2.58) and 7.84 (SD ± 1.77) respectively. The ‘z’ test value for predisposing factors and parental practice of thumb and digit sucking was 3.29 and the tabulated ‘z’ value was 1.96 (P< 0.05). So there was a significant difference of predisposing factors of mothers with 3 – 6 years children. The mean and standard deviation of predisposing factors and parental practices for non thumb and digit sucking were 16.59 (SD± 1.92) and 7.38 (SD ± 0.96) respectively. The ‘z’ test value for predisposing factors and parental practice of non thumb and digit sucking was 1.53 and the tabulated ‘z’ value was 1.96 (P < 0.05). There was no significant difference of parental practices of mothers with 3 – 6 years children.
**SECTION L:** Find the impact of predisposing factors and parental practices on thumb and digit sucking and non sucking among 3 – 6 years children.

**Table 12 :** Diagnostic statistics of the analysis (Logistic regression)

<table>
<thead>
<tr>
<th>S. No</th>
<th>Statistics</th>
<th>Value</th>
<th>P value (&lt; 0.01)</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Chi - square</td>
<td>65.536</td>
<td>-</td>
</tr>
<tr>
<td>02</td>
<td>Cox &amp; Snell R square</td>
<td>0.138</td>
<td>-</td>
</tr>
<tr>
<td>03</td>
<td>Nagelkerke R square</td>
<td>0.208</td>
<td>-</td>
</tr>
</tbody>
</table>

Table 12 depicts that the impact of predisposing factors and parental practices on thumb and digit sucking among 3 – 6 years children which is estimated by logistic regression analysis. The results of the analysis are as follows; the predisposing factors and parental practices are highly significant with thumb and digit sucking of 3 – 6 years children ($X^2 = 65.536$). It indicates the model chosen for the analysis was appropriate. The Cox & Snell R square and Nagelkerke R square values were 0.138 and 0.208 respectively. It indicates that the variance in the dependent variable (Thumb and digit sucking) can explained by the predisposing factors and parental practices can explain as 14% and 21%.
Table 13: Classification table of status of thumb and digit sucking

<table>
<thead>
<tr>
<th>Observed</th>
<th>Predicated Status of thumb and digit sucking and non thumb and digit sucking</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Thumb and digit sucking</td>
<td>Non thumb and digit sucking</td>
</tr>
<tr>
<td>Thumb and digit sucking</td>
<td>31</td>
<td>74</td>
</tr>
<tr>
<td>Non thumb and digit sucking</td>
<td>7</td>
<td>328</td>
</tr>
<tr>
<td>Overall percentage</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 13 depicts that the prediction of thumb and digit sucking among 3 – 6 years children based on the predisposing factors and parental practices. The logistic model correctly predicts that (29.5%) of the 3 – 6 years children were affected by thumb and digit sucking and 97.9 % of 3 – 6 years children were not affected by thumb and digit sucking. The model predicts that the affected and unaffected 3 – 6 years children thumb and digit sucking was 81.6%.
Table 14: Logistic regression of the risk factors on thumb and digit sucking among mothers with 3 – 6 years children

<table>
<thead>
<tr>
<th>S. No</th>
<th>Variable</th>
<th>Co-efficient</th>
<th>Standard error</th>
<th>P value</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Constant</td>
<td>12.585</td>
<td>0.66</td>
<td>0.000</td>
<td>292278.2</td>
</tr>
<tr>
<td>02</td>
<td>Predisposing factors</td>
<td>-0.987</td>
<td>0.310</td>
<td>0.001</td>
<td>0.373 *</td>
</tr>
<tr>
<td>03</td>
<td>Parental practices</td>
<td>-1.670</td>
<td>0.646</td>
<td>0.010</td>
<td>0.188 *</td>
</tr>
<tr>
<td>04</td>
<td>Predisposing factors and parental practices</td>
<td>0.68</td>
<td>0.037</td>
<td>0.066</td>
<td>1.071 *</td>
</tr>
</tbody>
</table>

*Significant

Table 14 depicts that the $\beta$ co-efficient and standard error of predisposing factors were $\beta = -0.987$ (SE ± 0.310) and exponential B value 0.373 which was significant at the level of $P < 0.001$. The $\beta$ co-efficient and standard error of parental practices were $\beta = -1.670$ (SE ± 0.646) and exponential B value 0.188 which was significant at the level of $P < 0.010$. The $\beta$ co-efficient and standard error of both predisposing factors and parental practices were $\beta = 0.68$ (SE ± 0.037) and exponential B value 1.071 which was significant at the level of $P < 0.066$. The exponential value of $\beta$ co-efficient of predisposing factors and parental practices and were 0.373 and 0.188 respectively which are less than 1. It indicates one unit increase in the predisposing factors and parental practices will minimize the chance of having thumb and digit sucking behaviour among children by 0.373 and 0.188 of that factors.
**SECTION M:** Find association between the predisposing factors and level of parental practices of thumb and digit sucking among mothers with 3 – 6 years children with their selected demographic variables.

**Table 15:** Association of predisposing factors of thumb and digit sucking among mothers with 3 – 6 years children with their selected demographic variables.

<table>
<thead>
<tr>
<th>S. No</th>
<th>Demographic variables</th>
<th>Predisposing factors</th>
<th>Chi-square</th>
<th>Table value</th>
<th>Inference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1 – 9</td>
<td>10 - 18</td>
<td>19 - 27</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>F</td>
<td>%</td>
<td>F</td>
<td>%</td>
</tr>
<tr>
<td>01</td>
<td>Sex of the child</td>
<td>Male</td>
<td>0</td>
<td>25</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>0</td>
<td>27</td>
<td>25</td>
</tr>
<tr>
<td>02</td>
<td>Age of the child</td>
<td>3 – 4 years</td>
<td>0</td>
<td>28</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4 – 5 years</td>
<td>0</td>
<td>19</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 – 6 years</td>
<td>0</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>03</td>
<td>Education of the father</td>
<td>Graduate</td>
<td>0</td>
<td>20</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Higher secondary</td>
<td>0</td>
<td>25</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Illiterate</td>
<td>0</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>04</td>
<td>Monthly income</td>
<td>Rs.3000 – 5000</td>
<td>0</td>
<td>28</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rs.5001 – 10000</td>
<td>0</td>
<td>15</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Above Rs.10000</td>
<td>0</td>
<td>9</td>
<td>9</td>
</tr>
</tbody>
</table>
Table 15 showed that Chi-square value was calculated to find the association of predisposing factors of thumb and digit sucking with their selected demographic variables. There was a significant association of predisposing factors with education of the father \( (\chi^2 = 12.507) \), monthly income \( (\chi^2 = 7.624) \) and religion \( (\chi^2 = 8.226) \).
Table 16: Association of parental practices of thumb and digit sucking among mothers with 3 – 6 years children with their selected demographic variables.

\[ n = 105 \]

<table>
<thead>
<tr>
<th>S. No</th>
<th>Demographic variables</th>
<th>Parental practices</th>
<th>Chi-square</th>
<th>Table value</th>
<th>Inference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Inadequate</td>
<td>Moderately adequate</td>
<td>Adequate</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>F</td>
<td>%</td>
<td>F</td>
<td>%</td>
</tr>
<tr>
<td>01</td>
<td>Sex of the child</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>4</td>
<td>41</td>
<td>8</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>3</td>
<td>47</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>02</td>
<td>Age of the child</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 – 4 years</td>
<td>4</td>
<td>39</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>4 – 5 years</td>
<td>2</td>
<td>39</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>5 – 6 years</td>
<td>1</td>
<td>10</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>03</td>
<td>Education of the father</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Graduate</td>
<td>2</td>
<td>20</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Higher secondary</td>
<td>3</td>
<td>58</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Illiterate</td>
<td>2</td>
<td>10</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>04</td>
<td>Monthly income</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rs.3000 – 5000</td>
<td>5</td>
<td>53</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Rs.5001 – 10000</td>
<td>2</td>
<td>26</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Above Rs.10000</td>
<td>0</td>
<td>9</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>05</td>
<td>Religion</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hindu</td>
<td>6</td>
<td>67</td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>Muslim</td>
<td>1</td>
<td>15</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Christian</td>
<td>0</td>
<td>6</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
Table 16 showed that Chi-square value was calculated to find the association of parental practices of thumb and digit sucking with their selected demographic variables. There was no significant association of parental practices with sex of the child, age of the child, education of the father, monthly income, religion, type of family and area of residence.
CHAPTER V
DISCUSSION

The aim of the study to assess the prevalence of thumb and digit sucking and its relationship with predisposing factors and parental practices among mothers with 3 – 6 years children in selected area at Dharapuram.

Description of demographic variables

With regard to sex of the child majority of mothers 53 (50 %) had male child and 52 (50 %) had female child.

With regard to age of the child majority of the children 47 (45 %) belonged to 3 – 4 years, 46 (44 %) belonged to 4 – 5 years and 12 (11 %) belonged to 5 – 6 years.

In education of the father majority of fathers 65 (62 %) had higher secondary education, 25 (24 %) had graduate education and 15 (14 %) were illiterate.

According to monthly income majority 65 (62 %) were Rs. 3000 – 5000 and 30 (29 %) were Rs. 5001 – 10,000 and 10 (9 %) were above Rs. 10,000.

With regard to religion majority 83 (79 %) belonged to Hindu and 16 (15 %) belonged to Muslim and 6 (6 %) belonged to Christian.

In type of family majority 46 (44 %) belonged to joint family and 59 (56 %) belonged to nuclear family.

With regard to area of resistance majority 68 (65 %) were in rural area and 37 (35 %) were in urban area.
This chapter attempts to discuss the findings of the study as per objectives are discussed under the following headings.

1. To assess the prevalence of thumb and digit sucking among 3 – 6 years.
2. To assess the predisposing factors of thumb and digit sucking and non thumb and digit sucking among mothers with 3 – 6 years children.
3. To assess the level of parental practices of thumb and digit sucking and non thumb and digit sucking among mothers with 3 – 6 years children.
4. To find the correlation between predisposing factors and parental practices of thumb and digit sucking among mothers with 3 – 6 years children.
5. To find the correlation between predisposing factors and parental practices of non thumb and digit sucking among mothers with 3 – 6 years children.
6. To find association between thumb and digit sucking and predisposing factors among mothers with 3 – 6 years children.
7. To find association between thumb and digit sucking and parental practices among mothers with 3 – 6 years children.
8. To find the significant difference of predisposing factors and parental practices of thumb and digit sucking and non thumb and digit sucking of mothers with 3 – 6 years children.
9. To find the impact of predisposing factors and parental practices on thumb and digit sucking and non thumb and digit sucking among 3 – 6 years children.
10. To find association of predisposing factors and level of parental practices of thumb and digit sucking among mothers with 3 – 6 years children with their selected demographic variables.
FIRST OBJECTIVE
Assess the prevalence of thumb and digit sucking among 3 – 6 years.

Data analysis showed that 105 (24 %) of children had thumb and digit sucking out of which 66 (15 %) of children had thumb sucking and 39 (9 %) of children had digit sucking and 335 (76 %) had no thumb and digit sucking.

The study findings consistent with the findings of Santos SA, et.al,(2009) who have conducted a study regarding nonnutritive sucking habits among preschool-aged children. A prevalence of 40.2% of nonnutritive sucking habits was obtained; of these, 27.7% were pacifier-sucking and 12.5% were finger-sucking habits. Girls showed a higher percentage of sucking habits, especially finger sucking (p = 0.02); younger children showed a higher prevalence of pacifier-sucking habits (p = 0.0006). A higher frequency of pacifier- and finger-sucking habits was associated, respectively, with parents' higher education (p < 0.05) and elementary education (p < 0.05).

SECOND OBJECTIVE
Assess the predisposing factors of thumb and digit sucking and non thumb sucking among mothers with 3 – 6 years children.

Data analysis showed that in thumb and digit sucking 79 (75 %) of primary care giver are mothers, 22 (21 %) are grant parents and 4 (4%) are servant. In education of mother majority 90 (86 %) of mothers had higher secondary education and 15 (14%) had graduate education. With regard to occupation of mother majority 59 (56 %) are housewife, 34 (33 %) are working mothers and 12 (11 %) are self working. In number of children majority 86 (82 %) of mothers had two children, 18 (17 %) had more than two children and 1 (1 %) had one child. With regard to space between two children majority 65 (62 %) hade 1 – 2 years, 31 (30 %) had more than 2 years and 9 (8 %) had less than one year. According to birth order of the child majority 76 (72 %) are 2nd child, 22 (21 %) are 1st child and 7 (7%) and 3rd child. With regard to socio economic status majority 60 (57 %) belonged to low socio
economic status, 36 (34 %) belonged to middle socio economic status and 9 (9 %) belonged to high socioeconomic status. In type of feeding in the first 2 years of life along with the complementary feeding majority of mothers 84 (80 %) given both breast and bottle feeding, 14 (13 %) given bottle feeding and 7 (7 %) given breast feeding. With regard to duration of breast feeding majority 53 (51 %) given for 3 – 6 months, 39 (37 %) given for less than 3 months and 13 (12 %) given for more than 6 months.

In non thumb and digit sucking 322 (96 %) of primary care giver are mothers and 13 (4 %) are grant parents. In education of mother majority 288 (86 %) of mothers had higher secondary education and 47 (14%) had graduate education. With regard to occupation of mother majority 281 (84 %) are house wife, 30 (9 %) are self working mothers and 24 (7 %) are working. In number of children majority 270 (80 %) of mothers had two children, 24 (17 %) had more than two children and 9 (3 %) had one child. With regard to space between two children majority 202 (62 %) had 1 – 2 years, 117 (36 %) had more than 2 years and 8 (2 %) had less than one year. According to birth order of the child majority 221 (66 %) are 2nd child, 103 (31 %) are 1st child and 11 (3%) and 3rd child. With regard to socio economic status majority 191 (57 %) belonged to low socio economic status, 127 (38 %) belonged to middle socio economic status and 17 (5 %) belonged to high socioeconomic status. In type of feeding in the first 2 years of life along with the complementary feeding majority of mothers 253 (76 %) given both breast and bottle feeding, 48 (14 %) given breast feeding and 34 (10 %) given bottle feeding. With regard to duration of breast feeding majority 255 (76 %) given for 3 – 6 months, 65 (19 %) given for more than 6 months and 15 (5%) given for less than 3 months.

The study findings consistent with the findings of Jahanbin.A.et.,al(2009) who had conducted a study regarding association between sociodemographic factors and nutritive and non-nutritive sucking
habits. Based on a questionnaire to the parents of 436 schoolgirls, the rate of current or previous pacifier-sucking was 26.6% and of finger-sucking was 10.6%. Child’s birth rank and number of siblings and parents’ educational level were significantly related to ever pacifier-sucking but not to finger-sucking. The highest prevalence of ever pacifier-sucking was among children who had been breast- and bottle-fed but finger-sucking was more common among exclusively breastfed children.

THIRD OBJECTIVE
Assess the level of parental practices of thumb and digit sucking and non thumb sucking of mothers with 3 – 6 years children

Data analysis showed that in thumb and digit sucking majority of 48 (46%) of mothers had moderately adequate practice, 35 (33%) of mothers had adequate practice and 22 (21%) of mother had inadequate practice. In non thumb and digit sucking, majority 272 (81%) of mothers had moderately adequate practice and 52 (16%) of mothers had adequate practice and 11 (3%) of mothers had inadequate practice.

FOURTH OBJECTIVE
Correlation between predisposing factors and parental practices of thumb and digit sucking among mothers with 3 – 6 years children.

Data analysis showed the mean and standard deviation score of predisposing factors and parental practices were 18.14 (SD ± 2.58) and 7.84 (SD ± 1.77) respectively. A low negative (inverse) correlation (r = - 0.217) between predisposing factors and parental practices of thumb and digit sucking children which was significant at the level of P < 0.05.

Hence the research hypotheses, \( H_1 \) there will be a significant correlation between predisposing factors and parental practices among thumb and digit sucking was accepted.
FIFTH OBJECTIVE
Correlation between predisposing factors and parental practices of non thumb and digit sucking among mothers with 3 – 6 years children.

Data analysis showed that the mean and standard deviation score of predisposing factors and parental practices were 16.59 (SD ± 1.92) and 7.38 (SD ± 0.96) respectively. A low negative (inverse) correlation (r = - 0.458) between predisposing factors and parental practices of non thumb and digit sucking children which was significant at the level of P < 0.05.

Hence the research hypotheses, $H_2$ there will be a significant correlation between predisposing factors and parental practices among non thumb and digit sucking was accepted.

SIXTH OBJECTIVE
Association between thumb and digit sucking and predisposing factors among mothers with 3 – 6 years children.

Data analysis showed that chi – square value of thumb and digit sucking and predisposing factors was 0.499 and the table value was 5.99 (P<0.05). There was no significant relationship between predisposing factors and thumb and digit sucking.

Hence, the research hypotheses $H_3$ There will be a significant association with predisposing factors and thumb and digit sucking among 3 – 6 years children was rejected.

SEVENTH OBJECTIVE
Association between thumb and digit sucking and parental practices among mothers with 3 – 6 years children.

Data analysis showed that chi – square value of thumb and digit sucking and parental practices was 2.284 and the table value was 5.99 (P<0.05). There was no significant relationship between parental practices and thumb and digit sucking.
Hence, the research hypotheses $H_4$ There will be a significant association with parental practices and thumb and digit sucking among 3 – 6 years children was rejected.

EIGHTH OBJECTIVE
Significant difference of predisposing factors and parental practices of thumb and digit sucking and non thumb and digit sucking of mothers with 3 – 6 years children.

Data analysis showed that the mean and standard deviation of predisposing factors and parental practices for thumb and digit sucking were 18.14 (SD± 2.58) and 7.84 (SD ± 1.77) respectively. The ‘z’ test value for predisposing factors and parental practice of thumb and digit sucking was 3.29 and the tabulated ‘z’ value was 1.96 (P< 0.05). So there was a significant difference of predisposing factors of mothers with 3 – 6 years children.

The mean and standard deviation of predisposing factors and parental practices for non thumb and digit sucking were 16.59 (SD± 1.92) and 7.38 (SD ± 0.96) respectively. The ‘z’ test value for predisposing factors and parental practice of non thumb and digit sucking was 1.53 and the tabulated ‘z’ value was 1.96 (P< 0.05). There was no significant difference of parental practices of mothers with 3 – 6 years children.

NINETH OBJECTIVE
Find the impact of predisposing factors and parental practices on thumb and digit sucking and non thumb and digit sucking among 3 – 6 years children.

The $\beta$ co-efficient and standard error of predisposing factors were $\beta = - 0.987 \ (SE \pm 0.310)$ and exponential B value 0.373 which was significant at the level of $P < 0.001$. The $\beta$ co-efficient and standard error of parental practices were $\beta = - 1.670 \ (SE \pm 0.646)$ and exponential B value 0.188 which was significant at the level of $P < 0.010$. The $\beta$ co-efficient and standard error of both predisposing factors and parental practices were $\beta = 0.68 \ (SE \pm 0.037)$
and exponential B value 1.071 which was significant at the level of P < 0.066. The exponential value of $\beta$ co-efficient of predisposing factors and parental practices and were 0.373 and 0.188 respectively which are less than 1. It indicates one unit increase in the predisposing factors and parental practices will minimize the chance of having thumb and digit sucking behaviour among children by 0.373 and 0.188 of that factors.

The study findings consistent with the findings of Santos SA, et.,al,(2009) who have conducted a study regarding nonnutritive sucking habits among preschool-aged children. Logistic regression revealed that younger individuals ($p = 0.033$) and secondary education level of parents ($p = 0.035$) are independent factors for habit persistence.

**TENTH OBJECTIVE**

Association between the predisposing factors and level of parental practices of thumb and digit sucking among mothers with 3 – 6 years children with their selected demographic variables.

Chi-square value was calculated to find the association of predisposing factors of thumb and digit sucking with their selected demographic variables. There was a significant association of predisposing factors with education of the father ($\chi^2 = 12.507$), monthly income ($\chi^2 = 7.624$) and religion ($\chi^2 =8.226$).

Chi-square value was calculated to find the association of parental practices of thumb and digit sucking with their selected demographic variables. There was no significant association of parental practices with sex of the child, age of the child, education of the father, monthly income, religion, type of family and area of residence.

Hence the hypotheses, $H_5$ There will be a significant association between predisposing factors and parental practices among mothers with 3 – 6 years children with their selected demographic variables was rejected except for education of the father ($\chi^2 = 12.507$), monthly income ($\chi^2 = 7.624$) and
religion ($\chi^2 = 8.226$) of predisposing factors and thumb and digit sucking among mothers with 3 – 6 years children.

The study findings consistent with the findings of Holanda AL, et., al (2009) who have conducted a study on relationship between breast- and bottle-feeding and non-nutritive sucking habits among children aged 3 to 5 years. The relation between duration of breastfeeding and thumb sucking was not statistically significant ($P = 0.087$). There was an association between the thumb sucking habit with sex (female), low level of schooling of father and the child being born as the last male child in the birth order.
CHAPTER VI
SUMMARY, CONCLUSION, IMPLICATIONS,
RECOMMENDATIONS AND LIMITATION

This chapter deals with:
- Summary of the study
- Conclusion
- Implications for nursing
- Recommendations
- Limitations

SUMMARY OF THE STUDY

The study was done to assess the prevalence of thumb and digit sucking and its relationship with predisposing factors and parental practices among mothers with 3-6 years children in selected area at Dharapuram with a view to conduct an awareness programme and to develop information booklet.

The research approach used for the study was descriptive approach. The research design used for the study was descriptive survey design. The study was conducted in various pediatric OPD (Maharishi Nursing Home and Srinithi clinic) and Nanchiyampalayam at Dharapuram. Conceptual frame work adopted in the present study was modified “Revised Health Belief Model (Rosenstock (1974) and Becker (1988)“. The samples were selected by non probability convenience sampling technique.

The predisposing factors and parental practices of thumb and digit sucking was assessed by checklist. The tool was administered to the mothers to assess the predisposing factors and level of parental practices. 20 minutes was spent for each sample. The sample size was 440 out of which 105 samples are thumb and digit sucking children. The information booklet was given to the mothers which consist of causes, predisposing factors and preventive measures
to stop thumb and digit sucking. End of the data collection an awareness programme was conducted in Nanchiyampalayam to create awareness regarding the thumb and digit sucking. The collected data were analysed by using SPSS package (16.0 version).

**MAJOR FINDINGS OF THE STUDY**

**Distribution of demographic characteristics of the mothers with 3-6 yrs children.**

- Majority 53 (50 %) of the mothers had male child and 52 (50 %) of mothers had female child.
- Majority 47 (45 %) of the children belonged to 3 – 4 years, 46 (44 %) belonged to 4 – 5 years and 12 (11 %) belonged to 5 – 6 years.
- Majority 65 (62 %) of fathers had higher secondary education, 25 (24 %) had graduate education and 15 (14 %) were illiterate.
- Majority 65 (62 %) were Rs. 3000 – 5000 and 30 (29 %) were Rs. 5001 – 10,000 and 10 (9 %) were above Rs. 10,000.
- Majority 83 (79 %) belonged to Hindu and 16 (15 %) belonged to Muslim and 6 (6 %) belonged to Christian.
- Majority 46 (44 %) belonged to joint family and 59 (56 %) belonged to nuclear family.
- Majority 68 (65 %) were in rural area and 37 (35 %) were in urban area.
- The prevalence majority 105 (24 %) of children had thumb and digit sucking out of which 66 (15 %) of children had thumb sucking and 39 (9 %) of children had digit sucking and 335 (76 %) had no thumb and digit sucking.
- The predisposing factors of thumb and digit sucking majority 79 (75 %) of primary care giver are mothers. In education of mother majority of mothers 90 (86 %) had higher secondary education. With regard to occupation of mother majority of mothers 59 (56 %) were house wife. In number of children majority of mothers 86 (82 %) had
two children. With regard to space between two children majority 65 (62 %) had 1 – 2 years. According to birth order of the child majority 76 (72 %) were 2nd child. With regard to socio economic status majority 60 (57 %) belonged to low socio economic status. In type of feeding in the first 2 years of life along with the complementary feeding majority of mothers 84 (80 %) given both breast and bottle feeding. With regard to duration of breast feeding majority of mothers 53 (51 %) given for 3 – 6 months.

➢ The predisposing factors of non thumb and digit sucking majority 322 (96 %) of primary care giver were mothers. In education of mother majority of mothers 288 (86 %) had higher secondary education. With regard to occupation of mother majority of mothers 281 (84 %) were house wife. In number of children majority of mothers 270 (80 %) had two children. With regard to space between two children majority 202 (62 %) had 1 – 2 years. According to birth order of the child majority of the children 221 (66 %) were 2nd child. With regard to socio economic status majority 191 (57 %) belonged to low socio economic status. In type of feeding in the first 2 years of life along with the complementary feeding majority of mothers 253 (76 %) given both breast and bottle feeding. With regard to duration of breast feeding majority of mothers 255 (76 %) given for 3 – 6 months.

➢ The level of parental practices in thumb and digit sucking majority 48 (46 %) of mothers had moderately adequate practice, 35 (33 %) of mothers had adequate practice and 22 (21%) of mother had inadequate practice. In non thumb and digit sucking, majority 272 (81 %) of mothers had moderately adequate practice and 52 (16 %) of mothers had adequate practice and 11 (3 %) of mothers had inadequate practice.

➢ The mean score and standard deviation of predisposing factors and parental practices were 18.14 (SD ± 2.58) and 7.84 (SD ± 1.77) respectively. A low negative (inverse) correlation (r = - 0.217)
between predisposing factors and parental practices of thumb and digit sucking children which was significant at the level of \( P < 0.05 \).

- The mean score and standard deviation of predisposing factors and parental practices were 16.59 (SD ± 1.92) and 7.38 (SD ± 0.96) respectively. A low negative (inverse) correlation \( (r = -0.458) \) between predisposing factors and parental practices of non thumb and digit sucking children which was significant at the level of \( P < 0.05 \).

- Chi – square value of thumb and digit sucking with predisposing factors was 0.499 and the table value was 5.99 (\( P < 0.05 \)). There was no significant association between predisposing factors and thumb and digit sucking

- Chi – square value of thumb and digit sucking with parental practices was 2.284 and the table value was 5.99 (\( P < 0.05 \)). There was no significant association between parental practices and thumb and digit sucking

- The ‘z’ test value for predisposing factors and parental practice of thumb and digit sucking and non thumb and digit sucking were 3.29 and 1.53 respectively and the tabulated ‘z’ value was 1.96 (\( P < 0.05 \)). So there was a significant difference of predisposing factors and parental practices of mothers having 3 – 6 years children with thumb and digit sucking and non thumb and digit sucking.

- The \( \beta \) co-efficient and standard error of predisposing factors were \( \beta = -0.987 \) (SE ± 0.310) and exponential B value 0.373 which was significant at the level of \( P < 0.001 \). The \( \beta \) co-efficient and standard error of parental practices were \( \beta = -1.670 \) (SE ± 0.646) and exponential B value 0.188 which was significant at the level of \( P < 0.010 \). The \( \beta \) co-efficient and standard error of both predisposing factors and parental practices were \( \beta = 0.68 \) (SE ± 0.037) and exponential B value 1.071 which was significant at the level of \( P < 0.066 \). The exponential value of \( \beta \) co-efficient of predisposing factors and parental practices were 0.373 and 0.188 respectively.
which are less than 1. It indicates one unit increase in the predisposing factors and parental practices will minimize the chance of having thumb and digit sucking behaviour among children by 0.373 and 0.188 of that factors.

- Chi-square value was calculated to find the association of predisposing factors of thumb and digit sucking with their selected demographic variables. There was a significant association of predisposing factors with education of the father ($\chi^2 = 12.507$), monthly income ($\chi^2 = 7.624$) and religion ($\chi^2 = 8.226$).

- Chi-square value was calculated to find the association of parental practices of thumb and digit sucking and with their selected demographic variables. There was no significant association of parental practices with sex of the child, age of the child, education of the father, monthly income, religion, type of family and area of residence.

**CONCLUSION**

The present study was aimed to find the prevalence of thumb and digit sucking and its relationship with predisposing factors and parental practices among mothers with 3-6 years children in selected area at Dharapuram. There was an negative (inverse) correlation ($r = -0.217$) between predisposing factors and parental practices of thumb and digit sucking children. The ‘z’ test value for predisposing factors and parental practice of thumb and digit sucking and non thumb and digit sucking were 3.29 and 1.53 respectively. The logistic regression $\beta$ co-efficient of predisposing factors and parental practices ($\beta = -0.987$ and $\beta = -1.670$) are highly significant with thumb and digit sucking behaviour. Finally the study concluded that mothers were still unaware about the behavioural problems of the child and its consequences. So conducting such awareness programme may reduce the prevalence rate of thumb and digit sucking behaviour among children.
IMPLICATIONS OF NURSING SERVICE

- Nurses as the agent can introduce the various measures to prevent the thumb and digit sucking at earlier stage.
- Facilities to be made available for managing the children with thumb and digit sucking in hospitals as well as in the home settings.
- Nurse can provide counseling to the mothers regarding the emotional and nutritional need of the child.

NURSING EDUCATION

- Nurse educators should provide opportunity to students to conduct various health education programmes in hospital and community regarding the prevention of thumb and digit sucking and promotion of oral health behaviour.
- Nurse educators can organize the in-service education programme regarding monitoring and early detection of thumb and digit sucking behaviour.
- Nurse educator should impart the concept of importance of oral health behaviour to nursing students.
- Nurse educators should conduct educational programmes to provide information regarding treatment of thumb and digit sucking like thumb guard, blue gross appliance, diversion and behavioural therapy to nursing students.

NURSING ADMINISTRATION

- A nurse administrator can make the students to organize and conduct workshop regarding thumb and digit sucking.
- Nurse administrators have more responsibility as supervisors on creating awareness among mothers regarding thumb and digit sucking by facilitating free distribution of booklets, handouts, posters, charts regularly to various health settings.
NURSING RESEARCH

- The finding of this study can be effectively utilized by the emerging researchers for their reference purpose.
- Students can do the mini project on other behavioural problems of children in same age group.

RECOMMENDATIONS

- Similar study can be conducted for a large group.
- Comparative study can be conducted among preschool children with thumb and digit sucking behaviour between working and non working mothers
- Comparative study can be conducted between the under five children with thumb sucking from urban and rural community.
- The experimental study can be conducted by giving some interventions to prevent thumb and digit sucking.

LIMITATIONS

- Researcher faced difficulty to get cooperation from mothers due to their attitudes and believes regarding thumb and digit sucking behaviour.
BIBLIOGRAPHY

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51. http://hdl.handle.net/2047/d10018797
APPENDIX - A

BISHOP’S COLLEGE OF NURSING
(C.S.I. Trichy - Tanjore Diocese)
C.S.I. Mission Compound, DHARAPURAM - 638 656,
Tirrupur District.

Ref: To,

Dr. Arivanand, MBBS, M.D., DCH.,
Maharishi Nursing Home,
Dharapuram.

Respected Sir,

This is to certify that Ms. M. Kiruthika is a bonafide student of our college doing her M.Sc.,(N) programme II year. As part of her requirement under, The Tamil Nadu Dr. MGR Medical University, Chennai, she has to do a project on "A study assess the prevalence of thumb and digit sucking and its relationship with predisposing factors and parental practices among mothers with 3-6 years children with a view to conduct an awareness programme and to develop information booklet in your hospital.

Kindly permit her to carry out the study in your Hospital.

Thanking you,

Yours faithfully,

Principal,
BISHOP’S COLLEGE OF NURSING,
C.S.I. MISSION COMPOUND,
DHARAPURAM-638 656,
TIRUPUR DISTRICT.
BISHOP'S COLLEGE OF NURSING  
(C.S.I. Triehy - Tanjore Diocese)  
C.S.I. Mission Compound, DHARAPURAM - 636 656,  
Tirupur District.

To,

Dr. Selva Ilankumaran, MBBS., DCH.,  
Srinithi Clinic,  
Dharapuram.

Respected Sir,

This is to certify that Ms. M. Kiruthika is a bonafide student of our college doing her M.Sc.,(N) programme II year. As part of her requirement under, The Tamil Nadu Dr. MGR. Medical University, Chennai, she has to do a project on “A study assess the prevalence of thumb and digit sucking and its relationship with predisposing factors and parental practices among mothers with 3-6 years children with a view to conduct an awareness programme and to develop information booklet in your hospital.

Kindly permit her to carry out the study in your hospital.

Thanking you,

Yours faithfully,

[Signature]

PRINCIPAL,  
BISHOP'S COLLEGE OF NURSING,  
C.S.I. MISSION COMPOUND,  
DHARAPURAM - 636 656,  
TIRUPUR DISTRICT.
கூட்டும்:
கு.ச.சு.சு. மலைஞாளைக் கோயில்
மனுஷ் பகுதியில் உள்ளது, எயருக்கு வந்து வல்லுனர், நூற்றாண்டுகளுக்கு முற்பாக
துருக்கம்

தலைவர் 3352/09புலோ முதல் 7-7-2011

அமர்,

மாநாடு கூட்டம் தலைவர் - தலைவரைப் பார்வையில் 3-6 மாத நூற்றாண்டுகளுக்கு முன் முயற்சியாளர் (Project Report)
இறுதி தேர்வு காணத்து வருகின்ற - தோற்றம்.

பத்மகோண்ட் உத்தியூர் கருவுக் காரணிகள் வெளிப்படுத்தும் தலைவர்

7-7-2011

கூட்டம் கூட்டியை பிரதம பகிர்மானமாகப் பரவலாக நடத்தும் அதிகரிப்பான ஆராய்ச்சியின் தொடர்பான சிற்றுருக்கே, MSC(Nursing) தருணம்
சுருக்காக வருகின்ற 3 மாதம் முதல் 6 மாதம் முதல் 2.5மாதம் சுருக்காக அமை
முயற்சியாளர் (Project) மூலம் சிற்றுருக்கே ஆராய்ச்சியாளர்

சிற்றுருக்கே

துருக்கம் கூட்டியை

சிற்றுருக்கே
APPENDIX - B

LETTER SEEKING EXPERT'S OPINION FOR

VALIDITY OF TOOLS

From
Ms. M. Kiruthika
M.Sc. (Nursing) II year,
Bishop’s College of Nursing,
Dharapuram.

To

Respected Madam/Sir,

SUB: Requisition for content validity of tool

I am M.Sc. (Nursing) second year student of Bishop’s College of Nursing, Dharapuram, under Dr. M.G.R Medical University, Chennai. As a partial fulfilment of my M.Sc.(N) Degree Programme, I am conducting a research on A study to assess the prevalence of thumb and digit sucking and its relationship with predisposing factors and parental practices among mothers with 3 – 6 years children in selected area at Dharapuram with a view to conduct an awareness programme and to develop an information booklet". One of the initial steps of the research study is to develop a tool. I am sending the above stated for content validity and for your expert and valuable opinion.

I will be very thankful to return it to the undersigned.

Yours sincerely,

(M. Kiruthika)

Encl;
Certificate of content validity
1. Statement of problem, objectives, operational definition, hypotheses
2. Description of the tool and tool for data collection
3. Self addressed envelope
APPENDIX - C

LIST OF EXPERTS FOR VALIDITY OF THE TOOL

1. Dr. Nalini P.hd(N).,
   Principal and Professor in Nursing
   Sacred Heart college of Nursing
   Madurai

2. Mrs. Vijayalakshmi,M.Sc(N).,
   Associate Professor
   KMCH College of Nursing
   Coimbatore.

3. Mrs. Mahalakshmi,M.Sc(N).,
   Associate Professor
   KMCH College of Nursing
   Coimbatore.

4. Mrs. Kavimani, M.Sc(N).,
   Principal
   SPM College of Nursing,
   Tirupur.

5. Dr. D.S Arivanand, M.B.B.S, M.D (Pae).,
   Maharishi Nursing Home
   Dharapuram,
CERTIFICATE FOR VALIDITY

This is to certify that the project tool on A study to assess the prevalence of thumb and digit sucking and its relationship with predisposing factors and parental practices among mothers with 3 - 6 years children in selected area at Dharapuram with a view to conduct an awareness programme and to develop information booklet has been validated by me and found appropriate with mentioned suggestions.

Signature : [Signature]

Name : [Name]

Designation : Principal

College : Sacred Heart Nursing College

Dr. Malini Jeyakumari
Principal
Sacred Heart Nursing College
CERTIFICATE FOR VALIDITY

This is to certify that the project tool on *A study to assess the prevalence of thumb and digit sucking and its relationship with predisposing factors and parental practices among mothers with 3 - 6 years children in selected area at Dharapuram with a view to conduct an awareness programme and to develop information booklet* has been validated by me and found appropriate with mentioned suggestions.

**Signature:** Vinejaya

**Name:** M. V. Vijayalakshmi

**Designation:** Asst. Prof., College of MMB

**College:** [Stamp]

7
CERTIFICATE FOR VALIDITY

This is to certify that the project titled on A study to assess the prevalence of thumb and digit sucking and its relationship with predisposing factors and parental practices among mothers with 3 - 6 years children in selected area at Dharaparam with a view to conduct an awareness programme and to develop information booklet has been validated by me and found appropriate with mentioned suggestions.

Signature : [Signature]
Name : N. B. MAHALAKSHMI
Designation : ASSO PROFESSOR
College : GADCHI COLLEGE OF NURSING
CERTIFICATE FOR VALIDITY

This is to certify that the project tool on A study to assess the prevalence of thumb and digit sucking and its relationship with predisposing factors and parental practices among mothers with 3 – 6 years children in selected area at Dharapuram with a view to conduct an awareness programme and to develop information booklet has been validated by me and found appropriate with mentioned suggestions.

Signature : N. KAVINATH

Name : N. KAVINATH

Designation : PRINCIPAL

College : PRINCIPAL,
SHIVPARVATHI MANDRAJIAR
INSTITUTE OF HEALTH SCIENCES,
PALAYAKOTTAI 636 108
CERTIFICATE FOR VALIDITY

This is to certify that the project tool on A study to assess the prevalence of thumb and digit sucking and its relationship with predisposing factors and parental practices among mothers with 3 - 6 years children in selected area at Dharapuram with a view to conduct an awareness programme and to develop information booklet has been validated by me and found appropriate with mentioned suggestions.

Signature

Dr. D.S. Arivanaud, M.B.B.S., M.D.(Ped.)
Registration No. 57647
MAHAARISHI HOSPITAL
New Era Street,
Dharaapuram-638006.

Name

Designation

College
APPENDIX - E

CERTIFICATE OF ENGLISH EDITING

TO WHOM SO EVER IT MAY CONCERN

This is certify that the dissertation work, “A study to assess the prevalence of thumb and digit sucking and its relationship with predisposing factors and parental practices among mothers with 3 – 6 years children in selected area Dharapruam with a view to conduct an awareness programme and to develop an information booklet” done by Miss. M. KIRUTHIKA, II Year M.Sc (Nursing) student of Bishop’s College of Nursing, Dharapuram is edited for English Language appropriateness by

[Signature]

[Address]

P.SAMPATH, M.A., M.PHIL, M.Ed.,
Lecturer in English,
Maharani Teacher Training Institute,
Dharapuram.
CERTIFICATE OF TAMIL EDITING

TO WHOMSOEVER IT MAY CONCERN

This is certify that the dissertation work, "A study to assess the prevalence of thumb and digit sucking and its relationship with predisposing factors and parental practices among mothers with 3-6 years children in selected area Dharapuram with a view to conduct an awareness programme and to develop information booklet" done by Miss. M. KIRUTHIKA., II Year M.Sc (Nursing) student of Bishop's College, Dharapuram is edited for Tamil Language appropriateness by D. SIRANGI MARY M.A., M.Ed., M.Phil.

Date :
Address :
APPENDIX - G

TOOLS

DEMOGRAPHIC DATA

1. Sex of the child
   a) Male
   b) Female

2. Age of the child
   a) 3 – 4 years
   b) 4 – 5 years
   c) 5 – 6 years

3. Education of the mother
   a) Graduate
   b) Higher secondary
   c) Illiterate

4. Education of the father
   d) Graduate
   e) Higher secondary
   f) Illiterate

5. Monthly income (Rupees)
   a) Rs. 3000 – 5000
   b) Rs. 5001 – 10000
   c) Above Rs. 10001

6. Religion
   a) Hindu
   b) Muslim
   c) Christian

7. Type of family
   a) Nuclear family
   b) Joint family
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<th>S. NO</th>
<th>PREDISPOSING FACTORS</th>
<th>1</th>
<th>2</th>
<th>3</th>
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<tbody>
<tr>
<td>1</td>
<td>Primary care giver</td>
<td>Mothers</td>
<td>Grand parents</td>
<td>Servant</td>
</tr>
<tr>
<td>2</td>
<td>Education of the mother</td>
<td>Graduate</td>
<td>Higher secondary</td>
<td>No formal education</td>
</tr>
<tr>
<td>3</td>
<td>Occupation of mother</td>
<td>House wife</td>
<td>Self work</td>
<td>Working</td>
</tr>
<tr>
<td>4</td>
<td>Number of children</td>
<td>1</td>
<td>2</td>
<td>More than 2</td>
</tr>
<tr>
<td>5</td>
<td>Space between 2 children</td>
<td>More than 2 years</td>
<td>1-2 years</td>
<td>Less than 1 year</td>
</tr>
<tr>
<td>6</td>
<td>Birth order of the child</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7</td>
<td>Socio economic status</td>
<td>High</td>
<td>Middle</td>
<td>Low</td>
</tr>
<tr>
<td>8</td>
<td>Type of feeding in the first 2 year of life</td>
<td>Breast feeding</td>
<td>Bottle feeding</td>
<td>Both breast and bottle feeding</td>
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<tr>
<td>9</td>
<td>Duration of breast feeding</td>
<td>More than 6 months</td>
<td>3-6 months</td>
<td>Less than 3 months</td>
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<td>--------------------------------------------------------------------------</td>
<td>-----</td>
<td>----</td>
<td></td>
</tr>
<tr>
<td>01*</td>
<td>Did you encourage the child for thumb and digit sucking</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>02*</td>
<td>Did you punish the child for this behaviour</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>03</td>
<td>Did you give exclusive breast feeding for 6 months</td>
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<tr>
<td>04*</td>
<td>Did you practice early bottle feeding</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>05*</td>
<td>Did you use pacifier during sleep in early childhood period</td>
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<td></td>
<td></td>
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<tr>
<td>06*</td>
<td>Do you force the child for doing works</td>
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<tr>
<td>07*</td>
<td>Do you force the child to socialize with others even when the child feels difficulty</td>
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<tr>
<td>08*</td>
<td>Did you use pacifier instead of finger sucking</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>09</td>
<td>Did you apply any bitter agents to stop this behaviour</td>
<td></td>
<td></td>
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<tr>
<td>10</td>
<td>Did you tie the clothes over the finger</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11*</td>
<td>Do you ignore the child when he is sucking the thumb</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Did you consult the physician for this behaviour</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Did you criticize the child infront of others for this behaviour</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>14</td>
<td>Did you take any special treatment to stop this behaviour</td>
<td></td>
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<tr>
<td>15</td>
<td>Do you engage the child with diversional activities at the time of thumb and finger sucking</td>
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<td></td>
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<tr>
<td>16</td>
<td>Did you reward the child when they are not sucking the thumb</td>
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The 8 questions with the asterisk * the negative score was given
### Score Interpretation

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* - Negative statements

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   ,) 5 – 6 taJ
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   M) Nky;epiyf; fy;tp
   ,) gb:gwpT ,y;iy
4. FLk;g tUkhdk; (Ughapy;)
   m)3000 - 5000
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6. trpg;gplk;  m) fpuhkk;
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INFORMATION BOOKLET

Definition

Thumb sucking is the childhood habit of putting the thumb in the mouth for comfort or to relieve stress.

Thumb-sucking is normal in babies and young children. A natural sucking instinct leads some babies to suck their thumbs during their first few months of life, or even before birth. Babies may also suck on their fingers, hands, or items such as pacifiers.

When the child starts to suck the finger?

Thumb-sucking may begin before birth. The thumb has been observed in the mouths of fetuses as young as 18 weeks of gestational age, and true sucking movements and protrusion of the lips may occur by 24 weeks. Newborns often have blisters on their hands and arms, indicating the probable occurrence of sucking before birth.
Why do babies suck their thumbs?

Babies have a natural urge to suck, which usually decreases after the age of 6 months. But many babies continue to suck their thumbs to soothe themselves. Thumb-sucking can become a habit in babies and young children who use it to comfort themselves when they feel hungry, afraid, restless, quiet, sleepy, or bored.

CAUSES

Thumb sucking when the child is hungry, disturbed and lonely, or is satisfying his urge for sucking, is a perfectly acceptable and normal phenomenon in children less than a year old.
NUMBER OF SIBLINGS AND ORDER OF BIRTH OF THE CHILD

Emotional insecurity
Forcing the child to do the activities even the child feels difficulty

Inadequate nutrition and hungry                  Unnecessary scolding and punishment

Fear of strangers and new things                  Lack of love and affection
Decreased duration of breast feeding and early beginning of bottle feeding

Does thumb-sucking cause any problems?

Prolonged thumb-sucking may cause a child to develop dental problems. Thumb-sucking can cause a child's teeth to become improperly aligned (malocclusion) or push the teeth outward, sometimes malforming the roof (upper palate) of the mouth. Malocclusion usually corrects itself when the child stops thumb-sucking. But the longer thumb-sucking continues, the more likely it is that orthodontic treatment will be needed to correct any resulting dental problems.

A child may also develop speech problems, including mispronouncing Ts and Ds, lisping, and thrusting out the tongue when talking.

- **Emotional difficulties.** Some preschoolers who suck their thumbs may feel ashamed if they are teased by other children. Don't shame or punish your child for thumb-sucking. This will only lower his or her self-esteem.

- **Dental problems.** Thumb-sucking can cause many serious future dental problems, such as improperly aligned teeth (malocclusion). Malocclusion usually corrects itself when the child stops thumb-sucking. But the longer thumb-sucking continues, the more likely it is
that orthodontic treatment will be needed to correct any resulting dental problems.

- **Speech problems.** The most common speech problems that develop because of thumb-sucking include mispronouncing Ts and Ds, lisping, and thrusting out the tongue when talking.

  Calluses, Sore and Infected Thumbnails and Fingernails
Digit Sucking and Related Learning and Socialization Problems

Classroom digit sucking can impede a child’s scholastic achievement and interaction
A child who sucks a digit at school is likely to be rejected by peers, resulting in feelings of inadequacy.

Teasing the child while thumb sucking

Changes in the dental arch
Rejected by peers
Thumb-Sucking - Exams and Tests

Thumb-sucking behavior before age 4 is normal and does not require medical tests or evaluation. Children who continue to suck their thumbs after age 4 or 5 may need a:

- Dental exam, to identify any irregularities of the teeth, bite, or jaw.
- Speech evaluation, if word pronunciations are affected or other irregularities develop.

If the habit is severe and appears to be related to other behavioral disorders, such as anxiety, or a reaction from a traumatic event, a psychological evaluation may be needed.

Speech evaluation     Dental examination

Thumb-Sucking - Symptoms

A thumb-sucking child usually places the thumb in the mouth above the tongue, pressing forward against the upper front teeth or gums and backward against the lower front teeth or gums. A child may develop a callus on the thumb if he or she sucks often and very hard.
• Some children suck their fingers instead of their thumbs. They may have found their fingers more easily than their thumbs when they first started sucking.

• Some children finger a piece of cloth, pull on their ears, or twist their hair while sucking.

Thumb-sucking in children younger than 4 is not usually a problem behavior. Children who suck their thumbs frequently or with great intensity after the age of 4 or 5 may develop:

**Timing: When to Initiate Treatment**

Early treatment is important to---prevent and minimize---the problems associated with digit sucking. And, the longer the behavior persists, the more difficult it is to eliminate because the strength of the emotional dependency increases with time. However, emotional and intellectual development must be sufficient to enable the child to succeed with the task, minimize frustration, and facilitate effective communication and motivation.

**Easy ways to get kids to stop sucking their thumb**

a. Keep the child's hands occupied with a toy, puzzle or other activity.

b. Carefully remove your child's thumb from his or her mouth during sleep.

c. Give the example of his friends that have managed to stop thumbsucking.

d. Don't put the child in a state of anxiety or fear. If the child has any emotional problems, or is under stress and needs comforting, you may need to resolve those issues first before your child can successfully stop thumb-sucking.

e. Talk about the 'bad' germs that are on our hands and how the child puts them in his or her mouth while thumb sucking.
f. Avoid punishing or shaming the child.

g. Reward the child for not thumbsucking for a progressively increasing time period.

h. Ask the advice of a pediatric dentist. He will explain to your kid what will happen to the teeth if the child does not stop sucking its thumb.

i. Use a thumb sucking guard. - In difficult cases, your dentist might suggest the use of special devices to stop thumb sucking, called thumb guards. A **thumb guard** is a device with a plastic cover of the thumb that is attached to a child's wrist. The thumb sucking guard interrupts the process by breaking the vacuum created by sucking, thus removing the child's pleasure. Treatment with thumb guards usually lasts four weeks and helps children to stop thumb sucking successfully.
6 tips for helping your child quit thumb sucking

1. Observe when, where and why your child sucks his or her thumb.
2. Identify what triggers the thumb-sucking behavior (e.g., she is tired, has a blanket, is afraid, is hungry).
3. Determine what you can do to eliminate the triggers that result in thumb sucking (hide the blanket, keep snacks on hand).
4. When you observe thumb sucking, give your child something else to do with her hands (a toy, book, snack or a drink).
5. At night or naptime, go into your child’s room and gently remove her thumb from her mouth.
6. Bring to your child’s attention how pleased you are when she is not sucking her thumb.

Treatment

Problem thumb-sucking is most often resolved with home treatment such as offering rewards and praise when the child is not thumb-sucking. When home treatments have not worked, other treatments may be necessary. These include:

Behavioral therapy. Behavioral therapy helps a child avoid thumb-sucking through various techniques, such as substituting tapping fingers together quietly. Behavioral therapy works best if all people involved in the child's care follow the treatment plan.
• **Thumb devices.** Thumb devices, such as a thumb post, can be used for children with severe thumb-sucking problems. A thumb device is usually made of nontoxic plastic and is worn over the child's thumb. It is held in place with straps that go around the wrist. A thumb device prevents a child from being able to suck his or her thumb and is worn all day. It is removed after the child has gone 24 hours without trying to suck a thumb. The device is put back if the child starts to suck his or her thumb again. Thumb devices need to be fitted by a doctor.

• **Oral devices.** Oral devices (such as a palatal arch or crib that fits into the roof of the mouth) interfere with the pleasure a child gets from thumb-sucking. It may take several months for the child to stop sucking the thumb (or fingers) when these devices are used. When the child stops sucking, parents may choose to continue using the device for several months. This may prevent the child from starting the habit again. Oral devices need to be fitted by a dentist.
ORAL DEVICES

Thumb Guard
Applying bandages or tying the clothes over the fingers
Speech therapy

Thumb-Sucking - Home Treatment

Home treatment for thumb-sucking is usually successful. Parents can set rules and help distract a young child from thumb-sucking. The child can take a more active role in controlling thumb-sucking as he or she matures and is able to understand cause-and-effect relationships, concepts of time, values (such as right and wrong, or sense of pride), and has some self-control.²

The following are suggestions to help your child stop sucking his or her thumb:³
Parent-directed measures for a young child (around age 4)

- Give your child more attention and distract him or her with engaging activities.
- Limit the places and times for thumb-sucking. For example, ask your child to do it only while in his or her bedroom.
- Put away items (such as blankets) that your child associates with thumb-sucking. At first, put the items away for short periods of time throughout the day. As your child learns other ways of self-comfort, gradually increase the amount of time these items are not available.

Measures where the child takes an active role (beginning around age 5)

Talk to your child openly about the effects of thumb-sucking.

Put gloves on your child's hands or wrap the thumb with an adhesive bandage or a cloth. Explain that the glove, bandage, or cloth is not a punishment, but is only there to remind him or her not to thumb-suck.

Develop a reward system, such as putting stickers on a calendar to record each day that your child does not suck his or her thumb. After an agreed-upon number of days, have a celebration for your child.

Use a special nontoxic, bitter-tasting nail coating, such as Thum. Apply it like fingernail polish to the thumbnail (or fingernail) each morning, before bed, and whenever you see your child sucking his or her thumb. This treatment is most successful when it is combined with a reward system.

Before you start any home treatment for thumb-sucking, make sure you feel comfortable and confident with your plan. Also, make sure your methods will be consistently used by other people who care for your child.
CONCLUSION:

Most habits are self-limiting and do not require professional help. But if the habit affects your child's physical or social functioning or persists even after you have tried all possible techniques, the behaviour may have a more serious emotional or physical cause. In these situations, you should consult your paediatrician or a mental health professional.

THANK YOU
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Foe;ij tpuy; rg;Gk; Neuq;fspy; Foe;iija NtW VNjDk; tpisahl;bNyh my;yJ nrayNy Nh <LgLj;jykh.; Foe;ijad; iffspy; nghk;ik Nghd;w tpisahl;L nghUs;fis nfhLj;f Ntz;;Lk.; Foe;ij tpuy; rg;g epidf;Fk; Neuq;fspy; NtW VNjDk; nraiyf; nfhLj;J me;j epidit khw;wyhk;.

2. tpuy;fspy; ghJfhg;G tisaq;fis nghUj;Jjy;:

,e;j tisaq;fs; gpsh];bf; nghUshy; nra;ag;gl;J. ,J Foe;ijad; tpuy;fspy; nghUj;jg;gLk; NghJ tpuy; rg;Gtiij; jLf;fpwJ. ,J kUj;Jthpdhy; nghUj;jg;gLfpwJ.

3. thapy; nghUj;jg;gLk; fUtp:

,e;jf; fUtp Foe;ijadp; thapd; Nky;g;gFjpapy; nghUj;jg;gLfpwJ. ,J Foe;ij tpuy; rg;Gtiij; jLf;fpwJ. ,J gy; kUj;Jthpdhy; nghUj;jg;gLfpwJ. kPz;Lk; Foe;ij tpuy; rg;Gtiij jLf;f ,e;j gof;fj;ij epWj;jpa gpwFk; gy khjq;fSf;F thapDs; nghUj;jg;gLfpwJ.
NgRk; jpwd tsh;j;y;

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KbTiu:

Foe;ij gUtj;jpy; ,Uf;Fk; vy;yh gof;fq;fSk; ve;j kUj;Jt cjtpAkpd;wp Fwpg;gpl;l tajpy; khWk;. vy;yh tpjkhd rpfr;irfSk; gadpd;wp ve;j gof;fk; khwhky; Foe;ijapd; tsh;r;rpiia ghjpf;fpwNjh me;j Foe;ij clystpYk; kdjstpYk; ghjpf;fg;gl;Ls;sJ vd;W mh;ijjk;. ,e;j khjphpahd R+o;epiyfspy; Foe;ij ey kUj;JtiuNah my;yJ kdey kUj;JtiuNah re;jpj;J MNyhrid ngwNtz;Lk;.

ed;wp

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