

KNOWLEDGE AND PRACTICES OF NIGERIAN MOTHERS
CONCERNING THE MANAGEMENT OF FEVER
IN THEIR CHILDREN

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To the Dean for Graduate Studies and Research:

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Concerning the Management of Fever in Their Children

I have examined the final copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science, with a major in Nursing.

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DEDICATION

This research is dedicated to my late father, Rev. Nathanel Oluwadare Asaju, and my late sister, Mrs. Grace Olufunmilayo Agbolagorite, whose guidance and wisdom inspired one to work hard and to achieve this goal. Unfortunately both died while I am still struggling in the United States to achieve the goal.

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ABSTRACT

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The problem of this investigation was to determine if a relationship existed between Nigerian mothers' knowledge regarding fever and the practices they used in managing fever in their children. This nonexperimental correlational research design involved 35 convenient sampling subjects and the relationship between their knowledge and management practice was found through the Ekiran Fever Questionnaire which was developed by the researcher. The score on the questionnaire was analyzed using Pearson r .

The findings of the study showed that there is a positive relationship between fever knowledge and management practices, with $r = 0.70$. It indicated that the higher the score in management, the more informed the subjects were on fever.

An analysis of variance was also calculated between the study variables and other demographic data such as age

of mothers, educational level, number of children, and how long they had lived in the United States. Tests indicated that there were no significant differences in mean scores when groups were compared.

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CHAPTER I

INTRODUCTION

Fever is a common ailment of childhood. It may be the primary reason parents call or visit child health care facilities. Children with fever are frequently brought into hospital emergency departments by anxious and frightened parents (Wagner, Stapleton, Stein, & Wadina, 1984). Due to the fact that the body's temperature control mechanism is not well developed in children, relatively minor infections can produce fevers higher than many parents expect.

Wagner et al. (1984) stated that parental fears may be related to ignorance or uneasiness about the proper techniques for temperature management. Anderson (1988) indicated that because "fever phobia" has been found in parents of well school-age children, the implications are far-reaching for health care management in such areas as medication abuse, potential masking of symptoms, and unnecessary anxiety on the part of the parents. Fruthaler (1985) noted that several studies have demonstrated high levels of anxiety among mothers when their children have fever and a great many misconceptions among parents concerning fever.

It is presumed that parental practices and methods used to manage fever in children would be based on the parents' knowledge of the body's temperature regulating mechanism, and, of course, "practices that have worked" in the past. In spite of the previous findings in this area, there are few publications in relation to parental knowledge and practices concerning fever. Therefore, this study focused on parental knowledge regarding fever and related practices in managing fever.

Problem of Study

The problem of this study was to determine if a relationship exists between Nigerian mothers' knowledge regarding fever and the practices they use in managing fever in their children.

Justification of Problem

It has been widely accepted that fever is one of the most common problems that children experience and one of the most common reasons for parents to seek medical assistance or for hospital visits for children. Parents often have a high level of anxiety and a great many misconceptions concerning fever. The present study focused on Nigerian mothers. The study may provide information on the parental knowledge about fever in relationship with

fever management in their children. According to Brownless (1978), a study of local health beliefs and practices is important for health workers planning to work closely with local residents either as patients or as co-workers in an effort to improve the health of the community.

Fruthaler (1985) stated that parents often have a high level of anxiety and a great many misconceptions concerning fever. Schmitt (1980) said although modern physicians have achieved balanced perspective on the treatment of fever, many parents still seem to be fearful of fever. This fear may affect the treatment given at home. This study was done among Nigerian mothers. The researcher sought to determine if their knowledge affected their decision-making in managing fever in their children.

Conceptual Framework

The conceptual frameworks that were used in this study were Levine's (1973) energy conservation principle and Argyris and Schon's (1974) experiential learning theory. According to Levine's (1974) principle of energy conservation, the ability of the human body to perform the work of life is dependent upon its energy balance. The supply of energy as produced by nutrients is measured against the rate of energy used during activities. The energy required by alterations in physiological function

during illness represents an additional demand made on the energy production systems, and also the fatigue experienced with illness is an empiric measure of that additional demand for energy. Levine (1973) stated that an increase in body temperature (fever) always signals an increase in the amount of energy production. In fact, such an increase is measurable--a 7% increase in metabolism for every degree Fahrenheit rise in the body temperature. According to Levine, the management of interventions required during fever or increased body temperature includes provision of rest, adequate nutrition and appropriate decision-making on the part of the caretaker to allow activity based upon the patient's energy resources.

Experiential learning deals with a specific way of learning which yields knowledge and the researcher will apply this conceptual framework to determine parental previous knowledge on fever as related to fever management in their children. The concept of experiential learning refers to the process by which knowledge is learned by experience. According to Argyris and Schon (1978), there are three steps to learning based on personal experience. First, there is a learning environment in which individuals produce the behavior from which they begin to learn. Second, there will be an examination of the governing

variables of the behavior. Third, the feedback about the behavior will be considered.

In this study the parents' previous reaction to fever was the behavior that generates learning. According to the second step, the parents will re-examine the governing variables of the behavior that generate learning. And, finally, the consequences of such behavior will determine its effectiveness or ineffectiveness, and therefore influence learning.

Learning how to be a parent is a complex developmental task that is generally undertaken with little societal assistance. Duvall (1971) noted that parenting involves producing, rearing, and caring for the needs of one's children. Needs are defined as conditions essential for healthy growth and development. A specific need that is relatively common among children is that of fever management. This study focused on Nigerian mothers' knowledge regarding fever management.

Assumptions

Assumptions for the study were as follows:

1. Mothers are interested in the health of their children.
2. Mothers' knowledge about fever influenced their management of fever in their children.

3. Mothers' knowledge about fever is a product of a variety of resources: (a) personal experiences with children having fever; (b) reading; (c) previous instruction from health care provider; (d) talking with family, relatives, and other parents concerning fever.

4. Cultural background and environment can influence knowledge and behavior.

Hypothesis

The hypothesis for this research study was:

There is a positive relationship between Nigerian mothers' knowledge about fever and fever management practices in their children, as measured by the Ekiran Fever Questionnaire.

Definition of Terms

For the purpose of this study, the following terms were defined:

1. Fever--body temperature over 37.8 degree C (100 degree F) orally or 38 degree C (100.5 degree F) rectally (Schmitt, 1980).

2. Mother--a biological mother of children ages 1 month to 12 years old. For the purpose of this study, the concept parent meant Nigerian mothers.

3. Fever management--refers to the practices and strategies used to control/lower an elevated temperature. For this study fever management was measured by a score on the Ekiran Fever Questionnaire. The higher the score, the more appropriate the management of fever.

4. Knowledge about fever--refers to the state of knowing the following information: (a) the normal body temperature, (b) at least two commonly used antipyretics, (c) how to accurately measure a child's temperature, (d) the most accurate route for measuring temperature in a child under 5 years of age, and (e) one effect of an extremely high temperature. For this study, knowledge regarding fever was measured by a score on the Ekiran Fever Questionnaire. The higher the score, the higher the knowledge level.

Limitations

The limitations that may have influenced the results of this study were:

1. A small convenience sample was used.
2. The sample was obtained from one geographical area in a southwestern state of the United States.
3. Only face validity was established for the tool used in the study.

4. The subjects had been in the United States for a varying number of years.

Summary

This chapter discussed the need for research to assess the parents' level of knowledge on fever and to investigate whether their previous fever knowledge influences their decision-making in fever management of their children. It was noted that research in this area is limited and the results of the studies are inconclusive. For this study, it was hypothesized that there would be a relationship between mothers' knowledge about fever and fever management in their children.

CHAPTER II

REVIEW OF LITERATURE

The focus of this study was an investigation of Nigerian mothers' knowledge regarding fever and their practices in managing fever in their children. This chapter presents a review of relevant literature. The literature review will be divided into the following subtopics: (a) Historical and evolutionary considerations regarding fever, (b) physiological and pathophysiological aspects of temperature, (c) methods of assessing fever in children, (d) common practices used in managing fever in children, and (e) research studies focused on the management of fever in children.

Historical and Evolutionary Considerations Regarding Fever

The concept of fever in children is not new to the research community and research effort has been fairly consistent to the topic. Without a thermometer, Hippocrates (cited in Younger & Brown, 1985) knew fever was a response to infection and not a passive by-product of disease.

Selle (1952) referred to Hippocrates Coi of the 14th century who said that fever was an indication of death if

accompanied with cold sweats, but if mild, fever indicates a protracted disease. Since this period, research efforts on fever in children have been comparatively consistent, but with the middle of the last decade little research had been conducted in the area of parental knowledge and management of fever. According to Kilmon (1987), parents have a great deal of concern and a number of misconceptions about fever that children experience. However, parents frequently assess and manage febrile illnesses at home without consulting a health professional.

The ancient people believed fever burned out "bad humors" (Younger & Brown, 1985). Fevers were not usually treated until the 1880s when antipyretics became available. In fact, fever has been used as a treatment for disease. Within the past decade, support for the belief that moderate fever is beneficial has reappeared.

According to Schmitt (1980), the controversy in medical theory and practice since ancient times has been the question of whether a physician ought to fight fever, ignore it, or encourage it. For ancient humored pathologists, fever was the most important of the body's natural defenses. When the amount of "phlegm" in the body increased, the doctrine stated that the heat of fever was

designed to drive the excess phlegm out of the body so fevers were encouraged and celebrated (Schmitt, 1980).

According to Kluger (1980), the long evolutionary history, by itself, supports the hypothesis that fever is a defense mechanism to infection. At the middle of the 19th century, Claude Bernard (cited in Schmitt, 1980) completed his experiments on the overheating of animals and had proven that death quickly occurred if the body temperature rose 5 to 6 degrees above normal. Thereafter fever was gradually looked on as injurious to health and treatment with antipyretic medication was considered essential (Schmitt, 1980).

Physiological and Pathophysiological Aspects of Temperature

The control of body temperature is regulated by the hypothalamus through a complex feedback system. The afferent nervous system monitors the external environment and an internal thermostat in the hypothalamus checks the temperature of the blood entering the brain (Younger & Brown, 1985).

According to Lovejoy (1978), three mechanisms are responsible for temperature elevation. In the first, the set point is roused, for instance, as in infection and malignancy. Appropriate therapy includes minimizing

shivering and giving antipyretics to lower the hypothalamic set point. In the second mechanism, heat production is excessive and the hypothalamic set point is normal, for instance, as in hyperthyroidism and aspirin overdose. Physical removal of heat by sponging, use of wet towels, and undressing is indicated. Attempts to lower the set point by drug administration are not helpful. Lastly, the third mechanism, heat loss, is defective and the hypothalamic set point is normal, such as in ectodermal dysplasia and heat stroke. Providing a cool environment and removing clothes are the primary treatment. Lowering of the set point with medication is without benefit (Lovejoy, 1978).

According to Andersen (1988), the term "set point" refers to the range of temperature around which body temperature fluctuates only slightly. Normally, if body temperature deviates from the set point, mechanisms are set in motion to it return to the set point. The set point is in the range of 37 degrees C (98.6 degrees F). The heat regulating center located in the hypothalamus works primarily by balancing heat production and peripheral heat loss. During a fever the thermostat setting shifts upward from normal. The higher setting raises body temperature by

triggering greater production of body heat or less peripheral heat loss (Gurevich, 1985).

According to Fruthaler (1985), a febrile episode is produced when infecting pathogen triggers receptors in the area of the hypothalamus that regulates body temperature. This interaction causes the body "thermostat" to be "reset" so that a higher core body temperature is maintained (Kilmon, 1987).

According to Levi (1984), there are three basic physiologic mechanisms that can cause fever. One is increased heat production in the body which occurs in response to a variety of stimuli. Some examples include malignant hyperthermia, hyperthyroidism, and excessive exercise. The second mechanism is interference with the body's ability to lose heat, such as when a child is overdressed on a hot day. The third way fever may be caused is an increase in the thermostat setting itself, which in fact, is what happens with most inflammatory conditions.

Many infectious agents such as viruses, bacteria, and fungi are able to raise the thermostat setting by causing the release of endogenous pathogen found in different cells of the body. The elevation in body temperature activates other body defenses to increase T-cell production and

increase the effectiveness of interferon in combating viral infection (Fruthaler, 1985). Therefore, fever is one of the body's natural defense mechanisms against disease rather than merely an uncomfortable side-effect of disease. In fact, some authorities consider fever to be beneficial to normal individuals because of the facilitating effect of increased body temperature on immune responsiveness (Duff, 1986).

According to Kilmon (1987), in most cases fever is not harmful to children, but it may produce discomfort due to chills as body temperature rises and sweating occurs when the temperature returns to normal. Mild dehydration may also occur if the child does not receive an adequate volume of fluids to counteract increased fluid losses. According to Schmitt (1984), approximately 4% of all children who experience fevers will have febrile convulsions. Fever by itself causes no brain damage or other harm, unless it reaches at least 41.7 degrees C (107 degrees F) (Schmitt, 1984).

Methods of Assessing Fever in Children

The normal body temperature of infants and children varies, but generally remains within a range of 36.2 degrees C to 38 degrees C (97 degrees F to 100.4 degrees

F) (Yaffe, 1980). Temperature also varies depending on the site at which the temperature is taken. Oral temperature is 1 degree lower than rectal temperature. To determine whether or not a child has fever, the normal body temperature must be known and the method used in taking the temperature must be taken into account.

There are several ways of measuring a temperature. According to Andersen (1988), oral temperatures are about 0.4 degrees C lower than aortic and core temperatures, and rectal temperature average 0.5 degrees C higher than oral. A rectal temperature is considered closer to the core body temperature than an oral or axillary temperature because of the protection from the varying effects of the environment (Andersen, 1988). However, measuring temperature orally usually is adequate.

The axillary temperatures are reliable estimates of fever. This method may be preferred by both child and parent. The axillary route may also be preferred by the health care provider in situations where rectal manipulation is contraindicated (Younger & Brown, 1985).

In the Wright, McKee, and Sell (1981) study of 301 episodes of fever of 103 degrees F and above, 79% were accompanied by respiratory tract signs and symptoms, 79% by disease at another site, and 22% with localized signs or

symptoms. Wright et al. concluded that much febrile illness in young children is due to self-limited viral infection. The use of antibiotics in highly febrile children can be confined to those with clearly defined indications of treatment such as otitis media and pneumonia.

Individual assessment of the child is more important in clinical decision-making than the level or pattern of temperature elevation. McCarthy et al. (1981) noted the key assessment variables in children to be spontaneous activity, visual movements, and motor behavior. In addition, Wright et al. (1981) indicated that the febrile child who is not seriously ill would be expected to give a normal age-appropriate response to a variety of stimuli, while the seriously ill child would not.

According to Gurevich (1985), temperature can vary by as much as 3 degrees in the same person over the course of a day. Oral readings of 97 degrees F (36.1 degrees C) are relatively common in the morning. During the day, body temperature rises to a peak of 99 degrees F (37.2 degrees C) or greater between 6:00 p.m. and 10:00 p.m. It is at its lowest point during sleep and reaches peak between 4:00 p.m. and 8:00 p.m. For this reason, it is especially important to monitor. It then drops slowly, reaching a

minimum at 2:00 a.m. to 4:00 a.m. In very hot weather, the body temperature may be elevated by 0.5 to 1.0 degrees F (Isselbacher, Adams, & Branuwaud, 1975). The febrile pattern of most diseases follows this normal diurnal pattern (Younger & Brown, 1985). The temperature may be as low as 96.5 degrees F (38.6 degrees C) in a healthy person.

Assessing the temperature can aid in the diagnosis of certain diseases and illnesses. There is no consensus on the exact temperature at which fever should be diagnosed. Casey et al. (1984) considered most temperature less than 41 degrees C (105.8 degrees F) to be relatively harmless. Press and Fawcett (1985) stated that children with temperatures greater than 41.1 degrees C (106 degrees F) are at risk for serious illness.

What is considered fever in a particular patient obviously depends on what his normal body temperature is. Normal can be as low as 96 degrees F or as high as 99 degrees F, so while a temperature of 100 degrees F is considered indicative of fever, a patient with a normally low temperature may have a fever when body temperature is only 98 degrees F (Gurevich, 1985). Continual sustained fever may suggest central nervous system damage or gram-negative pneumonia (Andersen, 1988). On the other hand, the degree of illness cannot always be gauged by the degree

of fever. The child may appear ill and yet not have a temperature elevation. The child's illness should not be discounted because of lack of fever.

Common Practices Used in Managing Fever in Children

No literature studies were found that related to the knowledge and/or practice of Nigerian mothers regarding fever management in their children. Some of the common practices reflected in the literature among other groups will be discussed.

According to Kilmon (1987), treatment of fever is directed toward reducing discomfort, preventing dehydration and febrile seizures in children who are susceptible to them. Antipyretics are the most effective means of lowering body temperature. Both aspirin and acetaminophen work by lowering the hypothalamic thermostat's set point (Schmitt, 1979). Acetaminophen is the preferred drug for children under 2 years of age because aspirin is metabolized more slowly in those children than in older children, thereby making them more susceptible to side effects (Chow, Durand, Feldman, & Mills, 1984). Acetaminophen recommended dose is 10 to 15 mg/kg body weight. This dose may be given as often as every 4 hours.

The practice of alternating acetaminophen with aspirin is not recommended (Schmitt, 1984).

Another commonly used method in lowering body temperature is sponging the body with luke-warm water. Schmitt (1984) indicates that sponging works by increasing evaporative heat loss and is somewhat effective. Sponging does not effect the hypothalamic set point, however. It should be used only in combination with antipyretic medication. If used alone, sponging may cause increased discomfort and shivering and when sponging is discontinued the body temperature will quickly return to its previous level (Schmitt, 1984).

Wessel (1981) indicated that many physicians now administer aspirin or other antipyretic drugs only when a child's temperature rises above 104 degrees F. Tepid sponge baths, light covers, and an increase in oral intake of fluids are effective methods of lowering temperatures and making a child more comfortable. Furthermore, Younger and Brown (1985) indicated that the combination of antipyretic drugs and sponging has been proved in research that it showed greater temperature lowering. Sponging should be done with tepid water rather than alcohol for two reasons: (a) the overly rapid evaporation and cooling

increases the risk of shivering, and (b) alcohol fumes are noxious (Younger & Brown, 1985).

Indiscriminate use of aspirin to treat fevers has generated much concern because of the recent implication of aspirin in Reye's Syndrome. The intake of adequate fluids prevents the dehydration that may in itself cause an elevated temperature (DeAngelis, 1984). Fluids are important in preventing dehydration. The calories/carbohydrates from the fluid also help to prevent ketoacidosis and the accompanying headache and fatigue (Andersen, 1988).

Clinical Implication of Fever

Fever in children is often a by-product of a minor infectious disease (Temple, 1983). The majority of children (70%) with a temperature greater than 101.6 degrees F will have a viral illness such as enterovirus, adenovirus, or influenza which will resolve within 2 to 3 days (Levi, 1984). In a study done by Davidson (1982), the etiology of fever in children in most emergency room cases was revealed to be an infection of the throat, urinary tract, pelvic organs, lungs, ears, or central nervous system.

Kramer, Naimark, and Leduc (1985) indicated that fever rarely causes permanent harm. Body temperatures of greater

than 41 degrees C (105.9 degrees F) can be harmful, but the literature agrees that most fevers, even if left untreated, do not reach this level (Press & Fawcett, 1985).

Fever in the range of 41.0 degrees C to 42.0 degrees C (105.8 degrees F to 107.6 degrees F) may cause central nervous system or muscle damage. Most pediatric fevers greater than 41.1 degrees C will be found in the child younger than 2 years of age (Press & Fawcett, 1985).

One of the feared consequences of high fever is the febrile seizure or convulsion. According to Whaley and Wong (1979), convulsions affect some 3% to 5% of young children, but are unusual after 5 years of age. The seizure is attributed to the rise in temperature, not a prolonged higher temperature. It was not believed that increased incidences of mental retardation or learning disorder occur in the child with a febrile seizure (Schmitt, 1984). Fishman (1979) and Schmitt (1984) indicated that status epilepticus involving a seizure lasting longer than an hour or repeated seizures without regaining consciousness between seizures occurs in 1% to 2% of children experiencing febrile convulsion and neurological damage can occur secondary to anoxia.

Another side effect of fever is dehydration and delirium. Insufficient intake of fluids and increased loss

of fluids from sweating can cause dehydration. Delirium attributed to fever is not a threat to well-being (Schmitt, 1984).

Research Studies Focused on Parental Assessment and Management of Fever in Their Children

No research studies were found that related to the assessment and management of fever among Nigerian mothers. Research studies conducted within the past 15 years among other groups will be discussed.

In addition to having misconceptions about the effects of elevated body temperature, parents also have difficulty in assessing fever in their children. Siebenaler (1985) found that only 8% of interviewed adolescent primiparas who brought their infants for the 2-week well-child visit were able to take a rectal temperature correctly and read the thermometer accurately. Ninety-six percent did not know what temperature is considered normal on a centigrade scale, although they had been given a centigrade thermometer when they were discharged from the hospital after their baby's birth.

In the research study done by Banco and Vedri (1984), a total of 303 mothers with children ages 5 days to 15 years were interviewed. The interview was to assess the ability of mothers to subjectively determine fever in their

children when compared with simultaneous temperature determination obtained by thermometer. Only 27 of the 303 mothers (8.93%) taking part in this study had temperature determined by thermometer at home, 5.9% (15 mothers) believed they were unable to estimate the presence or absence of fever by any method. The remainder of the mothers (261 or 86.1%) believed that they could estimate presence or absence of fever in their children by subjective methods. This method as demonstrated to the examiner included palpation of the forehead, face, abdomen, and torso, neck, and arms. Observation of the child included activity, fussiness, fatigue, or restlessness. Sixty-five of the 261 mothers studied believed their children to be febrile by subjective criteria but only 34 of such proved to be correct. Lastly, 18.2% of the 303 patients received antipyretics at home.

In a study done by Abdullah, Ashong, Herbib, Karrar, and Jishi (1987), 36 parents were questioned in Saudi Arabia about their understanding and management of the symptom "fever." Almost two-thirds of the parents did not keep or use thermometers at home and mainly relied on palpation for detection of fever and on questioning. Sixty percent were not aware of any definition of fever. Out of

12 parents using thermometers, 45% considered 38 degrees C as the upper limit for a normal oral temperature.

Also 37.5% of the parents believed that fever caused brain damage and 42.7% believed that it was a sign of a serious disease. When the parents were questioned on their practices at home, 20% said that they covered rather than unclothed their febrile children and 30% gave hot drinks to induce sweating. Forty percent closed the windows to keep the room warm and 50% used ice-cold water for sponging. Twenty-two percent of the parents used traditional preparations to treat fever. Examples were vinegar plus bread paste applied on scalp and olive oil applied all over the skin. Cumin was either roasted and mixed with bread and taken orally or seeds were fried, tied in a cloth bag, and sniffed; fresh leaves of hing beaten in vinegar and applied as a poultice to the scalp or soles of the feet and palms of the hands. Unexplained fever is treated with cauterization (Abdullah et al., 1987).

Wagner et al. (1984) conducted a study involving 21 adults for three specific purposes: (a) to determine the methods parents use in detecting fever in their children, (b) to assess parents' knowledge of appropriate treatment for the children's fever, and (c) to assess parents' ability to measure accurately their children's temperatures

with a glass thermometer. Wagner et al.'s findings on a questionnaire given to the 21 adults revealed 15 (71%) of the 21 adults responding cited the mother as the person responsible for taking the child's temperature at home. Thirteen (62%) had thermometers at home, 4 of these owned rectal thermometers, and 5 owned both (1 did not specify the type of thermometer). Most (69%) reported using touch as an additional criterion for determining the presence of fever. Fifteen (71%) were unable to state the correct normal temperature.

Attempts to reduce fever were initiated at temperatures lower than 38.9 degrees C by 15 (71%) of the adults interviewed. The most frequently mentioned method was the administration of antipyretic medication by 18 (86%). Most were able to name more than one means to reduce fever including tepid or cool baths, forced oral fluid, alcohol rubs, and rest. Responses varied widely regarding how often to recheck temperature and when help should be sought. Thirty-one percent of the adults were unable to read the thermometer correctly (Wagner et al., 1984).

According to Leininger (1978), human beings are unique because they possess cultural characteristics which shape and guide their behavior in different ways throughout the

world. Culture as a learned and transmitted process greatly influences how people will tend to remain well or engage in sickness behavior. "Culture is the blueprint for human behavior and can be a significant determinant of human thought and actions" (Leininger, 1978, p. 85).

Since this study sample consisted of Nigerian mothers whose native culture is different from the western world, the researcher sought to determine if their culture affects their decision-making in managing fever in their children. Leininger (1978) noted that in American society there are many taboos regarding fever in children, and similarly other cultural groups also have many taboos about fever management. Many of them are related to health care in general.

Summary

The literature reveals that parents have misunderstandings and fears related to the fever experience in their children and because of that, parents often treat elevated temperatures earlier and more aggressively than necessary. The problem of lack of adequate knowledge on the part of the parents is also found in the literature as the cause for poor decision-making. The occurrence of medication error, especially when one considers that such

errors can be life-threatening, was also revealed in the literature.

CHAPTER III

PROCEDURE FOR COLLECTION AND TREATMENT OF DATA

This study is classified by design as a non-experimental correlational research design. According to Polit and Hungler (1987), correlational studies examine the strength of relationships between variables, that is, the extent to which one variable is related to another variable.

This study investigated the relationship between the mothers' knowledge of fever and their fever management practices. The independent variable was the mothers' knowledge of fever, while the dependent variable was the fever management practice.

Setting

The setting for this study was the participant's home or site of her choice for completion of the questionnaire. Potential subjects were sought primarily in the African Baptist Churches in a large northwest metroplex in a southwestern state of the United States. The researcher described the study and asked potential subjects to participate on a voluntary basis. The research packet was

given to the volunteers who agreed to participate, to be completed at a convenient time and place and mailed back to the researcher.

Population and Sample

The population for this study consisted of all Nigerian mothers of children aged 1 month to 12 years. The sample consisted of all Nigerian mothers' of children ages 1 month to 12 years who attended any of the selected churches, and/or who volunteered to participate in the study.

Mothers who were in the medical profession, such as nurses and doctors, were excluded from the study. Mothers who attended these churches were contacted individually and in group meetings by the researcher, who described the study and criteria for inclusion and then ask for volunteer participants. Since the potential subjects were volunteers from an available population, the method of selection was convenient sampling (Polit & Hungler, 1987). The sample consisted of 35 subjects.

Protection of Human Rights

Since this study only involved completion of a questionnaire, it was classified as Category I research (no risk) under the Federal guidelines established by the

National Commission for the Protection of Human Subjects (Appendix A). Permission was obtained from the participating agencies (pastors of the churches) (Appendix B). Permission to conduct the study was obtained from Texas Woman's University Graduate School (Appendix C). The potential subjects were contacted by the researcher who identified herself and gave a verbal as well as a written description of the study, its purpose, the inclusion criteria of the mother, and what was involved in participation (Appendix D).

In addition, it was explained to the individual participants that their participation was purely voluntary and that anonymity was assured. Study findings were recorded as group data and not as individual data. The potential subjects were encouraged to ask any questions they may have, and they were informed that no major risk of participation in the thesis study could be identified. The questionnaires are unlikely to cause any emotional discomfort. The nature of this study necessitated the participants' ability to read and write English at the 6th grade level or above. If a subject checked less than 6th grade level on the demographic sheet, the data were not used.

Instruments

Two data collection instruments were used in this study: a Demographic Data Sheet (Appendix E) and the Ekiran Fever Questionnaire (Appendix F). Selected demographic information was obtained from the subjects using the Demographic Data Sheet. Information regarding the participants' age, education, number of children, age of children, and years living in the United States was obtained. This information was used to describe the sample. If a subject indicated that her educational level was less than 6th grade level, that data were deleted. The Ekiran Fever Questionnaire was developed by the researcher based on a review of relevant literature. The questionnaire consists of 21 questions which assessed mothers' knowledge of fever and fever management practices in their children. Knowledge of fever questions were: #1, #3, #4, #7, #11, #12, #13, #14, #15, #18, #19, and #20. Fever management practice questions were: #2, #5, #6, #8, #9, #10, #16, and #17.

The instrument was scored by adding the scores for knowledge of fever questions and adding the scores for fever management practices. Scores were allocated according to the strength of each response. Strongly Agree = 4; Agree = 3; Disagree = 2; Strongly Disagree = 1;

and Do Not Know = 0. On Item #17, the score was reversed in which Strongly Disagree = 4, Disagree = 3, Agree = 2, Strongly Agree = 1, and Do Not Know = 0. Knowledge of fever scores ranged from 0 to 48. The higher the score, the higher the knowledge about fever. Fever management scores ranged from 0-32. The higher the score on fever management questions, the more appropriate were the practices for fever management. Question #21 collected general information. The questionnaire was presented to a panel of three doctorally prepared judges who evaluated the questions for content validity, clarity, comprehensiveness, and readability. The written comments from the judges were used to revise the instrument to its present form. Reliability of the instrument has not been established.

Data Collection

After receiving permission to conduct the study from the Graduate School of Texas Woman's University, and the agencies (churches), data collection began. The researcher met with potential subjects primarily at the selected churches both on an individual basis and in group meetings as available. The researcher introduced herself, gave an oral explanation of the study, asked potential subjects to participate on a voluntary basis, provided the criteria for inclusion in the study, told how their rights were

protected, and what the subjects were asked to do. If the potential subject agreed to participate, a research packet containing a written explanation of the study, demographic data form, Ekiran Fever Questionnaire, and self-addressed stamped envelope was given to the subject, to be completed at the site of the subject's choice and returned, by mail, to the researcher. Printed on the written explanation and on the Ekiran Fever Questionnaire was this statement:

COMPLETION AND RETURN OF THIS QUESTIONNAIRE WILL BE
CONSTRUED AS YOUR CONSENT TO PARTICIPATE IN THIS STUDY.

Three weeks were allowed for return of the questionnaire.

Treatment of Data

Descriptive statistics were used in summarizing the demographic data. The information included the participant's age, marital status, education, number of children, and how long the mothers had lived in the United States of America.

Scores on the Ekiran Fever Questionnaire were analyzed using the Pearson-product moment correlation in order to assess the relationship between the mothers' knowledge of fever and their management practices. The level of significance was set at .05. Data obtained in Question #21 (additional comments) were summarized.

CHAPTER IV

ANALYSIS OF DATA

Descriptive statistics were used in summarizing the demographic data. The Ekiran Fever Questionnaire was analyzed using the Pearson-product moment correlation to assess the relationship between mothers' knowledge on fever and their management practices. This chapter describes the sample, an analysis of the data, and a summary of the findings.

Description of the Sample

Eighty questionnaires were distributed, 38 were returned and 35 were usable. This represented a 43.7% usable return rate. Three of the questionnaires were not usable because one subject indicated that she was in the medical profession. One said she had lived in the United States for 21 years and her age group fell between 20-24 so the researcher suspected that she was an American married to a Nigerian, and the third questionnaire was incomplete.

The sample was composed of 35 Nigerian mothers who had children between ages of 1 month and 12 years. The demographic data sheet contained items related to the subjects' age, marital status, level of education, number

of children, and how long the subject has lived in the United States. The age ranges for the subjects were in six categories. No subject was between the ages 15-19, 4 mothers (11.4%) were between ages 20-24, 11 mothers (31.4%) were ages 25-29. Another 11 (31.4%) mothers were between ages 30-34, 5 (14.3%) were ages 35-39, 5 (14.3%) were ages 35-39, and the remaining 4 mothers (11.4%) were ages 40-45.

All the subjects were married. The educational level varied from high school diploma to college degree and graduate degree. Eleven (31.4%) mothers had high school diplomas, 18 (51.4%) had a college degree, and 6 (17.1%) mothers had a graduate degree. The number of children varied from 1-4. Nine (25.7%) mothers had 1 child each, 16 (45.7%) had 2 children each, 6 (17.1%) had 3 children each, and 4 (11.4%) had 4 children each.

The number of years they had lived in the United States varied from 1 to 9 years, with a mean of 6.48 years and a standard deviation of 2.69 years. The demographic data are presented in Table 1.

Table 1

Demographic Data of Sample

Variable and categories	Frequency (<u>N</u> = 35)	Percentage
<u>Age</u>		
15-19	0	0%
20-24	4	11.4%
25-29	11	31.4%
30-34	11	31.4%
35-39	5	14.3%
40-45	4	11.4%
<u>Marital Status</u>		
Married	35	100.0%
Divorced	0	0%
Single	0	0%
<u>Education Level</u>		
6th grade completed	0	0%
High school diploma	11	31.4%
College degree	18	51.4%
Graduate degree	6	17.1%
<u>Number of Children</u>		
1 child	9	25.7%
2 children	16	45.7%
3 children	6	17.1%
4 children	4	11.4%
<u>Years Lived in United States</u>		
2 years	2	5.7%
3 years	3	14.3%
4 years	3	22.9%
5 years	9	25.7%
6 years	2	5.7%
7 years	1	2.3%
8 years	6	17.1%

The Ekiran Fever Questionnaire consists of both knowledge and management items. Each item can be responded to and scored as strongly agree = 4, agree = 3, disagree = 2, strongly disagree = 1, and do not know = 0. The 12 items related to knowledge of fever were scored and the sums totaled to create a knowledge subscore with a possible range of 0 to 48. A high score represented more correct responses. The subjects in the research sample produced scores which ranged from 15 to 38. The sample mean was 27.51 with a standard deviation of 5.68. Table 2 explains the group responses to the knowledge items.

The analysis of the knowledge items revealed that between 4 to 6 subjects checked "do not know" to six different items. Item 19 appeared to be the most difficult for the subjects to answer. Ten subjects responded "do not know" to the item. The eight items related to fever management practice were scored according to accuracy and totaled to create a management subscore. The possible range was from 0 to 32, with a higher score representing more appropriate practices. The sample data ranged from 17 to 31 with a mean of 25.00 and a standard deviation of 3.73. Table 3 displays the response to the management items.

Table 2

Frequencies and Percentages of Responses to Knowledge Items

Knowledge Items	Strongly agree	Agree	Disagree	Strongly disagree	Do not know
1. A body temperature of 98.6 degrees F is normal body temperature.	10 (28.6%)	20 (57.1%)	4 (11.4%)	0 (0.0%)	1 (2.9%)
3. A child with a body temperature of 100 degrees F orally is generally registered as having fever.	13 (37.1%)	19 (54.3%)	2 (5.7%)	1 (2.9%)	0 (0.0%)
4. Oral, rectal, and axillary are three routes for checking temperature in children.	15 (42.9%)	18 (51.4%)	0 (0.0%)	1 (2.9%)	1 (2.9%)
7. When a medicine has been given to a child to control an elevated temperature, the temperature should be rechecked every 2 hours.	9 (25.7%)	19 (54.3%)	5 (14.3%)	0 (0.0%)	2 (5.7%)
11. Reading the thermometer correctly may be a problem.	2 (5.7%)	18 (51.4%)	10 (28.65)	5 (14.3%)	0 (0.0%)
12. Lowering the room temperature assists in fever control in a child.	4 (11.4%)	22 (62.9%)	4 (11.4%)	0 (0.0%)	5 (14.3%)

(table continues)

Knowledge Items	Strongly agree	Agree	Disagree	Strongly disagree	Do not know
13. For a child 5 years or older, the most accurate route for checking temperature is oral.	9 (11.4%)	19 (54.3%)	4 (11.4%)	1 (2.9%)	2 (5.7%)
14. For a child under 5 years old, the most accurate route for checking temperature is rectally.	11 (31.4%)	12 (34.3%)	7 (20.0%)	0 (0.0%)	5 (14.3%)
15. A common harmful effect of excessive fever is convulsions.	13 (37.1%)	14 (40.0%)	2 (5.7%)	0 (0.0%)	6 (17.1%)
18. When a child has a fever, fluids and beverages should be offered.	10 (38.5%)	21 (71.4%)	0 (0.0%)	0 (0.0%)	4 (11.4%)
19. Shivering during fever indicates that the body temperature will still go higher.	3 (8.6%)	17 (48.6%)	5 (14.3%)	0 (0.0%)	10 (28.6%)
20. Covering a shivering child is considered appropriate in fever management.	4 (11.4%)	15 (42.9%)	10 (28.9%)	1 (2.9%)	5 (14.3%)

Table 3

Frequencies and Percentages of Responses to Management Items

Management Items	Strongly agree	Agree	Disagree	Strongly disagree	Do not know
2. Children's Tylenol is commonly used in controlling an elevated temperature in children.	14 (40.0%)	21 (60.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
5. A mercury thermometer is used to take a temperature.	16 (45.7%)	16 (45.7%)	0 (0.0%)	0 (0.0%)	3 (8.6%)
6. Tylenol might be given to a child who has a temperature of 100 degrees F or above.	13 (37.1%)	19 (54.3%)	3 (8.6%)	0 (0.0%)	0 (0.0%)
8. Cool sponge baths are used to control elevated temperature in children.	14 (40.0%)	21 (60.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
9. Before taking a child's temperature the mercury should be shaken down to below 95 degrees F.	15 (42.9%)	16 (45.7%)	3 (8.6%)	0 (0.0%)	1 (2.9%)

(table continues)

Management Items	Strongly agree	Agree	Disagree	Strongly disagree	Do not know
10. Before taking a child's temperature rectally, the tip of the thermometer should be lubricated.	20 (57.1%)	11 (31.4%)	1 (2.9%)	0 (0.0%)	3 (8.6%)
16. When taking a child's temperature rectally, it is appropriate to leave in place for 3 minutes.	8 (22.9%)	20 (57.1%)	4 (11.4%)	0 (0.0%)	3 (8.6%)
17. The home remedy way of treating fever is preferred to the scientific way.	6 (17.1%)	13 (37.1%)	10 (28.6%)	2 (5.7%)	4 (11.4%)

For item #17, the score was reversed in which strongly disagree = 4, disagree = 3, agree = 2, strongly agree = 1, and do not know = 0. In analyzing the management items, there were fewer subjects indicating "do not know" as their response. Only item #17 that was included to reflect their cultural background shows that the majority of the subjects prefer the home remedy way of treating fever to the scientific way. Nineteen subjects out of 35 preferred home remedy ways. Home remedies included oil on palm and sole, covering the child with clothes, and many others were the beliefs in this culture. Table 4 presents the means and the standard deviation on the Ekiran Fever Questionnaire.

Table 4

Means and Standard Deviation on the Ekiran Fever Questionnaire

EFQ	N	Mean	<u>SD</u>
Knowledge items	35	27.51	5.68
Management items	35	25.00	3.73

Item #21 on the questionnaire was added for individual comments on additional practices used in managing fever in children. Sixteen subjects (45.7%) responded to this question. Eleven repeated one thing or the other from the questionnaire such as taking the clothes off, giving a cool bath, etc. Three subjects suggested taking the child to the hospital to see the doctor if fever persisted. One indicated rubbing alcohol all over the body and one subject also indicated rubbing metholatum on the body.

Findings

The research question of this study will be restated in this section and the data analysis for the question will be discussed as it relates to the study. The hypothesis tested in this study stated that there is a positive relationship between Nigerian mothers' knowledge about fever and fever management practice in their children, as measured by the Ekiran Fever Questionnaire. The Pearson-product moment correlation was computed to test this hypothesis. The variables knowledge about fever and management of fever practices produced a correlation coefficient value of 0.70, which was significant at the .05 level.

This indicated that the higher the score in fever management, the more informed the subjects were on

knowledge of fever. Since there was a positive relationship between knowledge of fever and fever management practices, the research hypothesis was accepted.

Additional Findings

Additional tests were computed to determine whether there were other variables among the demographic data which affected the knowledge level of the mothers or their management practices in fever. The subjects' ages were divided into two groups from 15-29 years and 30-49 years. An analysis of variance by age group was calculated to determine whether the older mothers had more knowledge about fever than the younger mothers or whether their management was better because of their age. Table 5 shows the means, standard deviations, F values, and probabilities. Even though the mothers in Group II had higher mean scores on both knowledge and management, the differences were not significant.

Another variable considered was the educational level of the mothers in relation to their fever knowledge and management practice. Analysis of variance tests were conducted to determine whether the more educated had the more knowledge of fever and better practices. Table 6 indicates the relationship between the variables.

Table 5

Mothers' Age in Relation to Fever: Knowledge
and Management

Variables	Ages	Mean	<u>SD</u>	<u>F</u>	<u>p</u>
Knowledge	Group I, 15-29	27.00	4.42	0.20	0.643
	Group II, 30-49	27.90	6.56		

Management	Group I, 15-29	24.46	3.68	0.52	0.472
	Group II, 30-49	25.40	3.81		

Table 6

Mothers' Educational Level in Relation to Fever Knowledge
and Management

Variable	Educational level	Means	SD	<u>F</u>	<u>p</u>
Knowledge	High school diploma	25.27	6.45	1.33	0.277
	College degree	28.77	4.08		
	Graduate degree	27.83	7.93		

Management	High school diploma	23.90	4.30	0.67	0.518
	College degree	25.50	3.58		
	Graduate degree	25.50	3.20		

There were no significant differences in knowledge or management scores when compared by educational level. The third variable was number of children. Did mothers with more children have more knowledge about fever or better management skills? This was also tested using analyses of variance. The table below (Table 7) shows the results. The number of children was divided into three levels: one child = level 1, two children = level 2, and three or four children = level 3.

Table 7

Number of Children in Relation to Fever Knowledge and Management

Variable	Number of children	Means	SD	<u>F</u>	<u>P</u>
Knowledge	1 child	25.55	5.45	0.79	0.46
	2 children	28.56	5.09		
	3 or 4 children	27.60	6.81		

Management	1 child	23.33	1.80	1.36	0.27
	2 children	25.89	4.42		
	3 or 4 children	25.10	3.60		

Again, no significant differences were found among mothers' scores when grouped by number of children. The last variable treated was the number of years subjects had spent in the United States, may have been the western

culture had influenced their knowledge and management of fever. These data were used to form two groups: 5 years and over and under 5 years. The results are shown in Table 8.

Table 8

Years in United States in Relation to Fever Knowledge and Management

Variable	Years in United States	Mean	<u>SD</u>	<u>F</u>	<u>P</u>
Knowledge	Group I < 5 years	27.76	5.50	0.06	0.80
	Group II 5 years and over	27.27	5.99		

Management	Group I < 5 years	24.76	3.64	0.12	0.72
	Group II 5 years and over	25.22	3.90		

Again, the mean differences between groups were not significant. The number of years in the United States did not seem to influence the findings.

Summary of Findings

Using the Pearson r correlation, the results of the study revealed that there was a positive relationship

between the level of knowledge of fever and fever management practices in this sample of Nigerians mothers.

Therefore, the research hypotheses for this study was accepted. Additional findings of the study using ANOVA tests indicated that there was no significant difference in mean scores when groups were compared by age, educational level, number of children, and number of years in the United States in mothers in relation to their fever knowledge and management practices in their children.

CHAPTER V

SUMMARY OF THE STUDY

This chapter presents a summary of the study. The findings of the study are discussed and conclusions and implications are given. Recommendations for further research conclude the chapter.

Summary

A nonexperimental correlational research design was utilized to determine whether a relationship existed between Nigerian mothers' knowledge regarding fever and the practices they reported in managing fever in their children as measured by the Ekiran Fever Questionnaire. Demographic data regarding the mother's age, marital status, educational level, number of children, and number of years the subject had lived in the United States were also given. These variables were then used to group subjects for comparison of knowledge and fever management mean scores. Thirty-five subjects participated in the study. The study sample was chosen by convenience sampling method.

The conceptual frameworks for the study were Levine's (1973) energy conservation principle and Argyris and Schon's (1974) experiential learning theory. Levine (1973)

indicated that energy is needed by the body to perform works of life, and during illness an additional demand is made on the body to produce energy and a 7% increase in metabolism is needed for 1 degree Fahrenheit rise in body temperature which occurs in fever.

Argyris and Schon (1974) indicated that we learn by personal experience following a stress. First, a learning environment in which an individual produces a behavior that begins learning, in this study this was a feverish child and the mother's reaction to the fever. The second step is examination of the action taken, that is, the mother will re-evaluate her action to the fever, whether it is appropriate or not. The third step is the feedback of the action that generates learning. If the feedback is positive, the fever is down and the child is o.k., and the mother learns from the action. However, if the fever is not down, another action is considered.

The setting for the study was the participant's home or site of her choice for completion of the questionnaire. Subjects were volunteers sought primarily in three African Baptist Mission Churches, in a large northwest metroplex in a southwestern state of the United States. The convenience sample consisted of 35 subjects which represented a 43.7% response rate. Anonymity was maintained and the subjects'

rights were protected in accordance with the Texas Woman's University guidelines.

Two questionnaires were utilized in the study: a demographic data instrument and the Ekiran Fever Questionnaire to measure the knowledge and management practices on fever. This questionnaire was developed by the researcher and consisted of 20 questions rated on a Likert-type scale. There was a 21st question for general comments.

The questionnaire was presented to a panel of three doctorally prepared judges who evaluated the questions for content validity, clarity, comprehensiveness, and readability (Appendix G). The written comments from the judges were used to revise the instrument to its present form. Reliability of the instrument has not been established.

The Pearson product moment correlation was used to compare the group score on knowledge questions and the score on management questions and to test the research hypothesis. It was hypothesized that there was a positive relationship between Nigerian mothers' knowledge about fever and fever management practices in their children as measured by the Ekiran Fever Questionnaire. The level of significance was set at the .05 level.

The Pearson r was calculated for knowledge and management scores. A coefficient of $r = 0.70$ was obtained which showed a high positive significance. The research hypothesis was, therefore, supported. Other variables from the demographic data were computed using ANOVAs to make comparisons of knowledge and fever management scores among groups based on age, educational level, number of children, and years in the United States. None of the comparisons proved to be significant at the .05 level. Thus, management practices appear to be most related to knowledge scores.

Discussion of Findings

The findings of this study suggest that there was a positive relationship between Nigerian mothers' knowledge of fever and management practices in their children as measured by the Ekiran Fever Questionnaire. The Argyris and Schon (1974) experiential learning theory was not supported by the finding because all the demographic data proved to be insignificant. If the experiential learning theory is supported there will be a relationship between the number of children and the knowledge level of fever with the assumption that mothers of more than two children had been exposed to several episodes of fever and must have developed a better management skill from previous

experiences than the mother of one child. But the only possible explanation will be that if a mother has only one child, who is already 12 years old, she will be as exposed to fever management as much as mothers with three children. If mothers of children between ages 1 month to 6 months are in one group and mothers of children ages 2 to 8 years are in another group, the experiential learning theory can be supported. In this study the ages involve from 1 month to 12 years is so wide and the demographic variables became very insignificant.

The number of years lived in the United States did not change the group's cultural beliefs about fever because 19 (54.2%) subjects checked that they preferred a home remedy way of managing fever rather than scientific ways. Therefore, the length of time lived in the United States was also not significant.

Andersen's (1988) study of 84 parents found that regardless of level of education or age of child that parents believed fever begins at 37.8 degrees C and selected inappropriate methods of fever management. Andersen also found that the majority of parents, regardless of the level of their education or age of the child, worried about fever and wanted to know more about it. This research was consistent with the present study

finding that the level of education was not significantly related to the subjects' knowledge or management practices on fever.

Abdullah et al.'s (1987) study of 36 parents indicated that most parents did not have a thermometer and have minimal understanding of fever and its management, and 37% regarded fever as a cause of brain damage.

Kilmon (1987), in a descriptive study of 100 parents of infants and small children, conducted interviews to obtain information about their knowledge and practices related to treatment of children's fever. The parents interviewed were well educated. It was found that 21% of the parents treated fever when the child's body temperature was actually within normal range and most gave inappropriate intervention such as incorrect doses of antipyretic medication or sponged incorrectly.

Kilmon found that even though the group was highly educated, yet the lack of knowledge on fever affected their decision-making. The present study supported previous findings that the relationship between mothers' knowledge on fever and management practices was positive exclusive of other variables. In addition, an individual responding by checking "do not know" in this present study also supported the Kilmon (1987) finding that some parents do not know

when to use Tylenol or not by treating normal body temperature, or lack of knowledge on fever.

Conclusions and Implications

Based on this study, it was concluded that:

1. Mothers' knowledge affects fever management practices.
2. The content validity of the EFQ has been established.
3. The Argyris and Schon (1974) experiential theory cannot be supported with this study.
4. Demographic variables did not influence knowledge on fever and management practices.

The following implications for nursing can be drawn from this study:

1. An effort should be made to teach mothers the basic knowledge needed on fever to aide their management skills.
2. Inservice education programs should be taught to the nurses to help guide them in educating the mothers.

Recommendations for Further Study

The following recommendations for further studies are based upon the conclusions of this study:

1. Replicate this study using a larger group of mothers.
2. Replicate this study using mothers with one child between the ages of 1 to 6 months and mothers with two and more children.
3. Reevaluate and modify the tool in order to replicate the study.
4. Replicate the study using heterogeneous culture.
5. Reword item #17 so there will be consistence in the scoring of the tool.

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APPENDIX A

Research Review Committee Exemption

TEXAS WOMAN'S UNIVERSITY
COLLEGE OF NURSING

PROSPECTUS FOR THESIS/DISSERTATION/PROFESSIONAL PAPER

This prospectus proposed by: Margaret Dolapo Ekiran

_____ and entitled:

Knowledge and Practices of Nigerian Mothers Concerning
the Management of Fever in Their Children

Has been read and approved by the member of (~~his~~/hers)
Research Committee.

This research is (check one):

xx Is exempt from Human Subjects Review Committee
review because it is classified as Category I research.

_____ Requires Human Subjects Review Committee review
because _____

Research Committee:

Chairperson, _____

Member, _____

Member, _____

Date: 6/29/89

Dallas Campus xx Denton Campus _____ Houston Campus _____

APPENDIX B

Agency Permission Forms

TEXAS WOMAN'S UNIVERSITY
COLLEGE OF NURSING

AGENCY PERMISSION FOR CONDUCTING STUDY*

THE FIRST AFRICAN BAPTIST CHURCH OF ARLINGTON, TEXAS

GRANTS TO MARGARET EKIRAN
a student enrolled in a program of nursing leading to a Master's Degree at Texas Woman's University, the privilege of its facilities in order to study the following problem.

KNOWLEDGE AND PRACTICES OF NIGERIAN MOTHERS CONCERNING
THE MANAGEMENT OF FEVER IN THEIR CHILDREN

The conditions mutually agreed upon are as follows:

1. The agency (may) (may not) be identified in the final report.
2. The names of consultative or administrative personnel in the agency (may) (may not) be identified in the final report.
3. The agency (wants) (does not want) a conference with the student when the report is completed.
4. The agency is (willing) (unwilling) to allow the completed report to be circulated through interlibrary loan.
5. Other _____

Date 8-23-89

Margaret Ekiran
Signature of Student

Debra M. Hughes
Signature of Agency Personnel

Debra M. Hughes
Signature of Faculty Advisor

*Fill out & sign 3 copies to be distributed: Original-student; 1st copy-Agency; 2nd copy-TWU School of Nursing

TEXAS WOMAN'S UNIVERSITY
COLLEGE OF NURSING

AGENCY PERMISSION FOR CONDUCTING STUDY*

THE AFRICAN BAPTIST MISSION OF FORT WORTH, TEXAS

GRANTS TO MARGARET EKIRAN
a student enrolled in a program of nursing leading to a
Master's Degree at Texas Woman's University, the privilege
of its facilities in order to study the following
problem.

KNOWLEDGE AND PRACTICES OF NIGERIAN MOTHERS' CONCERNING
THE MANAGEMENT OF FEVER IN THEIR CHILDREN

The conditions mutually agreed upon are as follows:

1. The agency (may) (~~may not~~) be identified in the final report.
2. The names of consultative or administrative personnel in the agency (may) (~~may not~~) be identified in the final report.
3. The agency (wants) (does not want) a conference with the student when the report is completed.
4. The agency is (willing) (~~unwilling~~) to allow the completed report to be circulated through interlibrary loan.
5. Other _____

8-21-89
Date

Margaret J Ekiran
Signature of Student

[Signature]
Signature of Agency Personnel

[Signature]
Signature of Faculty Advisor

*Fill out & sign 3 copies to be distributed: Original-student; 1st copy-Agency; 2nd copy-TWU School of Nursing

TEXAS WOMAN'S UNIVERSITY
COLLEGE OF NURSING

AGENCY PERMISSION FOR CONDUCTING STUDY*

THE AFRICAN BAPTIST CHURCH OF IRVING, TEXAS

GRANTS TO MARGARET EKIRAN
a student enrolled in a program of nursing leading to a
Master's Degree at Texas Woman's University, the privilege
of its facilities in order to study the following
problem.

KNOWLEDGE AND PRACTICES OF NIGERIAN MOTHERS' CONCERNING
THE MANAGEMENT OF FEVER IN THEIR CHILDREN

The conditions mutually agreed upon are as follows:

1. The agency (may) (may not) be identified in the final report.
2. The names of consultative or administrative personnel in the agency (may) (may not) be identified in the final report.
3. The agency (wants) (does not want) a conference with the student when the report is completed.
4. The agency is (willing) (unwilling) to allow the completed report to be circulated through interlibrary loan.
5. Other _____

<u>8-25-59</u> Date	<u>MARGARET EKIRAN</u> Signature of Agency Personnel
<u>Margaret D. Ekiran</u> Signature of Student	<u>Oneida M. Hughes</u> Signature of Faculty Advisor

*Fill out & sign 3 copies to be distributed: Original-student; 1st copy-Agency; 2nd copy-TWU School of Nursing

APPENDIX C

Graduate School Permission to Conduct Study

TEXAS WOMAN'S UNIVERSITY
DENTON DALLAS HOUSTON
THE GRADUATE SCHOOL
P.O. Box 22479, Denton, Texas 76204 817/898-3400, 800-338-5255



November 2, 1989

Ms. Margaret Ekiran
3453 W. Rochelle Rd.
Irving, TX 75062

Dear Ms. Ekiran:

I have received and approved the Prospectus for your research project. Best wishes to you in the research and writing of your project.

Sincerely yours,

Leslie M. Thompson

Leslie M. Thompson
Dean for Graduate Studies
and Research

dl

cc Dr. Helen Bush

APPENDIX D
Explanation of Study

COMPLETION AND RETURN OF THIS QUESTIONNAIRE WILL BE
CONSTRUED AS YOUR CONSENT TO PARTICIPATE IN THIS STUDY.

Explanation of the Study and Subject Rights

My name is Margaret Ekiran. I am a Registered Nurse and a graduate student at Texas Woman's University. I am inviting you to participate in a research study designed to learn more about parent knowledge of fever and how parents manage fever in their children. You were selected as a possible participant because you have a child between the ages of 1 month and 12 years--the age group needed for this study. We hope to learn how we can best help parents deal with fever in their children. If you decide to participate in this study, you will be asked to complete one short questionnaire and a demographic data sheet. This will take approximately 15 minutes. The questionnaire was designed to obtain information about your knowledge of fever and how you manage fever in your children. If you are a nurse or medical doctor do not participate.

The research packet can be taken home and the questionnaire can be answered at your convenience. If you have any questions at any time you can reach me by calling the attached phone number and leaving a message. All information that is obtained in the course of this study will remain anonymous.

Participation in the study is strictly voluntary. By completing the questionnaire and mailing it back to me you will be giving your consent to participate in the study. Again, I will be happy to answer any questions regarding the study at any time.

Thank you for your time and cooperation.

Sincerely,

Margaret Ekiran, RN, BSN

APPENDIX E
Demographic Data Sheet

COMPLETION AND RETURN OF THIS QUESTIONNAIRE WILL BE
CONSTRUED AS YOUR CONSENT TO PARTICIPATE IN THE STUDY.

Demographic Data Sheet

1. Age in years:
☐ A. 15-19
☐ B. 20-24
☐ C. 25-29
☐ D. 30-34
☐ E. 35-39
☐ F. 40-45
2. Marital status:
☐ A. Married
☐ B. Divorced
☐ C. Single
3. Level of education:
☐ A. Less than 6th grade
☐ B. 6th grade completed (Class III in high school)
☐ C. High school diploma
☐ D. College degree
☐ E. Graduate degree
4. Number of children ages 1 month to 12 years:
Specify: _____
5. How long have you been in the U.S.A.?
Specify: _____
6. Medical profession:
☐ Yes
☐ No

APPENDIX F

Ekiran Fever Questionnaire

KKIRAN FEVER QUESTIONNAIRE

COMPLETION AND RETURN OF THIS QUESTIONNAIRE WILL BE
CONSTRUED AS YOUR CONSENT TO PARTICIPATE IN THIS STUDY.

DIRECTIONS

Please read each statement carefully and indicate whether you Strongly Agree, Agree, Disagree, Strongly Disagree or Do Not Know, by placing a "check mark" (✓) in the appropriate corresponding column.

	Strongly Agree	Agree	Disagree	Strongly Disagree	Do Not Know
1. A body temperature of 98.6°F. is normal body temperature.					
2. Children's Tylenol is commonly used in controlling an elevated temperature in children.					
3. A child with a body temperature of 100°F. orally is generally regarded as having fever.					
4. Oral, rectal and axillary are three routes for checking temperature in children.					
5. A mercury thermometer is used to take a temperature.					
6. Tylenol might be given to a child who has a temperature of 100°F. or above.					
7. When a medicine has been given to a child to control an elevated temperature, the temperature should be re-checked every two (2) hours.					

	Strongly Agree	Agree	Disagree	Strongly Disagree	Do Not Know
8. Cool sponge baths are used to control elevated temperature in children.					
9. Before taking a child's temperature, the mercury should be shaken down to below 95°F.					
10. Before taking a child's temperature rectally, the tip of the thermometer should be lubricated.					
11. Reading the thermometer correctly may be a problem.					
12. Lowering the room temperature assists in fever control in a child.					
13. For a child five (5) years or older, the most accurate route for checking temperature is oral.					
14. For a child under five (5) years old, the most accurate route for checking temperature is rectally.					
15. A common harmful effect of excessive fever is convulsion.					
16. When taking a child's temperature rectally, it is appropriate to leave the thermometer in place for three (3) minutes.					

	Strongly Agree	Agree	Disagree	Strongly Disagree	Do Not Know
17. The home remedy way of treating fever is preferred to the scientific way.					
18. When a child has a fever, a of fluids and beverages should be offered.					
19. Shivering during fever indicates that the body temperature will still go higher.					
20. Covering a shivering child is considered appropriate in fever management.					
21. ADDITIONAL COMMENTS: Please write any other additional practices that you use in managing fever in your children. 					

APPENDIX G

Letter to Panel of Experts

April 24, 1989

Dear Nurse Educator:

My name is Margaret Ekiran. I am a graduate student at Texas Woman's University, College of Nursing, Dallas Center. As part of the requirements for the Master's degree, I am conducting a research project in which the purpose will be to assess Nigerian parents' (mothers') knowledge of fever and related practices in managing fever in their children.

I have developed a 20-item questionnaire for use in this research project and I am seeking your assistance in validating the questions. Each item has a 5-point response Likert-type scale. Twelve items (1, 3, 4, 7, 11, 12, 13, 14, 15, 18, 19, and 20) are designed to assess the subjects' knowledge level about fever. The scores will range from 0 to 48. Eight items (3, 5, 6, 8, 9, 10, 16, and 17) are designed to assess the subjects' practices in managing fever in their children. The scores will range from 0 to 32.

Please review and critique the questionnaire for comprehensiveness, clarity, readability, and its ability to solicit data to test the research hypothesis. Please feel free to write on the questionnaire pages. The problem statement, hypothesis, and definitions of terms are enclosed.

I am most grateful for your assistance. Please return the questionnaire to me in the self-addressed, stamped envelope provided.

Sincerely,

Margaret Ekiran, RN, BSN