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A study to determine the effectiveness of cleanliness measures by mothers in preparation for handling of feeding their infants

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Boston University
A STUDY TO DETERMINE THE EFFECTIVENESS
OF CLEANLINESS MEASURES BY MOTHERS IN PREPARATION
FOR HANDLING OR FEEDING THEIR INFANTS

By
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(B.S. in Nursing, University of Hawaii, 1957)

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CHAPTER I

INTRODUCTION

The increased use of hospital facilities for care of the mother and child during and after delivery has drawn attention to the importance of good and improved health care and guidance in this area. Analysis of the great strides which have been made in the reduction of infant mortality in the United States during the past thirty-five years shows that the infectious causes of infant deaths can be controlled to a very large extent.¹ This field study is concerned with one of the most important aspects in the care of the newborn infant, the further prevention of infection.

The normal full-term infant is ready for an existence outside the uterus. However, he needs the kind of nurturing that will enable him to adapt to the outer world with the least amount of discomfort and the greatest amount of pleasure. The newborn infant needs observation and protection from infection because he is still an immature structure in many ways. At birth he becomes exposed to organisms to which he has little or no resistance, whereas in utero he was well protected from pathogenic organisms. Although his body fluids do contain some immune bodies from his mother's circulation, they do not provide him with sufficient protection from disease. Any infection, even of a minor nature, may threaten the life of the child.

¹ Jeans, Philip, Essentials of Pediatrics, p. 15.
The newborn has many characteristics which make him particularly vulnerable to infection. His lungs are not fully expanded and his system of blood formation is undergoing change. His skin and the mucous membranes of his respiratory tract are fragile and as such are excellent areas for bacterial growth. His gastro-intestinal tract is unstable and sensitive, and the hydrochloric acid content of his gastric juice is not high enough to destroy ingested organisms. Minor infection produces vomiting and diarrhea which can bring serious alterations in the electrolyte balance. Individual aseptic technic and careful observation are essential in the care of the newborn. He needs care which is meticulous, safe, and gentle.²

Statement of the Problem

One of the most important preventives of infection is cleanliness of the mother's hands before she touches her new infant. The problem to be studied is concerned with cleanliness of the mother's hands and breasts in preparation for feeding her baby. It can be stated as follows: are the hand care and breast care procedures for mothers before handling their infants, as set up in a given hospital, being used effectively?

Justification of the Problem

The purpose of the previously mentioned procedures is to prevent infection and promote the health of the newborn infant. An attempt to determine if the procedures are being correctly performed will help to determine the fulfillment of the purpose.

² Blake, Florence G., The Child, His Parents and the Nurse, pp. 54, 59, 60.
The actual value of these procedures has been questioned by some of the medical personnel and it is hoped that this study will help them to further understand its use or lead to a revision of policy concerning the procedures.

In addition it is anticipated that as a result of this study the investigator, and others reading it, may discover more about the ways in which learning occurs. Hospital "routines" are often accepted by patients without questioning or understanding of their purposes, resulting in incorrect application or minimal benefit of the therapy. An effort has been made to include ways in which the nurse can aid the individual in deriving maximum benefits from health care.

Scope and Limitations

This is a study done in the maternity unit of a specific hospital, therefore the findings, conclusions, and recommendations are not necessarily the same for another hospital.

A sampling of twenty-five mothers was taken, with no specified age or number of children. They were either private or clinic patients.

The information which a mother recalled as that which a nurse gave her, could not be rechecked because the nurse involved could not be interviewed. Oftentimes the mother did not know the particular nurse or the same nurse was not available for an interview at the times the interviewer was present. The same information may have been incompletely or inaccurately repeated because of the variations in each mother's ability to remember.

No standard method of instruction or information to be given the mother regarding the hand or breast care could be found in the nursery.
procedure book at the hospital. This accounts for the possibility of having a variety of explanations which the mothers may receive from different nurses.

Preconceived ideas about health care and cleanliness are individual to each mother. She brings these concepts with her and although the nurse may attempt to impart new or different ideas, past experience has shown that this learning may be very slow.

Definition of Terms

The term "hand tray" is used in this study to indicate a set of stainless steel utensils set on a tray. They include a small covered can of clean gauze saturated with a 1:1000 solution of zephiran chloride, a forcep holder containing a pair of forceps soaking in formaldehyde, and an emesis basin. The solutions and gauze are refilled daily from a stock supply and the complete tray is sterilized by autoclaving after the mother has been discharged. A clean tray is reset for each new mother.

The term "breast tray" is used in this study to indicate a hand tray additionally equipped with a small covered can of cotton balls saturated with a 1:1000 solution of zephiran chloride, a similar can with squares of wax paper, and a tube of vitamin A and D ointment. It is cared for in the same manner as the hand tray.

The term "hand care procedure" is used in this study to indicate the manner or method of cleansing the hands, which consists of a self-application of a 1:1000 solution of zephiran chloride to the mother's hands with a piece of gauze saturated in the solution, before she handles the infant. To ensure the desired result the mother should cleanse the following areas
of her hands with friction:

1. the anterior surface of the hand, from fingertip to wrist line
2. the posterior surface of the hand, from fingertip to the line that extends from the distal end of the tip of the ulna to the distal end of the radius and meets the wrist line
3. each finger, including all surfaces of the individual finger, from its tip to base
4. the area at the base of each finger which adjoins the next finger
5. under the fingernails
6. around each cuticle
7. around each ring and under the ring area

In order to cleanse under the fingernail, a corner of the gauze should be selected and meticulously rubbed at least once across on the underside of the fingernail and as close to the skin as possible. The use of friction, which is the rubbing with pressure of the surface of the gauze against the surface of the hand, is necessary to remove any foreign material from the hand. The procedure should be done individually, for each hand.\(^3\)

The term "breast care procedure" is used in this study to indicate the manner or method of cleansing the breasts, which consists of a self-application of a 1:1000 solution of zephiran chloride to the mother's breasts with a cotton ball saturated in the solution, before she breast feeds her infant. To ensure the desired result the mother should perform the hand care procedure first and then cleanse her breasts in the following

\(^3\) This definition was written by the author and approved by Miss Virginia Gillis, Obstetrical Supervisor, Beth Israel Hospital.
manner, using friction and one cotton ball for each breast:

Beginning at the tip of the nipple, work outwardly in a circular motion until all of the areola has been cleansed.

The word "mother" is used in this study to indicate a woman on the postpartum unit of the Beth Israel Hospital who has recently delivered a full-term, apparently healthy infant. One mother had delivered twins.

The term "handling" is used in this study to include "touching or dealing with" the infant.

The term "given hospital" is used in this study to indicate the Beth Israel Hospital, 330 Brookline Avenue, Boston 15, Massachusetts.

The word "use" is used in this study to indicate that which is "employed for some purposes; put into service."

The word "effectively" is used in this study to indicate "producing a desired result."

The word "teaching" is used in this study to indicate "the act of imparting knowledge of or skill in, or giving instruction in," the use of the hand or breast care procedure.

The word "cleanliness" is used in this study to indicate "freedom from dirt, filth, foreign, or extraneous matter."

4. This definition was written by the author and approved by Miss Virginia Gillis, Obstetrical Supervisor, Beth Israel Hospital.
Preview of Methodology

Agency permission to begin work on this study was obtained from the director of nurses and the chief obstetrician. Arrangements to gather data were made through the office of the maternity nursing supervisor.

In order to discover the ways in which the mothers use the hand or breast care procedure, observation and the interview were chosen as the tools for data collection. The former was selected to view the method which the mother used and the latter to gain the kind of information or opinion which the mother had about the procedures. Twenty-five mothers were selected from those who were receiving their babies for feedings and those who had normal infants.

Observations were made while the mothers were using the hand or breast trays in preparation for feeding the baby. The interviews were structured to include certain types of questions. However, the interviewee was free to discuss other areas of health care pertaining to herself or to the infant, especially in relation to feeding the baby.

Sequence of Presentation

Chapter II. The Theoretical Framework of the Study. This chapter includes a review of the literature, the basis of the hypothesis, and the statement of the hypothesis.

Chapter III. Methodology. This chapter includes a discussion of the selection and description of the sample, the tools used to collect data, and the procurement of data.

Chapter IV. Findings. This chapter includes the presentation and discussion of data.
Chapter V. Summary, Conclusions, and Recommendations. This chapter includes a summary, conclusions, and recommendations.
CHAPTER II
THEORETICAL FRAMEWORK OF THE STUDY

Review of the Literature

The ability of the human skin to transmit organisms from person to person has always been a special problem in the care of the mother and her newborn infant. Each individual's skin harbors a relatively permanent bacterial population, which is characteristic of the individual and modified at intervals by the introduction of new bacteria. If given adequate opportunity these newcomers may adapt themselves and become resident flora. Transient flora also inhabit the skin and usually reflect the person's contacts and pattern of living. They accumulate along with soil and tend to be held on by grease or fats. Friction easily removes those on exposed surfaces, but folds and creases between the fingers and the areas around and under the fingernails afford protection for the bacteria and a place to multiply.¹

The American Academy of Pediatrics gives repeated emphasis to the fact that the hands are a potential transmitter of infection and should be carefully washed before handling the infant.² They do not advocate the use of a specific soap, detergent, or technique, but do caution against negligent use of the antiseptic detergents.

"...their use is sometimes responsible for the erroneous idea that all that is necessary is covering the hands with them." ³

² Hospital Care of Newborn Infants, p. 29.
³ Ibid. p. 30.
The same group of medical advisors recommend that all personnel handling infants wash their hands before and after handling each infant or equipment assigned to an infant and that the nurse should see that the mother's hands are washed before giving the infant to her for a feeding.  

The Massachusetts Department of Public Health also recommends proper cleansing of the hands before handling the infant or formula and in addition states:

...the nursing mother shall wash her hands and cleanse her nipples with sterile water provided on a breast tray which shall be kept at her bedside.  

Van Blarcom feels that the immediate postpartum is an excellent time to teach the mother the importance of washing her hands before handling her baby and after changing his diaper by telling her the reason for this precaution and reminding her to wash her hands at these times.  

In reviewing the literature it was found that the classic technique to disinfect the skin is the application of a germicide, such as is used in the hospital in the study, with the hope that a relatively sterile field will result. However, the danger of injuring tissue contraindicates the use of germicides sufficiently stronger to be effective in a brief period of time and human impatience does not usually allow the time necessary to produce the desired result of germicides which are kindly to tissue but slow in action. It is also stated that a 1:1000 solution of zephiran

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4. Ibid. pp. 37, 77, 79.  
5. Licensure Rules and Regulations for Hospitals and Sanatoria in Massachusetts, p. 134.  
chloride is a reliable disinfectant when rubbed INTO the skin for two
minutes. 7

The same source lists three essentials for chemical disinfection
of the skin:

1. There must be an adequate period of exposure to the
germicide. No germicide is instantaneous in its action
and time must be allotted for the germicide to act.

2. The germicide must be maintained at its most effective
concentration on the skin. As germicides dry, their
power to destroy bacteria is lost.

3. Friction enhances germicidal power because it aids the
germicide in penetrating to the organism. 8

A specific procedure for the use of the hand and breast trays as
set up at the Beth Israel Hospital could not be found in their Nursery
Procedure Book. 9 Drawing from her own experience as a nursery nurse in
this hospital and her observations and practice in helping mothers use
these trays, the author stated the procedure as used at the hospital and
submitted it to the obstetrical supervisor for her approval and endorsement.
This was obtained and is used in this study as the accepted procedure at
the Beth Israel Hospital. (See pages 4, 5 and 6)

Basis of Hypothesis

Handwashing may often be done in a careless, mechanical manner as a
routine task and be so inadequate that it does not remove the risk of

8. Ibid., p. 184.
9. Nursery Procedure Book, Beth Israel Hospital, Boston, Massachusetts,
   1950.
The preceding paragraphs have pointed out some methods and the importance of adequate hand and breast care before the feeding or handling of infants. The author has observed, while working in the nursery at the hospital studied, that the recommendations listed to ensure proper cleanliness of the mother's hands and breasts have not been practiced in the prescribed manner. Other nurses and doctors in the same agency have remarked that they did not feel the methods used were adequate or being used to their full advantage.

Statement of Hypothesis

The hand care and breast care procedures for mothers before handling their infants, as set up in a given hospital, are not being used effectively.

CHAPTER III
METHODOLOGY

Description of the Maternity Ward

The maternity unit of the Beth Israel Hospital is contained in three floors of the south wing of the hospital. On the eighth floor are the labor and delivery suite, premature nursery, and formula room. Babies are transported to the premature nursery and to the regular nurseries by the incubator in which they are placed at birth, wrapped in a green drape, cleaned of excess vernix and blood.

On the seventh floor are accommodations for thirty-two mothers and thirty-two babies. The mothers' rooms each adjoin a long, straight corridor. There are two closets in every room, one for each mother, in which she may hang her clothing and place some of her personal belongings. On the top shelf of the closet is kept either the individual hand tray or breast tray for the mother. These mothers are clinic and semiprivate patients. On opposite sides of the middle of the corridor are the head nurse's station, and the two separate seventh floor nurseries. Each seventh floor nursery can contain sixteen babies in separate crib and cabinet units each in a glassed cubicle.

On the sixth floor are accommodations for twenty-four mothers in private and semiprivate rooms, and eighteen babies. The hand or breast trays are kept in the same location in each mother's room, as done on the seventh floor. The babies are in one nursery. There are no accommodations for care of the infant and the mother in the same room on either floor.
Description and Selection of Sample

This study involves twenty-five mothers of normal babies. Four were primiparous, twenty-one were multiparous. Fifteen of the mothers selected were under the care of a private obstetrician and in private or semiprivate accommodations on either the seventh or sixth floors. Ten were under the care of the Beth Israel Hospital house staff and in house accommodations, which are double rooms on the seventh floor. All mothers were ambulatory at the time of the interview, except one, who had phlebitis and was confined to her bed.

Tools Used to Collect Data

Since the investigator wanted to witness the mother's use of the hand or breast tray, the method selected to accomplish this was the observation. The author also wished to obtain any knowledge the mother had concerning the reasons for or the use of the trays. The interview was chosen as the collection tool for this information.

Procurement of Data

The investigator, dressed in a nursery gown and having performed a routine Phisohex scrub, was in the role of a nursery nurse during both the observation and interview. When the infant was brought to the mother for a feeding, the latter was watched while using the tray to cleanse either her hands or hands and breasts, without being aware of the observation. Specific items were looked for in each observation and data were recorded on a pocket notepad. (See Appendix A)

During the feeding period the author returned to the same mother's room to assist her with any feeding difficulties and to conduct the
interview, which was partly structured by an interview guide. (See Appendix B) Certain questions were asked to include the data desired, but the mother was free to provide any additional information or remarks. Data obtained by interview were recorded as soon after the interview as possible on the same pocket notepad.

The investigator selected the number of mothers to be observed and interviewed. The number twenty-five was chosen because it is a relatively easy number to work with statistically and it would also give an adequate number on which to base any conclusions. Permission was given by the chief obstetrician and private obstetricians to choose from clinic patients and private patients. The only criteria necessary for selection was that the mother received her infant for feeding. All of the mothers chosen had a normal infant, as an abnormal baby would be in the premature nursery and not brought to the mother for feeding. One mother had twins but received them alternately for feedings.
CHAPTER IV
FINDINGS

Presentation and Discussion of Data

The purpose of this study is to determine the effectiveness of the way in which the procedures, as set up in a given hospital, are being used for the mother's cleanliness before handling or feeding her infant.

The data were collected by observing and interviewing twenty-five mothers and are presented in this chapter.

In compiling the data for presentation, two distinctions were made in the mother's use of the hand care procedure, good and poor. Her use of the procedure was considered good if she used friction, and included cleansing the following three areas:

1. the anterior surface of the hand, from fingertip to wrist line
2. the posterior surface of the hand, from fingertip to the line that extends from the distal end of the tip of the ulna to the distal end of the radius and meets the wrist line
3. each finger, including all surfaces of the individual finger, from its tip to base.

If any one of the aforementioned criteria were omitted, the performance was considered poor.

Only four of the twenty-five mothers observed could be classified as "good" in their performance. A large majority, twenty-one, were poor performers. The ratings can be seen in the table below.
TABLE 1
MOTHERS' USE OF HAND CARE PROCEDURE

<table>
<thead>
<tr>
<th>Good Performance</th>
<th>Poor Performance</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>21</td>
<td>25</td>
</tr>
</tbody>
</table>

A closer analysis of the larger number of poor performances reveals that eight mothers used the zephiran-soaked pledget on only the anterior surface of their hands, with either a slight or negligible amount of friction. In eleven performances, although both the anterior and posterior surfaces of the hands were contacted by the pledget, with only a slight or negligible amount of friction, the individual fingers were ignored. Of the remaining two variances, one mother had employed some friction in covering the anterior surfaces of her hands and the individual fingers, but had neglected to do the posterior surfaces of her hands. The other mother had wiped her individual fingers with a little friction, but had excluded wiping the anterior and posterior surfaces of her hands. In the following table, these last two mothers have been classified in the column titled "Other."

TABLE 2
VARIATIONS IN POOR PERFORMANCES

<table>
<thead>
<tr>
<th>Only Anterior Surfaces of Hands Wiped</th>
<th>Individual Fingers Not Wiped</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>11</td>
<td>2</td>
<td>21</td>
</tr>
</tbody>
</table>
In addition to rating hand care, breast care was also judged. Performance in caring for the breasts was considered good if the mother used friction, began at the tip of the nipple, and worked outwardly in a circular motion until all of the areola had been cleansed, or poor if lacking any of the criteria described.

Four of the subjects observed were breast feeding and of these, three performed well in the use of the breast care procedure, while one performed poorly, as is shown in the following table.

**TABLE 3**

**BREAST-FEEDING MOTHERS' USE OF BREAST CARE PROCEDURE**

<table>
<thead>
<tr>
<th>Good Performance</th>
<th>Poor Performance</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>1</td>
<td>4</td>
</tr>
</tbody>
</table>

In the poor performance, friction was absent and the areola area was wiped first and then the nipple tip was wiped.

The mothers were questioned about the use or purpose of the trays in an attempt to discover what understanding they had concerning the reason for their performing the procedures. Their responses are listed as follows:
### TABLE 4

**MOTHERS' RESPONSES ABOUT THE USE OR PURPOSE OF THE TRAYS**

<table>
<thead>
<tr>
<th>Responses</th>
<th>Times Given</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;It's to sterilize my hands before I touch the baby.&quot;</td>
<td>7</td>
</tr>
<tr>
<td>&quot;It's to take off any germs left on my hands.&quot;</td>
<td>2</td>
</tr>
<tr>
<td>&quot;This makes my hands cleaner but handwashing is best.&quot;</td>
<td>1</td>
</tr>
<tr>
<td>&quot;It makes my hands clean.&quot;</td>
<td>9</td>
</tr>
<tr>
<td>&quot;This makes my hands clean, as sterile as can be, although you can't really sterilize the hands.&quot;</td>
<td>1</td>
</tr>
<tr>
<td>&quot;Cleanliness.&quot;</td>
<td>2</td>
</tr>
<tr>
<td>&quot;Sanitary reasons.&quot;</td>
<td>1</td>
</tr>
<tr>
<td>&quot;It helps in keeping clean, it's an added precaution after handwashing.&quot;</td>
<td>1</td>
</tr>
<tr>
<td>&quot;No idea of its use.&quot;</td>
<td>1</td>
</tr>
</tbody>
</table>

**Total** 25

Seven mothers believed that the pink solution sterilized their hands and one mother also said it sterilized the breasts before feeding the baby. She was not breast feeding. Of the twenty-five mothers interviewed, nine said that the use of the zephiran pledget was to make their hands clean, and three of these women mentioned that using this made them more conscious of keeping their hands clean. The mother who said she had no idea of the use of the hand tray said she was accustomed to merely washing her hands with soap and water at home. One mother thought that this procedure was a substitute for handwashing with soap and water and therefore had not washed her hands before using the hand tray.

Eleven mothers were specifically asked if they had washed their hands before the nurse brought them the hand tray. Seven of them had
walked to the sink, which is available in each room of the postpartum unit, and washed their hands with soap and water. One mother had just returned from having a shower and gotten directly into bed. Three mothers did not wash their hands first, one mother was the respondent who thought the procedure was a substitute for handwashing and another stated she washed her hands only at six o'clock in the morning when she first awoke. The following table illustrates the reported incidences of handwashing before using the hand or breast care trays.

**TABLE 5**

**REPORTED INCIDENCES OF HANDWASHING BEFORE USING THE HAND OR BREAST CARE TRAY**

<table>
<thead>
<tr>
<th>Washed Hands</th>
<th>Did Not Wash Hands</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>4</td>
<td>11</td>
</tr>
</tbody>
</table>

A further breakdown of the above table reveals that only two of the seven mothers who had washed their hands performed well, according to the criteria on page 4, in the use of the hand care procedure. The remaining five performed poorly. The correlations between handwashing, nonhandwashing, and performance in the prescribed hand care procedure can be seen in Table 6.
TABLE 6
HAND CARE PERFORMANCE IN
RELATION TO HANDWASHING

<table>
<thead>
<tr>
<th>Washed Hands</th>
<th>PERFORMANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Good</td>
</tr>
<tr>
<td>yes</td>
<td>2</td>
</tr>
<tr>
<td>no</td>
<td>1</td>
</tr>
</tbody>
</table>

Of the four mothers who did not wash their hands prior to using the hand tray, only one performed well. It is interesting to note that she was the same person who had thought the procedures were a substitute for handwashing and was also one who had performed well in use of the breast care procedure.

The author's curiosity was aroused when she felt that some mothers were concerned about not having any of the solution to use at home. While interviewing the mothers, it was found that six of them planned to use, or had used, soap and water to wash their hands when they were home, before feeding or handling their children. One mother said that in addition, she applied rubbing alcohol to her hands and rubbed them together. The opinions of the other nineteen mothers were not ascertained. Occasionally mothers asked what the solution was and six of them identified it as an antiseptic.

For purposes of this study, a mother was considered to have been taught if she said she had received any explanation from a nurse regarding the uses or purposes of the hand or breast care procedures or any instruction concerning a method of application. If she did not receive any
explanation or instruction she was considered as not having been taught.

It is surprising to note that more mothers were not taught than were taught. This is illustrated in Table 7.

TABLE 7

<table>
<thead>
<tr>
<th>Taught</th>
<th>Not Taught</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>16</td>
<td>25</td>
</tr>
</tbody>
</table>

Three of the mothers who have been classified as taught received very minimal explanation from the nurse, such as, "Use it all over your hands and don't dry them," or "This is like soap and water to be used to wash your hands." Two mothers reported that the nurse had said the procedure would sterilize their hands. One mother who had not received any instruction from a nurse wondered why the tray was used and asked her neighbor for an explanation. The sixteen mothers who were not taught said that they had received no explanation at all from a nurse regarding the uses, purposes, or method of application of the hand or breast care procedures.

In reviewing the performances of the mothers who had been taught, the three who received very minimal explanations did poorly in performing. Three others, who had received more explanation, also did poorly. Only three of the nine who had been taught performed well. The following table further illustrates this information.
TABLE 8
CORRELATION BETWEEN MOTHERS' PERFORMANCES AND TEACHING

<table>
<thead>
<tr>
<th></th>
<th>Mothers Who Had Been Taught</th>
<th>Mothers Who Had Not Been Taught</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good Performance</td>
<td>3</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Poor Performance</td>
<td>6</td>
<td>15</td>
<td>21</td>
</tr>
<tr>
<td>Total</td>
<td>9</td>
<td>16</td>
<td>25</td>
</tr>
</tbody>
</table>

The above information would seem to indicate that a mother who had been taught did not necessarily perform well, but that she was somewhat more likely to perform well than a mother who had not been taught. The reader must bear in mind that the teaching consisted of a very minimal explanation in some instances.

In concluding the data presentation, the major findings seem to be that the large majority of mothers are not using the hand care procedures as intended and the nurses are not instructing the mothers in the use of the same procedure.
CHAPTER V
SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

This study was undertaken to determine the effectiveness with which the hand and breast care procedures, as set up in the Beth Israel Hospital, are being used by mothers before handling their infants. It was hypothesized that they are not being used effectively.

The observational and interview methods were selected to collect the data and twenty-five mothers were chosen as participants.

The findings can be summarized as follows:

1. According to the criteria set up to determine a good performance only four mothers performed well in doing the hand care procedure, while twenty-one mothers performed the same procedure poorly.

2. Eight of the twenty-one poor performers had wiped only the anterior surfaces of their hands, using little or no friction; eleven of the poor performers had wiped both surfaces of their hands, with little or no friction, but neglected to include their individual fingers.

3. Following the criteria set up to determine a good performance in use of the breast care procedure, three mothers performed well and one mother performed poorly.

4. Seven mothers believed the solution sterilized their hands; one mother also thought it sterilized the breasts.

5. Seventeen mothers indicated that the procedure was used to provide cleansing of the hands, either by removing germs or helping to keep the hands clean.
6. One mother had no idea of the use of the hand tray.

7. Three mothers said this made them more conscious of keeping clean.

8. Seven mothers washed their hands at the sink with soap and water before using the hand or breast care tray, four mothers did not.

9. Of the seven mothers who did wash their hands first, two used the hand care procedure well and five used it poorly.

10. Of the four mothers who had not washed their hands first, one did well and three did poorly in using the hand care procedure.

11. Six respondents planned to wash their hands with soap and water before feeding or handling their children at home.

12. Identification of the solution as an antiseptic was made by six of the mothers.

13. Sixteen mothers were not given any explanation as to the use, purpose, or method of application of the procedures by a nurse; nine mothers were given some explanation, although in three instances it was very minimal.

14. Of the nine mothers who had been taught, only three performed well, while six members of this same group performed poorly.

15. Of the sixteen mothers who had not been taught, fifteen performed poorly and one performed well.

Conclusions

1. Most of the mothers performed poorly in their use of the hand care procedure. If performance does not meet the standards set to ensure the desired result, cleanliness, then the effectiveness of the procedure has not been obtained.
2. A majority of the mothers using the breast care procedure performed well, however, the number of mothers using this procedure was few. It may be concluded that the breast care procedure is being used effectively.

3. Some mothers had incorrect concepts about the action of the solution, i.e., the "sterilizing" power of the solution, which probably influenced their method of application. Other mothers expressed feelings of a cleansing action but didn't elaborate on how the solution cleansed. It was felt by the author that their inability to verbally explain the uses or purposes of the procedure and the types of poor performances and ways in which the solution was applied, demonstrated the vagueness of the mothers' understanding of this procedure.

4. Seven mothers had washed their hands with soap and water before using the hand tray. Five of them were rated poor performers, meaning that by the standards of good hand care procedure their hands were not clean. Actually, their hands were clean before they used the hand tray because they had just been washed. Three mothers who did not wash their hands prior to using the hand care procedures, performed poorly when using the hand tray, so did not ensure cleanliness of their hands before feeding their infants.

5. Six mothers intended to use soap and water to cleanse their hands at home, which may be considered an indication of their understanding in being able to adapt and apply the basic principle of the procedure to the home situation.
A procedure should always be introduced to the patient with an explanation of its uses, purposes, and method of application. This helps the patient to understand the whys and hows of the procedure and further enables her to derive its optimum benefits. In this study any explanation has been called teaching the patient and has been found lacking in most of the recorded instances. This lack of teaching, or explanation, may partly account for the large number of poor performances by the mothers in using the hand care procedures. Also, the fact that only one-third of those mothers who had been taught performed well, and the examples of the kinds of minimal explanation given indicate that the teaching done by the nurse was not as effective as it might have been.

Recommendations

1. That cultures be taken of the solution in the hand and breast care trays to discover any bacteria which may be present.

2. That cultures be taken of the mothers' hands after using the hand or breast care trays to determine the amount of residual bacteria.

3. That the present procedure be revised to make it more effective by resembling the home situation, where the mother will be washing her hands with soap and water. This will also help the mother learn the basic principles of cleanliness of the hands and adapt and apply them in her home. While the mother is in the hospital, the nurse has an excellent opportunity to instruct her in a proper method of handwashing and to observe her to ascertain if the mother can do it correctly. This can easily be done for the ambulatory patient as each room on the
postpartum floor has a sink with running hot and cold water.

Recent studies have discovered that mechanical cleansing is the most important factor in removing organisms from the skin. Soap and warm water reduce the basic flora of the skin, provide prolific suds, and cause a minimal irritation of the skin.¹

Three important factors to remember in relation to the mechanical cleansing technique are: the amount of vigor used in scrubbing; that care be taken to apply friction to every area of the forearms and hands; and that the nails and areas between fingers offer a haven for dirt and bacteria and should receive special attention.²

Essentials for proper handwashing techniques are running hot and cold water, towels, and sinks with foot or knee controls. In homes where sinks are provided with hand faucets only, the faucets may be turned on by hand and then soaped and washed while the mother's hands are lathered.³

Handwashing for the mother who is a bedpatient will be similar to that in a home where running water is not available and a washbasin must be used.⁴ The washbasin with warm water, soap, and a towel can be brought to the mother to use in bed. The nurse does this for bedpatients in other areas of nursing, so this is not a new procedure to her.

² Ibid. p. 560.
³ Greenberg, op. cit. p. 91.
⁴ Ibid. p. 92.
4. That studies be done to determine the reason, or reasons, for the lack of patient teaching in this particular unit of the hospital and how the effectiveness of the teaching can be improved.

5. That studies be done to obtain the opinions of the nurses and doctors regarding the hand and breast care procedures now in use.

6. That an analysis be made of the orientation program of nursery nurses to determine the instruction which they are given regarding the hand and breast care procedures.

7. That studies be done of job satisfactions and dissatisfactions of nursery nurses in regard to patients, personnel policies, and interdisciplinary relationships.

8. That curriculum study be done to discover the introduction which the student of nursing receives in regard to the basic principles of cleanliness for any patient and the principles of patient teaching.
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APPENDICES
Appendix A

Interview Guide

1. Had you used this method for hand or breast care before? Where?

2. Had you ever given it any thought as to why we ask you to use it?

3. How do you feel about using this?

4. Did the nurse ever give you an explanation of why or how you use the tray? What did she say? (If answer was no, then an attempt was made to discover her source of information concerning the use or method.)
Appendix B

Observation Guide

1. Areas cleansed:
   a. palms and back of hand to wrist line
   b. individual fingers
   c. between fingers
   d. under nails
   e. cuticle area
   f. around rings

2. Friction - absence or presence in use?

3. General attitude of mother while using tray - careful or hasty and careless in use?